

5th Edition

Financial Management

for Public, Health, and Not-for-Profit Organizations



Steven A. Finkler • Daniel L. Smith
Thad D. Calabrese • Robert M. Purtell

Financial Management for Public, Health, and Not-for-Profit Organizations

Fifth Edition

Dedications

Steven A. Finkler

To Max, Livi, and Judah

Daniel L. Smith

To Tara and Madison

Thad D. Calabrese

To Abby, Benjamin, Noah, and Ethan

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Preface

As available resources become scarcer, public managers and policy makers must have a working knowledge of financial management to ensure organization missions are met while not sacrificing long-term survival. This does not mean that all managers and policy makers of government, not-for-profit, and healthcare organizations must be financial managers. However, they cannot simply rely on others to be aware of the financial issues that may be of concern to the organization, nor can today's managers depend solely upon others to make consequential financial decisions. All managers must be able to understand and make use of financial information. This is particularly true at a time when mergers are increasingly common in the not-for-profit and health sectors—every merger requires, at a minimum, that managers read numerous documents with financial data.

This book provides a foundation in financial management to allow people to understand and use financial information. The intent of the book is not to make the reader an accountant. Rather, its goal is to provide enough of the language and tools of financial management to make the reader conversant in the field and a competent entry-level financial analyst in the public, health, or not-for-profit sector. The primary goal is to provide the skills necessary to use financial information. However, the text also provides technical skills needed to generate that information. In addition, the book strives to provide the foundation for additional coursework in such areas as debt financing, government budgeting and accounting, and health or not-for-profit management.

One of the skills that all users of financial information must have is a strong financial vocabulary. The fields of accounting, finance, and public finance are heavily laden with jargon. Any accountant can bury a non-accountant in debits and credits, journals, and reversing entries. A major emphasis of this book is on providing a working vocabulary for communication so that the reader can develop the ability to ask the right questions and interpret the answers.

In addition to vocabulary, this book describes a wide variety of methods, processes, and tools of accounting and finance. The book does not describe them in sufficient detail for the reader to fire the treasurer and controller and take over their jobs. (How many of you really want to do that?) Instead, there is sufficient detail so that the reader can comfortably use the wide variety of financial reports that are generated in the typical organization. Also, the user of this book will have an awareness of the techniques available that can provide information to help improve decision making.

The focus of the book is on the financial management of government, health, and not-for-profit organizations. Most financial books are oriented toward the for-profit corporate sector. Historically, they have had a heavy emphasis on manufacturing or financial markets. Recently, as the service sector of society has grown, there has been some shift in financial management toward service industries. However, government, health, and not-for-profit organizations are not typical service industries. The public sector that these organizations represent has developed its own financial management style and rules. Unusual public sector

accounting approaches, such as fund accounting, heighten the challenge of studying financial management. As a result, it is vitally important to have a targeted book such as this one.

Some users of this book will indeed want to go further in the field of financial management and gain a specialized knowledge. They will need to be able to not only use but also generate financial information. Some of the more technical aspects needed by those individuals are contained in the appendices to a number of the chapters in the book.

It is our hope and belief that this book fills a void in a number of ways. First, a substantial effort has been made to present all the material the target audience needs, while not including excess material that would obfuscate more than it would clarify. The balance of being sufficiently inclusive to adequately cover the topic and yet not so inclusive as to overwhelm the reader is a difficult one. It is one that we have devoted substantial efforts to achieve.

Second, the book has been written with an awareness that there is substantial movement of managers among the three sectors covered in this book. Public service is a broad concept. Often people who enter public service find that their careers take unexpected twists and turns, moving from one part of the public sector to another. By providing information on government, health, and not-for-profit organizations, this book provides the user with the background needed for future opportunities in public service careers that may yet be beyond the reader's imagination.

Third, this book presents the order of material in a revolutionary way. Historically, accounting education has predominantly been targeted to those going into public accounting with the primary goal of becoming Certified Public Accountants. As such, the elements of accounting most necessary for public accountants are taught first. Financial accounting, an area primarily involving the generation of information to be reported to people outside of the organization, is generally taught before any of the elements of managerial accounting. However, most readers of this text will be managers, rather than auditors. Their needs are oriented toward getting and using financial information to make decisions and manage effectively. Most managers will be exposed to budgets long before they ever see their organization's audited financial statements. Therefore, the book reverses the normal order of most financial management texts, providing the foundation of managerial accounting before the discussion of financial accounting.

The order in which the material is presented in this book is unique yet logical. The process of developing a plan for the future, implementing the plan, controlling operations to keep to the plan, reporting results, analyzing results, and using that information to improve future plans is the normal flow of financial information within an organization. It is the way that most managers deal with financial information. In using this book in the classroom, it has become apparent that this flow also helps readers get a better grasp of the entire financial management process.

The book is organized as follows. [Chapter 1](#) provides an introduction and overview of financial management. The chapter also provides background information on the primary sources and uses of money in the public sector. The text then moves on to the organization's mission and the planning process in [Chapters 2](#) through

6. A variety of budgeting techniques are discussed, and special attention is given to planning and measuring costs. Once made, plans must be implemented, with an effort to run the organization efficiently and to achieve its goals. Therefore, implementation and control issues are discussed in [Chapters 7 and 8](#). These chapters focus on the management of short-term resources and obligations, and on issues of accountability and control. Managers need feedback to measure whether actual results are varying from the plan so that midstream corrections can be implemented. This feedback, in the form of variance reports, is also discussed in [Chapter 8](#). At year-end the organization needs to aggregate the events of the year and prepare a report of what has transpired. This report contains a set of financial statements, which are discussed in [Chapters 9 and 10](#). Special reporting concerns of health, not-for-profit, and governmental organizations are addressed in [Chapters 11, 12, and 13](#). Finally, managers must analyze these results to understand the organization's financial position and performance. Financial statement analysis and financial condition analysis are covered in [Chapters 14 and 15](#).

New in this Fifth Edition

This fifth edition of *Financial Management for Public, Health, and Not-for-Profit Organizations* is the second to be co-authored by the team of Steve Finkler, Dan Smith, Thad Calabrese, and Bob Purtell. Whereas the prior edition was in many ways a major structural overhaul of the book and its ancillary materials, our focus for this edition was on updating and clarifying the material. In this edition we were particularly focused on clarifying the *intuition* behind some of the concepts and methods in the book.

Before turning to the less obvious updates, readers will notice that we have removed, from the printed text, the integrative case chapter (formerly [Chapter 9](#)) that we introduced in the prior edition. The chapter remains in another form, however. We have expanded it to include case studies in both managerial and financial accounting, and to allow for continued expansion with future editions, it is available to readers online at study.sagepub.com/finkler5e. Some of the cases have been expanded and transferred from the ends of chapters in the prior edition of the book, and some are entirely new to this edition. Faculty using this book who have developed their own cases over the years are encouraged to send them to us for possible inclusion in the next edition of the book.

[Chapter 1](#) has been updated throughout, and [Chapter 2](#) has been revised to help students better understand the difference between operating and cash budgets. In [Chapter 1](#), in addition to updating the data on resource flows in the public, health, and not-for-profit sectors, we have noted the impact of federal budget sequestration and the Patient Protection and Affordable Care Act of 2010 on the size and distribution of these resource flows. In [Chapter 2](#), we have expanded the discussion on the budgetary consequences of a timing gap between when an organization provides goods or services and when it receives cash payment for those goods or services.

We have substantially revised the text in [Chapters 4](#) and [5](#). In [Chapter 4](#), we have added discussion on the non-mathematical, conceptual intuition behind the elements of the break-even formula. In addition, we have added the formula for break-even price as well as some practical guidelines on dealing with units of analysis when doing break-even analysis. In [Chapter 5](#), we have expanded the discussion on both the time value of money and depreciation. These revisions directly address some of our students' most commonly asked questions.

In [Chapter 9](#) (formerly [Chapter 10](#)), the discussion of International Financial Reporting Standards (IFRS) has been updated to include the most recent developments. More specifically, given the lack of complete convergence between Generally Accepted Accounting Principles (GAAP) of the United States and IFRS, [Chapter 9](#) notes where major differences still exist between the two. In [Chapter 10](#) (formerly [Chapter 11](#)), we note that proposed changes to the financial reporting model by the Financial Accounting Standards Board (FASB) may result in requiring the direct method for deriving the cash flow statement. Presently, the indirect method is more common.

In [Chapter 11](#) (formerly [Chapter 12](#)), which examines unique accounting issues for not-for-profit and

healthcare organizations, we outline proposed FASB changes that would change net asset reporting categories and would require not-for-profits to report an operating measure of performance—like healthcare organizations currently do. We also discuss potential changes to the statement of functional expenses.

Governmental accounting standards have continued to change since the prior edition of the book was published. Recent changes, however, are largely beyond the scope of this book. In [Chapters 12 and 13](#) (formerly [13 and 14](#)), we have only lightly revised the text to clarify the fundamentals of modified accrual accounting and to make students aware of recent developments in pension accounting and reporting. In [Chapter 15](#) (formerly 16), we explain how those developments impact government financial condition analysis, and we have added material on state government fiscal monitoring systems.

In addition to the above, minor clarifications and general updates have been made for all chapters throughout the book. Homework problems at the end of each chapter have been updated and expanded. The resources available online for instructors, including Homework Excel Templates, Homework Solutions, PowerPoint slides, and Test Bank problems, have all been revised, updated, and expanded. We have used embedded Excel objects in the solutions files and PowerPoint class notes to make it easier for students and instructors to review the calculations and examine the impact of changes in any of the variables.

This new edition is accompanied by materials on the Web. Both instructor and student resources are available at study.study.sagepub.com/finkler5e. The online materials include:

- Student Resources Homework–related material
- Faculty Resources (available to instructors only)
- Word document solutions to all assignment material
- Excel templates for selected homework problems (These may be made available to students at faculty discretion.)
- Excel solutions to selected homework problems
- A test bank
- Updated and expanded PowerPoint class notes

We very much appreciate the feedback we have received directly from you—our students, colleagues, and friends. This book was a major undertaking. The results were substantially improved by the valuable comments and suggestions made by our colleagues and students. We offer our thanks to our many colleagues around the country who reviewed the manuscript and made important suggestions, including Khaled Amin, Emily Crawford, Tim Ettenheim, Santa Falcone, Dall Forsythe, Francesca Frosini, Patrice Iatarola, Dick Netzer, Pam Ouellette, Yousuf Rahman, Mark Robbins, Shanna Rose, Amy Schwartz, Bill Voorhees, and Robert Winthrop. We are grateful to David Strungis, who reviewed all the problems and solutions for the fourth edition, as well as Laura Hogue, who reviewed all of the assignment material for the second edition. Special thanks go to Dwight Denison, Marty Ives, Bernard Jump Jr., Ken Kriz, Dean Mead, William Moore, Ross Rubenstein, and Leanna Stiefel, whose efforts went beyond the call of duty. We would also like to thank the publisher's reviewers, whose comments led to a number of improvements: First Edition—Tom Courtney; Stan Davis, Indiana University Purdue University Fort Wayne; Rev. Albert J. DiUlio, The Vatican

Observatory; and William Zelman, University of North Carolina; Second Edition—Robert Bartolacci, Carnegie Mellon University; Harwell Herring III, Utica College; Ken Milani, University of Notre Dame; and Laura Peck, Abt Associates; Third Edition—Chaman L. Jain, St. John's University; Ken Milani, University of Notre Dame; and an anonymous reviewer; Fourth Edition—James Caillier, University of Alabama; Thomas Carment, Rogers State University; Susan Convery, Michigan State University; Lara Khouri, Columbia University; James Lock, Northern Virginia Community College; David Matkin, SUNY Albany; Melissa Merrell, Congressional Budget Office; Boris Morozov; Ross Rubenstein, Georgia State University; Jay Ryu, Ohio University; Randy Serrett, University of Houston–Downtown; H. “Charlie” Sparks, University of Alaska; and Megan Streams, Tennessee State University; Fifth Edition—Kimberly Kopka, Eastern Michigan University; Karen Kunz, West Virginia University; Jose Mercado, CUNY–Baruch College; Chester A. Robinson, Jackson State University; Jay Ryu, Ohio University. Ken Milani has been particularly generous in allowing us to include some of his material on budgeting and also on the unrelated business tax.

Bernard Jump Jr. of the Maxwell School (Emeritus) gets the medal of valor for having used the earliest drafts of the first edition of this book with his classes before even the most obvious and significant errors were removed. His tenacity in going through a number of different drafts of the book and his conceptual and technical comments throughout the process were invaluable.

Our thanks also go to Dwight Denison, Drew Franklin, Santiago Guerrero, Ed Roche and Louis Stewart for specific valuable contributions to the book. Dwight Denison authored a number of homework problems that appear at the end of chapters throughout the book as well as the Ponderosa case study. Santiago Guerrero prepared the PowerPoint class notes for the cases in the fourth edition. Special thanks to Khaled Amin for compiling the problem bank in the second edition.

We would like to thank the entire CQPress team for their remarkable job in getting this book to the reader. We thank our editors, Sarah Calibi and Matt Byrnie, Development Editor Elise Frasier, and Editorial Assistant Raquel Christie for overseeing the entire project. Production Editor David Felts managed the production process, and Sarah Duffy did a fantastic job copyediting the manuscript.

Any errors that remain are our responsibility. We welcome all comments and suggestions. Please feel free to contact either Dan Smith or Thad Calabrese by email.

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Case Examples

Throughout this text, there are running case examples regarding the town of Millbridge, the Hospital for Ordinary Surgery, and Meals for the Homeless. These organizations and their managers are fictitious, and any similarity to any real organization or person is strictly coincidental.

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Steven A. Finkler

Dr. Steven A. Finkler is Professor Emeritus of Public and Health Administration, Accounting, and Financial Management at New York University's Robert F. Wagner Graduate School of Public Service (NYU Wagner). At NYU Wagner, he headed the specialization in health services financial management for over 20 years. An award-winning teacher and author, Dr. Finkler is engaged in a variety of research topics in the areas of economics and accounting.

Among his publications are 25 books, several of which are *Financial Management for Nurse Managers and Executives*, 5th ed. (with Cheryl Jones and Christine T. Kovner, forthcoming 2017), *Accounting Fundamentals for Health Care Management*, 2nd ed. (with David Ward and Thad Calabrese, 2012), and *Finance and Accounting for Nonfinancial Managers*, 4th ed. (2011). He has also published more than 200 articles in many journals, including *Health Services Research*, *Journal of Public Policy and Management*, and *Healthcare Financial Management*.

He received a Bachelor of Science degree in economics (dual major in accounting and finance) and Master of Science degree in accounting from the Wharton School at the University of Pennsylvania. His master's degree in economics and doctorate in business administration were awarded by Stanford University.

Dr. Finkler, who is also a Certified Public Accountant, worked for several years as an auditor with Ernst and Young and was on the faculty of the Wharton School before joining NYU. He is a past member of the Executive Board of the International Society for Research in Healthcare Financial Management and the Editorial Board of *Health Care Management Review*, and he served as treasurer and a member of the Board of Governors of Daughters of Israel Geriatric Center. He was the editor of *Hospital Cost Management & Accounting* for 12 years and is a past member of the National Advisory Council for Nursing Research at the National Institutes of Health. He consults extensively, both around the country and abroad.

Daniel L. Smith

Daniel L. Smith, PhD, is associate professor of public budgeting and financial management at NYU Wagner, where he is director of the finance specialization. His research focuses on state government budgeting and financial management and appears in *Journal of Policy Analysis and Management*, *Journal of Public Administration Research and Theory (JPART)*, *Public Administration Review (PAR)*, *Public Budgeting & Finance*, and *Public Choice*, among others. In addition, he is co-editor of *JPART* and serves on PAR's editorial board. Dr. Smith is vice chair of the Association for Budgeting and Financial Management, and he is a member of the Governmental Accounting Standards Advisory Council. He earned his doctorate in public administration in the School of Public and International Affairs at the University of Georgia.

Thad D. Calabrese

Thad D. Calabrese, PhD, is assistant professor of public and nonprofit financial management at NYU Wagner. His research focuses on not-for-profit and government accounting and finance and is

published in the *Journal of Public Administration Research and Theory*, *Public Administration Review*, *Public Budgeting & Finance*, *Journal of Accounting and Public Policy*, *Nonprofit and Voluntary Sector Quarterly*, and *Nonprofit Management & Leadership (NML)*, among others. In addition, he currently serves on the editorial board of *NML*, and he has served on the Association for Budgeting and Financial Management's member-elected Executive Committee. He also co-authored *Accounting Fundamentals for Health Care Management*, 2nd ed. (with Steven Finkler and David Ward, 2012). Prior to entering academia, he worked as a financial manager in the not-for-profit sector and in local government.

Robert M. Purtell

Robert M. Purtell, PhD, recently retired as a clinical assistant professor of finance and director of the MPA program at the Nelson A. Rockefeller College of Public Affairs and Policy at the University at Albany, State University of New York. Dr. Purtell came to the academy after a long career as a financial manager and executive in the financial services industry. His research interests and publications focus on the valuation of public assets, the measurement and management of risk in public service organizations, and the use of evidence-based management.

Dr. Purtell received his Bachelor of Science degree in mathematics from Manhattan College. He also received a Master of Business Administration degree from the Stern School of Business and Master of Philosophy and Doctor of Philosophy degrees from the Robert F. Wagner Graduate School of Public Service, both of which are at New York University.

Part I Introduction: Setting the Stage

Chapter 1 Introduction to Financial Management

Learning Objectives

The learning objectives of this chapter are to:

- define financial management;
- define accounting and finance;
- discuss the sources and uses of resources in the public sector, including the federal government, state and local governments, healthcare organizations, and not-for-profit organizations;
- explain why public service organizations should be concerned with financial management;
- explain why public service organizations should earn profits; and
- introduce a hypothetical ongoing example to be used throughout the text.

This book is written for current and future public service managers and policy makers. Each person working in such a capacity—in government, in healthcare, or in a not-for-profit organization—will need to generate and/or use financial information. Some will become financial specialists and will use this book as their introduction to the field. For many readers, however, this book may be their only formal exposure to the concepts of financial management.

By the end of this book, the reader should be comfortable with the basics of financial management. That means the reader should be able to prepare and analyze budgets and financial statements, read and interpret financial information, and perform financial analyses. The reader should also have an appreciation for some of the things that financial management can do and know when to call upon a financial expert. Most importantly, the reader should have an improved ability to use financial information in making managerial and policy decisions.

Even those individuals who do not expect their careers to focus primarily on financial issues will find that an understanding of basic financial concepts is essential. All organizations are dependent on obtaining adequate financial resources and putting them to their best use. Resources are scarce, and financial management provides information about how scarce those resources will be and how they will be or have been used. Financial management gives managers tools that will aid them in achieving both the broad and specific goals of the organization.

This chapter begins with an overview of financial management. The chapter next moves on to examine public sector resource flows. From where does each of the major public service sectors get its resources, and on what does it spend those resources? The chapter then addresses the question of why government, healthcare, and not-for-profit organizations are all included in this one text.

The discussion next turns to whether such organizations should earn a profit from their activities. This gives rise to consideration of the tax implications if a public sector organization does earn a profit. The chapter concludes with the introduction of a hypothetical example that will be used throughout the text.

In this and every chapter, a great deal of new vocabulary is introduced. The first time a new term appears in the text, it is shown in *italics*. Words in *italics* are defined within the context of the chapter in the “Key Terms” section at the end of each chapter. These words are also defined, sometimes from a broader perspective, in the glossary.

What is Financial Management?

Financial management is the subset of management that focuses on generating financial information that can be used to improve decision making. In *proprietary*, or for-profit, organizations, the unifying goal of all decisions is to maximize the wealth of the owners of the organization. In public service organizations—the term by which we may collectively refer to public, health, and not-for-profit organizations—the decisions are oriented toward achieving the various goals of the organization while maintaining a satisfactory financial situation. Financial management encompasses the broad areas of *accounting* and *finance*.

Accounting is a system for keeping track of the financial status of an organization and the financial results of its activities. It is often referred to as the language of business. The vocabulary used by accounting is the language of nonbusiness organizations as well. Governments, healthcare organizations, and not-for-profit organizations often do not see themselves as being “in business.” Yet they must deal with many of the same financial issues as other types of organizations or risk “going out of business.” *Receivables*, *payables*, *inventory*, *net assets*, *depreciation*, and *debt* are just a few of the accounting terms that managers of public service organizations encounter in their interactions with the organization’s financial managers. These terms, and many others, will be introduced and explained throughout the book.

Accounting is subdivided into two major areas: *managerial accounting* and *financial accounting*. Managerial accounting relates to generating any financial information that managers can use to improve the future results of the organization. This includes techniques designed to generate any financial data that might help managers make more effective decisions. Major aspects of managerial accounting include making financial plans for the organization, implementing those plans, and then working to ensure that the plans are achieved. Some examples of managerial accounting include preparing annual operating budgets, generating information for use in making major investment decisions, and providing the data needed to decide whether to buy or lease a major piece of equipment.

Financial accounting provides retrospective information. As events that have financial implications occur, they are recorded by the financial accounting system. From time to time (usually monthly, quarterly, or annually), the recorded data are summarized and reported to interested users. The users include both internal managers and people outside the organization. Those outsiders include those who have lent or might lend money to the organization (*creditors*), those who might sell things to the organization (suppliers or *vendors*), those who might seek the organization’s services (e.g., clients or patients), and other interested parties. These interested parties may include regulators, legislators, and citizens. Financial statements provide information on the financial status of the organization at a specific point in time, in addition to reporting the past results of the organization’s operations (i.e., how well it has done from a financial perspective).

Finance focuses on the alternative sources and uses of the organization’s financial resources. Obtaining funds when needed from appropriate sources and the deployment of resources within the organization fall under this heading. In addition, finance involves the financial markets (such as stock and bond markets) that provide a means to generating funds for organizations. [Chapters 5](#), [6](#), and [7](#) discuss finance as it relates to public service

organizations.

Public Sector Resource Flows

The public, health, and not-for-profit sectors in the United States are large. Federal government receipts were over \$3 trillion in the fiscal year 2014.¹ In addition, state and local government receipts exceed \$2.5 trillion annually.² Spending on healthcare, meanwhile, now exceeds \$3 trillion each year and is expected to pass \$5 trillion by 2023.³ Finally, not-for-profit organizations reported a total of \$2.2 trillion in revenue as of 2012.⁴ Public service organizations obtain their financing from a variety of sources. The focus here will be on the major sources and uses of money in the public sector.

1. *The Economic Report of the President, 2015*, Table B-21, Federal Receipts and Outlays, by Major Category, and Surplus or Deficit, Fiscal Years 1948–2016, p. 409.

2. Ibid., Table B-24, State and Local Government Revenues and Expenditures, Fiscal Years 1954–2012, p. 412.

3. Centers for Medicare & Medicaid Services, Office of the Actuary. National Health Expenditure (NHE) Projections 2013–2023. NHE Projections 2013–2023, Table 03 National Health Expenditures; Aggregate and per Capita Amounts. <http://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-reports/NationalHealthExpendData/NationalHealthAccountsProjected.html>.

4. Brice S. McKeever and Sarah L. Pettijohn, *The Nonprofit Sector in Brief 2014*. Washington, D.C.: The Urban Institute, Center on Nonprofits and Philanthropy, 2014. <http://www.urban.org/sites/default/files/alfresco/publication-pdfs/413277-The-Nonprofit-Sector-in-Brief-.PDF>.

Governments

The Federal Government

The federal government represents a major component of the entire American economy. Where does the federal government get all of its money, and how does it spend it? [Table 1-1](#) provides a summary of the inflows to the federal government. Many organizations choose a year-end for accounting purposes that differs from the calendar year. The reasons for such a choice are discussed later in this book. Such years are referred to as *fiscal* years. The federal 2017 fiscal year begins on October 1, 2016, and ends on September 30, 2017.

Receipts	Amount
Individual Income Taxes	\$1,478
Social Insurance Taxes	1,065
Corporation Income Taxes	342
Other	291
Total	\$3,176

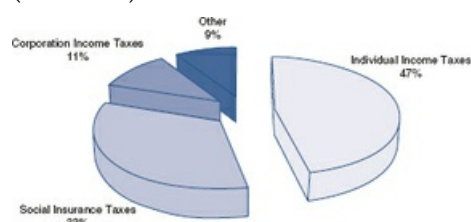
Table 1-1

*Estimates.

Source: Abstracted from “Table B-21, Federal receipts and outlays, by major category, and surplus or deficit, fiscal years 1948–2016,” *The Economic Report of the President, 2015* (Washington, D.C.: United States Government Printing Office, 2015), 409.

The federal government has several types of receipts that make up the bulk of government collections. These are individual income taxes, social insurance taxes (the majority of which are Social Security taxes), and corporation income taxes. Their relative proportions of total federal receipts can be seen in [Figure 1-1](#). The “Other” category in [Figure 1-1](#) includes things such as taxes on cigarettes and liquor, estate (inheritance) and gift taxes, and customs duties (charges on imports).

Figure 1-1 Federal Receipts by Source (in Percentages) for the Fiscal Year Ending September 30, 2015 (Estimates)



Source: Derived from Table B-21, Federal Receipts and Outlays, by Major Category, and Surplus or Deficit, Fiscal Years 1948–2016, *The Economic Report of the President, 2015* (Washington, D.C.: United States Government Printing Office, 2015), 409.

Social Security and national defense are the largest federal outlay categories (see [Table 1-2](#)), though their relative shares of the pie, shown in [Figure 1-2](#), are quite different. Social Security now accounts for a quarter of all federal outlays, making it the single largest category of spending by a wide margin. Income security, Medicare, and health also represent large shares of federal spending. Total spending on defense increased substantially in the years following the 9/11 attack and then even more during the Iraq and Afghanistan Wars. Since American combat troops have been withdrawn from those wars, however, defense spending has dramatically declined. In addition, over \$1 trillion in across-the-board cuts to discretionary budgets (including defense) over 9 years, known as *sequestration*, took effect March 1, 2013, after the president of the United States and the U.S. Congress failed to agree on deficit-reduction measures. Medicare and Social Security are mandatory, “entitlement” programs and are not subject to the sequestration.

Outlays	Amount
National Defense	\$ 508
Social Security	806
Income Security	523
Medicare	536
Health	481
Net Interest	229
Other	441
Total	\$3,750

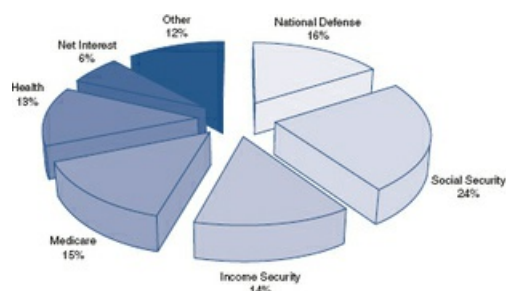
Table 1-2

*Estimates.

Line items do not precisely sum to total due to rounding. Projected total for the fiscal year ending September 30, 2015, is \$3,758.6 billion (rounded).

Source: Abstracted from “Table B-21, Federal receipts and outlays, by major category, and surplus or deficit, fiscal years 1948–2016,” *The Economic Report of the President, 2015* (Washington, D.C.: United States Government Printing Office, 2015), 409.

Figure 1-2 Federal Outlays by Category (in Percentages) for the Fiscal Year Ending September 30, 2015 (Estimates)



Source: Derived from Table B-21, Federal Receipts and Outlays, by Major Category, and Surplus or Deficit, Fiscal Years 1948–2016, *The Economic Report of the President, 2015* (Washington, D.C.: United States Government Printing Office, 2015), 409.

Income security includes welfare and the food stamp program. Medicare is a program of health benefits for the elderly and permanently disabled. The “Health” category includes Medicaid and all other federal government spending on healthcare and health research, aside from Medicare. Net Interest represents the amount the federal government spends on interest annually, primarily on the federal debt. The “Other” category in [Figure 1-2](#) includes a wide variety of areas, such as education, international affairs, the space program, agriculture, commerce, housing, transportation, and general government administration.

The total receipts in [Table 1-1](#) are less than the outlays in [Table 1-2](#). An excess of receipts over spending is referred to as a *surplus*. An excess of spending over receipts is referred to as a *deficit*. [Table 1-3](#) provides information about federal receipts, outlays, surplus or deficit, and debt for selected fiscal years 1990 to 2016.

	Fiscal Year Ending September 30						
	1990	1995	2000	2005	2010	2015*	2016*
Total Receipts	\$1,032	\$1,352	\$2,025	\$2,154	\$ 2,163	\$ 3,176	\$ 3,525
Total Outlays	1,253	1,516	1,780	2,472	3,456	3,750	4,000
Surplus or Deficit	\$ (221)	\$ (164)	\$ 236	\$ (319)	\$ (1,294)	\$ (583)	\$ (474)
Federal Debt	\$3,206	\$4,021	\$5,620	\$7,005	\$13,520	\$16,628	\$19,334

Table 1-3

*Estimates.

Source: Abstracted from “Table B-19, Federal receipts, outlays, surplus or deficit, and debt, fiscal years, 1948–2016,” *The Economic Report of the President, 2015* (Washington, D.C.: United States Government Printing Office, 2015), 407.

The receipts and outlays in [Table 1-3](#) represent the total of *on-budget* and *off-budget* items. A large portion of the Social Security receipts and payments are considered off-budget. Off-budget items are not included in the normal federal government budget process. For example, Social Security taxes and payments are off-budget. Which number better represents the surplus or deficit for the federal government? That is difficult to say.⁵ Based on receipts and disbursements, one could argue that the total receipts and total outlays reported in [Table 1-3](#) are reasonable. Others would argue that Social Security collections in excess of Social Security payments should not be used to offset general spending of the government. Those monies are collected with the expectation that they will be used only for Social Security payments.

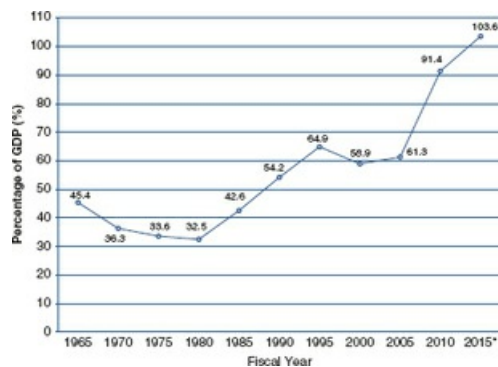
5. See James Howard. “Government Economic Projections: A Comparison Between CBO and OMB Forecasts,” *Public Budgeting and Finance*, Vol. 7 (1987), pp. 14–25.

Another concern is that the federal debt has grown large. The federal government's *national debt* is the total cumulative amount that the federal government has borrowed and not yet repaid. Thus, a deficit shows the amount spent in one year in excess of receipts. The debt shows the accumulated amount that the government owes because spending over time has exceeded receipts.

If the federal government incurs deficits year after year—as it routinely has for decades—then the size of the debt will continue to grow. However, note in [Table 1-3](#) that even during the period around 2000 when the federal government had surpluses, the total debt continued to grow! This is a result of the on-budget, off-budget accounting of the federal government. The surplus and deficits shown in [Table 1-3](#) are on-budget and off-budget items combined. Off-budget surpluses are being used to offset on-budget spending. This allows the government to report a lower deficit or a higher surplus. However, when the federal government uses social insurance trust funds (off-budget money) to offset the deficit, it must borrow them from the Social Security trust fund, increasing the overall level of the national debt. In other words, the overall amount of federal debt does recognize that taxes raised currently for future Social Security payments create obligations to make future payments. However, the calculation of the annual federal surplus or deficit is based more on a cash-in, cash-out perspective. If the cash is available to the government and is spent, that doesn't create a deficit for the year, even if the cash was supposed to be used for some future purpose such as making Social Security payments down the road.

Following World War II, the federal debt reached a high of 120 percent of the gross domestic product (GDP). That percentage fell over the decades following the war and reached a low of 33 percent in 1980, as seen in [Figure 1-3](#). However, since 1980 the debt has risen substantially compared to the total U.S. economy as measured by the GDP, with the only exception being around 2000, when the on- and off-budget accounts were in surplus (see [Table 1-4](#) and [Figure 1-3](#)). Focusing on the period since 2000, there are several reasons the national debt has grown as a percentage of GDP. Both revenue and expenditure actions have played a role, in addition to external economic factors. The 2001 recession reduced tax revenues due to higher unemployment and lower corporate profits. Large tax cuts in 2001 and 2003, a post-9/11 expansion in Homeland Security operations, and new defense spending for wars in Afghanistan and Iraq all contributed to growth in the national debt, as did a major expansion of the Medicare program in 2006 (providing coverage for pharmaceuticals). In addition, countercyclical fiscal policies following the so-called Great Recession that spanned the end of 2007 through the middle of 2009—namely, direct government financial assistance to for-profit companies, investment in national infrastructure, a temporary cut in federal payroll taxes, and an extension to federal unemployment benefits—further exacerbated the nation's debt load.

Figure 1-3 Federal Debt as Percentage of GDP



*Estimate.

Source: Derived from Table B-20, Federal Receipts, Outlays, Surplus or Deficit, and Debt, as Percent of Gross Domestic Product, Fiscal Years 1943–2016, *The Economic Report of the President, 2015* (Washington, D.C.: United States Government Printing Office, 2015), 408.

The 2007–2009 recession had an unusually severe impact on the federal government in that actual receipts for fiscal year 2009 were 22 percent lower than estimated in the 2008 edition of *The Economic Report of the President*, while outlays were more than 13 percent higher than estimated. High unemployment and stimulative tax cuts depressed individual and corporation income and payroll tax receipts, while stimulus spending, so-called bailouts of the for-profit sector, and expanding rolls for social insurance “safety net” programs pushed outlays well beyond estimates. Several extensions made to unemployment insurance benefits payments were a particularly visible and hotly debated source of expenditure growth.

	Fiscal Year Ending September 30								
	1955	1965	1975	1985	1995	2000	2005	2010	2015*
Federal Debt	274	322	542	1,817	4,921	5,629	7,905	13,529	18,628
Gross Domestic Product (GDP)	407	711	1,611	4,270	7,583	10,148	12,889	14,799	17,065

Table 1-4

*Estimates.

Source: Abstracted from “Table B-19, Federal receipts, outlays, surplus or deficit, and debt, fiscal years, 1948–2016,” *The Economic Report of the President, 2015* (Washington, D.C.: United States Government Printing Office, 2015), 407.

A principal factor that has contributed to growth in the national debt is that for decades federal policy makers have been amenable to raising the government’s statutory limit on borrowing as net outlays have increased. The debt “ceiling,” however, became a hot-button issue in the middle of 2011, as many policy makers expressed concern that the United States had accumulated too great a financial burden for future generations to bear. Having reached the legal limit on borrowing, Congress did not agree to simply raise the ceiling, as it and prior Congresses had done dozens of times in recent decades, but rather insisted that the president first agree to major spending cuts in the fiscal year 2012 budget and beyond. On July 31, 2011, the president and the Congress reached an agreement on raising the debt ceiling and cutting spending by up to \$2.4 trillion over 10 years; the bill was signed into law August 2. Had the impasse extended beyond August 2, the federal government would not have had enough cash on hand to make debt repayments and may have defaulted on its debt. Despite having averted default, the protracted stalemate between the Congress and the president played

a role in Standard & Poor’s decision to downgrade the sovereign long-term credit rating of the United States from AAA to AA+ on August 5, 2011 (bond ratings are discussed in [Chapter 15](#)).

State and Local Governments

What are the sources and uses of money at the state and local government levels? Sales, property, and income taxes are the major forms of taxation used by state and local governments to raise money, as seen in [Table 1-5](#) and [Figure 1-4](#). Clearly, however, another significant source of funds for state and local governments is the federal government. Other receipts include taxes on motor vehicles, various fees, other taxes, and miscellaneous revenues.

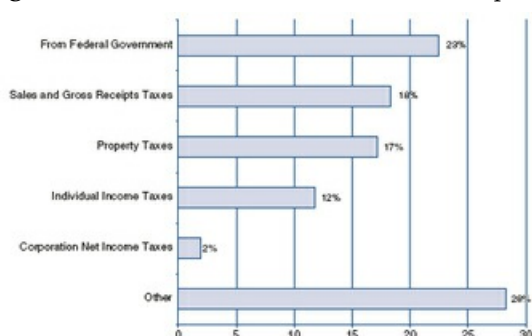
Receipts	Amount
From Federal Government	\$ 584
Sales and Gross Receipts Taxes	476
Property Taxes	446
Individual Income Taxes	307
Corporation Net Income Taxes	49
Other	735
Total	\$2,598

Table 1-5

Line items do not precisely sum to total due to rounding.

Source: Abstracted from “Table B-24, State and local government revenues and expenditures, fiscal years 1954–2012,” *The Economic Report of the President, 2015* (Washington, D.C.: United States Government Printing Office, 2015), 412.

Figure 1-4 State and Local Government Receipts in Percentage: Fiscal Year 2012



Source: Derived from Table B-24, State and Local Government Revenues and Expenditures, Fiscal Years 1954–2012, *The Economic Report of the President, 2015* (Washington, D.C.: United States Government Printing Office, 2015), 412.

Different state and local governments rely to a different extent on each of these sources, and not all state and local governments have the same mix. For example, local governments tend to rely heavily on property taxes, whereas state governments do not. Also, not all states have income taxes on individuals or on businesses.

[Table 1-6](#) and [Figure 1-5](#) show how state and local governments use their resources. The single largest object of expenditure is education, representing 34 percent of state and local outlays. Public welfare and highways are other significant items for state and local governments. Note that 41 percent of spending is in the “Other” category. This is a reflection of the tremendous diversity in the states and localities of the country. Some have high costs for snow removal and subway systems. Others have no snow and little public transit. Common types of costs included in the “Other” category are libraries, police and fire protection, and parks.

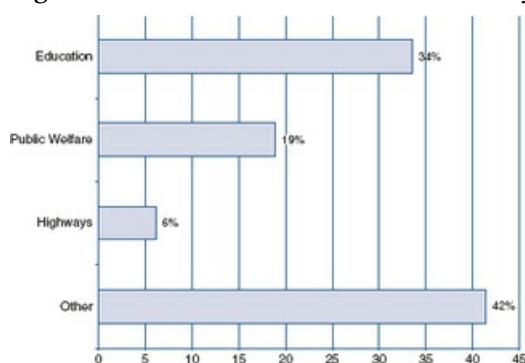
Outlays	Amount
Education	\$ 869
Public Welfare	490
Highways	159
Other	1,074
Total	\$2,591

Table 1-6

Line items do not precisely sum to total due to rounding.

Source: Abstracted from “Table B-24, State and local government revenues and expenditures, fiscal years 1954–2012,” *The Economic Report of the President, 2015* (Washington, D.C.: United States Government Printing Office, 2015), 412.

Figure 1-5 State and Local Government Outlays in Percent: Fiscal Year 2012



Source: Derived from Table B-24, State and Local Government Revenues and Expenditures, Fiscal Years 1954–2012, *The Economic Report of the President, 2015* (Washington, D.C.: United States Government Printing Office, 2015), 412.

The Healthcare Services Industry

In 1965, federal legislation was passed creating Medicare and Medicaid. Since then, spending on healthcare has risen at a rapid rate. During that time, there was a dramatic shift in the relative sources of financing the healthcare sector. Consider a comparison of the private and public roles in paying for national health expenditures over time, as shown in [Table 1-7](#). The public share of health spending has steadily grown over time, though it is projected to slow due to the passage of the Patient Protection and Affordable Care Act (commonly known as the Affordable Care Act, the ACA, or “Obamacare”). In particular, as shown in [Table 1-8](#), the federal government’s share of health spending is projected to remain flat between 2010 and 2020, despite having considerably increased between 2000 and 2010.

	1990		2000		2010		2020*	
	\$ in Billions	Percent	\$ in Billions	Percent	\$ in Billions	Percent	\$ in Billions	Percent
Private	488	67	888	64	1,447	56	2,311	54
Public (Federal, State, and Local)	236	33	490	36	1,158	44	1,962	46
Total	724	100	1,378	100	2,604	100	4,273	100

Table 1-7

*Projected.

Source: Actuals abstracted from “Table 5: National Health Expenditures by Type of Sponsor: Calendar Years 1987 to 2013.” Projection abstracted from “Table 16: National Health Expenditures (NHE), Amounts ... By Type of Sponsor, Selected Calendar Years 2008–2024.” Centers for Medicare & Medicaid Services, Office of the Actuary. <http://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/index.html>

	1990		2000		2010		2020*	
	\$ in Billions	Percent	\$ in Billions	Percent	\$ in Billions	Percent	\$ in Billions	Percent
Private	488	67	888	64	1,447	56	2,311	54
Federal	125	17	262	19	793	28	1,201	28
State and Local	111	15	228	17	425	16	762	18
Total	724	100	1,378	100	2,664	100	4,274	100

Table 1-8

Totals may not precisely sum, and may not equal those in [Table 1-7](#), due to rounding.

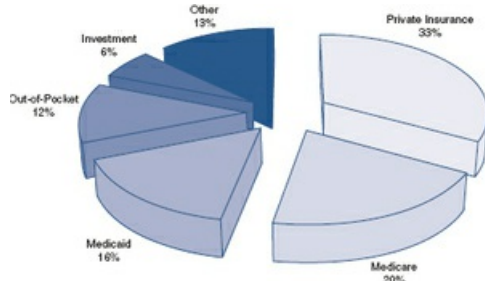
*Projected.

Source: Actuals abstracted from “Table 5: National Health Expenditures by Type of Sponsor: Calendar Years 1987 to 2013.” Projection abstracted from “Table 16: National Health Expenditures (NHE), Amounts ... By Type of Sponsor, Selected Calendar Years 2008–2024.” Centers for Medicare & Medicaid Services, Office of the Actuary. <http://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/index.html>

State and local government funding of healthcare over the period from 1990 to 2010 and through the projection for 2020 grew substantially in absolute terms but only gradually as a percentage of national health expenditures, as demonstrated in [Table 1-8](#).

One can get a better sense of the sources of healthcare financing from [Figure 1-6](#). Medicare is a federal program; Medicaid and other public programs are paid for by federal, state, and local governments. Medicare and Medicaid make up over one third of the healthcare pie. Private health insurance, including managed care programs, is the single largest source of funding. The “Out-of-Pocket” category represents direct payments by individual persons for care. The “Other” category includes payments by those other than patients. For example, it includes health services provided for employees at the employer’s site.

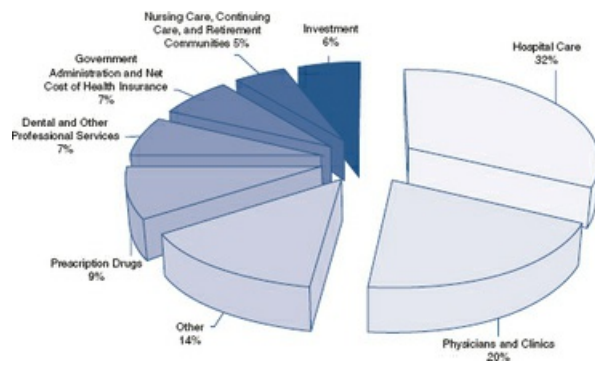
Figure 1-6 The Nation’s Health Dollar: Where It Came From, 2013



Source: *The Nation’s Health Dollar, Calendar Year 2013: Where It Came From*. Centers for Medicare & Medicaid Services, Office of the Actuary, National Health Statistics Group, <http://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/Downloads/PieChartSourcesExpenditures2013.pdf>.

What is this money spent on? [Figure 1-7](#) provides a breakdown of the total spending. Hospital care, at 32 percent, is the largest single cost driver. Physician services, nursing home care, and prescription drugs are also large objects of expenditure. Other spending includes dental, vision, research, construction, and other medical and nonmedical costs.

Figure 1-7 The Nation’s Health Dollar: Where It Went, 2013



Source: *The Nation's Health Dollar, Calendar Year 2013: Where It Went*. Centers for Medicare & Medicaid Services, Office of the Actuary, National Health Statistics Group, <http://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/Downloads/PieChartSourcesExpenditures2013.pdf>.

The Not-for-Profit Sector

The not-for-profit sector in the United States is extremely large, with over 1.4 million different tax-exempt organizations registered with the U.S. Internal Revenue Service (IRS). The largest single grouping is that of public charities, which number nearly 1 million.⁶ There is a tremendous range of charitable organizations, including but not limited to those in the arts, culture, and humanities; education; environment; health; human services; international affairs; religion; and foundations.⁷

⁶ Brice S. McKeever and Sarah L. Pettijohn, *The Nonprofit Sector in Brief 2014*. (Washington, D.C.: The Urban Institute, Center on Nonprofits and Philanthropy, 2014).

<http://www.urban.org/sites/default/files/alfresco/-publication-pdfs/413277-The-Nonprofit-Sector-in-Brief-.PDF>.

⁷ A good source for additional descriptions of and information about various types of not-for-profit organizations is the National Center for Charitable Statistics, at <http://nccs.urban.org>.

Although corporations and foundations make substantial contributions to the not-for-profit sector, the largest share of contributions, 72 percent, comes from individuals (see [Figure 1-8](#)). There was over \$335 billion in charitable giving in 2013.⁸ Most American households make contributions, and in 2013, the average American household gave \$2,974 to charity.⁹ Contributions are spread across a wide variety of organizations, as seen in [Figure 1-9](#). The greatest share of dollars contributed, 31 percent, went to religious organizations. Education, with 16 percent of the contributions, was a distant second. The not-for-profit sector is not totally, or even mostly, reliant on contributions, however.¹⁰ In 2012, fees for services and goods from private sources accounted for 50 percent of public charities' revenues, while fees for services and goods from government sources accounted for over 23 percent.

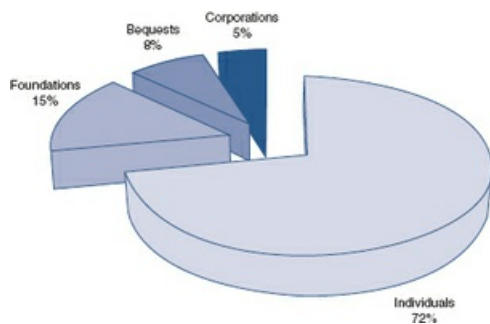
⁸ Giving USA 2014: Highlights. Researched and written by the Lilly Family School of Philanthropy at Indiana University-Purdue University Indianapolis. Published by the Giving USA Foundation.

⁹ Ibid.

¹⁰ Brice S. McKeever and Sarah L. Pettijohn, *The Nonprofit Sector in Brief 2014*. (Washington, D.C.: The Urban Institute, Center on Nonprofits and Philanthropy, 2014).

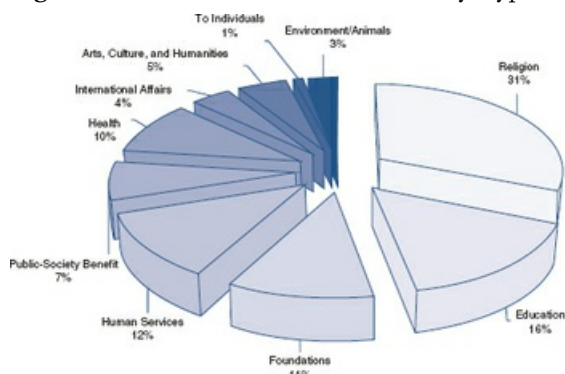
<http://www.urban.org/sites/default/files/alfresco/publication-pdfs/413277-The-Nonprofit-Sector-in-Brief-.PDF>.

Figure 1-8 Contributions: \$335 Billion by Source of Contribution, 2013



Source: *Giving USA 2014: Highlights*. Researched and written by the Lilly Family School of Philanthropy at Indiana University-Purdue University Indianapolis. Published by the Giving USA Foundation.

Figure 1-9 Contributions: \$335 Billion by Type of Recipient Organization, 2013



Source: *Giving USA 2014: Highlights*. Researched and written by the Lilly Family School of Philanthropy at Indiana University-Purdue University Indianapolis. Published by the Giving USA Foundation.

How do not-for-profit organizations obtain donations and grants? Fundraising has become an important part of the job of managers of not-for-profit organizations. There are two major types of fundraising: contributions or donations, and contracts or grants. The funds that not-for-profit organizations receive from these sources are either unrestricted or restricted. The organization may use unrestricted funds for any valid organizational purpose. If the funds are restricted, the organization must comply with specific limitations on how the funds may be used.

For example, the *New York Times* reported that when Joan Kroc died she left \$1.5 billion of the McDonald's restaurant fortune to the Salvation Army. However, the charity had to contemplate whether to accept the gift, because the donation was restricted. If accepted, half of the money had to be used to build 25 to 30 community centers and the other half placed in permanent endowment, with the income from the endowment used to pay for the costs to operate the centers. Based on the Salvation Army's past experience, it was likely that the endowment income would only be enough to pay approximately half the total operating cost of the centers. By accepting the gift with its restrictions, the Salvation Army essentially committed itself to raising an additional \$70 million a year from other sources, after the construction of the centers has been completed.¹¹ Sometimes gifts create burdens for charities.

¹¹. Stephanie Strom. "Salvation Army Receives a Gift of \$1.5 Billion," New York Times, January 21, 2004, <http://www.nytimes.com/2004/01/21/national/21GIFT.html>.

Fundraising has become a sophisticated area of management, and many not-for-profit organizations employ full-time staffs that specialize in fundraising, often called development. A brief introduction to fundraising is provided in Appendix 1-A.

The International NGO Sector

The World Bank defined nongovernmental organizations (NGOs) as "private organizations that pursue activities to relieve suffering, promote the interests of the poor, protect the environment, provide basic social services, or undertake community development" (World Bank Operational Directive 14.70). NGOs are similar to the not-for-profit organizations described in the previous section. They are primarily mission-focused rather than profit-focused. Essentially, any not-for-profit organization, independent from the government, can be considered an NGO.

We can think of NGOs as falling into three main categories: community-based, national, and international. Community-based organizations (CBOs) are membership groups that advance the interests of the members. They may be anything from farmers or trade associations to clubs or even lending organizations. National NGOs are larger organizations, more likely to have full-time staff that operate solely within a country. International NGOs have a presence in more than one country.

The NGO sector grew at a rapid rate in the last quarter of the 20th century. Each year the revenues and spending of NGOs amount to billions of dollars. A good source for additional information about the international NGO sector is the *Yearbook of International Organizations*, published annually.¹² It provides profiles of over 67,000 NGOs.

¹². *Yearbook of International Organizations*, Union of International Associations, K. G. Saur.

Why Public, Healthcare, and Not-For-Profit in One Book?

The reader might wonder why public or government, healthcare, and not-for-profit financial management are all discussed in one text. One argument for this grouping is that these organizations, for the most part, are exempt from taxes.¹³ Although that is something that many of these organizations have in common, it is not the primary issue. The common thread that binds these organizations is their *raison d'être*, their reason for existence. All of these organizations are in the public service. As such, their major focus is to provide benefits to the community.

¹³ Although it is generally true that the public and not-for-profit sectors are exempt from taxation, this is less true for the healthcare services sector. This book will address issues related to both not-for-profit and also for-profit, or proprietary, healthcare organizations.

The underlying public service motivation creates a large number of special circumstances in the area of financial management. Since not-for-profit organizations do not have owners watching to make sure their profits are maximized, there must be other mechanisms put in place to ensure that managers achieve their organization's goals.

Measurement of profit does not adequately provide the bottom line for public service organizations. Since they operate with a goal of providing a public benefit, there must be ways to ensure that the level of public service achieved is measured and reported. Tools must be provided that allow managers to work toward achieving the specific goals of their organizations. This book will help explain those tools and mechanisms, with a special focus on these three vital areas: public, health, and not-for-profit.

Why Should Public Service Organizations Worry about Financial Management?

If the primary mission of public service organizations is not to make a profit, should they even be concerned with issues of financial management? Should organizations such as governments, hospitals, churches, and museums spend time on financial management? The answer is a strong yes.

In for-profit organizations, profits are the goal. They represent the end result that the organization is trying to achieve. In public service organizations, financial resources are a means to an end. The profits themselves may not be the ultimate goal. However, without adequate financial resources, an organization generally cannot achieve its mission.

For example, suppose that an organization's mission is to provide food to homeless individuals. The goal is to keep people from being hungry. To achieve that goal, the organization needs a physical location. It must pay rent and heat and electric bills. Any needed food that is not donated must be purchased. The organization's managers could spend all of their time and efforts planning meals, cooking meals, and getting the meals to the homeless. But if they do that, there is a significant possibility that the organization will run out of money and will have to close its doors.

Achieving the goals of the organization requires financial planning. How much will it cost to provide the meals? How much money can the organization expect to receive? From what sources? Are there adequate resources, or will there be a shortfall?

By focusing on financial issues, managers can determine whether to increase fundraising efforts. They can decide if survival requires cutting back from serving three meals per person per day to just breakfast and dinner, or even just dinner. The desire to accomplish the goal of feeding the hungry can work against accomplishment of that goal. Managers can ignore the organization's finances and keep serving three meals a day—finances be damned. But bankruptcy and closure may be worse than cutting back to two meals a day. An understanding of the current financial status of the organization—how well it is doing financially and what it can or cannot afford to do—is essential for all organizations.

The field of financial management involves attempting to generate useful financial information that is free of value judgments. It is not the role of financial managers to say what the organization should do. Financial management can provide information about how many meals a day the organization can afford to provide to how many people, given expected financial circumstances. General managers often must use the information to make decisions. Suppose that the only choices available that will allow the organization to continue to provide meals for the hungry are to limit the number of people served or to change the menu to one with less nutritious food. Should the organization turn some people away, or should it reduce the quality of the food served? Such value judgments are outside of the domain of financial management.

Financial management focuses not only on questions of survival, but also on issues of *effectiveness* and *efficiency*. Effectiveness relates to whether an organization is accomplishing its mission. If there is a goal to

feed 1,000 people per month, financial management can assess how effective the organization is in achieving that goal. How many people are in fact being fed? Efficiency relates to whether the organization uses the minimum needed resources to produce its outcomes or outputs. To avoid wasting resources, organizations need to understand their productivity. How much did it cost per person fed? Is the organization maximizing the use of resources by finding the lowest-cost approach for achieving each of its results?

Should Public Service Organizations Earn a Profit?

Okay, so not-for-profit organizations need to be aware of their finances. But should they earn a profit? Again, the answer is yes. The term *not-for-profit* is meant to convey the fact that earning a profit is not the mission of the organization. However, organizations clearly would not want to lose money, because then they might be forced to cease operation. Even further, not-for-profit organizations should not be content to just break even. Earning a profit is essential to almost all organizations.

Although earning profits is not why public service organizations exist, profits enhance that existence. Earning profits allows organizations to better accomplish their goals. This is true for several reasons. First, profits provide an organization with a safety margin. Things do not always go according to plan. If for some reason financial results are poorer than expected, a profit earned in a prior period can make up the shortfall.

Second, organizations must be able to replace their equipment and facilities over time as they wear out. If there is inflation, it will cost more to replace these items than they originally cost. For example, if inflation is 3 percent per year, a piece of equipment that lasts 5 years will cost 15 percent more to replace than it originally cost.¹⁴ So a profit will be needed to allow for replacement of facilities.

¹⁴ Actually, the cost will increase by more than 15 percent, since the impact of inflation compounds over time. Issues related to compounding are discussed in [Chapter 5](#).

Third, organizations often want to be able to expand their services over time. This may be to reach out to more potential clients. Similarly, organizations want to be able to improve their services over time, perhaps taking advantage of new technologies. Some reasonable level of profits is necessary to allow for such expansions and adoptions of technologies.

What about governments? Should they earn a profit as well? Governments' profits are more commonly called surpluses. And one can make a good argument that governments also should attempt to earn at least limited surpluses. Cycles in the general economy tend to cause tax receipts to vary upward and downward from year to year. Often, in the years when tax receipts are low because of a recession, the demand on the government to provide public services, such as unemployment insurance payments and welfare payments, rises. Because the demands of government may be higher at times when tax revenues are lower, many governments will plan to have a surplus in good years. This provides available resources to cover needs in bad years. It can also protect the government from unexpected events, such as unusually severe winters requiring extra snow removal or overtime related to cleanup after a rare flood. Governments may have laws governing whether they may incur a surplus or deficit.

Corporate Income Taxes

If a not-for-profit organization earns a profit (surplus), will it be subject to corporate income taxes? No. Organizations that are exempt from federal income taxes, referred to as *tax-exempt* organizations, will not be subject to income tax simply because they earn profits. However, the profits earned must be used for the

benefit of the organization and its clients, rather than being used to benefit any select group that might be perceived as receiving the benefits of ownership.

For example, if a hospital gives free office space to physicians for their private practices, the IRS would likely consider that free space to be a distribution of profits to a group of physicians, placing the organization's tax-exempt status at risk.

In some cases, tax-exempt organizations are subject to income tax on profits they earn that come from sources not related to their primary tax-exempt mission. For example, if a museum operates a restaurant that is open to the general public (beyond just those people visiting the museum), the profits from that restaurant might be subject to income tax (see Appendix 11-A).

Even organizations that are fully tax-exempt are required to file an annual income tax return with the IRS, called Form 990. This document is available to the public either over the Internet or directly from the organization. Tax returns of for-profit corporations are private.

Issues related to income taxes can be extremely complex. Although many public service organizations are tax-exempt, all organizations should seek out the advice of competent tax experts to ensure that they are in compliance with the various tax laws.

Ongoing Case Study

This book uses a fictional example to help the reader learn about financial management in not-for-profit, government, and healthcare organizations. This case study introduces a wide range of financial management material in a realistic yet simplified setting. The case study will run throughout the entire book, with many chapters adding information to it.

The Setting

The Robert F. Wagner Graduate School of Public Service at New York University was having an alumni reunion. The reunion culminated with a formal dinner in the luxurious Bobst Penthouse faculty dining facility. Sitting next to each other at one particular table on this evening were three persons. Each had known the other two nearly a decade earlier when they had been working on their Master of Public Administration degrees at the Wagner School. They had gone their separate ways, but on this evening they found themselves in similar positions.

Leanna Schwartz had left the Wagner School and worked in a variety of positions in the not-for-profit field. Having performed in an excellent manner in each position, she had received a series of increasingly important positions. The culmination was that she had just been appointed the executive director of Meals for the Homeless.

Sitting a few seats from Schwartz was Steve Netzer. He had worked in just one organization since leaving Wagner, the Hospital for Ordinary Surgery. Working his way up through the ranks, from night administrator to assistant admitting department head to director of medical records, he had recently been promoted to the position of chief operating officer of the hospital.

In between Netzer and Schwartz was Dwight Ives. He had gone directly into government management upon leaving the Wagner School. After a stint in Washington as a White House fellow, he worked for a number of years in various roles in management in New York City. In a bit of a dramatic change, he had recently taken on the job of town manager for the suburban town of Millbridge.

As the three alumni chatted, they realized that not only had they taken on the most challenging position of their careers to date, but also they now had substantially more financial responsibility than ever before. None of them were financial managers per se. In fact, none of them had even specialized in financial management while at the Wagner School. However, each of them would now have financial managers working for them, and each of them would need to have a good working understanding of many basic aspects of financial management to be successful in their positions.

What financial skills will each of these managers need? How will those skills help them oversee their organizations? These are some of the questions that will be addressed throughout this book. Often students in not-for-profit, government, and healthcare management and policy programs have difficulty understanding exactly what value financial management has to them. It is hoped that this continuing case study will help the

reader understand more easily why financial information is important. That in turn should make it substantially easier to try to absorb the general and even some of the more technical aspects of financial management.

Summary

The primary focus of the book is on providing current and future managers with an understanding of financial information. The goal of the book is not to provide a highly technical grounding in accounting and finance. Rather, by the end of this book, the reader should be comfortable with the basics of financial management.

Financial management is the subset of management that focuses on generating financial information that can be used to improve decision making. It includes both accounting and finance. Accounting is a system for keeping track of the financial status of an organization and the financial results of its activities. It is subdivided into two major areas: Managerial accounting relates to generating any financial information that managers can use to improve the future results of the organization, and financial accounting provides retrospective information about the results of operations and the financial position of the organization. Finance focuses on the alternative sources and uses of the organization's financial resources.

Public sector organizations obtain their financing from a variety of sources and use them for a wide variety of purposes. Federal government outlays are nearly \$4 trillion annually. State and local government spending exceeds \$2 trillion. Spending on healthcare also exceeds \$2 trillion each year. Spending by not-for-profit organizations is nearly \$2.5 trillion annually. There were \$335 billion in charitable contributions in 2013, and in 2012 not-for-profit hospitals generated \$830 billion in revenues.

In public service organizations, financial resources are a means to an end. The profits themselves may not be the ultimate goal. However, without adequate financial resources, one generally cannot achieve the organization's mission. So it is essential for public service organizations to be concerned with financial management. The field of financial management attempts to generate useful financial information that is free of value judgments. It is not the role of financial managers to say what the organization should do. Financial management provides financial information that can help managers make decisions.

Public service organizations should not be content to just break even. Earning a profit is essential to almost all organizations. First, profits provide an organization with a safety margin. Second, organizations must be able to replace their equipment and facilities over time as they wear out. Third, organizations often want to be able to expand their services over time and adopt new technologies. Some reasonable level of profits is necessary to allow for safety, replacement, and expansion. Because the demands of government may be higher at times when tax revenues are lower, many governments will plan to have a surplus in good years. This provides available resources to cover needs in bad years or for unexpected costs.

Key Terms from This Chapter

accounting, 2
creditors, 2
debt, 2
deficit, 5
depreciation, 2
effectiveness, 16
efficiency, 16
finance, 2
financial accounting, 2
financial management, 2
fiscal, 3
inventory, 2
managerial accounting, 2
national debt, 6
net assets, 2
not-for-profit, 16
off-budget, 5
on-budget, 5
payables, 2
proprietary, 2
receivables, 2
sequestration, 5
surplus, 5
tax-exempt, 17
vendor, 2

Questions for Discussion

- 1-1. What is financial management?
- 1-2. What is the goal of proprietary, for-profit organizations?
- 1-3. What is the focus of decisions in public service organizations?
- 1-4. What is accounting?
- 1-5. What are the two major subdivisions of accounting? Explain.
- 1-6. What is finance?
- 1-7. Is financial management important for public service organizations? If so, why?
- 1-8. Is it appropriate for public service organizations to earn profits?
- 1-9. What are the major sources of financing for the federal government, state and local governments, the health sector, and the not-for-profit sector?
- 1-10. How large is total federal and state and local government spending, compared to the U.S. GDP?
- 1-11. How is it possible for the federal debt to increase in a year when the federal government has a surplus?
- 1-12. Is there any reason that a not-for-profit organization might decide to decline a gift?
- 1-13. What is an NGO?

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Appendix 1-A: Fundraising

Not-for-profit organizations have three primary sources of funds. One source is simply borrowing money. Often banks and other lenders will provide loans to not-for-profit organizations. A second source is from the sale of goods or services. This is the primary source of funds for many not-for-profit organizations (e.g., hospitals). The third source is from fundraising. This appendix provides a brief introduction to fundraising.

Fundraising is critical to the financial survival of many not-for-profit organizations. It is a broad field with many dichotomies. Funds are raised from either private or public sources. They come from donations or grants/contracts. They may be restricted or unrestricted. They focus on either operating or capital needs. They may come while donors are alive or after they have died. This appendix briefly explains some of the dichotomies and discusses some essential issues of fundraising. However, this is just a brief introduction to this topic.

We often think of fundraising as the process of getting individuals to donate money to a not-for-profit organization. And that is clearly a key element of fundraising. However, it is significantly more complicated than that. Fundraising refers not only to raising money from private sources by generating donations, but also to receiving funds from grants and contracts. Many not-for-profits raise their money from public rather than private sources. For example, many private not-for-profit universities receive a substantial amount of money from governments.

Contributions

Contributions are the most basic form of support for not-for-profit organizations. Contributions may be received from individuals, but are often also received from foundations, corporations, or the government. Contributions may be unrestricted. In that case, the not-for-profit organization can use them for any reasonable purpose related to the mission of the organization. Alternatively, donors may place restrictions on the use of the contribution. The restriction may be related to time or purpose. A time restriction would indicate that the donation cannot be used before a certain date, or must be used by a specific date. A purpose restriction would limit what the organization does with the donation. For example, it is common to restrict donations to pay for construction of a new building, rather than being used for routine operating activities. Endowment gifts are restricted in a way that prohibits them from ever being spent. Instead, such gifts are invested and the organization can use the income from the endowment in accordance with the instructions of the donor.

Donations come in many forms. Donations in cash or by check are easy for the organization. However, for convenience or for tax advantages, many donors give items such as stocks and bonds, real estate, computers, clothing, or services. Organizations receiving various types of donations should become aware of tax rules governing the donations.

Operating Versus Capital

Capital contributions are used to acquire resources that will last for more than one year. Operating contributions are used for the routine day-to-day costs of running the organization throughout the year. Frequently, a not-for-profit organization will hold a *capital campaign*, a fundraising drive to raise money to acquire long-term resources. Typically such a campaign is used to build and equip a new building or to renovate an existing building. Money raised through a capital campaign is usually restricted for use for capital (long-term) acquisitions and may not be diverted to pay for the routine current operating expenses of the organization. Many charities also hold operating-fund drives to generate donations that can be used to pay for current operating costs.

Planned Giving

Often not-for-profit organizations benefit from being creative in their fundraising efforts. Two of the most obvious ways to donate are to just give a gift currently or to leave money to the organization in a person's will. However, a number of planned giving approaches that are more complicated but have certain advantages have been developed. These approaches often allow donors to get the psychic benefit of donating money while they are alive, while still being able to enjoy the earnings on the money donated during their lifetime. Generally, these arrangements require the establishment of some form of charitable trust.

Once money is placed in an irrevocable charitable trust, donors cannot change their mind and get the money back. Nevertheless, such planned giving has advantages. A *charitable remainder trust* is one in which the donor gets income that is earned on the resources in the trust. When the donor dies, the charity gets the money remaining in the trust, hence its name. One type of remainder trust pays the donor a fixed payment each year. If the income on the trust is not enough to make the payment, some of the principal will be distributed to the donor. The charity may therefore wind up receiving less than the amount originally placed in the trust. Another form distributes a percentage of the trust's assets to the donor each year. If the trust goes up in value due to successful investments, the donor will receive increased annual payments. Alternatively, sometimes trusts are set up where the charity gets annual income from the trusts, but the principal amount passes to the donor's heirs upon the donor's death. Other arrangements are possible as well.

An individual's specific circumstances dictate which approach may be preferable. Most of the approaches have tax implications. Fundraisers should acquaint themselves with the tax law in the area of charitable donations so that they can explain to potential donors the advantages of each approach to planned giving.

Contracts and Grants

Contracts generally involve a quid pro quo. Unlike a donation, which is a gift with nothing expected in exchange, contracts usually provide something to each party. For example, if a corporation signs a research contract with a university, the university will receive funding and the corporation will receive the results of the research study. Grants are often similar to contracts. A foundation might award a grant to a researcher at a university to fund that individual's research. However, a grantor does not receive something in return for the grant in the same way that a contractor does.

This is a fine line of distinction. If a city contracts with Meals for the Homeless to provide meals to homeless people in the city, the city pays only if meals are provided. There might be a contractual arrangement requiring a payment of \$8 for each dinner meal provided. On the other hand, a foundation might give Meals for the Homeless a grant of \$1,000,000 restricted to providing meals to homeless in the city. Given the mission of Meals for the Homeless, which is to provide meals to homeless in the city, it will be anxious to obtain both contracts and grants like those described. Often grants and contracts may create a more stable source of funding than relying solely on contributions from individuals.

Governments and foundations frequently have programs that provide funds to not-for-profit organizations. Often they will solicit requests for that funding by issuing a request for proposal (RFP). It is helpful for a not-for-profit organization to place itself on the mailing list of potential funders so that it is aware of any relevant RFPs. Although not-for-profit managers are often familiar with local foundations, exploring new potential grant makers may be a worthwhile activity.

Once an award is received, as either a grant or a contract, the not-for-profit organization must inquire about its specific rules and policies before spending begins. That way the organization can ensure that it spends money only on allowable items and that it gathers all financial information needed to be in compliance with any reporting requirements related to the grant or contract.

Raising Money

Most not-for-profit organizations find that, although they receive some unsolicited donations, they must ask for contributions or grants to have adequate financial resources to achieve their mission. Fundraising can be very time-consuming, and it is common for not-for-profit organizations to employ a development officer who directs their fundraising efforts.

The role of the development officer is to prioritize, prospect, cultivate, and solicit. First, there is a need to determine the highest priorities for funding. Is the organization most desperate for funds for routine operations, a new building, or a new program? Prospecting refers to researching potential donors to determine what is important to them and what would be the largest gift that they could afford. This includes not only researching individuals, but also finding the best mailing lists to use for direct mail campaigns and other efforts. Cultivating refers to the process of educating the potential donors about the organization, its needs, and the difference it makes. Again, this is a broad topic. It may call for a personal visit by the development officer and the CEO of the organization or for direct mail of a carefully designed brochure that educates about the organization, without directly asking for donations. Solicitation is the final step where the donor is actually asked for a gift.

Although the development officer will visit some potential donors, not all donations are solicited in a one-on-one process. There are many approaches to fundraising. The Girl Scouts sell cookies. For many years Jerry Lewis held an annual television telethon for the Muscular Dystrophy Association. Public television stations run “begathons,” where they offer premiums (tote bags, coffee mugs, etc.) for donations. There are \$1,000-a-plate dinners, charity balls, golf tournaments, picnics, car washes, and bake sales. There is direct mail and telephone solicitation. Not-for-profit managers should try to be creative in determining approaches that will be sensible and successful for their organization.

Key Terms from This Appendix

capital campaign, 20

charitable remainder trust, 21

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Part II Planning

Chapter 2 Planning for Success: Budgeting

Learning Objectives

The learning objectives of this chapter are to:

- define mission and describe the role of mission for public service organizations;
- define strategic plan and discuss the importance of selecting a strategy and identifying goals for the organization;
- explain the role of the long-range or operating plan in setting the organization's specific objectives to aid in achieving its goals;
- define budget and explain how the budget provides the detailed plan for accomplishing the objectives defined in the long-range plan;
- define and discuss different types of budgets, including special purpose, operating, capital, and cash budgets;
- explain the budgeting process, including budget preparation, review and adoption, implementation, and evaluation of results; and
- acknowledge the political aspects of the budget process.

Organizations are not successful by accident. It takes careful thought and planning to excel. What is the organization trying to achieve? Why does it want to achieve that goal? How does it intend to translate that goal into results? The most successful organizations are the ones that specifically address these questions, rather than simply letting things happen. The budget is the organization's plan.

In the sphere of public service, budgeting is complicated by the fact that not all activities are directly related to maximizing the organization's profit. Although earning a surplus is a healthy financial result, governments, healthcare organizations, and not-for-profit organizations often undertake activities that will not earn an immediate financial return. What is the benefit from spending additional resources for teaching math in public schools? In the long run, society is likely to benefit. In the budget for the coming year, however, this will simply be an additional expenditure. Planning is accomplished by establishing the mission for the organization, defining a strategy to accomplish the mission, developing a long-range plan that defines the organization's financial and nonfinancial objectives, and preparing specific, detailed budgets that define the resources needed to accomplish its goals and objectives.

The budget describes where resources will come from and how they will be used. As part of the budgeting process, it is essential to communicate goals to the people who must achieve them, forecast future events, develop alternatives, select from among alternatives, and coordinate activities.

The budget process includes the preparation of budgets; their review, revision, and ultimate adoption; their implementation; and evaluating the results after the fact. A primary responsibility of management is to control results. Control represents a process of trying to keep to the plan. This is done by motivating people to achieve the plan, evaluating performance of both organizational units and individual persons, and taking corrective action when things are not going according to plan.

These issues are discussed in this chapter; [Chapter 3](#) picks up where this chapter leaves off, looking at a variety of additional budgeting issues for governmental, health, and not-for-profit organizations. It examines a number of different types of budget presentations and ways to organize budgets, and also discusses a variety of budgeting techniques. That chapter finishes with a discussion of some unique aspects of budgeting for governmental organizations.

Mission

The organization's *mission* represents its *raison d'être*. Public, healthcare, and not-for-profit organizations have missions that relate to providing a public service. Their mission may be to improve society by providing wide access to culture—through museums, opera, ballet, or symphony. Or the mission may relate primarily to healing the ill or feeding and sheltering the poor. For government, the mission may be to provide essential common services such as police, education, sewers, and fire protection.

For public, health, and not-for-profit organizations, then, profitability is a means to an end rather than the end itself. To some extent, the healthcare industry is becoming more and more a part of the for-profit sector. Similarly, the for-profit education sector has grown. For such proprietary public service organizations, profits do play an important role in the organization's mission. However, their profit motive must be balanced with the public service elements of their mission.

[Chapter 1](#) introduced Meals for the Homeless—a hypothetical organization. One of the first activities for Leanna Schwartz, the new executive director of Meals for the Homeless, would be to examine the *mission statement*. To lead the organization, she must be thoroughly familiar with what the organization hopes to achieve.

A good mission statement answers five questions. The first three define the *domain* of the organization. They are “*What* does the organization plan to do?” “*Who* will it serve?” and “*Where* will it operate?” The fourth is “*How* does the organization plan to deliver its services?” and the final question is “*Why* has Meals for the Homeless chosen its specific social purpose?” Here is the mission statement of Meals for the Homeless:

Meals for the Homeless recognizes the plight of the homeless residents of Middle City, and we hold that society must ensure at least some minimal level of food security for these individuals. It is, therefore, the mission of Meals for the Homeless to provide food to the homeless in Middle City whenever a homeless individual's nutritional needs are not being met by other sources.

Like all good mission statements, the mission of Meals for the Homeless includes both breadth and limitations. A mission should be targeted. If the goal is to do everything for everyone, the mission is unlikely to be achieved and the organization will lack clear direction. If the mission is too narrow, it may not provide the organization with sufficient challenge to sustain itself over time.

In the mission statement for Meals for the Homeless, there is breadth in that the goal of the organization is to meet the nutritional needs of every homeless person who cannot get food from other sources. The limitations are that the organization is geographically limiting its efforts to Middle City and to supplying food. It is not providing jobs, shelter, medical care, or other services.

Strategic Plan

Once the organization has a clearly defined mission, it can develop its *strategy* for accomplishing that mission. The *strategic plan* defines the primary approaches that the organization will take to achieve its mission. Generally, strategic plans do not have specific financial targets. However, they set the stage for specific, detailed budgets.

The mission of Meals for the Homeless (Meals) is to ensure an adequate supply of nutritious food for the homeless. It could attempt to achieve that mission by a large number of approaches. Meals could be a lobbying organization, raising money and using it to lobby for legislation requiring the government to provide nutritious food to the homeless. Another strategy would be to start a “take a homeless person to dinner” campaign. This approach would consist primarily of advertising, with a goal of encouraging the general public to buy meals and give them directly to homeless people. The general strategy that Meals has taken is to solicit donations of food and money, and to use those resources to prepare and serve meals directly to the homeless. Meals uses two delivery trucks and one soup kitchen to carry out this strategy. This was pretty much the way things had been for the past 10 years, despite a growing number of homeless in Middle City.

When Leanna Schwartz became executive director of Meals for the Homeless, she decided that Meals had a clear mission. It also had an overall strategy or approach for accomplishing that mission. However, it had no broad goals. As a result, as the needs of the homeless grew, Meals had not responded. Therefore, as one of her first priorities, Schwartz decided to form a subcommittee from her Board of Directors to establish a more formal strategic plan, including a set of goals for the organization. The strategic plan would serve as a link between the mission and activities that the organization would undertake to achieve that mission.

As part of the new strategic plan, Meals developed the following goals:

- Directly provide nutritious meals to the homeless of Middle City.
- Directly provide nutritious meals to the indigent in Middle City’s public housing.
- Increase the fraction of the target population served from 20 percent to 60 percent within 5 years.
- Expand funding sources to cover the increase in services, including corporate sponsorships and direct fundraising.

Schwartz was pleased with this set of goals. She believed that it pointed the organization in the direction its mission dictated. She also believed that it gave her some tangible targets to work toward. The next step would be to translate the goals of the strategic plan into attainable objectives.

Long-Range Plan

While the strategic plan establishes goals and broad strategies, the *long-range plan* (sometimes referred to as the operating plan) considers how to achieve those goals. Long-range plans establish the major activities that will have to be carried out in the coming 3 to 5 years. This process provides a link between the strategic plan and the day-to-day activities of the organization. Organizations that do not prepare a long-range plan are often condemned to just sustain current activities, at best. Many managers simply try to replicate the current year's results when they plan for the coming year. They take whatever has happened, add a few percentage points for inflation, and assume that they have an adequate plan for the future.

The problem with that approach is that after 5 years the organization will likely be exactly where it is today. It will be providing the same quantity and quality of services. It will not be able to look back at where it was 5 years ago, compare that to where it is today, and find that a satisfying amount of progress has been made. Most public service managers believe that they are trying to achieve something. They do not work in the field just to collect a paycheck, but rather to provide some service to society. Given that, it does not make sense to try to sustain operations without any significant gains over time.

Management needs vision. Great managers are those individuals under whose stewardship organizations make great strides forward. In some cases, vision may come from inspiration that only a few people ever have. In many cases, however, vision is a result of hard work and careful planning. It is the result of taking the time to think about the organization's mission, form a strategic plan with goals, and then establish the tactics to carry out that plan and achieve the goals.

For example, one element of the strategic plan for Meals for the Homeless is expansion of meals provided from 20 percent to 60 percent of the target population. This cannot be achieved by simply carrying out the existing daily routine, day after day, year after year. Nor can it happen overnight. A long-range plan must be developed that will specify how the organization expects to achieve that goal.

The managers of Meals will have to determine what must happen to attain its goals. Schwartz would likely start by having conversations with many interested parties about how best to get meals to the poor of the city. Then, a variety of approaches or tactics might be considered. Finally, a long-range plan will be formulated.

The long-range plan should focus on both financial and nonfinancial issues. For example, there are many dimensions to quality in providing a service. How long do the homeless have to wait in line for the meal? Do the homeless like the way the food tastes? What is the relationship between each soup kitchen and its community? Organizations, especially public service organizations, need to be concerned with more than just the number of units of service provided (*output*). The number of meals served is important. But Meals's long-range plan should more broadly help it to achieve its desired *outcomes*. Outcomes are the results that the organization is trying to achieve. These objectives are not all easily quantified in financial terms.

For example, Meals's mission calls for providing the homeless with an adequate amount of nutritious food. Therefore, a desired outcome is providing the homeless with nutritious meals. To achieve its mission, Meals

might adopt a strategy of ensuring its meals meet all federal government daily recommended levels for a balanced diet. The long-range plan needs to include specific tactics for that strategy. Meals's long-range plan may indicate that every meal must contain some protein, fat, carbohydrates, vegetables, and fruit. The organization will only deem itself to be effective if it not only provides meals to enough homeless, but also provides meals that meet its nutritional targets.

Some objectives are more directly tied to financial issues. After gathering input and considering choices, Schwartz might decide that the most efficient way to expand from 20 percent to 60 percent coverage (the goal) would be to add three new locations, strategically located to be readily accessible to the largest number of homeless, and to add four more vehicles to its current fleet of two (specific tactics to achieve the goal). These changes will require specific financial resources.

All of these tactics could probably be carried out within 3 months, except that the organization does not have the money for the expansion. Money will be needed to buy equipment and vehicles, pay rent, buy food, and hire staff. The long-range plan will also have to address how to raise the money and when to spend it (more tactics). A reasonable long-range plan for Meals for the Homeless might include the following objectives:

Year 1: Establish fundraising campaign and begin fundraising. Raise enough money to open one new site.

Year 2: Add a food distribution/soup kitchen location. Raise additional money to acquire and operate a vehicle and open another location. Solicit more restaurants for leftover food donations.

Year 3: Add another food distribution/soup kitchen location and a new vehicle. Raise additional money to acquire and operate a vehicle and open another location. Solicit more restaurants for leftover food donations.

Year 4: Add another food distribution/soup kitchen location and a new vehicle. Raise additional money to acquire and operate two vehicles. Solicit more restaurants for leftover food donations.

Year 5: Add two new vehicles. Raise additional money to begin replacement of old kitchen equipment and old vehicles. Get enough contributions to at least reach a steady state in which replacements take place as needed.

As can be seen from the preceding objectives, unless planning is done in year 1 to raise money, the organization will never be able to undertake the acquisition and expansion in years 2 through 5. The organization cannot be satisfied with raising enough to get through the coming year. For it to thrive, rather than merely survive, it must think ahead. The long-range plan provides the opportunity to think ahead prior to making budgets for the coming year.

The objectives included in the long-range plan can be thought of as quantified targets. These targets can relate to both inputs and outputs. For example, we can think in terms of specific fundraising objectives, specifying the total dollar amount of donations we plan to receive each year over the coming 5 years. We can also think in terms of the specific number of delivery trucks to be purchased. These targets or objectives make it possible to create specific, detailed budgets for the organization in financial terms.

Budgets

What is a *budget*? It is simply a plan. The plan indicates management's objectives and shows how it expects to obtain and use resources to achieve those objectives. In some cases the plan may be the result of enacted legislation. The budget indicates the amount of money that the organization expects to receive from all sources for the time period it covers, which is usually a year. It also indicates the amount of money that the organization will have available to spend to provide services. Thus, it provides managers with a detailed action plan. Based on the information in the budget, managers make decisions that they believe will help them carry out the plan and therefore accomplish the organization's objectives.

Budgets must be developed to plan for the accomplishment of goals and objectives. The process requires that a number of predictions and decisions be made. How many homeless will there be next year? What percentage of the homeless will be children? How many workers should the organization assign to fundraising? How many restaurants should be solicited for food? What vehicles will be purchased, and at what price? How much will kitchen employees be paid per hour and in total for the coming year? How much money will Meals receive in donations each month of the year? All of these questions and many more must be answered in the process of developing the budgets for the organization.

Virtually all managers become involved in creating and using budgets. Budgeting is not the sole domain of financial managers. Budgets establish the amount of resources that are available for specific activities. As we learn from economics, resources are not unlimited. They must be used wisely. Organizations attempt to do this by planning the activities they will undertake and how much they will spend on them. However, budgets do not merely limit the resources that can be spent. They help the organization achieve its goals and objectives.

Budgets help the manager understand whether the organization expects that receipts will exceed disbursements and a surplus (profit) will occur, or if spending is expected to exceed receipts, resulting in a deficit (loss). If the latter is the case, the budget may indicate how the organization plans to cover that deficit without having to cease operations.

Budgeting for governments as compared with budgeting for other types of public service organizations is significantly different. It is common for decisions by the Board of Trustees of a not-for-profit organization to require that the budget for the organization not show a deficit. In carrying out the plan, however, many times a not-for-profit organization will actually spend more than the amount in the approved budget, sometimes resulting in a deficit. For governments, however, by law the amount that is actually spent generally cannot exceed the budgeted amount. As a result, governments tend to place more controls on spending, and the options available to government managers are often more limited than those available to managers of other types of organizations.

Often, balancing the budget results in limiting services provided. This is true for all kinds of public service organizations. It is frustrating to managers to have to limit the amount of services provided to the

organization's clients. However, it is worse to run out of money and to have to stop providing any services at all. Failure to plan carefully can result in a level of spending that exceeds an organization's resources and leads to a financial crisis; in some instances the organization will even be forced to cease operations.

Special Purpose Budget

Although most organizations prepare broad annual budgets that are intended to include all of their activities for the year, at times a special opportunity may arise. An organization may wish to consider undertaking an activity, but there is no money set aside for it in the annual budget. This does not necessarily create an insurmountable roadblock. At any time during the year, a *special purpose budget* can be developed for a specific project, program, or activity. The organization can then decide whether it wishes to undertake the activity based on the proposed special purpose budget.

For example, suppose that Steve Netzer, the new chief operating officer of the Hospital for Ordinary Surgery, has an idea for a program that could help the public and might generate additional patients for the hospital. He would like to send nurses to local supermarkets to do free blood pressure screenings. The hospital would pay for the nurses and the supplies. The costs of the nurses and supplies are *expenses*. Expenses are the resources consumed in the process of providing goods and services. The hospital expects to earn *revenues* from supermarket customers who become patients as a result of medical problems uncovered by the screening. Revenues are the resources the organization earns in exchange for providing goods or services.

Will the extra revenues from these new patients be enough to cover the expenses of care provided to them as well as the expenses related to the screening? A special budget comparing all of the expenses and revenues can be developed. If the revenues exceed the expenses as a result of the program, then a *profit* will be earned. Profit is simply the excess of revenues over expenses and is sometimes referred to as a surplus or as net income. If the expenses exceed the revenues, the excess of expenses over revenues is a loss or deficit. Once the expected profit or loss is known, the organization can decide if it would like to implement the plan. It is not necessary to wait until the next annual budget cycle to consider and implement special budgets.

Depending on the financial magnitude of the special activity, the organization's management may be able to approve the activity, or it may require approval by the board of directors, governors, or trustees. In the case of governmental bodies, the additional activity may constitute a change in the overall budget, and it is essential to ensure that such a change is legal.

Case Study: Special Purpose Budget

To develop a more detailed special purpose budget example, assume that Dwight Ives, the town manager of Millbridge, received a call from one of the churches in town. The church had a very rudimentary accounting system, recording cash receipts when received and cash payments when made. As long as the church had money in the bank, its governing body assumed that everything was okay. When it ran out of money, the church made special appeals to its congregants. Over the years, this had created several financial crises, such as the winter when the boiler died and the church had no heat for weeks. In that instance, as now, the parish priest, Father Purtell, had asked his friend the town manager for advice on financial planning.

Father Purtell's current problem involved a proposal by some congregants to send a group of teenagers to the Holy Land for about two weeks during the coming summer. The concept called for the families of the students to pay part of the cost, the students to hold fundraisers, and the church to provide a subsidy. The church elders felt that the church could afford to contribute \$5,000 to the program, but that was all. Father Purtell had no idea how to decide how much to charge the families and whether the trip could be arranged within the limits of the subsidy. He did know that a decision must be made soon so that there would be time to enroll teenagers in the program and make all the necessary airline and hotel reservations. He called on Dwight for some advice. What did he think? Could the church run the program? He was worried about the consequences if it turned out that the church had to provide a subsidy above the \$5,000.

Dwight's first questions involved whether Father Purtell felt comfortable with the basic concept: Was the church in the business of setting up trips to Israel? Did such a trip make sense, given the mission of the church? Father Purtell explained that he strongly believed that the concept of the trip was an appropriate church activity. First of all, the church was always struggling with developing programs to keep teenagers active with supervised activities during the summer months. Second, the visit to the Holy Land would include stops at Bethlehem and Jerusalem. The potential positive religious experience for young impressionable minds could not be surpassed by any other program he could imagine. Since the program did fit nicely with the overall mission of the church, Dwight indicated that the next step was to develop a plan to determine if the program could work. Only by developing a plan could one have an idea of how much to charge families and whether the program would likely be financially feasible.

Dwight suggested that they start the plan by calculating the profit or loss from the program. "How many participants are you expecting, and what will you charge them?" asked Dwight. "That's the problem," Father Purtell replied. "I want to have enough participants and charge them the right amount so that the program can work. Can't we calculate that? Maybe we should start with the costs and then determine the necessary price."

Dwight explained that he felt the father was starting the process without gathering enough background information. The first element of the plan should be an environmental scan. What other trips to the Holy Land are available? How are they similar and dissimilar from what the church had in mind? What do other organizations charge for the trip? Why might some people prefer what the church was offering? Even if the trip fit with the church mission, was there really a need for the church to get into this new venture? Dwight cautioned that one must look around outside the organization to see what others are or are not doing before developing a reasonable plan for the organization's proposed activity. Father Purtell agreed, and they scheduled a meeting for one week later.

At the next meeting, Dwight Ives and Father Purtell discussed the results of the environmental scan. The priest was grateful for having taken the approach. In his mind, he relayed to Dwight, he had assumed that at least half of the teenagers in his parish would jump at the opportunity to go on the church-sponsored trip. Having talked to travel agents, school authorities, a group of interested parents, and others, he had learned a lot. In fact, there were few if any formalized programs that would compete with the church for a trip to the Holy Land. However, a number of travel agents had attractive family packages, and some families had already purchased airline tickets and made hotel reservations for family trips to the Holy Land. The travel agents also had pointed out that many families make travel plans early, with a variety of destinations, and he should consider that. In fact, based on conversations with parishioners, he found that to be the case. He also found out that many of the teenagers already had plans to return to summer camps they had gone to in the past.

Based on his environmental review, he now felt that he could attract a group of 30 to 50 teenagers if the price was right. Travel agents were charging about \$2,500 per person for a similar trip. His trip had the added advantage of church chaperones and the benefit of the youngsters being able to spend a lot of time with other children their age.

Dwight felt that using this, they could start to develop a specific plan. He explained that a budget was needed to decide if the project was feasible. He sat down with the father near his computer and turned on a spreadsheet program, Excel.¹ Dwight suggested that they set up the budget in terms of anticipated receipts and payments related to the program. He typed in headings, resulting in [Table 2-1](#).

1. Excel is a registered trademark of Microsoft. There are a number of other spreadsheet programs, such as Apple Numbers, Google Sheets, Gnumeric, and Open Office.org Calc.

	A	B	C
1	CHURCH OF MILLBRIDGE		
2	Budget		
3	Holy Land Trip		
4			
5	PROJECTED RECEIPTS		
6	Charges		
7	Less Uncollectibles		
8	Net Charges		
9	Fundraising		
10	Total Receipts		
11			

Table 2-1

“Whoa!” Father Purtell said. “What is that line for *Uncollectibles*?” Dwight explained that it was certainly likely that some people would make a deposit but would never fully pay for the trip. It would be very risky to assume that everyone would pay the full amount charged. They then discussed the fact that to estimate the revenues, they would need to project both an anticipated number of participants and an estimated price. They would also need to know what types of expenses would be incurred. They gave this some thought, trying to anticipate all the different things on which money would have to be spent. Working together, they generated [Table 2-2](#).

	A	B	C	D
1	CHURCH OF MILLBRIDGE			
2	Budget	Projected	Per	
3	Holy Land Trip	# of People	Person	Total
4				
5	PROJECTED RECEIPTS			
6	Charges	30	\$2,000	\$ 60,000
7	Less Uncollectibles			<u>(1,800)</u>
8	Net Charges			\$ 58,200
9	Fundraising	30	250	<u>7,500</u>
10	Total Receipts			<u>\$ 65,700</u>
11				
12	PROJECTED PAYMENTS			
13	Airfare	32	\$1,000	\$ 32,000
14	Hotels	30	1,200	36,000
15	Chaperone Salaries	2	3,000	6,000
16	Food	32	600	19,200
17	Admission Fees	32	250	8,000
18	Guide	1	3,000	3,000
19	Local Transport (Bus)		2,500	2,500
20	Entertainment	32	300	9,600
21	Other	32	200	6,400
22	Contingency Fund			<u>2,500</u>
23	Total Payments			<u>\$125,200</u>
24				
25	Projected Surplus / (Deficit)			<u>\$ (59,500)</u>

Table 2-2

The priest decided that 30 teens would be an easily obtainable goal, and he wanted to start out seeing if the church could afford the program making conservative assumptions. Line 6 in [Table 2-2](#) shows the 30 teens. The value in line 6, column B, was then multiplied by an assumed charge of \$2,000 (line 6, column C) to get the total charges of \$60,000. After discussion, Dwight and the priest decided to use 3 percent of total charges as an estimate for uncollectibles. Assuming that each student not only paid \$2,000, but also raised \$250 through fundraising activities (e.g., bake sales, car washes), there would be an additional \$7,500 in receipts. Dwight felt this was a bit ambitious, but the father felt it was an attainable goal. He felt that if each teen committed to raising those funds, they would value the trip more and get more out of it. Dwight remained skeptical.

Based on his discussions with travel agents, Father Purtell was sure he could get airfare for \$1,000 or less. With a guarantee of 30 or more teens, probably substantially less. To be conservative, however, they used the \$1,000 airfare. The father felt that there would have to be one chaperone for every 15 teens. With 30 teens anticipated, there would be two chaperones, and their airfare was included.

They would need hotels for 15 nights. Hotel expenses were calculated based on what the travel agents said they could get, assuming double occupancy. The hotel expenses were calculated, therefore, at \$80 per person per night. For \$160 per night per room, they should be able to get something reasonable. The room cost was therefore \$1,200 per teen ($\$160 \text{ per room} \div 2 \text{ teens per room} \times 15 \text{ nights}$). The travel agents assured him that hotels would provide free rooms for the chaperones if he booked rooms for the rest of the group.

The rest of the payment or expense budget was generated based on similar discussions, through line 21. When they got to line 22

Dwight suggested a contingency fund. “What for?” asked Purtell. “What will that money be used for?” Dwight explained that he had absolutely no idea. “That’s why it’s called a contingency fund. If we could identify something we need to spend money on, we’d list it specifically. This is to protect the church against costs it doesn’t anticipate. Remember, you have no experience running trips of this sort.” They finally agreed on a lump sum \$2,500 contingency fund.

When the projected deficit was calculated, Father Purtell was devastated. “We only set aside \$5,000 for a subsidy, not \$60,000!”

Dwight was less dejected. “A budget is a plan,” he pointed out, “but we can work some more on the plan. Things don’t always work out the way you first plan them. That’s why we go through the planning process rather than just going full steam ahead.” He suggested that the father spend a week working on each revenue and expense category, getting more information, and making some choices about the existing plan.

The next week they met again. “I’ve made some decisions,” the father explained. “Let’s put them in the computer and see what happens.” He then relayed the following details to Dwight.

1. Raise the price to \$2,500.
2. Raise the number of teens to 50.
3. Lower the airfare to \$600.
4. Lower the hotel cost to \$40 per person per night.
5. Change the chaperone salaries to zero.
6. Cut the admission fees per person in half.

Dwight started to protest about several of the changes, but he changed the numbers in the spreadsheet, which automatically recomputed all of the math, resulting in [Table 2-3](#). The priest was elated when he saw the result.

	A	B	C	D
1	CHURCH OF MILLBRIDGE			
2	Budget	Projected	Per	
3	Holy Land Trip	# of People	Person	Total
4				
5	PROJECTED RECEIPTS			
6	Charges	50	\$2,500	\$125,000
7	Less Uncollectibles			(3,750)
8	Net Charges			\$121,250
9	Fundraising	50	250	12,500
10	Total Receipts			\$133,750
11				
12	PROJECTED PAYMENTS			
13	Airfare	54	\$ 600	\$ 32,400
14	Hotels	50	600	30,000
15	Chaperone Salaries	4	0	0
16	Food	54	600	32,400
17	Admission Fees	54	125	6,750
18	Guide	1	3,000	3,000
19	Local Transport (Bus)		2,500	2,500
20	Entertainment	54	300	16,200
21	Other	54	200	10,800
22	Contingency Fund			2,500
23	Total Payments			\$136,550
24				
25	Projected Surplus / (Deficit)			\$ (2,800)

Table 2-3

“But how do you justify all of these changes?” Dwight gasped.

“Aha!” responded Father Purtell. “As you said, I just had to examine the plan and see what could be done about it.”

“But you can’t expect to raise the price and raise the number of participants,” Dwight argued. “That flies in the face of the laws of supply and demand.”

“No,” said the priest. “It doesn’t. You see, I could tell that I would have to raise the price, and I know that I will probably only get 25, or perhaps even 20 at the higher price. So I went over to my colleague, Father Stewart, in West Oak and proposed that some of the teens from his parish come on the trip. Between the two parishes, we will be able to get 40 to 50 teens at the higher price. I’m sure of it. And if I’m wrong, we can cancel the trip with no lost money.”

“Well, that explains the price and the number of teens,” Dwight responded. “What about the other changes?” Father Purtell

answered, "First, I realized that with the additional teens we would need at least one more chaperone. I started thinking about whom we could hire and came up with the most wonderful idea. Several of our adult parishioners would love to take a trip to the Holy Land but cannot afford it. If I can pay the airfare, hotel, and all expenses, they would be more than happy to go as chaperones and not charge any salary. Father Stewart and I decided that two parent chaperones would come from each parish.

"When I went to the travel agent and mentioned 54 people, we were able to get a substantial group discount on the flight and on all admission charges as well. The hotel cost is more of a problem; we will have to have four teens to a room. The rooms all have two double beds. They can double up or they can bring sleeping bags and take turns sleeping on the floor. I got our parish teen council involved, and it was their suggestion as a way to lower the cost per person. I found that getting more input in the budgeting process can open your eyes to things that you wouldn't think of on your own. The four chaperones will share two rooms, which the travel agent will get for free when we book the rooms for the teens. We still have to rent only one bus for the whole group."

"Well, this seems good, but what if you get only 40 teens instead of 50?"

"Oh, I don't see that as a problem. The only reason that would occur is the price. Now, however, as you can see, we are projecting only a \$2,800 deficit. And the deficit will only be that high if we need to use the entire \$2,500 contingency fund. Our church is still willing to put up a \$5,000 subsidy. I convinced Father Stewart to come up with a similar \$5,000 subsidy from his parish. Even with the \$2,800 deficit, we still have over \$7,000 available for financial aid for those teens who cannot afford the full amount. We will give scholarships.

"I must say, this has worked out splendidly. If I hadn't come to you, we might have just done the program without really planning the finances. We probably would have lost nearly \$60,000. It would have been a disaster. And I'm glad you told me not to be discouraged by our first plan. When I saw the \$59,500 deficit, my first reaction was just to assume we couldn't do this wonderful program. But by having the budget, I had a plan to work with. You were so right to encourage me to reexamine each element of the plan to see what changes could be made. I was able to make changes and still accomplish the overall goal of getting teens over to the religious sites in the Holy Land. And the way the revised budget has come out, we will be able to send 50 teens instead of just 30!"

Lessons from the Case

This special purpose budget case study raises a number of important points. First, there is no magic to budgeting. Budgeting requires thought. Does the planned project fit with the organization's mission? Does it make sense to undertake this, given what other organizations are already doing? Can the organization afford to undertake the project? Budgeting requires estimating all the likely receipts and all the likely payments. The more facts that are available, the better. Knowing the airline fares, the hotel prices, the willingness of teens to live four to a room, and the admission rates at various attractions leads to a more accurate budget. Inevitably, some assumptions must be made, such as the number of participants. The assumptions should be reasonable. A contingency plan should exist in case the assumptions do not all come out as anticipated. Moreover, the process is very likely to require a number of preliminary drafts and revisions before a feasible plan is developed and accepted by all parties. Even so, things may not occur according to the budget. Once approved, efforts must be made to try to keep as closely to the plan as possible.

The Master Budget

Although some budgeting is done on an ad hoc basis, as in the case study discussed previously, most budgeting is done on a regular basis. The *master budget* incorporates and summarizes all of the budget elements for the coming year. These elements provide the specific detail to accomplish both the routine ongoing activities of the organization and the coming year's portion of the long-range plan. By incorporating service volume, prices, costs, cash flow, and capital spending, the master budget becomes the plan for everything the organization will be doing during the coming year. It is prepared each year.

The main elements of the master budget, sometimes called the comprehensive budget, are the *operating budget* and the *financial budget*. The operating budget presents a plan for revenues and expenses for the *fiscal year*. It poses the question: Do we expect to earn enough during the budget period to pay for the resources we expect to use during the period? The financial budget includes a *cash budget* and a *capital budget*. The cash budget focuses primarily on the coming year. It asks the question: Do we expect to have enough money on hand, or do we expect to collect enough during the budget period to pay for the things that we need during that time? The capital budget considers outlays for resources that will provide service for a period of time longer than just the coming year.

Operating and cash budgets provide estimates of the organization's various types of revenues and expenses or *expenditures*.² For example, for the Hospital for Ordinary Surgery (HOS), the major sources of revenue in the operating budget may be patient revenue, donations, investment income, gift shop sales, and cafeteria sales. For the town of Millbridge, revenues would likely consist of real estate taxes, state aid, sewer taxes, and user fees. Meals for the Homeless is likely to have such items as donations, grants, and government aid. For all three types of organizations, typical expenses would include salaries, supplies, and rent, among others.

². Healthcare providers typically use the word expense, whereas governments use expenditure. Some not-for-profits use expense, whereas others use the term expenditure more frequently. There are some subtle differences in meaning, which are discussed in [Chapter 12](#).

Capital budgets focus on the acquisition of long-term resources. Expenses such as salaries, supplies, and rent would not appear in a capital budget. Instead, one might see a listing of pieces of equipment and/or buildings. Revenues are often not included in the capital budget, which focuses on the cost of, and the justification for, the acquisition. However, revenue flows that result from acquiring the items in the capital budget are considered in the capital budgeting process. Also, if old equipment or buildings are sold as they are replaced by new equipment and buildings, the revenues from the proceeds of those sales may be included in the capital budget.

The Operating Budget

The operating budget is a plan for expected revenues and expenses. For-profit organizations generally earn revenues in exchange for providing goods and services. Not-for-profit organizations may earn revenues in a similar fashion and may also receive support from contributions or grants. Governments may earn revenues from the sale of goods and services, but primarily they are entitled by law to collect tax revenues to be used to provide services. Expenses are the resources that the organization uses in carrying out its activities. There is often a gap between when an organization provides goods or services and when it receives cash payments for providing those goods or services. Similarly, there is often a gap between when an organization consumes resources in the course of providing goods or services and when it makes cash payments for those resources.

Revenues and Other Support.

When patients are treated at HOS, they receive bills for the care provided. Suppose that a patient is billed \$5,000 for the care he or she has received. HOS may generate \$5,000 in revenue by merely providing the care

and billing the patient. Alternatively, HOS may generate the revenue only after it receives payment for the care that it provided. It depends on HOS's accounting system, and this is discussed further below.

The basic approach to developing an operating budget is not substantially different from the approach taken in preparing the special purpose budget. One must consider all possible sources of revenue or other *support*. Revenues can be calculated by predicting the volume of goods or services to be provided and their unit price. Multiplying the price per unit by the volume of units provides the organization with an estimate of its revenues.

In the case of governments, revenues are often calculated by multiplying tax rates by the tax base. For example, assume that in Millbridge, the real estate has a total assessed value of \$200,000,000. That amount is referred to as the town's tax base. The town's tax rate might be stated as \$.50 per \$1,000 of assessed value. This means that the taxpayer would have to pay \$.50 for every \$1,000 of assessed property value. Therefore, if the taxpayer's house is assessed at \$300,000, the taxes would be \$15,000. For the town as a whole, the taxes would be \$10,000,000 (\$200,000,000 tax base $\times$ [\$.50 $\div$ \$1,000]).

When revenues are listed in the operating budget, they are generally separated by source. Suppose that the state gives the town of Millbridge \$2,000,000 in aid for use in the school system. The town charges a sewer tax, which is \$80 per year for each residential property. There are 10,000 homes in the town, yielding a total sewer tax of \$800,000. Finally, the town charges users of the town pool, golf course, and tennis courts varying fees. Based on the number of users of each facility and the prices charged, the town expects to bring in a total of \$500,000 in user fees. In preparing its budget for the coming year, the town would likely have a listing such as the following:

Town of Millbridge Operating Budget Projected Revenues	
Real Estate Taxes	\$10,000,000
State Aid	2,000,000
Sewer Tax	800,000
Recreation User Fees	<u>500,000</u>
Total Revenue	<u>\$13,300,000</u>

There is often great latitude in the budgeting process. Except in governmental situations, where laws may dictate the format and content of budgets, organizations can develop their budgets in any way that the managers believe will be most useful. Therefore, unless prohibited by law, Millbridge's revenue budget might be grouped as taxes and other sources, as follows:

Taxes	\$10,800,000
Other Revenues	<u>2,500,000</u>
Total Revenues	<u>\$13,300,000</u>

In this format, real estate and sewer taxes have been grouped together. Other groupings are possible as well.

In addition to having a revenue budget that shows the revenues by each major source, there should be detailed supporting schedules backing up each line on a budget. This is true for an expense budget as well. These schedules provide the information that explains the derivation of each number that appears on the budget. For example, each piece of property and the assessed value of that property should be listed. These supporting

schedules are not a part of the finished budget. However, they provide important backup information, especially if questions arise before the budget is adopted.

In preparing the revenue budget, it is extremely important to consider all possible sources of revenue or support. In addition to taxes or charges for services, these sources might include ancillary sources such as gift shops or restaurants, endowment income, gifts, or grants.

In predicting revenue for the coming year, managers should consider many issues. Managers need to be concerned not only with what they might want to do, but also with other factors such as the economy, inflation, growth, employment, and interest rates. In some cases, formalized forecasting of variables is needed to arrive at a sound budget. For example, Millbridge's town manager, Dwight Ives, would likely realize that he has to undertake a commonsense review of the likely impact of the economic environment on the organization. He would plan to use a variety of forecasting approaches to predict variables that would affect the town's revenues. (Forecasting is discussed in [Chapter 3](#).)

Some variables are uncontrollable. However, not everything is outside of the control of the manager. For example, managers often have to make investment decisions. If the organization has money that it will not be using right away, it must decide how to invest that money. Managers can decide to invest in safe investments with low rates of return or can seek out somewhat riskier investments that have higher possible returns.

Also, things like user fees are subject to some degree of control. Suppose that last year the town sold 3,000 pool passes at \$100 per pass for the season. Since the town's population is fairly stable, the forecast is for similar results in the coming year. However, that represents a forecast of what will happen rather than a budget. Before the budget can be finalized, it is necessary to consider factors such as the impact of raising or lowering the price, competition from new county facilities, and the potential impact of making improvements at the town's pool.

Although it is true that not everything is out of the manager's control, neither can managers do whatever they want. In preparing the previously mentioned revenue budget, Ives made assumptions of modest increases in taxes and user fees. He knows, however, that if the expense budget is higher than the revenue budget, he will need larger increases in taxes. Such increases will be politically difficult to attain. At that point, there will be difficult negotiations with the mayor and town council over whether to increase taxes or cut services.

Expenses.

Some organizations budget revenues before expenses, and some do the opposite. The order is not critical, since it is likely to be necessary to make revisions to arrive at an acceptable budget in any case. In many situations, the revenue and expense budgets will be prepared simultaneously. For example, government agencies may be preparing their expenditure budgets individually, while the central government administration is estimating total revenues that will be available.

Dwight Ives's first attempt at developing a budget for expenses—here, they are expenditures—considered all of the costs currently incurred as well as additional expenditures required to incorporate elements of the town's

long-range plan. Aggregating all of the individual costs required to operate the town resulted in the following budget for expenditures:

Town of Millbridge Operating Budget Projected Expenditures	
Salaries	\$10,800,000
Utilities	1,800,000
Supplies	<u>1,500,000</u>
Total Expenditures	<u>\$14,100,000</u>

Surplus or Deficit.

The budgeted expenses or expenditures of the organization are subtracted from the budgeted revenues to determine whether the plan projects a surplus or deficit for the coming year. In some instances, a loss may be acceptable. Organizations with large amounts of accumulated profits from earlier years may be willing to lose money in other years. In other cases, losses may be inevitable. In no case should an organization be indifferent. Unfortunately, Millbridge does not have a balanced operating budget, as can be seen:

Town of Millbridge Operating Budget Projected Revenues and Expenditures	
<i>Revenues</i>	
Real Estate Taxes	\$10,000,000
State Aid	2,000,000
Sewer Tax	800,000
Recreation User Fees	<u>500,000</u>
Total Revenues	<u>\$13,300,000</u>
<i>Expenditures</i>	
Salaries	\$10,800,000
Utilities	1,800,000
Supplies	<u>1,500,000</u>
Total Expenditures	<u>\$14,100,000</u>
Deficit	<u>\$ (800,000)</u>

In general, the town council would not legally be allowed to adopt a budget containing a deficit. Ives would have to go back to each element of the operating budget, finding additional revenues and/or reducing expenditures. This would be similar to the process that Ives required Father Purtell to undertake to revise the Holy Land trip budget. It would be very helpful if Ives could look at the budgeted results for each main activity of the town. For example, is the town swimming pool expected to make money or lose money? Such breakdowns of budget information into more useful formats are discussed in [Chapter 3](#).

The surplus or deficit reported in the operating budget relates just to the time period covered by that budget. Each period's surplus or deficit is determined based just on the revenues and expenses of that period. The budgets presented in this chapter are highly simplified. [Table 2-4](#) presents a somewhat more realistic budget for one department in the hypothetical HOS.

Hospital for Ordinary Surgery Laboratory Department Operating Budget	
Account	Budget
311. Revenues	
010 Routine	\$ 31,244,410
020 Other	<u>27,590</u>
Total Revenues	<u>\$ 31,272,000</u>
411. Personal Services (PS)	
010 Salaries—Regular	\$ 24,230,881
020 Salaries—Per Diem	112,845
030 Salaries—Overtime	140,128
050 FICA	1,575,007
060 Health Insurance	862,125
070 Pension	1,211,544
090 Other	<u>217,228</u>
Total PS Expenses	<u>\$ 28,340,758</u>
611. Other Than Personal Services (OTPS)	
010 Laboratory Supplies	\$ 1,841,692
020 Office Supplies	10,097
030 Forms	32,111
050 Equipment	91,553
060 Seminars/Meetings	4,163
070 Books	1,145
080 Equipment Rental	8,385
090 Miscellaneous	<u>2,388</u>
Total OTPS Expenses	<u>\$ 1,991,534</u>
911. Interdepartmental Expenses	
010 Central Supply	\$ 77,828
020 Pharmacy	9,527
030 Laundry	16,046
040 Maintenance	28,977
060 Telephone	15,962
070 Photocopy	2,124
090 Miscellaneous	<u>4,165</u>
Total Interdepartment Expenses	<u>\$ 154,629</u>
Excess of Revenues Over Expenses	<u>\$ 776,079</u>

Table 2-4

Cash versus Accrual Accounting.

In some organizations, revenues are only acknowledged, or *recognized*, when they are received in cash. In those cases, expenses are only recognized when they have been paid in cash. These are the *recognition* rules of the *cash basis* of accounting. For example, suppose that HOS treats a patient in December 2017 and issues a bill to the patient upon discharge on December 12, 2017. HOS receives payment for the care from the patient's insurance company January 18, 2018. Assuming HOS ends its fiscal, or accounting, year on December 31 of each year, when should it recognize the revenue from the patient? Under the cash basis of accounting, the revenue is recognized in 2018. That is, HOS would project those revenues in its fiscal year (FY) 2018 budget, as opposed to its FY 2017 budget.

Many argue that preparing an operating budget based on cash inflows and outflows may result in a misleading depiction of an organization's results from its financial operations. In the case of HOS, the cost of caring for the patient (personnel, supplies, etc.) would be recognized as an expense in 2017, if HOS paid or expected to pay those costs in 2017. However, the related revenues would be recognized in 2018, if HOS does not expect to receive them in cash until 2018. Across a large number of patients, it might seem that the organization had a deficit in 2017, even if the revenues that will ultimately be collected for those patients in 2018 will exceed the expenses. The operating budget for 2017 would provide an unduly pessimistic view of the expected financial results from treating patients.

It is important for organizations to have a *matching* of revenues and expenses. A matching means that for a

given unit of service provided, the revenues arising from providing that service and the expenses incurred in providing that service are both recognized in the same fiscal period. In that way, the organization will be able to determine if the provision of specific services results in a profit or loss.

Should the money that HOS is entitled to receive for providing care be considered revenue in the year care is provided or the year payment is received? If the revenue is recognized in the year the service is provided, the organization is using the *accrual basis* of accounting. As noted earlier, if revenue is recognized in the year the cash is received, the organization is using the cash basis of accounting.

The choice of whether to use a cash or accrual accounting system is an often debated topic. Cash accounting is easier. But it does not do a good job of letting managers understand whether the organization's activities are profitable. Accrual accounting is more difficult, but it provides a matching of revenues and expenses. When operating budgets are prepared using the accrual basis of accounting, the organization accrues, or anticipates, the eventual receipt of money once the service has been provided. When the organization provides its goods or services, it has earned its revenue. Thus, in the 2017 operating budget, HOS will include all amounts it expects to earn in 2017, even if they will not be received in cash by the end of 2017.³

³ Most organizations do not actually collect all of the money that is owed to them for goods or services they have provided. The amounts that are never collected are referred to as uncollectible accounts or *bad debts*. Under accrual accounting, the operating budget would show the full amount earned less the portion that it expects it will not be able to collect.

The accrual approach applies not only to the sale of goods or services, but to charitable support as well. Suppose that the director of the Millbridge Ballet Company convinces the Millbridge Town Council to provide the not-for-profit organization with an annual subsidy of \$10,000 as long as it gives at least 20 performances a year. If it uses the accrual basis of accounting, Millbridge Ballet would recognize the town support it gives in 20 performances in the year, even if the town does not make the payment by the end of the year.

By the same token, under an accrual approach to preparing an operating budget, expenses are recognized in the year in which resources are consumed. If supplies are bought and used this year, they are considered to be a cost, or expense, in the operating budget, even if the supplier is not paid until the following year.

The accounting profession strongly endorses accrual accounting. Accrual accounting allows the organization to compare the money that it is entitled to receive for this year's activities to the cost of resources used up carrying out those activities. There is less room for manipulation than in a system based on cash. Imagine an operating budget that used cash receipts and disbursements. If one wanted to look especially poor, it is possible to accelerate payments and postpone collections. If one wanted to look like the year was especially good, the reverse could be done. By contrast, with accrual accounting revenues and expenses are associated with a year based on actual activity and are much less subject to manipulation.

To better understand the implications of cash versus accrual, consider the following example. Tricky Hospital provides \$100 million of care each year and always eventually collects all of that money. Tricky consumes \$100

million of resources each year. In 2015, Tricky's board of directors wished to look especially needy so that they could encourage a donor to make a large gift. Tricky paid for all its current consumption and even prepaid for supplies that would not be received and used until sometime in 2016. Tricky also made no efforts to encourage rapid payment by its patients or the patients' insurers for the care Tricky provided in 2015. As a result, Tricky collected only \$90 million in cash, but it made payments of \$110 million.

In 2017, however, Tricky wanted to convince a bank that it was particularly financially solid so that the bank would lend Tricky \$300 million for a major expansion program. Tricky again provided \$100 million of care and consumed \$100 million of resources. However, in 2017 Tricky worked hard to collect as much cash as possible from patients and insurers. Meanwhile, it kept its employees and suppliers waiting for their payments until early in 2018. It wound up collecting \$110 million (partly from care provided in 2016 and the rest from care provided in 2017) and paying \$90 million in cash during 2017.

In both years, the amount charged for services provided was the same, and the cost of resources consumed was the same. However, consider the financial results that would be reported on a cash basis in contrast to an accrual basis:

	Cash Basis		Accrual Basis	
	2015	2017	2015	2017
Revenues	\$ 90,000,000	\$110,000,000	\$100,000,000	\$100,000,000
Expenses	110,000,000	90,000,000	100,000,000	100,000,000
Profit or (Loss)	<u>\$ (20,000,000)</u>	<u>\$ 20,000,000</u>	<u>\$ 0</u>	<u>\$ 0</u>

Note that the accrual system is clearly not as subject to manipulation as the cash basis approach. When accrual accounting is used, the operating budget gives a good idea of how profitable the organization can expect to be based on its activities for a particular period of time. However, it does not give an accurate idea of how much cash it will have. Tricky Hospital really did use more cash in 2015 than it collects. Since cash may be received at different times than the revenues and expenses are reported on an accrual basis, it is necessary to have a cash budget as well as an operating budget to be sure enough cash is available to meet obligations as they come due.

The Financial Budget

The financial budget has two primary components: the cash budget and the capital budget. The cash budget plans for the cash receipts and disbursements of the organization. The capital budget plans for the acquisition of long-term resources, such as buildings and equipment.

The Cash Budget.

The cash budget is a plan for expected cash receipts and payments. It is identical to the operating budget for organizations that use the cash basis of accounting. For organizations using the accrual basis of accounting, the cash budget provides vital additional information. It helps managers know when there will be cash available for investment and when a shortage of cash is expected. This information allows the organization either to arrange for sources of cash (such as a loan from the bank) to alleviate an expected shortfall or to change the organization's planned revenues and expenses to avoid the shortage.

In the case of HOS, the cash budget estimates the amount that will be paid during the year for expenses and

the amount that will be collected during the year for patient treatment. Any other sources and uses of cash would also be included in the cash budget. The general format for cash budgets is as follows:

Beginning Cash Balance
+ Cash Receipts
= Available Cash
- Cash Payments
= Subtotal
+/- Cash from Borrowing/(Lending)
+/- Cash from Receipt/(Repayments) of Loan Principal
+/- Cash from Sale/(Purchase) of Investments
= Ending Cash Balance

Note that cash budgets are similar to personal checking accounts. The amount of cash we have at the end of one period of time is still available at the beginning of the next period. So the beginning cash balance for any cash budget is identical to the ending cash balance from the previous time period.

This budget is generally prepared for the coming year. However, it is also important to have more frequent cash projections. For example, within the annual cash budget, there may be monthly cash budgets. Just knowing that cash receipts are sufficient to cover cash payments for the year may be inadequate. It is helpful to know if the organization expects to have enough cash to pay its bills each month.

For example, the town of Millbridge has variable cash flows. The town issues bills for its real estate taxes on a quarterly basis, its user fees mostly during the spring and early summer, its sewer taxes once a year near the beginning of the year, and its state aid once a year near the middle of the year. Even if annual cash receipts are enough to cover payments, Millbridge might need to borrow money to get through certain times of the year when cash receipts are low.

The cash flow is complicated by the fact that not only are billings not constant throughout the year, but different sources of money arrive with differing payment lags. Most people pay their taxes promptly, since the town charges a high interest rate on late payments. By contrast, the state does not make its payments until near the very end of the year. This allows the state to have the political advantage of being able to show aid to the municipalities and also keep the money in the state account earning interest until the very last possible day.

Let's consider an example of how a cash budget might work. For this example, assume that Meals for the Homeless has a fiscal year of January through December. It had \$15,000 cash at the end of last year, and had no investments and outstanding loans as of the end of the year. If an organization finishes a year with \$15,000 cash, that cash will still be available at the beginning of the following year. Meals expects to receive \$10,000 a month from the city next year. However, this is a new contract and the city pays each month with a 1-month delay (also known as a lag), so the payment for January won't be received until February, and so on. Meals expects to receive \$60,000 in contributions for the coming year. However, most of them will come in during December. Meals expects to receive \$3,000 every month from January through November, and the remaining \$27,000 in December. It also expects to receive \$5,000 every month from other sources. Despite the fairly wide fluctuations in the receipt of contributions, Meals provides its services evenly throughout the year. Meals pays \$1,000 in rent every month. It expects to pay its staff \$11,000 every month. Its supplies are increasing in

cost due to inflation. In the last month of last year, it used \$4,500 of supplies, but it expects that cost to rise \$100 each month. Meals pays its suppliers with a 1-month lag, so the \$4,500 for December will be paid in the first month of the coming year. Other expenses that are paid in cash every month total \$3,000. Meals wants to be sure to begin every month after January with \$4,000 cash available. If it has more (or less) than that amount at the end of a month, it invests (or borrows) money. The organization's plan is to pay back any outstanding loan balance in December, when it receives the bulk of its contributions. The monthly cash budget for the first quarter of the coming year would be:

Meals for the Homeless Cash Budget				
	For the First Three Months of Next Year			
	January	February	March	Total
Beginning Balance	\$15,000	\$ 4,000	\$ 4,000	\$15,000
Cash Receipts				
City		10,000	10,000	20,000
Donations	3,000	3,000	3,000	9,000
Other	5,000	5,000	5,000	15,000
Total Available Cash	<u>\$23,000</u>	<u>\$22,000</u>	<u>\$22,000</u>	<u>\$59,000</u>
Less Cash Payments				
Labor	\$11,000	\$11,000	\$11,000	\$33,000
Rent	1,000	1,000	1,000	3,000
Supplies	4,500	4,600	4,700	13,800
Other	3,000	3,000	3,000	9,000
Total Cash Payments	<u>\$19,500</u>	<u>\$19,600</u>	<u>\$19,700</u>	<u>\$58,800</u>
Subtotal	\$ 3,500	\$ 2,400	\$ 2,300	\$ 200
Borrowing/(Repaying or Investing)	500	1,600	1,700	3,800
Ending Cash Balance	<u>\$ 4,000</u>	<u>\$ 4,000</u>	<u>\$ 4,000</u>	<u>\$ 4,000</u>

Notice that in the January column the budget starts with \$15,000. There is no cash received from the city in January, so the only receipts that month are from donations and other sources. The starting cash balance plus cash receipts in January provide available cash of \$23,000 for that month. Payments are made for labor, rent, supplies, and other. Note that the payment for supplies is the \$4,500 for the previous month. All four of these cash payment items total to \$19,500 in January. That total of cash payments is subtracted from the \$23,000 of available cash to arrive at a \$3,500 subtotal before borrowing or investing. Since Meals wants to start February with \$4,000 of cash on hand, it will have to borrow \$500 at the end of January.

The ending cash balance for January becomes the beginning balance in the February column. During February Meals expects to receive \$10,000 from the city as well as the donation and other cash inflows. Cash payments are the same as January except for the increasing supply payments. Despite the cash receipt from the city, payments once again exceed receipts, and Meals expects to have to borrow \$1,600 in order to end February and begin March with \$4,000 of cash.

Notice, in the total column for the 3 months, that the first and last rows are not summed across the columns. That is, the starting cash balance in the total column is the \$15,000 we begin the year with. This represents the starting balance at the beginning of the year. This makes sense since the first day of the quarter and the year are both January 1. And the ending cash balance in the total column is the \$4,000 that we have at the end of March. Similarly, the last day of the quarter and the last day of the month are both March 31. But we can add all of the cash receipts, cash payments, and borrowing values across the page to get the totals for the 3-month period. The starting cash balance of \$15,000 plus all of the cash receipts in total for the 3 months, less all of the cash payments in total for the 3 months, equals a \$200 subtotal for the 3 months (note that this

subtotal is arrived by adding down the total column, not across the subtotal row). Combined with the \$3,800 total amount that has been borrowed over the 3 months, we get the \$4,000 cash value at the end of the quarter. Notice that Meals had to borrow money every month in the quarter, but it would appear that if things keep going as they are, the \$27,000 of expected cash receipts from donations in December should be enough to allow for repayment of the total outstanding loan by the end of the year. Being able to demonstrate in a cash budget that you know when you will be able to repay a loan increases the likelihood of being able to obtain a loan.

The Capital Budget.

Another type of budget is a capital budget. A capital budget is a plan for acquisitions of *capital assets*. Capital assets are resources that have lifetimes that extend beyond the year in which they are acquired. This typically includes buildings and equipment.

One reason the capital budget is used relates to the issue of accrual accounting. If Meals for the Homeless buys a delivery truck with a 5-year life, it would be inappropriate to charge the entire cost of the truck to the coming year. Suppose that a delivery truck costs \$40,000. Even if Meals will pay \$40,000 cash for the truck next year, and therefore it will be a \$40,000 reduction in the cash budget, Meals will not fully use up the truck in the one year. Part of the truck will be used in future periods. It would not be reasonable to charge the entire \$40,000 cost of the truck as an expense in its first year. Organizations that use accrual accounting would spread the \$40,000 cost of the truck out over the years it is used, charging a portion as an expense each year. Thus, the full cost of the truck will be included in the capital budget, but only a 1-year portion of the cost of the truck will be included as an expense, called *depreciation expense*, in the operating budget each year.

For example, we expect the \$40,000 delivery truck to last for 5 years. At the end of 5 years assume that we will just dispose of it. It will have no value at that point and cannot be sold for anything. We simply divide the \$40,000 cost by the 5-year expected lifetime. The resulting \$8,000 ($\$40,000 \div 5 \text{ years} = \$8,000$) per year is the amount of expense that we will record each year as we use the truck. That expense is depreciation expense. Depreciation can become complicated. There are issues concerning how we determine the lifetime, the amount the asset can be sold for at the end of its lifetime, and whether it is reasonable to assume that an equal amount of the asset is used up each year. Depreciation is discussed further in [Chapter 10](#) and Appendix 10-B.

Most organizations that do not use accrual accounting do not use a true cash basis. Rather, they use a *modified cash basis*. Under such a modified cash approach, routine revenues and expenses are recognized on a cash basis, but capital assets, such as buildings and equipment, are recognized as expenses gradually over the years they are used rather than all in the year the organization pays for them.

Capital budgets are closely coordinated with the long-range plan. Often, in order to carry out that long-range plan, it is necessary to make major investments in buildings and equipment that will have relatively little initial benefit. However, the long-range plan looks far enough into the future to recognize the long-term benefit that may come from that current investment. [Chapter 5](#) examines financial management methods used to evaluate the financial impact on the organization of capital asset acquisitions.

Capital acquisitions are evaluated in a separate budget from the operating budget for a number of reasons. First, as noted, it does not make sense to include the full cost of the capital asset in the operating budget for one year, since it is not fully used up in that year.

A second reason for having a separate capital budget is that capital assets often represent large costs for major pieces of equipment and buildings. A poor decision could be costly, so it is worthwhile to give the decision focused attention. Since capital items will last for a number of years, the organization is making a long-term commitment. If it makes an error in selection, it will be committed to that error for a long time. In the case of governments, capital budgets are often mandated by law or regulation.

A third reason that capital assets receive special attention is related to their financing. Since capital items are often expensive, the organization often has to make special arrangements to acquire the financing necessary to buy them. However, as we will discuss in [Chapter 5](#), the decision to acquire an asset and the decision about how to finance it, while related, are separate and distinct decisions. For example, suppose that HOS plans on building a \$100 million new wing that will generate \$40 million a year in revenue. The revenue over the life of the wing may be sufficient to pay for its construction. However, the cash receipts from the wing in the first year will certainly not pay the full construction costs. That money may have to be borrowed. The revenue earned in the future has to be great enough to repay both the amount borrowed and the interest on that loan and a premium that justifies taking the risks related to making the investment. This requires careful calculations related to the timing of the cash receipts and payments related to the project, including all of the costs of obtaining the money needed for the capital purchase. Capital budgeting, as noted previously, is discussed further in [Chapter 5](#).

The Budget Process

Although a budget is a plan, budgeting is a process of planning and control. In the budget process, resources are allocated, efforts are made to keep as close to the plan as possible, and then the results are evaluated. “Properly applied, budgeting can contribute significantly to greater efficiency, effectiveness, and accountability in the overall management of an organization’s financial resources.”⁴

⁴ Alan Walter Steis. *Financial Management in Public Organizations*. Pacific Grove, Ca.: Brooks/Cole, 1989, p. 146.

The budgeting process is one of exploring possibilities. Organizations determine what things they can do and what they cannot. They examine alternatives and choose those that will likely yield the best results. They become attuned to possible problems and can work to find solutions. Ideally, budgeting causes managers, policy makers, and legislators to think ahead, have clear expectations against which to measure performance, and coordinate the activities of the organization so that everyone is working toward a common purpose.

In larger organizations, coordination is inherently more difficult, and the budget process can become cumbersome. Such organizations will often have budget departments that devote substantial efforts to aid managers and policy makers in developing budgets. Governmental budgeting is often subject to a variety of

laws, making the need for assistance even greater.

The budget preparation process includes developing revenue and spending projections. In modern government management, approaches for making projections vary from simple guesses to projections based on the current year plus inflation to use of sophisticated econometric forecasting. Forecasting is discussed further in [Chapter 3](#).

The Budget Cycle

In most organizations, the budget process consists of a cycle of activities. We can summarize this cycle as follows:



The budget is first prepared. After review by the body with the authority to adopt the budget (often the board of trustees or the legislature), it is adopted, with or without changes. It is not uncommon for the decision-making body to request or make changes prior to approval. Once approved, the budget is implemented. It is the responsibility of the management of the organization or the executive branch of the government to ensure that the adopted budget is carried out. Finally, the results must be evaluated. Often, actual results will vary from the adopted budget. This may be because of inefficiency, or it may be due to non-controllable factors. All significant variations should be analyzed. This evaluation in turn will provide information to be used for feedback in preparing the next budget.

Budget Preparation.

Initially, a draft budget must be prepared. Generally, top executives will prepare a set of assumptions and guidelines that department or agency managers should use as they develop detailed budgets for their areas. In government, the chief executive will generally provide a *budget guidance memorandum*, which provides policies, goals, and performance expectations.⁵ The managers in the organization (unit and department heads or bureau chiefs and agency directors) then prepare draft budgets, considering their *responsibility center's* needs and the guidelines they have received. A responsibility center approach divides the budget into units for which individual managers are held accountable, called responsibility centers.

⁵ Ibid., p. 151.

Organizations quantify their budgets, often assigning measures in dollars or units or both. For example, during the budget preparation process, Meals for the Homeless will need estimates of not only the dollar cost of meals, but also the number of pounds of food needed and the number of meals expected to be served. This requires plans to become specific, so they can be summarized in a document that can be shared across the organization.

Budgets are prepared using forms that are generally unique to each organization. The forms help guide the manager to assess the need for resources to carry out the objectives of the responsibility center. The budget process will generally require the manager to justify the need for the requested resources. [Chapter 3](#) provides additional discussion about the elements of a budget and some of the techniques that can be used in preparing budgets. [Chapter 4](#) addresses issues related to planning for costs. [Chapter 5](#) addresses special issues related to the capital budget.

It is common for budget requests to be “supported by detailed *objects of expenditure*—tabulations of the myriad items required to operate each program, including salaries and wages, rent, office supplies, travel, equipment and other inputs.”⁶

[6.](#) Ibid., p. 146.

Budget Review and Adoption.

Budget requests are reviewed to ensure that the forms have been completed fully and without error. The various budget requests from all responsibility units are aggregated to determine the total resources that have been requested. There is also a review to ensure that the department budgets all follow the same assumptions about salary increases, expected workload, and other factors that need to be consistent across departments.

It is common for the total of all spending requests to exceed projected revenues. In most cases, this requires the organization to go through a process of negotiation. The first goal of this process should be to eliminate any inefficiency in the budget. If this still leaves the budget unbalanced, it is necessary to find additional sources of revenue or to reduce spending. Spending reductions should be selected so as to minimize the impact on the accomplishment of the organization’s goals and objectives. In many instances, this requires the organization to establish priorities. Managers should be given the opportunity in this process to provide their rationale for why their budget requests are high priorities and should not be among the first items cut.

Once the top management of an organization is comfortable with the budget, it submits it to the decision-making body for review and approval. In the case of the government, the executive branch submits the budget to the legislative branch for review. In many cases, the legislative process includes an opportunity for public scrutiny and comment. In some cases, the public actually votes on the budget, but this is less common and occurs primarily with respect to school budgets. If the executive is unhappy with changes made by the legislature, the budget can be vetoed. In many cases the veto can be for the entire budget; in some cases it may be line item by line item. Generally, there is some provision for the legislature to override a veto.

The body that must approve the budget should receive not only the budget, but also an executive summary. This summary should focus on the policy implications of the proposed budget. One should try to avoid letting the trees get in the way of seeing the forest. Often the extreme detail provided with budgets causes managers to lose sight of the goals that should be accomplished as the budget is implemented.

Finally, after discussing and perhaps requiring changes in the budget, it is accepted by the board or, in the case of government, passed by a legislative vote in favor of an *appropriation*. When a legislative body—be it a

senate or an assembly, a town committee or a council—approves spending for a specific line item, which is called an appropriation. Appropriations create the authorization for spending the amount in the budget.

Budget Implementation.

Once adopted, the budget must be implemented or executed. Steis describes this part of the process:

Budget execution is both a financial process and a substantive operational process. This stage of the budget cycle involves the initiation of authorized projects and programs within an established time schedule, within monetary limits, and ideally, within standard cost limits. Budget execution is the longest stage in the budget cycle, covering the full fiscal year and overlapping both the formulation and review stages of the budget for the succeeding and prior years, respectively.⁷

⁷ Ibid., p. 153.

Budgets authorize and limit the amount of spending for each responsibility center in an organization. Appropriations tend to be specific in terms of the amount that can be spent and what it can be spent on. Governments next make *allocations*, subdividing the appropriation into more detailed categories, such as responsibility centers, programs, or objects of expenditure. Sometimes, spending is further broken down into *allotments*. Allotments refer to a system that allocates budget resources to specific time periods or for use only after a certain event occurs. This allotment process serves “(1) to avoid premature exhaustion of appropriations, necessitating supplemental appropriations; (2) to keep the rate of expenditures in line with the flow of revenue; and (3) to provide the funds agencies actually need in the course of budget implementation and no more.”⁸ While the process is not quite as formalized in other public service organizations, the same elements apply.

⁸ Donald Axelrod. *Budgeting for Modern Government*. New York, N.Y.: St. Martin’s Press, 1988, p. 12.

Part of the budget implementation process focuses on expenditure control. A widely used technique in governments and some not-for-profit organizations is a system of *encumbrances*. When the organization places an order for a resource, an encumbrance is created. The encumbrance identifies the portion of the budget for a specific line item that has already been “spoken for” by purchase commitments that have been made.

For example, suppose that the Millbridge Town Council has adopted a budget that includes an appropriation of \$20,000 for computer equipment. On the first day of the government’s fiscal year, October 1, an order is placed for \$15,000 worth of equipment. The equipment arrives 2 months later. The government pays for the equipment a month after that. In the interim between the placing of the order and the payment for the computers, Dwight Ives, the town manager, would like to know how much money is available for computer purchases. He knows that the budget was \$20,000, but he suspects that some purchases may have already been made. As soon as an order is placed, the government accounting system records an encumbrance in the dollar amount of the order. If Ives looks at the town budget report on November 1, he will see that the budget is \$20,000, but that there is a \$15,000 encumbrance. The available, or unencumbered, balance is \$5,000. Special

approvals are generally required to place additional orders that would exceed the unencumbered balance.

When the computers that were ordered have been received, the encumbrance will be removed. At that point the financial records would show a budget for computers of \$20,000, an expenditure of \$15,000, an encumbered balance of \$0, and an unencumbered balance of \$5,000.

Other aspects related to managing the organization within the limits of the adopted budget are discussed in [Chapter 7](#), which looks at management of the short-term resources and obligations of the organization, and [Chapter 8](#), which focuses on issues of accountability and control.

Evaluation of Results.

The last element in the budget cycle is the evaluation of results. Budgets not only create plans, but can be used to help accomplish those plans. One way that this is done is by comparing actual results to the budget. This is sometimes referred to as performance evaluation. This is especially helpful if done on an interim basis, during the year. That allows problems to be corrected midstream, helping the organization accomplish its budget.

Things do not always go as planned. It is important to attempt to assess why. In some cases, money is being wasted through inefficiency. If so, the inefficiency should be determined, and corrective action should be taken. In other cases, events have occurred (e.g., price increases in supplies that are essential) that are beyond the control of the organization or its managers. However, not all deviations from budgets are negative. Often, careful review can reveal opportunities an organization can use to their advantage. In any case, there should be a thorough investigation of why variations occur.

Looking at its results, the organization can assess what needs to be corrected and where organizations can take advantage of opportunities. How good a job did the organization's management do? How well did the organization itself do? Ideally, the organization's performance should be evaluated in a number of different ways. Meals wants to know if it served as many meals as expected and whether they cost more or less than expected. However, it also wants to know if the meals met its standards for nutrition. It wants to know if the homeless felt that the meals tasted good. The measurement of performance is discussed in [Chapter 3](#).

To evaluate performance, one must have a standard or benchmark to use for comparison with actual results. The budget establishes the organization's expectations. When actual results vary from those expectations, the organization can use feedback to investigate the cause of the variations. The results of such investigation can provide the information needed to improve the management of the organization in the future. The difference between a budgeted amount and an actual result is called a variance. Variance analysis is discussed in detail in [Chapter 8](#).

Governments often have a formal midyear review. This serves a critical function. Since state and local governments must have a balanced budget, it is critical to examine whether the organization is on track for spending no more than the appropriated amount. If it turns out that spending is above the budget level, or that revenues are less than budgeted, then actions must be taken to avoid a deficit. Often this requires cutting expenditures for the remainder of the year to a lower level than had been expected when the budget was

passed. Many health and not-for-profit organizations undertake similar reviews for the same purpose.

Another purpose of performance evaluation is to enhance accountability. All organizations want to ensure that their resources are used efficiently and effectively. This is enhanced if the organization can hold managers and responsibility centers accountable for their activities and results. Accountability is partly ensured by frequent comparison of the budget with actual results and analysis of the causes of variances. Another element critical to accountability is the audit process.

An *audit* is an examination of records or procedures. Operating or performance audits seek to identify inefficiencies in the way the organization operates so that they can be avoided in the future. Financial audits examine whether financial reports are presented in a fair manner⁹ and whether all resource use has complied with relevant laws, rules, or regulations. Although not all audits are intended to dig deeply enough to discover all fraud and embezzlements, some audits are conducted specifically to determine if resources have been used for their intended purposes.

⁹ Often audits seek to determine if financial statements have been prepared in accordance with rules that are referred to as Generally Accepted Accounting Principles (GAAP). See [Chapter 9](#) for further discussion of GAAP.

Mikesell uses the example of a state's purchase of salt for its roads to distinguish between a financial audit and an operations (or efficiency and economy) audit:

A financial audit would consider whether the agency had an appropriation for salt purchased, whether salt purchased was actually delivered, whether approved practices were followed in selecting a supplier, and whether agency reports showed the correct expenditure on salt. An efficiency and economy audit would consider whether the salt inventory is adequately protected from the environment, whether the inventory is adequate or excessive, and whether other methods other than spreading salt would be less costly to the community.¹⁰

¹⁰ John L. Mikesell. *Fiscal Administration—Analysis and Applications for the Public Sector* 9th ed. Boston, Mass.: Wadsworth, Cengage Learning, 2014, p. 68.

Clearly, audits serve an important role in ensuring accountability in the use of resources.

Budget Presentation

Another element in accountability is the presentation of the budget. Organizations formalize their budgets by recording them in written form. This allows the budget to be used to communicate to all of its managers. Human resource managers can do their job better by knowing the staffing plans of other departments. The managers of the recovery room in a hospital can manage their department better if they know the number of surgeries that are expected by the operating room department.

The choice of revenue and expense groupings and the level of detail of information shown in the budget can

have a dramatic impact on the amount of information that is communicated by the budget. In the case of government, budgets become public documents. An effective presentation can give the public a tool to keep government accountable for its actions. The specific contents and presentation of budgets are discussed further in [Chapter 3](#).

A Budget Timeline

The budget process can be quite complicated and time-consuming. The process may take 1 to 3 months in small organizations, and 4 to 6 months or even longer in larger ones. In order to ensure that the budget is ready for adoption sufficiently early to be implemented at the start of the coming year, many organizations prepare a budget calendar or budget timeline. Government timelines are often set by law or regulation. Examples of timelines are provided in [Exhibits 2-1](#) and [2-2](#). These timelines indicate the deadline by which each major activity must be completed in order to ensure the possibility of timely adoption of the budget.

Activity	Responsibility	Deadlines
1. Appointment of the budget committee	CEO	June
2. First meeting of budget committee	Committee chair	July
3. Complete assumptions and guidelines and communicate to department heads	Budget committee	August 31
4. Complete long-range budget	Budget committee	September 30
5. Unit capital and operating budgets	Unit managers	October 15
6. Negotiation between units and their department heads	Department heads	October 22
7. Compilation of all unit budgets into department budgets	Department heads	October 30
8. Development of cash budget	Chief financial officer	November 15
9. Negotiation and revision process	All managers	December 15
10. Approval	Board of trustees	December 16
11. Implementation	All managers	January

Exhibit 2-1

<i>(a) Agency Budget Planning</i>		<i>April to Mid-September</i>
• Governor policy letter issued	Governor's office	April
• Bureau chiefs prepare budget requests	Bureau chiefs	April-June
• Agencies review bureau requests	Agency directors	July-August
• Agency budgets prepared	Agency directors	August-first half September
<i>(b) State Budget Review</i>		
• Agencies submit requests to Department of Budget (DoB)	Agency directors	One week after Labor Day
• Analysis by DoB	DoB	September-November
• Informal hearings	Budget examiners	September-November
• Formal hearings—comparative data	Budget examiners	September-November
• Final recommendations	Budget director	Mid-December
• Preparation of alternative plans	Budget examiners	Mid-December
	Fiscal analysts	
<i>(c) Final Review</i>		
• Budget director recommendations on policy	Budget director	Mid-December to Mid-January
• Governor's decisions on policy	Governor	Mid-December to Mid-January
• Fiscal analyst plan recommendations	Fiscal analysts	Mid-December to Mid-January
• Governor and budget director formulate plan	Governor/budget director	Mid-December to Mid-January
• Budget message prepared	Governor	Mid-December to Mid-January
<i>(d) Passage of Budget Bill</i>		
• Governor submits budget bill to legislature	Governor	Mid-January to February 1
• Analysis, hearings, passage	Legislature	Mid-January to April
• Passage of special appropriation bills	Legislature	Mid-January to April
• Fiscal year begins—implementation of budget	Agency directors	April 1

Exhibit 2-2

Source: Adapted from New York State Division of the Budget. *Budget Request Manual*. Albany, N.Y.: 1983. This simplified timeline is not meant to indicate the current specific process of New York State.

Note the word “possibility” in the previous sentence. Even if every deadline in the timeline is met, except for approval, the budget may not be adopted on time. The body that must approve the budget may decide that the budget is not acceptable. The process of revising the budget until it is acceptable may extend into the next fiscal year. In the case of not-for-profit organizations, the board generally will authorize that operations continue pending adoption of the budget, but often at a reduced level of activity or on an austerity basis. This can be quite deleterious to the organization. At times, the final budget adopted calls for less spending than occurred during the period the organization operated without an approved budget. This results in even harsher cuts in spending for the remainder of the year. In rare cases, the organization will actually come to a halt, with only the most essential activities continuing. This happened to the U.S. federal government several times in the latter half of the 20th century and, more recently, in 2013.

The budget timelines in [Exhibits 2-1](#) and [2-2](#) both stop at the point of implementation. However, the process of auditing results, analyzing variances, and providing feedback for the next budget cycle is critical; this is shown in some organizations’ timelines.

Political Realities in the Budget Process

The process of developing budgets is highly politicized. This is true in most public service organizations. To the extent possible, managers should try to establish and use an objective budget process that best leads to the accomplishment of the organization’s mission, goals, and objectives. In reality, it is inevitable that politics will play at least some role in almost all organizations.

Politics may take a variety of forms. The politics may be personal. A department manager may be a relative of a member of the board and may get, or be perceived as getting, special breaks at budget time. More broadly, however, politics often revolves around agendas. Proponents of a particular service or program will lobby for resources for that program. This is true in most organizations.

Politics is of special concern in the government, which is, after all, a political arena. It is at least partly through the political process and voting that the public makes its desires known. Politics serves a major role in resource allocation in governments. Although budgets should be objective in trying to accomplish the goals and objectives of the organization, politics has an appropriate role in setting those goals and objectives.

Politics in the public sector takes many different shapes. It takes the form of special interest groups lobbying for their cause. It takes on the perspective of competing policies to accomplish similar or different objectives. Sometimes politics in budgeting is manifested as a power struggle between the branches of government or between political parties.

Managers should be aware of the political nature of budgets within their organization. This can help them better define their role in the budget process.

Behavioral Aspects of the Budget Process

Although it sometimes seems that budgets are all about numbers, this is not the case. Once a budget has been adopted, it is up to the employees of the organization to come as close as possible to achieving the budget. People are the key to successful budgeting. It is critical to understand that the actions of people within an organization have a tremendous impact on how well the organization does. If people work to accomplish the goals of the budget, we are likely to have much better outcomes than if they are indifferent about accomplishing those goals or, even worse, work in opposition to accomplishment of the organization's goals. The numbers on paper are just that. People—their attitudes, needs, and desires—are the key to budgeting. If we don't specifically focus on why people would want to accomplish the organization's goals as defined by the budget, we are not likely to achieve the best possible actual outcomes.

Therefore, an essential part of the budget process is understanding what motivates the organization's employees. We need to understand why employees would make their best effort to accomplish the organization's goals and why they wouldn't. And we need to understand how incentives can be used to motivate employees to work at their highest level to accomplish the organization's goals.

The more input employees have in making plans, the more likely it is that they will strive to achieve them. People working in a unit or department of an organization know a great deal about how that unit or department functions. They are in a good position to be able to propose changes that will improve efficiency. If we solicit input from managers and staff members in preparing budgets, and develop budgets based on that input, employees are likely to become vested in showing that the approaches they have proposed are sound. If budgets are prepared without staff input, staff will likely feel much less motivated to meet the budgets that have been handed down to them.

Budgets and Motivation

Motivation is the critical underlying key to budget success. One of the best features of budgets is that they present a measurable goal. When there is a clearly stated goal, managers and staff can work toward that goal. Most people are inherently motivated to do a good job. They want to gain a sense of accomplishment from their job, and a budget goal can help them do that. Setting demanding but realistic budget goals, combined with public praise and rewards when goals are met or exceeded, can enhance motivation and resulting performance.

Compare the likely progress of a dieter with specific weight-loss goals to one who simply wants to lose a lot of weight, or compare an athlete with measurable objectives to one who just wants to be strong or run fast. Setting specific goals and working toward them is a tremendous self-motivator. Most employees want to have a sense of pride in their organization and want their organization to do well. Nevertheless, a goal of "spending as little as possible" is no better than the dieter's hope to "lose weight." A more specific goal, such as "Let's reduce electric consumption by 10 percent as compared to the prior year" is likely to be a better motivator.

Control is complicated by the fact that even when the primary goal is clearly stated, it is the basic nature of

individuals that their own personal goals will often be different from the goals of their employer. This does not mean that human nature is bad—just that there is such a thing as human nature and it is foolish to ignore it. For example, most employees would prefer a salary that is substantially larger than the salary they are currently receiving. There is nothing wrong with employees wanting more money. In fact, ambition is probably a desirable trait. On the other hand, employers generally will not provide employees with more money because they lack the revenues to pay those higher wages. While the employees are not wrong to desire large raises, the employer is not wrong to deny such raises. Inherently, a tension or conflict exists as a result.

Nor is it just an issue of salaries. Often employees would like larger offices with new furniture and remodeled facilities. They would certainly like more staff to enable them to carry out their department's mission more effectively. However, organizations have limited resources and must make choices concerning how to spend those limited resources.

As a result, even when morale is generally excellent and is not considered to be a problem, an underlying tension naturally exists. Even though the employees may want to achieve the mission of the organization, their personal desires will be for things the organization cannot or will choose not to provide. This is referred to as *goal divergence*. For example, employees might prefer to take long breaks frequently throughout the day. That might well impair their ability to efficiently get their work done.

To best achieve its goals, the organization must bring together the interests of the individual with its own interests so they can work together. In the budgeting process, the organization wants to control spending. But it is not the "organization" that controls costs; it is the human beings involved in the process. There must be some motivation for the human beings to want to control costs. We need to find a way for the employees to feel that it is in their interests not to take frequent, long breaks. Bringing the individuals' desires and the organization's needs together is referred to as *goal congruence*.

Since congruent goals are not inherently the norm, it is necessary to address formally how convergence is to be obtained. Organizations generally achieve such convergence or congruence by setting up a system of incentives that makes it serve the best interests of the employees to serve the best interests of the organization.

Incentives

Although employees serving in government, health, and not-for-profit organizations are motivated by factors other than money, it would be foolish to ignore the potential of monetary rewards to influence behavior. Public service organizations must search for the proper mix of incentives that will motivate managers and staff to control costs. Financial incentives are frequently employed. The most basic financial incentives are the ability to retain one's job and to get a good raise. We can use a carrot or a stick to motivate. The stick: If you constantly take long breaks frequently throughout the year, you may be fired.

Another common motivating tool that incentivizes employees is a bonus system. This is a carrot approach. For example, one could tell a manager that her department budget for the year is \$3,000,000. However, if her department spends less than \$3,000,000, she and her staff can keep 20 percent of the savings. If the

department spends only \$2,900,000, the manager and the staff will get a bonus of \$20,000 (i.e., \$3,000,000 less \$2,900,000, multiplied by 20%) to share. The total cost to the organization is \$2,920,000 including the bonus, as opposed to the \$3,000,000 budget, so it has saved \$80,000 after paying the bonus. The staff benefits and the organization benefits. In this case, goal congruence is likely to be achieved. Workers will not take frequent, long breaks, because they are trying to work more efficiently so they will earn the available bonus.

Many public service organizations have in fact added bonus systems. The use of bonus systems has both positive and negative aspects. The positives relate primarily to the strong motivation employees have to reduce costs. The negatives relate to the fact that bonuses sometimes create unintended incentives. For example, bonuses give employees a strong incentive to lower quality of services provided in order to reduce costs and earn a bonus. Careful metrics must be put in place to ensure that the bonus is not being earned at the expense of the quality of products and services provided. Managers must try to anticipate unintended consequences when developing incentive systems. Also, the bonus must be adequately large to achieve the desired congruence. If you can get away with taking frequent long breaks, and you are inclined to do so, a bonus that adds up to only \$10 a week for each employee might not provide sufficient motivation to change that behavior. Would \$50 a week per employee be sufficient? \$100? Each organization must give careful thought to developing a motivation system that provides sufficient incentives to achieve an appropriate level of goal congruence.

Another potential problem with bonuses relates to changes in volume of services provided. A bonus should not reward employees for lower spending that results simply from lower volume. Nor should employees fail to get a bonus simply because costs increased as a result of higher volume. We don't want to provide an incentive that results in employees being motivated to reduce the volume of service provided. This can be avoided by making the bonus system adjust automatically for changes in volume.

Bonuses are not the solution to all motivational problems. Bonus systems have a variety of other problems. Some bonus systems reward all employees equally if overall spending is reduced. But if everyone gets a bonus, no one feels that her or his individual actions have much impact. Individuals may feel that they do not have to work particularly hard to reap the benefits of the bonus. They will let everyone else do the hard work, and they will share in the bonus distributed. That can lead to a situation in which no one makes any effort to control costs. There won't be a bonus to be shared, and the organization won't keep costs under control. In that case, the bonus system will not be providing the incentives we need. On the other hand, bonuses given only to some employees based on their individual performance may create jealousy and discontent.

There are incentive alternatives to bonuses. For example, one underused managerial tool is a letter from supervisor to subordinate. All individuals responsible for controlling costs should be evaluated explicitly with respect to how well they control costs. That evaluation should be communicated in writing. This approach costs little to implement but can have a dramatic impact. Most people respond well to praise and other forms of positive feedback about their personal performance and their department's performance. Framed certificates of achievement along with a moderate monetary reward for an outstanding achievement can be a strong motivator. Employee of the month and other similar programs can be strong motivational tools as well.

Telling individuals they've done a good job and that their boss and their boss's boss know that they've done a good job can be an effective way to get people to continue trying to do a good job in the future. We tend to take a biased approach, complaining to employees when there is a problem without correspondingly praising them for a job well done when there are no problems. In the real world, praise is both cheap and, in many cases, effective. On the other hand, fair criticism, especially in writing, can have a stinging effect that managers and staff will work hard to avoid in the future. Ultimately, however, people tend to respond better to praise than to criticism.

Unrealistic Expectations

There is no question that many people do attempt to satisfy—to do just enough to get by. One thing incentives are used to accomplish is to motivate those individuals to work harder. A target that requires hard work and stretching, but that is achievable, can be a useful motivating tool. If the target is reached, there might be a bonus, or there should be at least some formal recognition of the achievement, such as a letter. At a minimum, the worker will have the self-satisfaction of having worked hard and reached the target.

However, it is important to recognize that budget targets should be achievable. Some organizations have adopted the philosophy that if a high target makes people work hard, a higher target will make them work harder. This may not be the case. If targets are placed out of reach, they will probably not result in people reaching to their utmost limits to come as close to the target as possible. In fact, that approach may lead to cynicism and hostility toward a management that promises to make bonuses available and then places them out of reach. It may seem that the organization is short-changing itself whenever someone achieves a target. One may think, "We set the target too low. Perhaps if the target were higher, the higher target would have been achieved." The problem with that logic is that there are risks associated with it. If an employee fails to meet a target because of incompetence or because of insufficient hard work, the signal of failure that is sent is warranted. In fact, repeated failure may be grounds for replacing that individual in that job. But if an employee is both competent and hardworking, failure is not a message that should be sent. Even if it is desirable to encourage the individual to achieve even more, the signal of failure will be discouraging.

When people work extremely hard and fail, they often question why they bothered to work so hard. If hard work results in failure to achieve the target, then why not ease off? If they are going to fail anyway, why try very hard? And when people get discouraged, they may become angry. This situation can lead to turnover and even sabotage by angry persons who feel their supervisors are against them and that they are being set up to fail. Thus managers at every level of the organization must be extremely careful to ensure that all goals assigned are reasonable, or results may be less favorable than they otherwise would be.

Case Study: Developing A Government Budget

To gain a better sense of the budget development process, we will now discuss the development of a hypothetical budget for Millbridge. According to Ives, Razek, and Hosch, these are some of the specific steps that must be taken:

- prepare budgetary policy guidelines
- prepare a budget calendar
- prepare and distribute budget instructions
- prepare revenue estimates
- prepare departmental (or program) expenditure requests
- consolidate departmental expenditure requests ... and revenue estimates
- prepare the budget document
- present the budget document to the legislative body
- determine the property tax (millage) rate¹¹

¹¹. Martin Ives, Joseph R. Razek, and Gordon A. Hosch. *Introduction to Governmental and Not-for-Profit Accounting*, 5th ed. Upper Saddle River, N.J.: Pearson Education, 2004, p. 71.

We will consider each of these steps in turn.

Prepare Budgetary Policy Guidelines

As noted, the first step in budget preparation is for the top management to prepare a budget guidance memorandum, which provides assumptions and guidelines about policies, goals, and performance expectations that managers should use as they develop detailed budgets for their areas. The Millbridge guidelines indicate that, given current economic conditions, an average increase in all taxes and fees of 3 percent would be considered acceptable. Due to a housing boom in the town, population growth of 5 percent is expected and this will translate into increased property values and sales tax. Inflation in the cost of supplies is expected to be 4 percent and, if possible, employees will be given 5 percent salary increases.

Prepare a Budget Calendar

The budget process can take from 3 to 6 months, or even longer. To ensure that everything is done efficiently, Millbridge prepares a budget calendar (see [Exhibit 2-3](#)).

July 1–5	Mayor, town manager, and other key officials meet to develop budget guidelines.
July 10	Department heads receive budget guidelines and forms.
August 31	Department budget requests must be submitted to town manager.
September 10–15	Meetings are held between mayor, town manager, and department heads to discuss individual department budget requests.
September 16–30	Department heads revise and resubmit budget requests.
October 15	Town budget is presented to town council.
October 15–31	Town council holds meetings to discuss budget.
October 31	Town council proposes adjustments to the budget.
November 1–15	Budget is revised and printed.
November 15	Budget is mailed to residents.
December 1–15	Public hearings on the budget are held.
December 16	Town council votes on budget.
January 1	New budget year begins.

Exhibit 2-3

Prepare and Distribute Budget Instructions

As we can see from [Exhibit 2-3](#), the budget committee meets to set guidelines from July 1 to 5. These guidelines are distributed to department heads on July 10, along with specific instructions for completing the budget. The materials provided should give each department head information about their current year budget, their actual expenditures to date, and projected expenditures through

the end of the year. Additionally, it should provide guidance regarding anything that would impact the departments, but of which the department heads might be unaware. For example, the school superintendent should be informed if new housing construction will likely affect the number of students in the school system. The same housing construction and resulting expansion of the town population might also impact the service demands on police, fire, ambulance, and public works. Each department must be informed for their budgets to reflect the resources needed to maintain the desired level of services.

Prepare Revenue Estimates

The money available to the town for the coming year will consist of its revenues generated for the year as well as any surplus carried over from the previous year. Therefore, the finance department of the town, working with each department manager, should estimate any surpluses that will likely exist at the end of the current year. In [Exhibit 2-4](#) we can see that total projected 2017 revenues of \$14,757,133 are about \$53,000 above budgeted revenues of \$14,704,150. However, any changes in expenses from the budget would also have to be considered before knowing if Millbridge expects to have a surplus at the end of the current year.

Department	2016	2017	Jan.-June		July-Dec.	Total 2017	2018
	Actual	Budget	Actual	Projected	Projected		
General Government							
Property Tax	\$ 6,344,928	\$ 6,747,196	\$3,373,598	\$3,373,598	\$ 6,747,196	\$ 7,297,093	
Sales Tax	253,797	269,888	127,387	173,920	301,307	325,864	
Education	4,856,028	5,163,900	2,581,950	2,581,950	5,163,900	5,318,817	
Public Safety	1,198,855	1,274,862	601,735	702,351	1,304,086	1,343,209	
Public Works	0	0	0	0	0	0	
Health and Sanitation	355,920	378,485	178,645	193,028	371,673	382,823	
Recreation	529,541	405,344	148,523	264,333	412,856	589,834	
Water	294,305	312,964	147,719	159,612	307,331	316,551	
Sewer	142,478	151,511	71,513	77,271	148,784	153,247	
Total	\$13,975,852	\$14,704,150	\$ 7,231,070	\$ 7,526,063	\$14,757,133	\$15,727,438	

Exhibit 2-4

Line items may not precisely sum due to rounding.

The next step is to determine revenues for the coming year. For each department, we first attempt to determine what current year results will be. Typically, a budget worksheet would provide the information shown in [Exhibit 2-4](#). The first numerical column in this table shows the actual results for the entire year prior to the current year. Next, the budget for the current fiscal year 2017 is shown. From the first two columns we can see the expected changes from last year to the current year. That information may be helpful in planning the changes from the current year to the coming year. Next, we see the actual revenues for the current year to date. Assume that Millbridge's fiscal year is identical to the calendar year. Since this information is provided to Millbridge department managers in July, only 6 months' worth of actual data are provided. A projection must then be shown for the remaining months of the current year as well as for the entire current year.

This projection requires care. One cannot just assume that the second half of the year will be like the first half. In [Exhibit 2-4](#), we see that property tax revenues for general government and education revenues are expected to split evenly between the two halves of the year. By contrast, sales tax is not. The total projected sales tax for 2017 is above the budget for the year, possibly indicating that by the time the 2018 budget was being prepared, the expectations were that the 2017 Christmas sales season was going to be stronger than had been anticipated a year earlier.

The managers should employ forecasting approaches (see [Chapter 3](#) for a discussion of forecasting) to estimate their likely revenues for the coming year. The budget guidelines for Millbridge have also provided the town's managers with some information. Specifically, tax rates are expected to increase by 3 percent, and population to grow by 5 percent. That population growth is expected to impact both property and sales taxes. Managers considered those factors when preparing the 2018 budget ([Exhibit 2-4](#)).

Additionally, individual managers may be aware of specific reasons why their revenues might differ for the coming year. For example, suppose that the town's pool was closed during the current year for major renovations. This would adversely impact the revenues of the recreation department. Notice that the 2017 budget for recreation revenues was down from the 2016 actual result in anticipation of the renovations. Next year the pool will be open, and with the improvements it will likely attract more members than ever before. The head of Millbridge's Recreation Department has taken that revenue growth into account in preparing the budget for the coming year.

Some departments may not have any direct revenue. For example, the Public Works Department may be funded by the general revenues of the town. In such instances, its budget will not include a revenue component.

In [Exhibit 2-4](#), the revenue increases that are projected are largely the result of an increasing tax base due to construction and an assumption that all tax rates will be increased by 3 percent. At this point the budget has not been approved, and tax rate increases that are ultimately approved may be greater or smaller than that amount, requiring adjustments to the revenue budget. According to the timetable in [Exhibit 2-3](#), the revenue budgets would have to be submitted by August 31.

Prepare Departmental (or Program) Expenditure Requests

Each department must prepare a detailed listing of the items that it believes it needs to fund for the coming year. Often the requests of all departments, when combined, will exceed revenues. At that point either revenues will have to be raised (by actions such as tax increases) or negotiations will take place with departments to reduce their expenditure levels.

Ives, Razek, and Hosch suggest that to prepare the expenditure budget one should take seven steps. First, one should ascertain the expenditures for the last year and project what they will be for the coming year. Second, in order to arrive at a “stand-still” level of spending, it is necessary to incorporate inflation and cost of living, and to allow for uncontrollable factors. Third, changes have to be accounted for by determining which new activities, if any, will be undertaken, as well as expansion, contraction, or discontinuance of any current activities. Fourth, the amount to be spent must be adjusted for the changes identified in step 3. Fifth, justifications must be prepared for all changes identified in step 3. These justifications should account for the impact of both undertaking each change and not undertaking each change. The sixth step is to develop a worksheet for the various types of expenditures. These worksheets will need to be tailored for each type of expenditure, but in all cases should include information in detail for the previous year, current year, and projected year being budgeted. Finally, the individual worksheets should be summarized.¹²

¹² Ibid., p. 81.

Generally, departmental expenditure budgets are divided into budgets for personnel, known as personal or personnel services (PS), other than personal services (OTPS), and capital budgets. Based on the timetable in [Exhibit 2-3](#), all of the expenditure budget requests would have to be submitted by August 31.

Personal Services

The personnel budget lists all of the categories of employees, the number of paid hours expected for the category, the pay rate, and the total pay. Frequently, the document will include not only the budget request for the coming year, but also the actual value for the prior year, and the projected spending for the current year. See [Exhibit 2-5](#) for an example of the Millbridge Recreation Department personnel budget for the 2018 year. A similar budget would be required for each department. Millbridge assumes that a full-time worker will be paid for 40 hours a week for 52 weeks a year. Therefore, the director of the Recreation Department, who is a full-time year-round employee, will be paid for 2,080 hours. The three manager positions cover only the four summer months, so they are budgeted for 693 paid hours each year. The lifeguard and maintenance hours dropped during 2017, when the town pool was being renovated. Both figures are expected to increase in 2018, once the renovation is complete.

Position Code	Position Title	2016 Actual			2017 Estimated			2018 Budget		
		Hours	Rate	Amount	Hours	Rate	Amount	Hours	Rate	Amount
1001	Director	2,080	\$ 40.10	\$ 83,408.00	2,080	\$ 41.30	\$ 85,904.00	2,080	\$ 43.37	\$ 90,209.60
1002	Pool Manager	693	20.50	14,206.50	693	21.12	14,636.16	693	22.17	15,363.81
1003	Golf Course Manager	693	18.40	12,751.20	693	18.95	13,132.35	693	19.90	13,790.70
	Tennis Club Manager	693	18.40	12,751.20	693	18.95	13,132.35	693	19.90	13,790.70
1010	Lifeguards	6,240	12.00	74,880.00	4,160	12.36	51,417.60	6,411	12.98	83,214.78
1020	Maintenance Workers	10,400	10.25	106,600.00	9,360	10.56	98,841.60	10,574	11.09	117,265.66
1030	Clerical	4,160	14.75	61,360.00	4,160	15.19	63,190.40	4,160	15.95	66,352.00
		<u>24,952</u>		<u>\$365,956.00</u>	<u>21,839</u>		<u>\$340,254.46</u>	<u>25,304</u>		<u>\$399,987.25</u>

Exhibit 2-5

Line items may not precisely sum due to rounding.

The budget for 2018 includes raises of 5 percent, in accordance with the budget guidelines provided to each manager, but does not include fringe benefit costs, which would often be added directly by the government’s finance department when the individual department budgets are combined to get the overall costs of the governmental body. Fringe benefits are usually calculated as a percentage of wages. Fringes include payments into the Social Security system (FICA), healthcare benefits, retirement plan payments, and a variety of other costs. The fringes are not determined employee by employee. Rather, an average rate is used for a large segment of employees. A typical rate might be around 30 percent of wages in a not-for-profit or health organization, and in

excess of 50 percent in government. Fringes can have a dramatic impact on any organization's spending. For example, one of the largest components of the overall fringe rate is the cost of employee health insurance. If health insurance costs increase more than expected, the fringe benefit rate can easily increase at least several percent, creating a large budget imbalance for the organization.

Many government bodies adopt personnel classification systems that list the various types of positions that exist and establish a pay grade for each. Individual pay grades often have "steps," allowing employees to move up in pay over time, even if they are not promoted to a new position. In a given year an employee may move up a step to reflect experience and longevity, and also receive a general salary increase that is applied across the board to all grades and steps. Once individuals have reached the top step for their grade, they must change to a different position at a higher grade or else receive only general salary increases each year.

Some of the benefits of a classification system are a greater degree of uniformity in pay for positions requiring similar skills. They also allow for systematic and consistent consideration of employee experience and longevity. Also, if budgeted positions are vacant when the budget is prepared, or new positions are being added in the coming year's budget, the budget can still be prepared with some degree of certainty about expenditures, because the classification system dictates the wages that will be earned when the positions are filled. Some critics are concerned, however, that when the public is told that raises are going to be 5 percent for government employees for the coming year, they may not be aware that many employees receive substantially bigger raises than 5 percent, when their step increases are considered.

Other Than Personal Services

The other major part of the operating budget for departments is referred to as the other than personal services (OTPS) budget. This would include a variety of different types of expenses such as office supplies, subscriptions, and copying costs. Again, the actual budget form would typically include information about the prior and current years as well as the projected budget request for the coming year. In making their budget projections for the coming year, managers must carefully determine what most influences the amount that must be spent on each item. For example, office supply costs might vary based solely on inflation. However, the amount spent on the supply items to test the composition and safety of the pool water might vary most with the number of hours the pool will be open (assuming that the water is tested once an hour during all hours of operation). If the renovated pool will be open more hours, then we must anticipate the cost of additional supplies to test the water.

Some organizations budget for OTPS costs using a formula to simplify budget calculations. For example, a government may have found that historically, the amount spent on supplies can be related to the number of workers. To budget supply costs for the future, one would first determine the increase or decrease in the number of workers. Then one could estimate the change in supply cost due to inflation. Suppose that an agency spent \$80,000 on supplies last year and expects a 2 percent increase in manpower and a 3 percent increase in the price of supplies. The budget for the coming year would increase to \$81,600 to cover the manpower increase ($\$80,000 + [2\% \times \$80,000] = \$81,600$) and then to \$84,048 to cover the price increase ($\$81,600 + [3\% \times \$81,600] = \$84,048$). This is a much easier approach than trying to figure out exactly how many pens, pads, and paper clips will be needed.

Similar rules of thumb can be used in budgeting for other OTPS costs. For example, when planning on the purchase of blacktop for pothole repair, the department of transportation might develop a formula based on tons of blacktop needed in a typical year per mile of two-lane road that must be maintained. That could be adjusted for roads that have more than two lanes.

Capital Budgets

Earlier in the chapter capital budgets were discussed, and it was explained that a separate capital budget is generally prepared. We will assume that Millbridge is not planning any capital expenditures for the coming year. Capital budget issues are discussed further in [Chapter 5](#).

Consolidate Departmental Expenditure Requests and Revenue Estimates

Once the revenue estimates and expenditure requests have been prepared, all of the elements from all of the departments can be consolidated so that the initial projected surplus or deficit can be calculated. Based on the timetable presented in [Exhibit 2-3](#), this consolidation would take place during the first 10 days of September. We can see in [Exhibit 2-6](#) that the general revenues of Millbridge are expected to be substantially more than the amount needed to cover General Administrative costs. Also, the school system is budgeted to just cover its costs. However, a number of departments are projecting deficits. Public Works, which has no revenues of its own, is projecting the largest deficit amount. Public Safety is another department that requires large amounts of support from the general revenues of the town. On the other hand, the Recreation, Water, and Sewer departments have all submitted budget requests that project surpluses.

	Projected Revenues	Projected Expenditures	Projected Net
General Revenues			
Property Taxes	\$ 7,297,093		
Sales Tax	<u>325,864</u>		\$ 7,622,957
General Administration			
PS		\$ 3,104,095	
OTPS		<u>1,076,523</u>	(4,180,618)
Education			
School Taxes	5,318,817		
PS		4,295,403	
OTPS		<u>1,023,414</u>	0
Public Safety			
Fines and License Revenue	1,343,209		
PS		2,357,349	
OTPS		<u>423,520</u>	(1,437,660)
Public Works			
Revenue	0		
PS		2,139,542	
OTPS		<u>924,008</u>	(3,063,550)
Health and Sanitation			
Fee Revenue	382,823		
PS		295,468	
OTPS		<u>98,463</u>	(11,108)
Recreation			
Fee Revenues	589,834		
PS		399,997	
OTPS		<u>180,549</u>	9,298
Water			
Usage Charges	316,551		
PS		228,435	
OTPS		<u>73,058</u>	15,058
Sewer			
Usage Charges	153,247		
PS		84,375	
OTPS		<u>42,058</u>	26,814
Total			<u>(1,018,809)</u>

Exhibit 2-6

Line items may not precisely sum due to rounding.

The mayor, town manager, and other key top-level executives of Millbridge would review the consolidated budget from September 10 to September 15. Overall the consolidated budget requests result in a projected deficit of over \$1 million. If the town has a requirement to show a break-even or surplus budget, then the draft budget in [Exhibit 2-6](#) will be unacceptable. It will be necessary to either increase tax rates further, find other revenues, or trim expenditures. According to the budget timetable in [Exhibit 2-3](#), department heads will revise budgets during the last half of September so that the finalized budget can be submitted to the town council on October 15.

Prepare the Budget Document

Once the budget has been changed (which may take a number of rounds back and forth), and the chief executive officer (in the case of Millbridge, the mayor and the town manager) has decided that the budget is acceptable, a formal budget document is prepared. This document will include a message to the reader addressing the financial situation of the government and discussing what the budget tries to accomplish. New programs will be discussed, as will significant changes in revenues or expenditures. The budgeted revenues and expenditures are shown along with detailed supporting schedules allowing the reader to better understand what the summary numbers represent. Justifications will typically also be provided so that the reader understands the negative consequences of eliminating any of the elements of the budget. This does not mean that the budget must be adopted as submitted, but rather that the reader should understand the implications of various types of changes.

Present the Budget Document to the Legislative Body

Once prepared, the budget document is sent to the legislative body for review and adoption. In the case of Millbridge, the budget is presented to the town council on October 15. For the next 2 weeks, the council holds meetings to discuss the budget. The council members may accept the budget as proposed or they may adjust it. If adjustments are made, the budget must be modified and then printed, and in the case of Millbridge, mailed to all residents for their review. This is followed by public hearings on the budget before the final vote by the Town Council. Public hearings are common practice by governments, although not universal. The timing of the public hearings will vary as well. They may come at an earlier point than they do in this example. The budget is adopted by passage of an appropriation ordinance or act, which establishes the maximum spending by the government body for the

coming year. The approved Millbridge budget, as revised by department managers and by the Town Council, appears in [Exhibit 2-7](#).

	Projected Revenues	Projected Expenditures	Projected Net
General Revenues			
Property Taxes	\$ 7,671,435		
Sales Tax	<u>325,864</u>		<u>\$ 7,997,299</u>
General Administration			
PS		\$ 3,001,435	
OTPS		<u>983,564</u>	<u>(3,984,999)</u>
Education			
School Taxes	5,318,817		
PS		4,295,403	
OTPS		<u>1,023,414</u>	<u>0</u>
Public Safety			
Fines and License Revenue	1,343,209		
PS		2,139,743	
OTPS		<u>388,426</u>	<u>(1,184,960)</u>
Public Works			
Revenue	0		
PS		1,983,045	
OTPS		<u>884,356</u>	<u>(2,867,401)</u>
Health and Sanitation			
Fee Revenue	382,823		
PS		295,468	
OTPS		<u>98,463</u>	<u>(11,108)</u>
Recreation			
Fee Revenues	589,834		
PS		399,987	
OTPS		<u>180,549</u>	<u>9,298</u>
Water			
Usage Charges	316,551		
PS		228,435	
OTPS		<u>73,058</u>	<u>15,058</u>
Sewer			
Usage Charges	153,247		
PS		84,375	
OTPS		<u>42,058</u>	<u>26,814</u>
Total			<u>0</u>

Exhibit 2-7

Line items may not precisely sum due to rounding.

Determine the Property Tax (Millage) Rate

Once the budget has been passed, the legislative body must enact legislation to provide revenues in support of the budget. Some revenues are recurring and do not require any annual action on the part of the government. For example, Millbridge might have a sales tax that continues at a set rate unless specifically changed by the government. Similarly, rates are established for parking tickets, licenses, and other sources of revenue. However, for many local governments, one of the primary sources of revenue, the property tax, is adjusted each year.

This approach is not universal. In some localities, the property tax is a flat percentage of assessed property value, and that percentage does not change from year to year. As assessed values change, the revenues from the tax will change correspondingly. That does not require any action on the part of the legislature each year. However, it also substantially limits the ability of the local government to control its revenues. As a result, expenditures must be matched to available revenues. In localities where the property tax rate is adjusted each year, the government has a greater ability to adjust revenues to meet expenditure needs.

Millbridge is assumed to have a property tax rate that is adjusted annually. Usually such rates go up from year to year, but that is not necessarily the case. For example, in an older community with a falling number of school-age children, the costs of the educational system may drop enough to actually allow property tax rates to decline. Also, if property values are rising rapidly, then the assessed property tax base may rise enough to offset the need for a tax increase. In the case of Millbridge, additional housing construction is increasing the tax base. Also, with the opening of a new direct rail connection to the nearby large city, house prices in the town have risen dramatically. The overall increase in the assessed value therefore offsets some of the additional costs of services that will be incurred due to the larger town population.

From [Exhibit 2-7](#), we see that the property taxes for general revenues will be \$7,671,435 and school taxes will be \$5,318,817 for Millbridge for the coming year. In the case of Millbridge, both of these property taxes are collected by the town, but the tax rates are

stated separately. Due to exemptions from tax for not-for-profit organizations, veterans, and the elderly, not all property in Millbridge is taxed. Also, based on past experience, Millbridge has found that a portion of billed taxes is never collected from property owners. They have found that adding 1 percent to the amount needed for the budget provides an appropriate cushion to cover those uncollectible amounts. Millbridge would take the following approach to set its tax rates:

Total Assessed Value of Property in Township	\$1,423,540,000
Property Exempt From Tax	<u>(180,243,000)</u>
Net Assessed Value of Property	<u>\$1,243,297,000</u>
Amount Needed for General Revenues (see Exhibit 2-7)	\$7,671,435
Allowance for Uncollectible Taxes (1%)	<u>76,714</u>
Required Levy for General Revenues	<u>\$ 7,748,149</u>
Amount Needed for Schools	\$ 5,318,817
Allowance for Uncollectible Taxes (1%)	<u>53,188</u>
Required Levy for Schools	<u>\$ 5,372,005</u>
Calculation of Tax Rate:	
Tax or Millage Rate	= $\frac{\text{Required Tax Levy}}{\text{Net Assessed Property Value}}$
Town General Revenues Property Tax	= $\frac{\$7,748,149}{\$1,243,297,000}$ = 0.00623
School Property Tax	= $\frac{\$5,372,005}{\$1,243,297,000}$ = 0.00432
Combined Property Tax Rate	= 0.00623 + 0.00432 = 0.01055

For a homeowner with a house appraised at \$300,000, the taxes would be calculated by multiplying the rate by the appraised value:

$$\$300,000 \times 0.00623 = \$1,869.00 \text{ Town Tax}$$

$$\$300,000 \times 0.00432 = \$1,296.00 \text{ School Tax}$$

$$\$300,000 \times 0.01055 = \$3,165.00 \text{ Total Property Tax}$$

These rates would normally be multiplied by \$1,000 to get the tax rate per \$1,000 of assessed value. For example, the overall property tax rate would be \$10.55 per \$1,000 of assessed value ($.01055 \times \$1,000$). The rates per thousand dollars of assessed valuation are called *mill rates*. New tax bills should be mailed out as early as possible to ensure that the government collects its property taxes on time.

In this example, Millbridge found it sufficient to just add 1 percent to the total tax bill to account for uncollectible taxes. Estimates of uncollectible taxes are often based on historical experience and estimated as a percentage of the tax bills sent to residents. Were that the case, Millbridge would calculate the amount of the required levy by dividing the total amount by one minus the uncollectible tax rate to calculate the required tax levy. In this example, \$7,671,435 needed for General revenues would be divided by $1 - .01 = .99$ resulting in a general revenue tax levy of \$7,748,924. That would add \$775 to the required general revenue tax levy, a small difference, but one that would grow with both the size of the budget and the proportion of the tax levy that went uncollected.

Summary

Having a plan is essential for getting the most out of any organization. Planning is accomplished by establishing the mission for the organization, defining a strategy to accomplish the mission, developing a long-range plan that defines the organization's objectives, and preparing specific detailed budgets that define the resources needed to accomplish its goals and objectives.

A budget is simply a plan. The plan shows how management expects to obtain and use resources to achieve the organization's objectives. It provides a detailed action plan. There is no magic to budgeting. It requires thought. Budgeting requires estimating all the likely receipts and all the likely payments. The process usually requires a number of preliminary drafts and revisions before a feasible plan is developed and accepted by all parties. Once approved, efforts must be made to try to keep as close to the plan as possible.

Although some budgeting is done on an ad hoc basis (special purpose budgets), most budgeting is done at regular intervals. The master budget incorporates and summarizes all of the budget elements for the coming year. The main elements of the master budget, sometimes called the comprehensive budget, are the operating budget and the financial budget. The operating budget presents a plan for revenues and expenses for the fiscal year. The financial budget includes a cash budget and a capital budget. While the cash budget focuses on cash flows for the fiscal year, the capital budget considers outlays for resources that will provide service for a number of years into the future.

In some organizations, support and revenues are acknowledged, or recognized, by the organization only when they are received in cash. In those cases, expenses are recognized only when they have been paid in cash. They are said to use a cash basis of accounting. By contrast, if revenue is recognized in the year service is provided, the organization is said to be using an accrual basis of accounting. Accrual accounting is more difficult than cash accounting, but it provides a matching of revenues and expenses, allowing the manager to get a better sense of the profitability of the organization's activities.

The process of developing budgets is highly politicized. To the extent possible, managers should try to use an objective budget process that best leads to the accomplishment of the organization's mission, goals, and objectives. All organizations seek to accomplish some end. Hospitals exist to provide healthcare services to their communities. Museums exist to provide the public with access to fine art. Governments exist to provide essential services. The budget becomes the tool to facilitate the accomplishment of these missions.

Key Terms from This Chapter

accrual basis, 40
allocation, 48
allotments, 48
appropriation, 47
audit, 49
bad debts, 40
budget, 27
budget guidance memorandum, 46
capital assets, 44
capital budget, 34
cash basis, 39
cash budget, 34
depreciation expense, 44
domain, 24
encumbrance, 48
expenditure, 35
expenses, 28
financial budget, 34
fiscal year, 34
goal congruence, 53
goal divergence, 53
long-range budget, 50
long-range plan, 25
master budget, 34
matching, 40
mill rate, 66
mission, 24
mission statement, 24
modified cash basis, 44
objects of expenditure, 47
operating budget, 34
outcomes, 26
output, 26
profit, 28
recognition, 39
responsibility center, 46
revenues, 28

special purpose budget, 28
strategic plan, 25
strategy, 25
support, 35
uncollectibles, 30

Questions for Discussion

- 2-1. How does planning help an organization?
- 2-2. What is the organization's mission and why is it important?
- 2-3. What is the purpose of the strategic plan?
- 2-4. What is the role of the long-range plan?
- 2-5. Why are budgets used?
- 2-6. Why would a special purpose budget be used?
- 2-7. What are the different types of budgets?
- 2-8. How are budgets useful for motivation?
- 2-9. How do individual goals differ from organizational goals?
- 2-10. Discuss the concept of goal congruence.
- 2-11. What are several incentive approaches? Are there weaknesses in any of the approaches?
- 2-12. What are some negative consequences of unrealistic budget expectations?
- 2-13. What are the elements of the budget cycle?
- 2-14. Distinguish between cash basis and accrual basis accounting.
- 2-15. What is a modified cash basis of accounting?
- 2-16. What is the purpose of a budget timeline?

Problems

2-17. Finn Fixes is a new charity that repairs donated cars for use by unemployed job seekers. Finn collects the cars from area junkyards. The first year Finn is in operation, jobs programs bought cars from the organization for \$60,000. They paid Finn \$45,000 during the year and owe \$15,000. Finn uses donated, unskilled labor and free garage space at a local high school. Its only cost is for parts. Total parts cost \$58,000 for the year. During that first year Finn paid its parts suppliers \$52,000. It owes its suppliers the balance.

1. What is the profit or loss to Finn Fixes on a cash basis?
2. What is the profit or loss to Finn Fixes on an accrual basis?
3. If Finn Fixes were to stop operating at the end of the first year but received payment from the jobs programs and paid its suppliers, what would its cash budget for the next year be?
4. How much cash would Finn Fixes have on hand at the end of the second year? How does that amount compare to its budgeted accrual basis profit or loss for the first year?
5. Which basis reflects the long-term stability of the organization?

2-18. Accrual budgets plan for expenses for supplies when _____, while cash budgets plan for the expense when _____. (choose from below)

1. they are ordered
2. they are delivered to the organization
3. they are paid for
4. they are consumed
5. It depends of the type of expense.

2-19. Answer the following questions about methods of accounting.

1. On the accrual basis of accounting, revenues and support are recognized when an organization _____ an amount that it is likely to collect, and it recognizes expenses when it _____ a resource.
2. Accrual-based expenses associated with capital assets are called _____.
3. Capital projects are evaluated on the _____ basis of accounting.
4. Loan repayments are resource outflows on the _____ basis of accounting, but not on the _____ basis of accounting.
5. Borrowed amounts are resource inflows on the _____ basis of accounting, but not on the _____ basis of accounting.

2-20. Monroe Outpatient Surgery Center (MOSC) is developing an operating budget for the month ending June 30, 2018. The Center expects to perform 80 surgical procedures during the month. MOSC's average charge (price) per surgical procedure is \$2,500. The cost of disposable surgical supplies is \$300 per surgical procedure. MOSC also contracts with orthopedic surgeons at a fee of \$1,500 per surgical procedure. The monthly salaries for the Center's receptionist, bookkeeper, and two surgical nurses total \$10,500. The Center's occupancy costs, which include space rental, insurance, and all utilities, are \$8,200 per month. Average monthly communication costs are \$1,200. Office and operating

room equipment was installed at a cost of \$240,000. The equipment is expected to have a 5-year life and has no salvage value. Prepare MOSC's operating budget for the month of June 2018.

2-21. Westchester City is constructing a new city hall. The building will cost \$40,000,000 and is estimated to have a useful life of 40 years. Based on the experience of other similar cities, and the best estimates of the city's engineers, Westchester's planners expect that at the end of 40 years the building will have to be torn down and rebuilt, so it is not expected to have any value at the end of 40 years. It will cost \$6,000,000 to acquire equipment for the new center. Equipment is assumed to last for 10 years. The city estimates that the equipment can be sold for 20 percent of its cost at the end of its useful life. If the city undertakes this project, what will the building and equipment expense be in the first year after the center is opened?

2-22. Children's Best Hope (CBH) provides day care services to low-income families. CBH bills the state for its services under a service contract. Billings for the first 4 months of 2017 are anticipated to be as follows:

January	February	March	April
\$220,000	\$200,000	\$240,000	\$230,000

CBH finds that it collects 25 percent of the amounts billed in the month of service with the balance collected in the month following service.

CBH is planning to acquire a new building as an additional site for its services in March 2017. The full \$250,000 purchase cost of the building will be financed with a mortgage loan. CBH anticipates a February 28, 2017, cash balance of \$26,000. CBH anticipates the following expenses and disbursements for the month of March 2017:

Payroll payments	\$170,000
Personnel expenses	\$160,000
Payments to suppliers	\$ 45,000
Supplies expense	\$ 48,000
Depreciation expense	\$ 12,000
Interest expense	\$ 6,000

Prepare an operating budget, cash budget, and capital budget for CBH for the month of March 2017.

2-23. Middleboro Township plans to order supplies every quarter of the year. It expects to receive the supplies in the quarter after they are ordered. It expects to use them the quarter after that and pay for them the quarter after that. For example, if it orders supplies in the first quarter of the year, it will receive them in the second quarter, use them in the third quarter, and pay for them in the fourth quarter. The township pays salaries in the quarter that the employees work.

The township earns its income tax revenues equally throughout the year. However, it receives substantially more cash in April, when tax returns are filed. It plans to borrow \$35,000 on a 20-year, 5 percent annual interest note on the first day of the fourth quarter. Interest will be paid once each year at the end of the third quarter.

The town prepares its operating budget following the unique rules of modified accrual accounting employed by governments. Under these rules expenses are recognized when the town receives goods or services and becomes legally obligated to pay for them. It does not matter if they have been used or not.

Also, cash inflows or proceeds from long-term loans are treated as if they were revenues. Using the information from the table below, prepare an operating budget and a cash budget for Middleboro Township for the fourth quarter only. Assume the town has \$300,000 in cash when the fourth quarter starts.

	Jan.-March	April-June	July-Sept.	Oct.-Dec.	Total
Supply Orders	\$300,000	\$360,000	\$ 300,000	\$330,000	\$1,390,000
Salaries	600,000	750,000	825,000	720,000	2,895,000
Income Tax Cash Receipts	600,000	600,000	1,200,000	600,000	3,000,000

2-24. Local Hospital (LH) has decided that it would like to send nurses to a local supermarket to provide a free health screening for interested supermarket customers. The screening will consist of measuring the individual's blood pressure and taking a drop of blood, which will immediately be tested for several critical indicators. The director of public relations at the hospital believes that 100 people will take advantage of the screening each day. The plan is to provide the screening every day for 1 week; thus a total of 700 screenings are expected. LH expects the supermarket to provide a \$1,000 grant to help defray the costs of the program (since it will likely draw more customers to the store). LH anticipates the following expenses:

Test equipment rental	\$500	For 1 week
Nurses	\$50/hr	A total of 10 nurse hours/day for 7 days
Blood tests	\$1	Per individual tested

Test equipment rental \$500 For 1 week

Nurses \$50/hr A total of 10 nurse hours/day for 7 days

Blood tests \$1 Per individual tested

Determine the special purpose budget for the program. Show revenues and expenses by line item, and show the expected profit or loss. If there is an expected loss, should LH necessarily abandon the project or are there other factors that must be considered?¹³

¹³ This problem and problems 2-25, 2-29, and 2-30 are adapted from problems written by Dwight Denison.

2-25. Roche City has two major sources of revenues, property tax and sales tax, which are billed according to the schedule at the top of the next page.

Traditionally, property tax revenues have been received in cash according to the following schedule:

40 percent in the first month following the billing date

20 percent in second month

10 percent in third month

10 percent in fourth month

8 percent in fifth month

5 percent in sixth month

7 percent are not collected

The state collects the sales tax revenues and will transfer cash to the city on March 1, 2018, for the sales tax revenues earned in the last quarter of 2017.

Roche City is not planning any capital asset purchases during the next 3 months. Monthly cash disbursements for general operations are \$3,700,000. Beginning cash balance for January 1, 2018, is \$500,000. Roche City will borrow to ensure that the ending cash balance each month is at least \$100,000.

2017 (\$)	July	August	Sept.	Oct.	Nov.	Dec.
Property Tax	—	—	45,000,000	—	—	—
Sales Tax	50,000	55,000	62,000	50,000	68,000	112,000

Use this information to prepare a monthly cash budget for Roche City for January, February, and March of 2018.

2-26. Because of the downturn in the state's economy, the mayor of Stratton thinks that uncollectible taxes are likely to increase from 5 percent of total tax bills to 10 percent in the coming fiscal year. The total value of all of the properties in the town of Stratton is \$300,000,000 and the approved budget is \$3,500,000. Properties are assessed at their full value. A total of \$5,000,000 worth of properties is exempt from taxation. To minimize tax increases in the coming fiscal year, the mayor and town council have decided to take \$500,000 out of the town's rainy-day fund (a reserve used to meet short-term budget shortfalls) and apply that money toward the coming year's budget. How much does the town have to charge per \$1,000 of assessed valuation to raise the needed \$3.5 million? Show your calculations. You may round your answer to the nearest penny. Be sure to check your answer by multiplying the amount you propose billing by the expected tax-collections rate to show that the amount you expect to collect is enough to meet Stratton's fiscal needs.

2-27. Select from the choices below to answer the following questions:

1. increase
 2. decrease
 3. stay the same
 4. cannot tell from the information given
1. If the amount of uncollectible school taxes increases, the mill rate that citizens must pay on their school taxes will _____.
 2. If the value of taxable properties rises from \$300 million to \$310 million and the amount that the town needs to raise does not change, the mill rate that the town charges its citizens will _____.
 3. If the value of tax-exempt properties decreased from \$100,000,000 to \$75,000,000 and the amount that the town needs to raise does not change, the mill rate that the town charges its

citizens will_____.

2-28. River County is planning several capital acquisitions for the coming year. These include the purchase of two new garbage trucks at \$150,000 each, one new bulldozer at \$240,000, three new riding lawn mowers at \$16,000 each, and construction of an activity center in the park for \$650,000. The expected lifetime of the various capital items is 10 years for garbage trucks, 8 years for the bulldozer, 5 years for the lawn mowers, and 40 years for the activity center. Prepare a capital budget for the items to be acquired, showing their estimated lifetimes and their per unit and total costs.

2-29. Zoo Extravaganza is a not-for-profit organization. Zoo Extravaganza took over the county zoo, with the provision that the county would provide a subsidy for its operations. The county provides \$7,000 per month. The rest of the zoo's revenues comes from admission charges, which are as follows: \$20 for a family admission (the average family has four people), \$3 per child in school groups, \$5 per child ticket when not in a school group, and \$8 per adult ticket.

Each ticket entitles the visitor to ride on the "Train Around the Zoo." However, only one-third of all visitors actually ride the train.

The zoo expects the following number of visitors per month:

Visitor Type	Monthly Number of Admission Tickets
Adult	800
Child	950
Schoolchild	1,000
Families	300

The zoo has the following monthly expenses in four general areas:

Administration	\$12,000
Zoo staff	\$10,000
Train rides	\$1 per person who rides the train
Maintenance	\$1 per visitor

Determine the operating budget per month. Show revenues and expenses by line item, and show the expected profit or loss.

2-30. Draft a quarterly cash budget for Zoo Extravaganza (ZE) for the first two quarters of the coming year. Use just the information in this problem.

1. Interest is paid on the last day of the year and can be ignored in quarters 1 and 2.
2. Annual expenses are \$220,000 for administration and ZE staff (other than maintenance workers). Those costs are paid evenly throughout the year.
3. Assume the cash balance on January 1 is \$5,000 and ZE policy is to have at least a \$5,000 ending cash balance each quarter.
4. Train expenses are incurred in the same seasonal pattern as admissions and are paid with a one-quarter lag. The budgeted annual expense for this year is \$20,000. Last year the annual cost for the train was \$18,000.
5. The cost of the maintenance crew is 20 percent of admissions revenue each quarter. Maintenance workers are paid in the quarter in which they work.

6. The total annual county grant of \$84,000 is received on the last day of the fourth quarter of the year.
7. ZE collects all admissions in cash at the time of admission. Total admissions revenues are \$180,000 for the year. The seasonal pattern of admissions is shown in the following table.

	Quarter			
	1	2	3	4
Admissions by Quarter	30%	25%	15%	30%

- 2-31. Prisons R Us (PRU) delivers counseling services to prison inmates for the state on a fee-for-service basis. It is preparing its cash budget for the month of March. Its operating budget reflects accrued fee-for-service revenues of \$12,500, \$13,000, and \$14,000, respectively, for the months of January, February, and March. PRU bills the state electronically at the end of each month for the services that it delivers to its fee-for-service clients. PRU collects 60 percent of its fee-for-service billings in the month following the delivery of service, with the remainder being collected in the second month after the delivery of services. What are PRU's total cash receipts from the state for the month of March?
- 2-32. You are the executive director of a community service agency in the inner city. Your operation is funded through a combination of cash contributions, federal government grants, and city contracts. Your revenue budget for the coming fiscal year is shown at the top of the next page.

Revenue Budget for Coming Fiscal Year				
Source of Revenue	Q1	Q2	Q3	Q4
Contributions	\$ 25,000	\$ 35,000	\$ 35,000	\$ 50,000
Federal Grants	\$250,000	\$375,000	\$350,000	\$250,000
City Contracts	\$240,000	\$300,000	\$320,000	\$360,000
Total	\$515,000	\$710,000	\$705,000	\$660,000

- You know from past experience that not all of your revenue and support is collected when you earn it. Cash contributions are collected in the quarter they are pledged. Federal government grants are collected one quarter after you send the granting agency a bill. The city pays 25 percent of what it owes you one quarter after you send in the bill. An additional 25 percent is collected from the city in two quarters and the remaining 50 percent takes three quarters to collect. Starting with the revenue budget above, calculate the amount you can expect to collect in the fourth quarter of coming fiscal year.
- 2-33. Re:Plate is a not-for-profit grocery store that buys unused edible food from restaurants and for-profit grocery stores and sells the food at below-market prices. It also offers cooking classes for a fee throughout the year. Its fiscal year is January 1–December 31. In FY 2017:

1. Re:Plate will begin the year with \$21,000 in cash.
2. Re:Plate plans to buy 1,000,000 pounds of food at \$1.25 per pound in cash throughout the year. (Use "Food" as the line item in the budgets.)
3. Re:Plate expects to sell all of its 1,000,000 pounds of food in inventory it acquires throughout the year, at an average price of \$1.65 per pound. (Use "Grocery sales" as the line item in the budgets.)
4. Re:Plate plans to offer three cooking classes per week throughout the year. Each class will have 10 participants, each of whom will pay a \$25 fee. (Use "Class fees" as the line item in the budgets.)
5. Re:Plate will pay \$10,000 per month in rent, up from \$9,500 per month in FY 2016. Rent will be

\$10,500 per month in FY 2018 Re:Plate pays rent one month in advance.

6. Re:Plate's total payroll will be \$210,000 in salaries, up from \$180,000 in FY 2016. In addition to salary, Re:Plate's employees are paid benefits valued at 40% of their salaries. The benefits rate will be unchanged from FY 2016. Employees are paid monthly with a 1-month lag. (Use "Salaries and benefits" as the line item in the budgets.)
 7. Re:Plate will take out a \$40,000 loan July 1. The loan will have an annual interest rate of 2%. An interest payment and a principal repayment of \$10,000 will be due December 31.
 8. Re:Plate will use the loan to purchase a new forklift that will have a useful life of 10 years and a salvage value of \$5,000. Re:Plate also owns computer equipment it purchased in 2015 for \$50,000; the equipment has no salvage value and a useful life of 5 years. Prepare an annual operating budget and a semiannual cash budget (showing the first half of the year, the second half of the year, and annual amounts in three side-by-side columns) for Re:Plate for FY 2017. Recall that interest expense and depreciation expense are further discussed in [Chapters 5](#) and [10](#), respectively.
- 2-34. The county has an initiative for students in underperforming schools. To get funding, schools provide each student with eight 2-hour group tutoring sessions each month. Also, parents must agree to pay \$10 per month for each child they register for the program. The county will pay each school \$200 per enrolled child, per month.

Schools must provide one tutor for every five students enrolled in the program, at a cost of \$50 per hour at a teacher's home school or \$60 per hour if the teacher has to commute from another school in the system.

Schools that participate also need to acquire a site license for a self-study computer program, at a cost of \$2,400 per year regardless of the number of students. Schools also incur a cost of \$1.50 per child, per tutoring session, for workbooks that are tied to the self-study program.

Generally, the county takes 1 month to pay bills submitted by schools. Parents pay all tuition bills at the beginning of each month. Participating teachers are paid for all after-school programs at the end of each month. The full cost of the software must be paid by the end of the first month of the program.

Workbooks are paid for in the month they are used.

You are the budget manager for Typical County School (TCS). Five teachers in your school have agreed to be tutors. Since you expect to need 15 tutors by the end of the year, you will also use 10 teachers from other schools, as needed. Your calculations indicate an expected 25 students in the program during the first month it is offered, 41 in the second month, and 52 in the third month. As budget manager:

1. Prepare operating budgets for each of the first 3 months of the program.
2. Summarize the three monthly budgets into a quarterly operating budget.
3. Starting from a zero cash balance, prepare a cash budget for the first quarter (3 months) of the program. You do not have to prepare monthly cash budgets.

2-35. Marquoya College¹⁴

¹⁴ This problem was written by Ken Milani and Jim Gaertner. Used with permission.

Part I

Marquoya College (MC) is a medium-sized private school located in the Midwest. In the past, MC administrators established a budget for the next academic year by adding a specific percentage (e.g., 6 percent, 8 percent) to the tuition revenue and operating expenses. This year MC has asked for your assistance in developing its budget for the next academic year. You are supplied with the following data for the current year.

Enrollment	4,300 students
Tuition	\$3,300/year
Full-time faculty	250 (72% tenured)
Fees	\$280/year
Average faculty salary	\$36,000/year
Full tuition-only scholarships	400 students

For the next academic year, enrollment is expected to increase by 300 students, with each student taking an average of 32 credit hours. Tuition will increase by \$100/year.

Prepare a schedule computing the next academic year's tuition and fee revenue budget. Explicitly show the effect of scholarships.

Part II

The additional students will require MC to hire 20 adjunct faculty members. Each adjunct will teach 18 credit hours and will be paid at the rate of \$750/credit hour. Full-time faculty members will receive a 5 percent pay increase. Additional merit increases to be awarded to individual faculty members will amount to \$280,000.

Prepare a schedule computing the next academic year's budget for faculty salaries. The payroll budget should reflect payroll taxes using a rate of 10 percent.

Part III

The current budget is \$1,200,000 for operation and maintenance of plant and equipment, including \$190,000 for salaries and wages. Experience of the past 3 months suggests that the current budget is realistic. However, expected increases for next year are \$10,000 in salaries and \$50,000 in other expenditures for maintenance of plant and equipment.

The IRS has determined that MC has unrelated business income. In the year just past, MC paid \$48,000 of federal income taxes and a penalty of \$2,000. MC's administrators feel that proper allocation of costs and timely payments to the IRS will result in a total tax liability of \$36,000.

Estimates for other costs include:

Mortgage payments	\$ 264,000 (reducing principal by \$100,000)
Administrative and general	1,440,000 (including salaries of \$1,200,000)
Library	1,800,000 (including salaries of \$1,000,000)
Health and recreation	750,000 (including salaries of \$300,000)
Athletics	320,000 (including salaries of \$60,000)
Insurance and retirement benefits	548,000
Capital improvements	1,300,000

Where applicable, use a payroll tax rate of 10 percent.

Anticipated revenues, other than tuition for the next academic year, are as follows:

Endowment receipts (e.g., interest, dividends)	\$ 514,000
Net income from auxiliary services	\$ 538,000
Athletics	\$ 1,580,000

MC's remaining source of revenue is an annual alumni support campaign. Last year, the alums were very generous (MC's basketball team was ranked high throughout the cage campaign) and contributed over \$600,000.

MC borrowed \$200,000 from the Golden Dome Bank for summer operations on June 15. The principal plus interest (at an annual rate of 12%) is to be paid on September 15.

On the basis of the tuition and fee revenue budget and faculty salaries budget computed in parts I and II, prepare a schedule computing the amount that must be raised during the annual support campaign to cover the expenditures budgeted.

Part IV

Using anticipated alumni support of \$750,000, prepare a cash budget for the first quarter (September, October, November) of the MC fiscal year. (Round all calculations to the nearest hundred dollars.) The following patterns of cash flows are anticipated:

MC must maintain a cash balance of \$3,000. Financing can be arranged at the Golden Dome Bank at a rate of 8 percent. Borrowing occurs in \$1,000 increments. All loans are repaid as soon as possible, but a minimum of 1 month's interest is charged. Estimated cash on September 1 is \$3,700.

	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.- Aug.
Tuition revenue	20%	—	15%	5%	30%	15%	15%
Fee revenue	50%	—	—	—	50%	—	—
Endowment income	25%	—	—	25%	—	—	50%
Net income from auxiliary services	10%	10%	10%	10%	10%	10%	40%
Athletic revenue	10%	—	50%	10%	10%	5%	15%
Alumni support	2%	2%	12%	25%	6%	3%	50%
Faculty salaries	10%	10%	10%	10%	10%	10%	40%
Operation and maintenance of plant and equipment	8%	8%	10%	10%	10%	8%	48%
Insurance and retirement	10%	10%	10%	10%	10%	10%	40%
Athletic expenditures	10%	5%	10%	10%	15%	10%	40%
Capital improvements	—	80%	—	10%	—	—	10%
Federal income tax	—	—	—	—	25%	25%	50%
All others	12 equal receipts/disbursements						

Note: Part II of this extended problem appears at the end of [Chapter 3](#).

Review chapter content and explore online resources at study.sagepub.com/finkler5e

Extended Problem (2-36) Denison Specialty Hospital—Part I

Denison Specialty Hospital is planning its master budget for the coming year. The budget will include operating, capital, cash, and flexible budgets. The hospital is noted for its three fine programs: oncology (cancer), cardiac (heart), and rhinoplasty (nose jobs).

Section A

The managers at Denison have been busy working. They have reviewed past records and considered changes in competition, the general economy, and overall medical trends. Using past charges and anticipated rates of medical inflation, they have also made a first attempt at setting their prices.

Based on a thorough review and discussion of these data, they have projected that next year they will have 240 patients. They expect 120 oncology patients, 80 cardiac patients, and 40 rhinoplasty patients.

The charge, or list price, for oncology patients will average \$50,000. Cardiac patients will be charged an average of \$40,000, and rhinoplasty, \$25,000 per patient. However, those charges often are not the actual amount ultimately received.

The amount the hospital receives depends on whether patients pay their own hospital bills or have healthcare insurance. Assume that private insurance companies pay the full charge or list price. However, Medicare and Medicaid have announced rates they will pay for the coming year as follows: oncology patients \$40,000, cardiac patients \$30,000, and rhinoplasty patients \$10,000. Self-pay patients are supposed to pay the full charge, but generally 25 percent of self-pay charges becomes a *bad debt*. Note that *bad debts are treated as an expense* in healthcare. They may not be shown as a reduction lowering revenues. The full charge for self-pay patients is shown as revenue, and then the uncollectible amount is shown as an expense. No payment for charity care is ever received, and *charity care is not shown as a revenue or expense*.

The payer mix is as follows:

	Private Insurance	Medicare/Medicaid	Self-Pay	Charity
Oncology	30%	50%	10%	10%
Cardiac	20%	60%	10%	10%
Rhinoplasty	10%	20%	60%	10%

Gift shop revenue is projected to be \$120,000 for the current year and is expected to remain the same. However, this revenue will increase or decline in proportion to changes in patient volume.

Denison Hospital has an endowment of \$1,000,000. It is invested as follows:

- \$500,000 in 6 percent U.S. Government Bonds that pay interest annually
- \$250,000 in AT&T stock, which pays a dividend of 8 percent annually
- \$250,000 in growth stocks that pay no dividend

Section A Requirements:

1. Calculate patient revenue on an accrual basis for the coming year. Subdivide revenue by program, and within each program subdivide it by type of payer.
2. Calculate endowment revenue on an accrual basis for the coming year.
3. Prepare a revenue budget on an accrual basis, including all sources of revenue discussed previously. The revenue budget does not have to show all of the detail from requirements 1 and 2, but should show each major source of revenue, such as patient services and endowment.

Section B

The hospital expects to employ workers in the following departments:

	Radiology	Nursing	Administration	Total
Managers	\$ 100,000	\$ 200,000	\$ 200,000	\$ 500,000
Staff	<u>1,900,000</u>	<u>4,200,000</u>	<u>300,000</u>	<u>6,400,000</u>
Total	<u>\$ 2,000,000</u>	<u>\$ 4,400,000</u>	<u>\$ 500,000</u>	<u>\$ 6,900,000</u>

Supplies are expected to be purchased throughout the year for the departments, as follows:

	Total
Radiology	\$ 360,000
Nursing	160,000
Administration	<u>20,000</u>
Total	<u>\$ 540,000</u>

Assume that *all* supply use varies with the number of patients.

Denison Hospital currently pays rent on its buildings and equipment of \$300,000 per year. Rent is expected to be unchanged next year. The rent is paid \$75,000 each quarter.

To better serve its patients, Denison would like to buy \$500,000 of new oncology equipment at the start of next year. It would be paid for immediately upon purchase. The equipment has a 5-year life and would be expected to be used up evenly over that lifetime. Although the capital budget would normally include justification for why the equipment is needed, it is sufficient for our purposes to know that the capital budget for Denison is \$500,000 and the equipment to be purchased has a 5-year useful life. It will have no value left at the end of the 5 years. Denison charges the cost of its capital acquisitions on a straight-line depreciation basis. That means that the cost is spread out over the useful life, with an equal share being charged as an expense, called depreciation expense, each year.

Section B Requirements:

1. Calculate expected bad debt expenses on an accrual basis for the coming year.
2. Calculate an expense budget on an accrual basis for the coming year. The expense budget does not require detailed information by program or department, but should show each type of expense such as salaries and supplies. Be sure to consider the impact of capital acquisitions on the expense budget.
3. Combine the revenue (Section A) and expense budgets to present an operating budget for the coming year.

Chapter 3 Additional Budgeting Concepts

Learning Objectives

The learning objectives of this chapter are to:

- define line items and responsibility centers, and distinguish between line-item and responsibility center budgeting;
- explore the issue of centralization versus decentralization in the budget process;
- examine the presentation of budget information categorized by program or function;
- define and discuss flexible budgeting;
- define and discuss performance budgeting;
- define and discuss zero-based budgeting;
- introduce forecasting and explain which forecasting techniques are useful when historical data are available and which are useful when such data are not available; and
- address additional budgeting issues related particularly to governments, specifically focusing on limitations on management actions, the role of budget reserves, and communicating the budget to the public.

The basic elements of budgeting are discussed in [Chapter 2](#). This chapter focuses on some additional elements of budgeting for governmental, healthcare, and not-for-profit organizations.

This chapter begins with a discussion of budget development using a line-item approach, as contrasted with a responsibility center approach. A *line-item expense* is a specific class or category of resource used by an organization. For example, salaries are a line item. By contrast, a responsibility center approach divides the budget into units for which individual managers are held accountable. A government might have a parks department with a manager who is responsible for the total amount spent on parks. The total budget for the government could be divided into line items that would indicate the total amount being spent on salaries, on supplies, and so on. Alternatively, it could be divided by responsibility center, indicating the total amount budgeted for parks, the amount for police, and so on. Or it could be divided by line item and responsibility center.

The chapter then considers the issue of centralization versus decentralization in the budget process. Different organizations have different philosophies as to how centralized budgeting should be.

Following that, the chapter moves on to a discussion of different ways of organizing and presenting budget information. In addition to reporting budget information by line item or responsibility unit, another alternative is to organize the budget by program. Program budgets focus on the costs and revenues of specific programs. For example, we could evaluate the town's new safety awareness program, which draws resources from both the police and fire departments. That program budget would include some elements from each of those two responsibility centers. Functional budgets represent yet another way to look at an organization, focusing on the main functions of the organization. For example, the police and fire department budgets could be combined in total to report on the public safety function of a government.

The chapter then moves to a discussion of a variety of budgeting techniques:

- Flexible budgeting takes into consideration the fact that the actual output level often differs from expectations. Managers must have some way of controlling operations in light of varying levels of activity.
- Performance budgeting is an approach designed to improve the focus on outcomes in the budget process.
- Zero-based budgeting is a technique that requires annual justification of all items in a budget, rather than just the incremental change.
- Forecasting focuses on how managers make predictions of expenses, revenues, and other items in the budget.

The chapter finishes with a discussion of some distinctive aspects of budgeting for governmental organizations.

Line-Item and Responsibility Center Budgets

Budgets are most often created to provide information by line item and/or by responsibility center. Line-item expenses represent specific individual types of expenses, such as wages or supplies. Responsibility centers are organizational subdivisions that a specific person is responsible for supervising.

For example, suppose that the Hospital for Ordinary Surgery (HOS) expects to spend \$100 million in the coming year. One way that the expense budget might be organized would be by line item, as follows:

Hospital for Ordinary Surgery Expense Budget for the Coming Fiscal Year	
Salaries	\$ 60,000,000
Supplies	25,000,000
Utilities	4,300,000
Rent	7,700,000
Interest	3,000,000
Total	<u>\$100,000,000</u>

This is referred to as a line-item budget. Managers need to know the amounts of money budgeted for salaries versus supplies, two of the line items in the budget. However, this budget is limited in its ability to help managers implement and control the plan. There are many managers in a hospital, each responsible for a different part of the organization. If the organization is to hold individual managers accountable for what happens in their areas, the managers must have specific budgets for their parts of the organization. Those parts of the organization are called responsibility centers.

For example, HOS might have a responsibility center expense budget that would appear as follows:

Hospital for Ordinary Surgery Expense Budget for the Coming Fiscal Year	
Radiology	\$ 13,000,000
Nursing	10,000,000
Pharmacy	5,000,000
Laboratory	7,000,000
Operating Room	50,000,000
Administration	15,000,000
Total	<u>\$100,000,000</u>

By preparing a budget for each responsibility center (department or cost center), managers know the amount they are authorized to spend. Then the organization can track how well the managers and units do in keeping to that spending level. However, providing a manager with only a total amount for a responsibility center makes it difficult to control spending. Combining line-item and responsibility center information provides managers with more information and a better ability to control spending (e.g., see [Table 3-1](#)).

Hospital for Ordinary Surgery Expense Budget for the Coming Fiscal Year							
	Radiology	Nursing	Pharmacy	Laboratory	Operating Room	Administration	Total
Salaries	\$ 3,700,000	\$ 8,000,000	\$1,300,000	\$4,000,000	\$32,000,000	\$11,000,000	\$ 60,000,000
Supplies	3,600,000	1,200,000	3,500,000	2,500,000	13,700,000	500,000	25,000,000
Utilities	3,400,000	100,000	100,000	200,000	400,000	100,000	4,300,000
Rent	2,300,000	700,000	100,000	300,000	3,900,000	400,000	7,700,000
Interest	0	0	0	0	0	3,000,000	3,000,000
Total	<u>\$13,000,000</u>	<u>\$10,000,000</u>	<u>\$5,000,000</u>	<u>\$7,000,000</u>	<u>\$50,000,000</u>	<u>\$15,000,000</u>	<u>\$100,000,000</u>

Table 3-1

Notice how the budget format in [Table 3-1](#) provides information on the budgeted spending for each responsibility unit and also provides detailed breakdowns of how much each responsibility unit will be

spending on each line item.

Centralization Versus Decentralization

An organization's budget process is often characterized by its degree of centralization or decentralization. When one imagines the development of a budget for an entire organization, the process may seem overwhelming. Developing detailed line-item budgets for individual responsibility centers breaks the budgeting process down into more manageable pieces. These budgets may be prepared primarily by the manager of the responsibility center or by higher levels of management.

Responsibility center budgets can be prepared in a centralized fashion by the organization's top management. In such an instance, the responsibility center managers are told the budgeted amount and are expected to achieve the budgeted result. This is sometimes referred to as a *top-down budget* (see [Figure 3-1](#)). It is often hard for responsibility center managers to achieve such top-down budget expectations because it is very difficult for top managers to be aware of all of the factors affecting spending in each responsibility unit. At the other extreme, responsibility center managers would create the budgets for their own centers and inform the top management of their spending plans for the coming year. This could be described as a *bottom-up budget* (see [Figure 3-2](#)). However, responsibility center managers are rarely knowledgeable about the overall limitations on financial resources available to the organization. Their bottom-up budgets may exceed such limitations.

Figure 3-1 Top-Down: Budgets are developed by top management and then disseminated to middle managers and line (first-level) managers for implementation.



Figure 3-2 Bottom-Up: Budgets are developed by the lowest level of management and passed up for review, negotiation, modification, and approval.



Some organizations tend to be more centralized in the budgeting process, while others are less centralized. Rarely, however, would one see either of the extreme situations described in the preceding paragraph. In fact, one can think of the process of top-down budget management and bottom-up budget development as being

complementary.

In general, all budgets will start with some input from top management. Broad policy goals are formulated by top executives, policy makers, and, in the case of government, political representatives. These goals should reflect public needs and preferences as well as the mission and strategy of the organization. Most organizations then incorporate their responsibility center managers into the process by asking unit or department heads to prepare detailed budgets, incorporating the broad objectives that top management has provided.

A bottom-up approach allows the individuals who are most involved with the day-to-day activities and specific aspects of the organization's operations to be involved in the planning process. This empowerment of employees often leads to better morale and better results. However, it requires top managers who are willing to accept some degree of decentralization. In very autocratic, centralized organizations, where top managers desire to retain high levels of control, a top-down budget is more likely to be employed.

In some cases, organizations have multiple goals that cut across departments. In such cases, top management may need to make resource allocation decisions. At other times, unit managers may initiate new proposals. They may see a need for something new that the organization does not currently do at all. For example, a mid-level manager at HOS might suggest conducting a blood-pressure screening of shoppers at local supermarkets. After proposing the concept, the manager may be given the responsibility of developing the special-purpose budget for the program.

Centralized budgeting and *decentralized budgeting* each have advantages and disadvantages. Top-down has a speed advantage. Decisions can be proposed, adopted, and implemented with a minimum of delay. In times of crisis, speed may be a critical element. The primary disadvantage is that it is much harder to get cooperation and commitment from the people at all levels of the organization to carry out the budget. Bottom-up budgeting is better for gaining consensus and support for the budget. However, it not only is time-consuming, but also creates the need for negotiation and compromise. It works better when times are stable than in times of crisis or significant change.

As noted, most organizations use neither top-down nor bottom-up budgeting exclusively. Hybrid approaches are much more common. Such approaches combine direction from top-level management with inputs from below. Ideally, the result is a budget that takes into account the overall organizational needs and expectations, and also incorporates the creativity and superior detailed knowledge that may exist at lower levels of the organization.

Program and Functional Budgets

Line-item and responsibility center are two common ways to classify budget costs, but they are not the only approaches. Budgeted costs can be divided by type of program or by functional area.

Program Budgets

Suppose that HOS specializes in three programs: oncology (cancer care), rhinoplasty (nose jobs), and cardiac surgery (heart operations). Budgets can be prepared that would show expected revenues and costs of each major program. This could be done for regular programs or for special projects or specific services. If HOS made budgets for different programs, it could prepare *program budgets* to evaluate each program's profitability and decide whether it can afford each program. For example, if rhinoplasty is mostly elective surgery and the program loses money, as shown in the following budgets, the hospital might use that budget information to decide to eliminate the program:

Hospital for Ordinary Surgery Program Budgets for the Coming Fiscal Year				
	Oncology	Rhinoplasty	Cardiac	Total
Revenues	\$40,000,000	\$12,000,000	\$50,000,000	\$102,000,000
Expenses	37,000,000	17,000,000	46,000,000	100,000,000
Total	\$ 3,000,000	\$5,000,000	\$ 4,000,000	\$ 2,000,000

Governments, by contrast, often have a weak ability to match revenues and expenses by program. In many cases, the government uses its general tax revenues to support a wide range of programs. In other cases, governments do have the ability to create specific budgets such as the preceding HOS budget. For example, revenues and expenses for education are often matched against each other, especially for local governments.

The preceding numerical example is highly summarized. However, a budget could be prepared for each program that also shows line-item and responsibility center details that make up the total revenues and expenses.

Note in the preceding example that the total cost of the three programs is \$100,000,000, the same as the total expenses for HOS in the earlier examples. This means that all costs from the responsibility center budgets in [Table 3-1](#) have been allocated to these three programs. Some allocations may be fairly arbitrary. For example, it is hard to determine how much of the administration cost of the hospital rightfully should go to each program. HOS must be careful in its decisions. If it closes the rhinoplasty program, it may not be able to eliminate some of those allocated costs.¹

¹ Often some costs of running an organization do not relate to individual services. For example, suppose that HOS's building must be heated in the winter. The heating cost is not specifically a cost of oncology, rhinoplasty, or cardiac surgery. However, it is a cost of the organization. Such costs are often referred to as indirect, *overhead*, or joint costs and are frequently allocated to specific programs or services. That means that a portion of the total overhead cost is assigned or charged to each program or service. There are a wide variety of possible allocation approaches, from a simple division (one-third each to oncology, rhinoplasty, and cardiac) to more sophisticated alternatives. See [Chapter 4](#) for additional discussion of cost allocation.

Functional Budgets

When not-for-profit organizations report their annual results to outsiders, they often prepare *functional* financial statements. These statements separate activities into their major functions. Consider Meals for the Homeless (Meals), for example. The organization's primary mission is to provide meals. However, suppose that it also provides counseling to some of its clients. The role of the counseling is to direct the homeless to various government agencies and other charities that can provide them with assistance. Also, there are fundraising and administrative departments. A budget for Meals for the Homeless might be categorized as follows.

Meals for the Homeless Expense Budget for the Coming Fiscal Year					
	Program Services		Supporting Activities		Total
	Meals	Counseling	Management and General	Fundraising	
Salaries	\$ 500,000	\$25,000	\$60,000	\$40,000	\$ 625,000
Supplies	900,000	1,000	6,000	20,000	927,000
Rent	100,000	5,000	15,000	5,000	125,000
Other	50,000	2,000	8,000	4,000	64,000
Total	<u>\$1,550,000</u>	<u>\$33,000</u>	<u>\$89,000</u>	<u>\$69,000</u>	<u>\$1,741,000</u>

In this budget, Meals is using a functional segregation of its primary *program services*, separated from its *supporting activities*. However, it is also providing information by line item. It would also be possible for there to be a subdivision of this budget by responsibility centers. For example, the program service Meals might be provided by a Kitchen department that cooks the meals, a Distribution department that delivers meals to soup kitchens and other locations, and a Serving department that serves the meals to the homeless. Each department might have its own manager, responsible for the costs of that department. Thus, the Meals column under Program Services might be subdivided into three individual responsibility center budgets by line item that total to the amount shown in the preceding budget.

Budgeting Techniques

The budget process is described in [Chapter 2](#). At this point, this chapter addresses several specific budgeting techniques: *flexible budgeting*, *performance budgeting*, *zero-based budgeting*, and forecasting.

Flexible Budgeting

Preparing a budget requires many assumptions and predictions. One of the most prominent of these involves the workload level. *Workload* refers to the volume of goods or services that the organization will provide. If the volume of services, cost of services, and revenues related to services all rose and fell in equal proportions, this might not create a significant problem. However, that is generally not the case. Revenues may change in a sharply different proportion than costs. Managers need to be able to anticipate such variations. A *flexible budget* is a tool to aid managers in this area.

A flexible budget is an operating budget for varying workload levels. For example, suppose that Leanna Schwartz, executive director of Meals for the Homeless, expects to provide 40,000 meals and has the following operating budget for the coming month:

Meals for the Homeless Operating Budget for the Next Month	
Revenues	
Donations	\$105,000
City	60,000
Total Revenue	\$165,000
Expenses	
Salaries	\$ 46,000
Supplies	100,000
Rent	12,000
Other	6,000
Total Expenses	\$164,000
Surplus	\$ 1,000

This budget provides Meals with confidence that it will have a good month. A surplus of \$1,000 is projected. But what will happen if the number of meals provided is greater or less than expected?

Assume that donations do not change if the number of meals provided changes. However, Middle City is paying Meals \$1.50 for each meal provided. If the number of meals increases or decreases, revenue will change. Also, some of the expenses are *fixed costs*; that is, they will not change as the volume of work changes. For example, rent on the kitchen location is a flat monthly amount, regardless of the number of meals served. If the volume of meals goes up or down, rent will remain the same. For most organizations, however, some costs are *variable*; they vary as the volume of goods or services provided goes up or down. Meals will have to buy more food if it gets very busy. Or it can buy less food if it gets slow. For planning purposes, Meals estimates that it uses \$2.50 in supplies for each meal served.

A flexible budget takes the basic operating budget and adjusts it for the impact of possible workload changes. Assume that payments from the city and purchases of supplies (food) are the only items that vary with the number of meals served. Consider a flexible budget for Meals, assuming that 35,000 or 45,000 meals are served next month:

Meals for the Homeless Flexible Operating Budget for the Next Month			
	Volume of Meals Provided		
	35,000	40,000	45,000
Revenues			
Donations	\$105,000	\$105,000	\$105,000
City	52,500	60,000	67,500
Total Revenue	\$157,500	\$165,000	\$172,500
Expenses			
Salaries	\$ 46,000	\$ 46,000	\$ 46,000
Supplies	87,500	100,000	112,500
Rent	12,000	12,000	12,000
Other	6,000	6,000	6,000
Total Expenses	\$151,500	\$164,000	\$176,500
Surplus/(Deficit)	\$ 6,000	\$ 1,000	\$ (4,000)

This flexible budget shows that if the number of meals provided increases, a loss is likely to occur. This information can serve as a warning to the managers at Meals. If they start seeing demand and the number of meals served increase, they can anticipate the likely financial shortfall without waiting until the end of the month or later to find out. Actions can be taken to increase fundraising efforts or to try to find ways to cut costs. Decisions can be made regarding whether Meals can financially sustain a loss. If it cannot, managers may have to choose among cutting the cost of the food used per meal, limiting the number of meals served, or finding other places to cut costs.

Flexible budgets focus on an output measure. Hospitals treat patients. Soup kitchens serve meals. Government agencies may build miles of roads or carry passengers in public transit vehicles or educate students in schools. In each case, some measure of volume is needed to prepare a flexible budget.

The key to preparing a flexible budget is determining which numbers in the budget are likely to change and which are likely to remain the same. Will the costs that vary change in direct proportion to volume changes, or will their change be more or less than proportional? Management must work to understand revenue and cost structures enough to be able to anticipate the changes caused by volume variations.

Performance Budgeting

Operating budgets are an attempt to plan the resources needed to accomplish desired outcomes. The outcomes are the results that the organization hopes to achieve. However, the process tends to focus more on the budgeted level of resources (the *inputs*) and less on the various outcomes to be achieved. To the extent that outcomes are taken into account, they are usually summarized by one limited measure, such as the number of meals served. Performance budgeting is an approach designed to improve the budget process by focusing more on what the organization hopes to accomplish.

A hospital's goal is for its patients to get well. A soup kitchen's goal is to reduce levels of hunger and malnutrition. A parks department's goal is to provide rest and recreation. However, these outcomes are extremely difficult to measure. Often organizations are forced to rely on simpler output measures, such as the number of patient treatments, meals served, or park users. More sophisticated performance measurement approaches are discussed in [Chapter 8](#).

Performance budgeting is a useful approach in situations that do not have a clear relationship between resources and outcomes. The method calls upon the manager and organization to define goals, plan the

amount of resources needed to accomplish those goals, and then assess how well the goals have been achieved. This may not result in measurement of outcomes, but it is a step in that direction.

Consider, for example, Millbridge's Parks and Recreation Department. One of the primary reasons Millbridge has the Parks and Recreation Department is to maintain the town's parks for the pleasure of its residents. There are 10 parks in Millbridge. Dwight Ives, town manager for Millbridge, was concerned that the town had no way to evaluate the budget of the Parks and Recreation Department. How much money should it receive to maintain the parks? There are baseball diamonds to be groomed, tennis courts to be cleaned and repaired, lawns to be mowed, and snow to be removed. Litter must be picked up and trash cans emptied. Paths must be paved and trees pruned.

A typical operating budget for a Parks and Recreation Department would show the money available for salaries, supplies, equipment, and so on. It would tend to be a line-item budget for a responsibility center. Such a budget focuses on inputs such as salaries and supplies. If the town is looking to save money, there might be support for cutting the spending of the Parks and Recreation Department. Spending cuts often translate into reductions in service. However, one could argue that the parks and recreation budget could be cut by 10 percent, and all 10 parks would still be available for the citizens of Millbridge. Therefore, there will be no reduction in service.

That argument is unlikely to be completely correct. If the budget is cut by 10 percent, then the reduced spending may well cause a decrease in the maintenance of each park. Lawns may not be mowed as often. Paths may not be repaved when needed. There will be difficulty in evaluating what has happened. Ten parks will still be maintained, but not as well. Maintenance cost per park has decreased. However, that might not translate into higher efficiency. It can translate into lower performance.

Clearly, a simple quantity or output measure, such as the number of parks maintained, does not tell the whole story. To improve the budgeting process, it is necessary to get a better sense of the goals of a department or organization. What is it really trying to achieve, and how can achievement of that goal be measured? Public, health, and not-for-profit organizations tend to have this problem more than most private, for-profit industries. For a proprietary organization making a specific product, if the amount of inputs can be reduced, keeping outcomes the same, it would be more productive. The problem, however, is whether outcomes can be adequately measured in the public service sector to see if they are the same. A key element is whether the organization can readily define what it does. If it cannot, then it will have trouble planning how much it will do and, after the fact, measuring how much has been done.

If HOS reduces the number of clinical care hours per patient per day, does that represent improved efficiency or decreased quality and quantity of patient care? The performance budgeting approach can help managers answer these questions by defining the outcomes of a department in a way that allows measurement.

For the Millbridge Parks and Recreation Department, how could the goals be thought of, rather than simply maintaining 10 parks? Millbridge could consider the following as goals: the number of trash cans to be emptied, the number of miles of pathway to be repaved, the number of acres of lawn to be mowed, or the level

of satisfaction of park users. In the government sector, it is common to use specific performance measures such as these to keep pressure on agencies or departments to be productive. Rather than just providing a budgeted spending level and requiring that parks be maintained, the agency or department will be held accountable for achieving certain levels of performance based on a number of different criteria.

The first step is to define objectives clearly. What is the organization trying to accomplish? Are these the appropriate objectives? The objectives are considered performance areas. Next, one must identify the operating budget. How much money has the organization budgeted for the department or cost center? The percentage of operating budget resources that will be devoted to each objective must be determined. The operating budget resources can then be allocated to the performance areas. Measures of performance for each objective or performance area must be established. For each performance area, a specific outcomes level should be budgeted. Then a performance budget can be developed.

Example

An example of performance budgeting for a hospital cardiac laboratory is provided in Appendix 3-A. The key performance areas for the lab were determined to be as follows: perform diagnostic catheterizations, perform interventions, improve quality of care, improve throughput (the time from the beginning of one procedure to the beginning of the next), control the supply cost per patient, improve patient satisfaction, improve physician satisfaction, and improve staff satisfaction. The performance budget developed in that example is shown in [Table 3-2](#).

Performance Area	Type of Activity	Output Measure	Budgeted Output	Total Cost	Average Cost
Perform diagnostic catheterizations	Catheterizations	Number of catheterizations	1,200	\$777,000	\$648/ catheterization
Perform interventions	Interventions	Number of interventions	1,200	\$800,000	\$742 per intervention
Improve quality	Change in specific procedures	Number of complications	10% reduction in complication rate	\$ 50,000	\$5,000 per 1% reduction
Improve throughput	Develop new coordination procedures with OR and MDs	Turnaround time	5% reduction in turnaround time	\$ 64,400	\$12,880 per 1% reduction in turnaround time
Control supply cost/patient	Work on vendor contracts, work with clinical staff	Supply dollars per patient	Constrain increase to 3% versus expected industry 6% increase	\$ 34,000	\$11,333 per 1% below industry expectations
Improve patient satisfaction	Improve staff communication with patients	Number of complaints	Reduce number from 60 to 40	\$ 53,900	\$2,695 per eliminated complaint
Improve physician satisfaction	Redesign work scheduling to meet MD demands	Cases per MD	2% increase per MD	\$103,000	\$51,500 per 1% increase
Improve staff satisfaction	Allow longer breaks and free coffee/donuts	Turnover rate	Reduce turnover by 50% from 4 per year to 2 per year	\$ 18,700	\$9,350 per staff member retained

Table 3-2

This budget provides a summary of each performance area, the type of activity required to achieve the desired results, the primary measure for each output or outcome, the level of budgeted output or outcome for each performance area, the cost of resources devoted to each area, and the average cost per unit for each output or outcome. See Appendix 3-A for a discussion of the derivation of this budget.

Return on Investment (ROI) Analysis

Once the performance budget has been developed, it is possible to perform a return on investment analysis for each performance area. The reason for such analysis is to assess whether it is worthwhile, from a financial

perspective, to allocate the budgeted amount of resources to each of the performance areas.

For example, suppose the supplies budget is \$1,520,000. Each 1 percent difference in the cost of supplies will cost the hospital \$15,200 (i.e., $\$1,520,000 \times 1\% = \$15,200$). From [Table 3-2](#), we see that the performance budget calls for spending \$34,000 to keep supply costs 3 percent below the industry average, or \$11,333 for each 1 percent savings. On a savings-to-cost basis, the return on investment calculation would be as follows:

$$\text{Savings/Cost} = \$15,200/\$11,333 = \$1.34 \text{ savings per dollar spent}$$

For every dollar the department spends to control supply costs, it saves \$1.34 in the cost of supplies. Since it is saving more than it is spending, it is appropriate to devote \$34,000 of resources to control supply costs.

This is a very limited form of cost-benefit analysis, a technique discussed in [Chapter 5](#). A further discussion of performance budgeting return on investment calculations is provided in Appendix 3-A.

The performance budgeting concept can be helpful to most public service organizations. For example, what does the executive director of Meals for the Homeless do? The budgeted costs for the director could be divided into performance areas for fundraising, public relations, cost control, increased meal volume, managerial supervision, and long-range planning. How can one measure these performance areas? One way to get started is by focusing on the activities that will occur. Perhaps Leanna Schwartz, executive director of Meals, intends to make 25 personal visits to philanthropists. And suppose that although many philanthropists will turn her down, it is anticipated that a total of \$500,000 will be raised. The organization can determine the percentage of her effort that goes to this objective, the cost of her time for this, and the budgeted goal. This can be translated into a return on investment analysis. In this way, even the many areas that have seemed to defy measurement can in fact be evaluated.

However, return on investment analysis must be used with care in public service organizations. Many social outcomes involve what economists refer to as externalities—benefits such as clean air, improved public health, or lower crime rates—that may not be easily quantified or felt directly by the organization that generates them. As a result, externalities may not lend themselves easily to financial measurement. In addition, efforts like fundraising and grant development can take a substantial amount of time to bear fruit. While Leanna Schwartz might meet with potential donors or funders today, she might not expect to see tangible results for months or even years. When applying cost-benefit and return on investment analyses in a public-benefit setting, these considerations must be taken into account.

Zero-Based Budgeting

Conceptually any expense budget should call for consumption of only those resources that are needed to accomplish the organization's goals. Excessive resource use is wasteful and detracts from the organization's financial stability and its ability to achieve its mission. In reality, as organizations get larger, the budget process becomes complex. It is not unusual for an organization to try to simplify its budgeting process by authorizing across-the-board incremental increases in budgets from one year to the next. For example, Dwight Ives, the town manager of Millbridge, might authorize a 4 percent increase for all departments that are part of the town government. The 4 percent increase represents an increment over the amount authorized for the previous year. This approach is therefore often called *incremental budgeting*.

Although this may be easier than careful item-by-item, department-by-department evaluation, it does not ensure that only the minimum resources necessary are used. Further, it does not ensure that scarce resources are allocated to the highest priorities. One department might have a very strong need for a 10 percent increase, while another might not need any increase at all. As technology, unemployment levels, and social needs change, some departments have growing financial needs, while other departments could get by with decreasing resources.

Some organizations examine all requested increases in budgets carefully. That is, no across-the-board increase is automatically authorized. Every increase must be justified. Although this is better than a flat equal percentage across the board, it assumes that the previous year's budget is an acceptable starting point. There is no critical examination of the base, only of the increase. Zero-based budgeting (ZBB) is an approach that argues that each year every item in every budget should be closely examined for the value it adds.

Any items that do not add value or do not add sufficient value to justify their cost should be eliminated from the budget. ZBB gets its name from the fact that each department or program starts with a zero base of justified costs. All spending from zero on up must be explained and justified. ZBB helps to keep budgets from developing "fat." No expenditure is automatically accepted without some explanation of why the organization is better off with that expenditure.

The evaluation of every item in each budget is a very time-consuming process. Rather than make such a large investment in budgeting, some organizations use ZBB only to evaluate new programs. As such, ZBB has become a leading program budgeting technique. Some organizations use ZBB for their operating budgets but rotate agencies or departments, with each receiving a thorough ZBB review every 3 (or 4 or 5) years and incremental budgets in the intervening years.

Whether it is used to evaluate annual operating budgets or budgets for new or existing programs, ZBB focuses on alternatives. Information is collected into a *decision package*. This package provides the analysis of the program or department being evaluated. It contains broad information about the program being evaluated, including why the program has been proposed, the negative effects of not doing the program, and the costs and benefits of the program. One of the key elements is a statement of alternatives.

ZBB requires evaluation of alternatives in a variety of ways. Different programs aimed at the same goal should be compared. Different ways of performing each given program should be compared. Different quality and quantities of each program should be compared. For example, if Meals for the Homeless decides to start a new suburban program, it may have to choose whether to use a fixed location (soup kitchen) or use a truck to deliver meals. The truck alternative must consider different-sized trucks. There must be consideration of not only whether to serve one, two, or three meals a day, but also the nutritional value (and therefore cost) of the meals provided. By examining alternative approaches and the costs and benefits of each approach, managers are placed in a better position to make informed choices when allocating limited resources. Each alternative is ranked, with the manager giving consideration to the costs and benefits of the differing approaches.

ZBB can also be used for *decremental budgeting*—that is, planning for budget cuts. In such a use, decision packages become the source of information needed for reducing the overall budget rather than for evaluating budgets from a zero base. For example, suppose that due to a downturn in the economy and a rise in unemployment rates, Millbridge municipal tax revenues are expected to fall. The town, in an effort to reduce expenditures and avoid a deficit, can use the ZBB technique as an evaluative approach for making the budget cuts that will have the least negative impact on the town and its residents.

Forecasting

Budgets are plans for the organization for a future period of time. Budgets are based on estimates of expected revenues and expenses. Lee, Johnson, and Joyce note:

Revenue is, as much as anything, a technical process. If a government is required to have a balanced budget, as state and local governments are, then accurate revenue forecasts become critical. Estimates that are too high can create major crises during the execution phase, at which time expenditures must be cut in order not to exceed revenues. Low estimates also cause problems, because programs may be needlessly reduced at the beginning of the fiscal year.²

² Robert D. Lee Jr., Ronald W. Johnson, and Philip G. Joyce. *Public Budgeting Systems*, 9th ed. Burlington, Mass. Jones & Bartlett Learning, 2013, p. 238.

Estimates of expenses are equally important. Consider, for example, a school budget. The budget will depend on the number of students. Part of the school budget is the cost to heat the school building. That cost will depend on the average temperature throughout the winter. Part of the school budget may depend on the average price of textbooks. These are just a few of the many expense expectations in a school budget. The future depends on many unknown factors and events. When managers develop budgets, they must make predictions called *forecasts*. Forecasts are little more than guesses about what the future will be. However, there are statistical approaches to forecasting that can improve accuracy of the predictions and give one a sense of how variable the actual results may be.

The manager preparing a school budget will forecast the number of students, the average temperature, and the

price of textbooks. The more accurate the forecast, the easier it will be to manage the budget. If the winter is colder than expected, the school system will have to spend more on heating. Within the closely regulated budget systems of governments, this may require spending reductions in another area.

There are many approaches to making forecasts. Forecasts often are the result of a combination of the output from an analytical model and the judgment of the forecaster. Most forecasts are accomplished by using historical information and projecting that information into the future. There are a wide variety of approaches for doing this, ranging from very simple to very complex. However, all of these approaches have the benefit of being based on a firm, historical foundation. Predictions are even more difficult to make in the absence of any experience or history. However, organizations in the public service at times have to make such predictions.

Forecasting Without the Benefit of Historical Data

Every time a new service or program is suggested, the financial evaluation is performed without any history. How can estimates be made in the absence of such data? To some extent, one can rely on engineering calculations. A determination can be made of exactly what resources should be required for each unit of the service provided. However, even such an objective analysis cannot tell the organization how much of the service will be demanded. In such cases, individual managers can use their own judgment. However, it is often better to base such forecasts on the collective opinion of groups of individuals.

Two common techniques are designed specifically to help improve the accuracy of estimates when no specific historical information is available: the nominal group and Delphi techniques. In both approaches, a team or panel must be selected that consists of individuals who are likely to have reasoned insights with respect to the item being forecast. Industrial experience has shown that by arriving at a consensus among a team of experts, subjective forecasts can be reasonably accurate. The experts do not have to be expert in the specific project, but they should come from areas as closely related as possible.

The nominal group technique is one in which the group members are brought together in a structured meeting. Each member writes down a forecast. Then all of the written forecasts are presented to the group by a group leader without discussion. Once all of the forecasts have been revealed, the reasoning behind each one is discussed. After the discussions, each member again makes a forecast in writing. Through a repetitive process, eventually a group decision is made.

By using a group approach, a number of individuals focus their attention on the same problem. Each person has a somewhat different perspective that influences his or her subjective forecast. Being exposed to competing forecasts and explanations of the reasoning behind them can be extremely helpful in providing the central planner with insights that had not already been considered. The underlying concept is that both the additional ideas and the discussion of the ideas by all members of the group will result in an improved forecast.

Obviously, the nominal group technique has weaknesses. One problem involves lack of information. If different individuals base their forecasts on different assumptions, it may be impossible to reach consensus. A more serious problem involves politics and personalities. As members of the group defend their forecasts,

extraneous issues having to do with whose idea it is may bias the group decision. Some individuals may be reluctant to share their ideas in public for a variety of reasons. The Delphi technique overcomes that weakness.

In the Delphi approach, the group never meets. All forecasts are presented in writing to a group leader, who provides summaries to all group members. After several rounds, a decision is made based on the collective responses. The weakness of the Delphi method is that it takes more time and is more cumbersome than the nominal group method. Nevertheless, Delphi has several particular advantages. By avoiding a face-to-face meeting, the technique avoids confrontation. Decisions are based more on logic than on personality or position.

These two methods recognize that individual managers cannot be expected to think of everything. Different individuals, bringing different expertise and different points of view to the same problem, can create an outcome that is superior to that which any one of them could create individually.

Forecasts Based on Historical Data

In cases where historical data do exist, forecasting is somewhat easier. Knowledge about the past is often an excellent starting point for predicting the future. Forecasts based on historical data fall into the categories of *causal models* and *time-series models*. The simplest approaches to forecasting are informal. For example, next year can be assumed to be just like the current year. More effort and sophistication in the forecasting method can result in more accurate forecasts—but simple models often provide the most reliable results.

In causal models, changes in one variable are used to predict changes in another. For example, Meals for the Homeless can examine how much the amount of food it used in past years changed as the number of meals served varied. Based on that relationship, it can predict how much food will be needed in the coming year if it has an expectation of the number of meals that will be served in the coming year. Changes in the number of meals cause a change in the amount of food needed.

In time-series models, there is assumed to be a relationship between the item we wish to forecast and the passage of time. For example, Meals may believe that the best indicator of the number of meals to be served in the future is simply the underlying trends that occur over time.

Consider property tax revenues. Will next year's revenues be the same as this year's? That is unlikely.

However, the manager has much of the information available to make the forecast. Property tax revenues are the tax rate multiplied by the tax base. Over time, there are additions of new or remodeled properties increasing the base, and property values in general may rise or fall.

Over time, trends may exist that would make it unlikely that the value of a variable will be the same next year as it was this year. Trends make forecasting more complicated. The linear regression statistical technique can be used to take a series of historical points and provide a projection in such situations.

However, what if there is an intra-year seasonal pattern or a long-term cyclical pattern? Perhaps certain times of the year are always busy and other times are always slow. Or perhaps the economy cycles through years of

economic expansion alternating with recessions. Linear regression is inadequate when there are underlying nonlinear patterns. A variety of more sophisticated statistical time-series techniques, such as exponential smoothing, can smooth out fluctuations in a historical series.

In some cases, governments and other organizations will rely on sophisticated econometric forecasting models. These causal models use multiple variables (e.g., multiple regression) or in some cases multiple equations (solved simultaneously) to provide improved forecasts. In multiple regression models, several independent variables are used to create the forecast. In the case of multiple equations models, the predictor variables need not be assumed to be independent of each other. This is perhaps more realistic.

In the case of governments, and many other public sector organizations as well, it is critical to consider general economic and other regional factors when making forecasts. Many elements of a budget (e.g., sales tax receipts and income tax receipts) will vary with the general economic conditions. Similarly, demographics can have a significant influence. The closing down of a major employer and the emigration of former employees of that employer can have dramatic impacts on both revenues and expenses of a government.

Before using a forecasting model, it is always beneficial to test it out. This can be done by running the model parallel to the current forecasting approach to see if it does better than existing techniques. Another way to verify the accuracy of a model is to use it to predict the past few most recent periods and see how accurately it would have predicted what actually happened.

Even in periods of relative stability, with a model that seems to forecast well, the judgment of the manager is critical in the forecasting process. Only the manager of a specific responsibility center can be aware of the many reasons that history may not be a good predictor of the future. For example, in the health sector, clinical technology changes rapidly. Forecasting models are limited when discontinuous changes occur. A new machine or technique can have a dramatic impact on the costs of procedures or even the number of procedures performed, and therefore on revenues. One should never rely totally on statistical techniques alone. Careful thought about the subject of the forecast and managerial knowledge, intuition, and judgment are essential to the forecasting process. Forecasting is discussed further in Appendix 3-B.

Using Budgeting Techniques

An organization would rarely use just one budgeting technique. It is not expected that a manager will always choose to use flexible budgeting or zero-based budgeting. Rather, the specific situation determines the appropriate budget technique. The decision of whether to build a new baseball stadium to prevent a team from leaving a city might best be evaluated using a cost-benefit analysis (see [Chapter 5](#)). Efforts to reduce the growing administrative costs of an organization might be dealt with using ZBB. Concerns about what will happen to Meals for the Homeless if the demand for services increases might be addressed using flexible budgeting. Thus, managers must use a combination of techniques to address the many resource allocation issues that they confront in their organizations.

Additional Governmental Budgeting Issues

Many of the issues discussed in this chapter and [Chapter 2](#) relate generally to government management as well as to healthcare and not-for-profit management. Governments, however, have a number of unique budgeting concerns. Governments tend to have much less flexibility in structuring budgets than other organizations do. Government budgets often have mandated forms and content. Government budgets are public and are often used by individuals outside of the government for a variety of purposes. For example, the budget of a government may be used by lenders to decide whether to make a loan to the government or to determine what interest rate to charge.

One of the reasons that governmental budgeting is different is that governments have taxing authority. This creates an ability to generate revenue that many organizations do not have. At the same time, it places a greater responsibility on the organization to be accountable to the public in its spending.

When the government decides on taxes, they are often based on achieving some policy objective. Taxes on cigarettes may be partly a method of raising revenue and partly a way for the government to discourage cigarette smoking. The social policy role in governmental budgeting has wide implications. Policy decisions will affect who or what to tax and at what rate. Decisions to help those with less money may require tax increases for those with more money. Policy decisions also affect transfers of revenue between governmental units. For example, in an effort to provide more self-determination, Medicaid money can be given from the federal government to state governments with few strings attached, allowing the states to decide what healthcare services to provide to Medicaid beneficiaries. States in turn may pass on block grants and authority to local governments.

This decentralization process, shifting money and authority to lower levels of government, is referred to as *devolution*. It serves a policy of allowing each state and locality greater control over spending. Devolution takes place on a selected basis. For example, the federal government may decide that it wants to retain control over the healthcare treatment of the elderly. Therefore, all Medicare decisions might be made at the federal rather than local level, even though Medicaid decisions are not made by the federal government.

Suppose that an approved budget turns out to be inaccurate due to poor forecasts and that it becomes apparent during the year that spending will exceed receipts. Service cuts may be required to keep spending within legal limits. The government does this by making a *rescission*. The term *rescission* refers to the fact that the authorization to spend the money is rescinded. Service cuts are often immediately apparent to the public and often receive unfavorable response.

One might think the solution is simply to increase taxes and revenues to ensure that service cuts will not be required. However, if taxes are deemed to be unacceptably high, people may find legal ways to avoid those taxes. These approaches may be detrimental to the community. For example, suppose that Millbridge, in its effort to have the cleanest streets in the nation, institutes a local sales tax to pay for it. The town managers expect this tax to bring in extra revenue. However, to get around the sales tax, many buyers may choose to

shop in the towns surrounding Millbridge that have no such sales taxes.

With fewer customers, local merchants go out of business. With rows of unoccupied stores, urban decay begins. Unoccupied buildings are likely to attract rodents and squatters; fires and physical deterioration of the buildings may occur. With the unappealing look of the downtown area, people start to sell their houses and leave town. Property values fall and property tax receipts decline. Faced with falling property tax revenues, the property tax rate rises to cover lost money needed by the town. This tax increase accelerates the decline in property values and the flight of homeowners to other communities. Eventually, most government services are cut because there is not enough money to pay for them. Millbridge soon earns the distinction of having the dirtiest streets in the country.

This extreme example of a downward spiral is meant to show that the power to tax is not absolute. Governments have limited resources, just as other organizations do. High taxes in themselves are often politically undesirable. (Voters like to throw those who vote for higher taxes out of office.) Furthermore, they do not always generate higher revenues, as the preceding example demonstrates. It requires a skillful balancing act to provide all necessary services without creating an excessively high tax structure.

Tying Managers' Hands

The political and professional management sides of government should work together. Unfortunately, the nature of laws enacted through the political process often ties the hands of professional government managers in the financial management process. For example, both *mandates* and *entitlements* create required spending patterns that must be built into budgets. Managers must also deal with the fact that there are legal limits on changes in budgets.

The federal and state governments often create mandates that require local governments to provide services at their own expense. A state may have a teachers' pension system. To keep the administration cost per participant low, the state may require that all local school districts participate in the system. For some local governments, the pension may be more generous than they would otherwise negotiate with the local teachers' union. However, if mandated by the state, they must participate and pay the higher costs.

Entitlements tend to create burdens on the federal and state budgets. These represent benefits that must be given to any individuals who meet eligibility criteria specified in the law creating the entitlement. For example, Medicare provides healthcare for not only the elderly, but also the permanently disabled. If the number of disabled individuals rises, total Medicare benefits will increase, and resources must be provided to pay for those benefits, unless the law creating the entitlement is changed. Politicians have found that eliminating or reducing some entitlements is extremely unpopular and politically difficult to do.

Governmental budgets have the force of law. Managers are generally restricted from spending more than the total amount budgeted for their department. They also tend to have a limited ability to move funds from one account to another within their department. For example, it is often the case that money budgeted by governments for salaries cannot legally be used for supplies. This reduces managers' flexibility when dealing

with unexpected events. On the other hand, it also prevents managers from using more funds than intended or using funds for a different purpose than their intended use.

In proprietary organizations, the owners have a personal financial interest in watching over the actions of the organization's managers. In public service organizations, the members of the public are the owners. However, the public's ability to act as watchdogs over government management is very limited. Therefore, controls are put in place to safeguard the use of the public's money. These tend to limit the flexibility of management. Some would argue that they keep governments from being as responsive and efficient as possible and are wasteful. However, it is a price that is paid to prevent misappropriations and potentially much greater waste.

Budget Reserves

As noted earlier, if revenues fall short, it may be necessary to cut spending to avoid an illegal budget deficit. Another alternative to risking the need for sudden painful spending cuts is to establish *budget reserves* at the time the budget is created. These reserves are sometimes called *rainy day funds*.

No matter how carefully one budgets, it is rare for actual results to exactly match the plan. It is not possible to know for sure when and how much cash will be received from taxes. It is not possible to know if there will be unusually heavy snowfalls requiring unexpected overtime and salt use. Nor can one know exactly what equipment will break down and how much the repairs will cost. It is sensible to have reserves for unexpected events.

When reserves are established, the government must decide how large they should be, who can authorize use of the reserve, and what happens if all of the reserve is not used. Presumably, if some reserves are left, the government as a whole will have a surplus. That money can be used toward balancing the next year's budget, or it can be accumulated. By accumulating reserves, the annual reserves can be smaller. For example, suppose that Millbridge expects to spend \$200,000 per year on snow removal. In a really bad winter, this could rise as high as \$500,000. A winter that bad would occur only once in 10 years. One solution is to have a reserve of \$300,000 each year to protect against a really bad winter. An alternate solution would be to have a reserve of \$30,000 each year and allow that reserve to accumulate until it reaches a level of \$300,000.

Governments are cautious about accumulating reserves, however. Though accumulating and preserving reserves is prudent financial management, reserves are subject to scrutiny by policy makers and voters who interpret large reserves as government profiting off the taxpayers. In many cases, reserves are legally restricted to a fixed proportion of the budget or must be appropriated by the legislative body.

Communicating with the Public

Very few organizations share their plans with the public. Governments are fairly distinctive in that they must communicate budget information to the public. Although each budget document will be unique, there are some elements that are common to most government budgets reported to the public: a budget message from the manager or chief executive, a table of contents, summary tables of revenues and expenditures, and other supporting information.

The presentation of the information, use of graphics and exhibits, and other general elements should be aimed at informing the public about the government's plans for the collection and expenditure of resources. The budget should present the goals and objectives of the government as well as information about how it expects to measure its performance. Performance budgets can be particularly useful in this respect. The budget document should be readable and should avoid complexity whenever possible.

Summary

This chapter builds on the basic budgeting concepts of [Chapter 2](#). Budgets may be organized to provide information in many different ways. They can be line-item budgets, focusing on the amounts spent on various types of resources, such as labor or supplies. Or they can be organized to present the budget for responsibility centers, programs, or functions. Often there is a combination of approaches used within the same budget. Most responsibility center, program, or functional budgets will generally show line-item information.

Note that often the organization will present information about the same total spending in different formats. For example, Meals for the Homeless can show its total spending divided by responsibility centers such as the kitchen, delivery, serving, fundraising, and administration departments. The same total spending can also be divided up and reported in terms of the meals, counseling, and support services functions of the organization.

The budgeting process at some organizations is highly centralized. Other organizations take less of a top-down approach, giving managers throughout the organization more say in the development of budgets for their responsibility centers. There are advantages and disadvantages to both top-down and bottom-up budgeting. As a result, most organizations use an approach that incorporates both direction from above and detailed input from below.

A number of specialized budgeting techniques can be very helpful for managers: flexible budgeting, performance budgeting, zero-based budgeting, and forecasting are some of the more prominent techniques. Flexible budgeting is an approach that provides budgets at different volume levels. This helps managers plan actions that will be necessary if actual volume exceeds or falls short of expectations. Performance budgeting is an approach that helps organize budget information so that managers can see the cost of achieving different outcomes, instead of focusing primarily on inputs. Zero-based budgeting is a technique that requires budget justification of all costs in a budget, rather than merely justification of the increase in costs from one budget year to the next. Forecasting focuses on how managers make predictions of expenses, revenues, and other items in the budget.

Government managers have some special budgeting concerns. These result from the structure provided to protect the public's resources and hold governments accountable. Governments tend to have much less flexibility in developing budgets than other organizations do. Their budgets often have mandated forms and content, and must be disclosed to the public. It is much more difficult to change spending from the authorized amount in total or to use funds intended for one purpose for another. Often decisions of how much to spend are out of the control of managers because of mandates or entitlements. Nevertheless, government managers must actively work on developing and managing the budget to ensure that the public receives the services it needs when it needs them, to the extent possible.

Key Terms from This Chapter

bottom-up budget, 82
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Questions for Discussion

- 3-1. Are there any limits on government taxation or spending? Explain.
- 3-2. Distinguish among line-item, responsibility center, and program budgets.
- 3-3. The Museum of New Art traditionally offers a new exhibit each month, in addition to its permanent collection. Mary Moser, the new museum director, has found that the number of exhibits must be reduced because of financial constraints. The museum has always used a line-item budget, but Mary has asked for a program budget for each of the proposed exhibits for the coming year. Explain the difference between the line-item and program budget and why Mary wants the latter.
- 3-4. Distinguish between a top-down and bottom-up budget process.
- 3-5. The advantage of a centralized approach to budgeting is that staff has more involvement in setting organizational priorities. True or false?³

³ This question and questions 3-10 and 3-12 were written by Dwight Denison.

- 3-6. In the past year, a major factory closed in Parsons City. Following the closure, a number of residents moved from the town. Property values are falling, and the mayor believes that a tax cut is necessary to avoid further exodus. He believes that the high unemployment rate will result in a substantially increased demand for some public services. On the other hand, the declining population may reduce demand for other services. What budget approach would make the most sense for the city for the coming year? Why?
- 3-7. What are the two main categories of functional budgets? Why do you think this might be a useful way to budget?
- 3-8. Distinguish between a mandate and an entitlement.
- 3-9. What is performance budgeting? What does it try to accomplish? How does the method work?
- 3-10. Performance budgeting is concerned more with reducing costs than with monitoring outcomes. True or false?
- 3-11. Describe zero-based budgeting.
- 3-12. Which of the following is *not true* about zero-based budgeting?
 - 1. generally more costly to prepare
 - 2. reevaluates all program activities every year
 - 3. most commonly used budget method
 - 4. reduces “slack” in budgets
- 3-13. What is a flexible budget?
- 3-14. Many managers simply average historical data to get a forecast of future results. Is that approach adequate?
- 3-15. What is the principal advantage of curvilinear forecasting?
- 3-16. A carefully done computerized analysis should be sufficient for most forecasts. True or false? Why?
- 3-17. What are two forecasting techniques that can be used if no historical data are available?
- 3-18. What do functional financial statements do?

Problem

3-19. Select from the following to answer questions 1 and 2.

1. zero-based
2. formula
3. incremental
4. accrual
5. capital
6. flexible

1. If your boss, the town's chief financial officer, told you that the town expected tax revenues to be 22 percent lower than last year and asked you to prepare decision packages to justify all of the town's discretionary programs, you would use a(n) _____ budget.
2. To test the sensitivity of your operating expenses to changes in the number of campers coming to Camp Summertime Fun this summer, you would use a(n) _____ budget.

3-20. Give an example of a line item or an object of expense.

3-21. Select from the following to answer questions 1 through 4.

1. zero-based
2. formula
3. incremental
4. accrual
5. capital
6. flexible

1. If your boss told you to test this year's budget for the impact of changes in expected client volume on your budgeted revenue and expenses, you would use a(n) _____ budget.
2. _____ budgets focus on proposed investments in valuable, long-lived resources.
3. Decision packages are normally associated with a(n) _____ budget.
4. Operating budgets are normally done on a(n) _____ basis.

3-22. Performance budgets focus on _____ rather than solely on outputs.

3-23. The executive director of Mutt Rescue (MR) animal shelter has asked you to prepare an annual budget for the coming fiscal year as well as a flexible budget based on a 5 percent increase in the number of dogs taken into MR's shelter during the year. She has given you the following guidelines.

- Number of dogs rescued and placed by MR: 800
- Average length of stay for a dog in the shelter: 12 days
- Daily cost of feeding one dog: \$1.10
- Number of veterinary visits per dog on average: 1.2
- Cost per veterinary visit: \$45
- Cost of spay/neuter and transportation per dog rescued: \$60
- Cost of the kennel and related equipment: \$400,000
- Useful life of the kennel and related equipment: 20 years

- MR uses straight-line depreciation
- Salvage value of the kennel and related equipment: \$0

MR has three full-time employees: an executive director, who earns \$40,000 per year, an evaluator/trainer, who earns \$30,000 per year, and a kennel manager, who earns \$25,000. Fringe benefits are equal to 25 percent of each employee's annual salary.

MR expects to place all of the dogs that it takes into the program by the last day of the fiscal year. It charges an adoption fee of \$225 per dog. Experience has shown that 15 percent of the people elect to make an additional donation to MR at the time of adoption. Historically, these extra donations have averaged \$175. In addition, MR has an active fundraising program and expects to raise \$40,000 in donations during the fiscal year.

3-24. Stratton County Community College is adding a band program that will be open to college students and also to the community. The music department chair has asked you to prepare a special-purpose budget for the program for the next two semesters. Prepare the budget for the full academic year using an accrual basis using the following information:

The band will derive revenue from three sources. Students enrolled in band classes will pay \$425 per semester. The college has two semesters each year. Community members will pay \$50 per semester to play in the band, but will not receive course credit. The only other revenue will come from the sale of tickets to the six concerts that the band intends to give each academic year.

The faculty expects to have 35 students enrolled in band classes each semester and also expects another 20 people from the community to play in the band each semester. Based on discussions with other universities, Stratton expects its concerts to attract 300 people on average and expects to charge \$2.50 per ticket.

To run the band program, Stratton will have to hire a graduate assistant at a cost of \$15,000 per academic year (two semesters). It will also have to rent an average of 10 brass and 15 woodwind instruments per semester. Brass instrument rentals will average \$90 per semester per instrument and woodwinds will cost \$50 per instrument per semester.

The band will rent rehearsal space from the local high school at a cost of \$250 per night. The band will meet one night each week for 15 weeks in each semester.

The department will also pay \$100 to clean the hall after each concert and \$50 per concert for student ushers. It will also spend \$200 on promotion for each concert and \$75 per concert for insurance. Ticket and program costs will average \$.75 per attendee.

Finally, the department needs to buy a tuba at a cost of \$4,000, a baritone saxophone for \$2,500, and a full set of percussion instruments at a cost of \$7,500. It figures that the instruments will last only 5 years and will not be able to be sold for anything after 5 years. The department will also need to buy 30 sets of band music pages at an average cost of \$150 per set. The music pages often get lost, so the department

wants to treat the sets as an expense in the year they are acquired.

3-25. Refer to Problem 2-29 in [Chapter 2](#). Assuming that the mix of visitors does not change, provide a budget assuming admissions are 10 percent lower and 10 percent higher than expected.

3-26. The Free Health Care Center (FH) charges each patient \$5.50 (not quite free after all, but pretty close). Due to rising costs, the center has been forced to consider raising this charge to \$6.00 or \$6.50. If the price goes up, fewer people will come to the center for care. At a price of \$6.00 only 18,000 patients are expected, and at a price of \$6.50 there will likely be only 16,000 patients. Prepare a flexible budget for the FH at prices of \$5.50, \$6.00, and \$6.50. The *variable cost* per patient is \$4, and the fixed costs of operating the center are \$32,000. The FH currently expects to have about 20,000 patient visits. What do you recommend the clinic do? Why?

3-27. The Georgeville city government provides a wide variety of services to the community. Among them is the protection provided by the police force. In order to provide that force it spends \$3 million on salaries, \$200,000 on vehicle costs, and \$300,000 on supplies.

The police force expects to have 7,000 measurable actions, consisting of 1,000 arrests, 4,000 traffic citations, and 2,000 responses to emergency calls. It has noted that the average cost for each one of these actions is \$429 if you simply divide the \$3,000,000 department cost by the 7,000 specific individual actions. Some have argued that it is not cost-effective to give out traffic tickets, since the \$429 cost per ticket exceeds the fine collected. The Georgeville Police Department is considering adopting a performance budget. The performance areas would be arrests, citations, and emergency responses.

The Police Department believes that activities related to making arrests consume 30 percent of salaries and 40 percent of supplies. Traffic citations consume 30 percent of salaries and 10 percent of supplies. Emergency response takes up 15 percent of salaries and 25 percent of supplies. Additionally, it performs many other activities that collectively take up 25 percent of salaries and 25 percent of supplies. It also estimates that its vehicles are used 25 percent for arrests, 30 percent for citations, and 5 percent for emergency responses. How much money is budgeted for each arrest, citation, and emergency response? Regardless of your answer, assume that the cost per traffic citation exceeds the average fine collected. Should the police cease issuing citations? Why?

3-28. Eger Township is preparing its budget for the fiscal year ending March 31, 2018. The township has a Management Department, a Public Works Department, a Recreation Department, and a Public Safety Department. The proposed budget calls for spending money on the items listed in [Exhibit 3-1](#). Based on the information in that exhibit,

Line-Item Type	Department	Function	Amount
Salaries	Management	Management	\$1,248,720.00
Supplies: Office	Management	Management	23,984.23
Rent	Management	Management	128,349.00
Gas and Electric	Management	Management	32,550.00
Telephone	Management	Management	14,201.00
Fringe Benefits	Management	Management	262,231.20
Interest	Management	Management	42,410.00
Depreciation Exp.	Management	Management	14,200.00
Salaries	Public Works	Garbage	241,089.00
Supplies: Office	Public Works	Garbage	1,832.00
Gas and Electric	Public Works	Garbage	2,385.00
Telephone	Public Works	Garbage	1,832.00
Fringe Benefits	Public Works	Garbage	59,628.69
Depreciation Exp.	Public Works	Garbage	40,000.00
Salaries	Public Works	Snow	84,736.00
Supplies: Office	Public Works	Snow	831.59
Supplies: Salt	Public Works	Snow	36,748.00
Gas and Electric	Public Works	Snow	18,236.00
Telephone	Public Works	Snow	1,272.77
Fringe Benefits	Public Works	Snow	17,704.56
Depreciation Exp.	Public Works	Snow	20,128.00
Salaries	Public Works	Road Repair	61,632.00
Supplies: Office	Public Works	Road Repair	3,163.00
Supplies: Blacktop	Public Works	Road Repair	42,979.00
Gas and Electric	Public Works	Road Repair	2,016.34
Telephone	Public Works	Road Repair	1,025.37
Fringe Benefits	Public Works	Road Repair	12,942.72
Depreciation Exp.	Public Works	Road Repair	28,944.00
Salaries	Recreation	Parks	31,555.00
Supplies: Office	Recreation	Parks	427.00
Supplies: Parks	Recreation	Parks	4,278.00
Gas and Electric	Recreation	Parks	524.00
Telephone	Recreation	Parks	617.00
Fringe Benefits	Recreation	Parks	6,626.55
Depreciation Exp.	Recreation	Parks	8,293.00
Salaries	Recreation	Concerts	14,315.00
Supplies: Office	Recreation	Concerts	624.00
Supplies: Concerts	Recreation	Concerts	2,941.00
Gas and Electric	Recreation	Concerts	262.00
Telephone	Recreation	Concerts	619.00
Fringe Benefits	Recreation	Concerts	3,006.15
Depreciation Exp.	Recreation	Concerts	2,744.00
Salaries	Recreation	Athletics	61,201.00
Supplies: Office	Recreation	Athletics	3,890.00
Supplies: Athletic Facilities	Recreation	Athletics	27,443.00
Gas and Electric	Recreation	Athletics	8,079.34
Telephone	Recreation	Athletics	3,178.38
Fringe Benefits	Recreation	Athletics	12,852.21
Depreciation Exp.	Recreation	Athletics	118,742.00
Salaries	Public Safety	Police	310,432.00
Supplies: Office	Public Safety	Police	7,957.00
Supplies: Uniform Allowance	Public Safety	Police	2,856.00
Gas and Electric	Public Safety	Police	3,890.00
Telephone	Public Safety	Police	4,755.00
Fringe Benefits	Public Safety	Police	65,190.72
Depreciation Exp.	Public Safety	Police	52,888.00
Salaries	Public Safety	Fire	150,771.50
Supplies: Office	Public Safety	Fire	4,426.00
Supplies: Fire Truck	Public Safety	Fire	22,856.00
Gas and Electric	Public Safety	Fire	3,890.00
Telephone	Public Safety	Fire	4,755.00
Fringe Benefits	Public Safety	Fire	31,662.02
Depreciation Exp.	Public Safety	Fire	152,888.00
Total			\$3,569,296.34

Exhibit 3-1

Note: Many of the above line items, such as salaries, are summaries of detailed information listing individual employees and their salaries.

This exhibit is available as an Excel worksheet file at study.sagepub.com/finkler5e. Use of that file will aid in solving Problems 3-28 to 3-31.

1. Prepare a line-item budget for the township. Group all types of supplies together as one line item.
2. Prepare a responsibility center budget for the township, just showing departmental totals.

3. Prepare a budget that shows both line-item and responsibility center information. Group all types of supplies together as one line item for each responsibility center.

3-29. Eger Township has a Management Department that provides support to other departments. The Public Works Department has three functions: garbage collection, snow removal, and road repair. The Recreation Department has three functions: park maintenance, concerts, and athletics (including tennis courts, golf course, and swimming pool). The Public Safety Department has two functions: police protection and fire protection. The proposed budget calls for spending money on the items listed in [Exhibit 3-1](#). Based on the information in that exhibit, prepare a functional, line-item budget for the township. Show each type of supply item separately.

3-30. The State Department of Labor is working on its revenue budget for the year ending June 30, 2019. The state uses a system of account numbers to simplify its bookkeeping processes. The system uses four digits to the left and four digits to the right of the decimal point. The basic structure for an account would appear as 0000.0000. The first digit in the number (on the extreme left) represents whether the account is describing an asset (resource owned by the state), a liability (obligation owed by the state), revenue, or expense. The code would be as follows:

1. Asset
2. Liability
3. Revenue
4. Expense

The second and third digits signify the department. Several examples are as follows:

01. Legislature
02. Governor's Office
03. Judiciary
04. Agriculture
05. Transportation
12. Labor

The fourth digit represents the subdivisions within each department. For the Department of Labor, these are as follows:

1. Economic Planning and Development
2. Economic Assistance and Security
3. Manpower and Employment Services

The first two digits to the right of the decimal point represent specific line-item revenue sources and expense codes:

01. Direct State Appropriations
02. Grants-in-Aid
11. Salaries and Wages
12. Materials and Supplies
13. Maintenance

The third and fourth digits to the right of the decimal point represent programs. For the Department of Labor, the programs are as follows:

01. Administration and Support Services
02. Unemployment Insurance
03. State Disability Insurance
04. Vocational Rehabilitation Services
05. Workplace Standards
06. Employment Services

For example, account 3122.0104 represents revenue for the Department of Labor intended for the Economic Assistance and Security subdivision of the department. The revenue comes directly from state appropriations and is intended for use in the Vocational Rehabilitation Services program. This can be seen as follows:

3122.0104 The 3 in the first digit on the far left indicates that this is a revenue account.

3122.0104 The 12 in the next two digits indicates that the account is related to the Department of Labor.

3122.0104 The 2 in the next digit indicates that the account is related to the Economic Assistance and Security subdivision of the department.

3122.0104 The 01 in the first two digits to the right of the decimal point indicates that the source of the revenue is direct state appropriations.

3122.0104 Finally, the 04 in the last two digits indicates that this money is earmarked for the Vocational Rehabilitation Services program.

Using this account code system, and the information in [Exhibit 3-2](#), prepare the following budget reports for the year ending June 30, 2019:

Account Code									Budget Amount
3	1	2	1	-	0	1	0	1	\$ 143,063
3	1	2	1	-	0	1	0	2	634,623
3	1	2	1	-	0	1	0	3	334,444
3	1	2	1	-	0	1	0	4	734,683
3	1	2	1	-	0	1	0	5	6,743,323
3	1	2	1	-	0	1	0	6	4,565,344
3	1	2	2	-	0	1	0	1	346,678
3	1	2	2	-	0	1	0	2	2,456,787
3	1	2	2	-	0	1	0	3	234,111
3	1	2	2	-	0	1	0	4	123,378
3	1	2	2	-	0	1	0	5	453,337
3	1	2	2	-	0	1	0	6	357,982
3	1	2	3	-	0	1	0	1	813,416
3	1	2	3	-	0	1	0	2	334,587
3	1	2	3	-	0	1	0	3	2,457,845
3	1	2	3	-	0	1	0	4	353,467
3	1	2	3	-	0	1	0	5	1,118,238
3	1	2	3	-	0	1	0	6	530,213
3	1	2	1	-	0	2	0	1	45,488
3	1	2	1	-	0	2	0	2	543,543
3	1	2	1	-	0	2	0	3	564,577
3	1	2	1	-	0	2	0	4	745,764
3	1	2	1	-	0	2	0	5	363,466
3	1	2	1	-	0	2	0	6	553,888
3	1	2	2	-	0	2	0	1	546,346
3	1	2	2	-	0	2	0	2	2,122,547
3	1	2	2	-	0	2	0	3	276,453
3	1	2	2	-	0	2	0	4	8,634,678
3	1	2	2	-	0	2	0	5	8,745,666
3	1	2	2	-	0	2	0	6	353,353
3	1	2	3	-	0	2	0	1	513,254
3	1	2	3	-	0	2	0	2	1,342,424
3	1	2	3	-	0	2	0	3	462,342
3	1	2	3	-	0	2	0	4	342,342
3	1	2	3	-	0	2	0	5	325,623
3	1	2	3	-	0	2	0	6	476,476
Total									\$49,693,749

Exhibit 3-2

This exhibit is available as an Excel worksheet file at study.sagepub.com/finkler5e. Use of that file will aid in solving Problem 3-30.

1. Prepare a line-item revenue budget for the Department of Labor. Note that the only two line items are Direct State Appropriations and Grants-in-Aid.
2. Prepare a responsibility center revenue budget for the Department of Labor showing just the three main subdivision totals without line-item information.
3. Prepare a responsibility center revenue budget for the Department of Labor showing the three main subdivisions and line items.
4. Prepare a functional revenue budget with line-item information for the Department of Labor.

Treat each of the programs as a separate function of the Department.

3-31. The Billings Multi-Specialty Physician Group Practice is trying to forecast the number of patient visits it will have for the coming year. It has data from the previous 3 years to use for the forecast. (See Appendix 3-B to complete this problem.)

1. Create a graph of the historical data that demonstrates whether the volume contains a trend, a seasonal component, or both.
2. Develop a forecast for the next four quarters. Use whatever approach is appropriate given the pattern identified in the data.

Year	Quarter	Patient Visits
1	1	20,000
	2	23,000
	3	27,000
	4	20,000
2	1	21,000
	2	25,000
	3	29,000
	4	20,000
3	1	19,000
	2	24,000
	3	26,000
	4	21,000

3-32. Senior Ride Access (SRA) provides a van service for senior citizens. SRA receives a \$100,000 grant each year from a local foundation for the aged. SRA expects to spend \$2,500 each year to pay for copying and supplies to operate the service. Insurance will cost SRA \$1,750 per year for each of the two vans that it operates. SRA employs a supervisor, earning \$34,000 a year, to run the van service. There are also six part-time coordinators who organize the routing of the vans and provide outreach to the senior community. Each coordinator works an average of 17 hours per week for 50 weeks in the year. Coordinators earn \$10 per hour. All drivers are volunteers. The costs associated with carrying each passenger are \$0.50 per mile. The average ride for each passenger is 5 miles. Seniors are asked to donate \$1.00 for each ride, but only 85 percent of the riders are able to afford the donation.

Prepare an operating budget for the upcoming year, assuming 5,000 seniors use the van service during the year. In the past, there have been fluctuations in ridership, so SRA would also like to see what would happen should there be a 10 percent increase or decrease in the number of rides.

3-33. You are the manager of the Corn is Not Just for Ethanol (CNJE) relief organization, which works with a coalition of countries to help provide corn, wheat, and other food staples to countries where food is in short supply. CNJE's board has asked you to prepare a monthly operating budget based on feeding 15,000 people per day as well as a flexible budget based on a 30 percent increase in the number of people you will have to feed each day.

Your operation has three full-time employees: a manager who earns \$48,000 per year, a security chief earning \$36,000 per year, and a field manager who earns \$24,000 per year. CNJE spends an additional 30 percent of each employee's annual salary to pay for the cost of health insurance and retirement benefits. You also employ 20 local people as cooks. They earn \$25 per day. As a group, they can cook enough food to feed up to 20,000 people per day. Cooks do not receive benefits.

You use trucks to deliver food and cooking fuel to the remote feeding sites. You estimate it takes one truck to service every 500 people you feed each month. It costs \$2,600 to pay for the fuel, drivers, and maintenance to operate one truck for one month. Depreciation for nontrucking equipment adds \$18,000 to expenses.

Direct costs for food are \$4.00 per person per day. The coalition of countries has agreed to pay CNJE \$4.17 per day for each person you feed. For budgeting purposes, assume there are 30 days in a month. Finally, the World Nutrition Society has pledged \$50,000 per month to support the CNJE effort for the coming year.

Extended Problem (3-34) Denison Specialty Hospital—Part II⁴

⁴ Part I of this extended problem appears at the end of [Chapter 2](#).

To complete the requirements in this section, use the information from both Parts I (see [Chapter 2](#)) and II.

Section C

The programs at Denison consume the services of departments as follows:

	Radiology	Nursing	Administration
Oncology	80%	50%	50%
Cardiac	15%	40%	35%
Rhinoplasty	5%	10%	15%

That is, oncology patients consume 80 percent of the services of the radiology department but only 50 percent of the nursing services provided.

Note that Denison classifies rent, depreciation, and bad debts expenses as “General Expenses” rather than assigning them to any specific department. However, if equipment can be specifically traced to a program, the depreciation on that equipment is charged to that program.

Section C Requirements:

1. In Part I, Section B, number 2, you prepared a line-item expense budget on an accrual basis. Prepare the expense budget again as a responsibility center budget, showing the projected costs for each department (radiology, nursing, and administration).
2. Prepare an expense budget with expenses shown by program (oncology, cardiac, rhinoplasty). For simplicity, assume that bad debts are not assigned to specific programs.

Section D

The hospital usually prepares a flexible budget as part of its annual master budget to assess the likely impact of patient volume variations on revenues and expenses.

The salaries of managers are all fixed costs. That type of expense does not change as patient volume changes. The staff salaries are variable costs (expenses) in all areas except in the administration department, where they are fixed. All salaries are paid in equal amounts each month. Variable salaries vary in direct proportion to patient volume. Supplies vary in direct proportion to patient volume.

Section D Requirement:

1. Prepare a flexible budget assuming patient volumes are 10 percent and 20 percent higher and 10 percent and 20 percent lower than expected. Also include the expected patient volume level in the flexible budget. Prepare the flexible budget before doing the cash flow budget in Section E.

Section E

Patients are expected to be treated and discharged throughout the year as follows:

Quarter 1	Quarter 2	Quarter 3	Quarter 4	
January–March	April–June	July–September	October–December	Total
30%	25%	20%	25%	100%

Historically, Denison has found that private insurance pays in the quarter after patient discharge. Medicare/Medicaid pays half in the quarter after discharge and half in the following quarter. Twenty-five percent of all self-pay revenue is collected each quarter for three quarters following discharge. Twenty-five percent is never collected. Also, charity care is never collected.

For simplicity, assume that the current year’s patient flow, payment rates, staffing, and supplies purchases are the same as those projected in the budget for the coming year.

Supplies are expected to be purchased in the following months:

Quarter 1	Quarter 2	Quarter 3	Quarter 4	
January–March	April–June	July–September	October–December	Total
\$150,000	\$124,000	\$138,000	\$128,000	\$540,000

The supplies are paid for in the quarter after purchase.

Assume that all interest and dividends on endowment investments are received on the first day of the seventh month of the year. Assume that gift shop revenue is received equally each quarter. (This may be an unrealistic assumption.) Assume that salaries are paid equally each quarter.

Denison plans to start next year with \$50,000 of cash and likes to end every quarter with at least \$50,000 in its cash account. If necessary, it will borrow from the bank at a rate of 12 percent per year. Each quarter it must pay interest on any outstanding loan balance from the end of the previous quarter. When it has extra cash, it repays its outstanding bank loan. If it has extra cash beyond that, it simply leaves it in its non-interest-bearing cash account.

Denison prepares its operating budget (revenues and expenses) on an accrual basis. The hospital expects to buy the oncology equipment as described in Part I of the case.

Section E Requirements:

1. Prepare a cash budget for the coming year. It will help if you prepare it in the following order:
 1. Determine patient revenues by quarter by type of payer for the coming year. That is, determine private insurance revenues for each quarter, Medicare/Medicaid revenues by quarter, and so on.
 2. Determine patient revenues by quarter for the current year. Since many payers pay with a lag, some of the coming year's cash receipts come from current year's revenues.
 3. Determine patient cash collections by quarter for the coming year, using revenue information from parts a and b, and payment lag information provided in the narrative of the problem.
 4. Develop the cash budget by quarter.

Start with the beginning cash, add cash receipts shown by source (e.g., patient revenue by payer, endowment). Calculate the available cash. (Note that it will be necessary to determine other cash receipts and payments by quarter. For example, determine how much is received from endowment each quarter and how much is paid for supplies.)

Deduct cash payments by line item (e.g., salaries). Be sure to include interest payments. Assume Denison does not owe any money at the beginning of the year. Subtract cash payments (called disbursements) from available amount to get a subtotal.

2. Based on the subtotal, calculate the amount to be borrowed or repaid. Combine the amount borrowed or repaid with the subtotal to get the ending cash balance for the quarter.

Show loan payable amount on cash budget below the ending cash balance.

It is easier to develop a correct cash budget if you work one quarter at a time.

Based on your cash budget, prepare a revised operating budget. That is, take the operating budget Part I, Section B, number 3, and incorporate the interest expense from the cash budget. Do not prepare a revised flexible budget.

3. As an advisor to Denison Hospital, you are certain of one thing: The Board of Trustees of the hospital will not approve a budget that projects an operating deficit. If the operating budget projects a deficit, what do you suggest that Denison do about it?

Review chapter content and explore online resources at study.sagepub.com/finkler5e

Appendix 3-A: A Performance Budget Example

Assume that the Laboratory Department at the Hospital for Ordinary Surgery consists of several specialized labs. One of them, the Cardiac Lab, decided to move its activities from a traditional budget, which provides resources based simply on the number of lab procedures, to a performance budget. After careful consideration, the manager decided that there were eight main objectives for the department: perform diagnostic catheterizations, perform therapeutic interventions, improve quality of care, improve throughput (the time from the beginning of one procedure to the beginning of the next), control the supply cost per patient, improve patient satisfaction, improve physician satisfaction, and improve staff satisfaction.

There is no question that development of a good set of performance measures for any department requires some thought and reflection. However, that in itself is a worthwhile exercise. Departments should have to consider what they are really trying to accomplish. That will allow them to more easily eliminate activities that are done just because they always have been done, whether they add value or not.

Assume that the regular operating budget for the responsibility unit in this example is as follows:

Manager	\$ 70,000
Staff Salaries	400,000
Education	10,000
Supplies	1,520,000
Total	<u>\$2,000,000</u>

One of the main things that must be determined to establish a performance budget is the percentage of resources that should be devoted to each performance area. There are several ways to do this. The manager could simply make allocations based on what seems appropriate. Alternatively, the allocations could be based on current actual practice. This information could be obtained by asking employees for their best guess or by having employees keep a log for a period of time to see how they actually spend their time. In this hypothetical example, assume that the allocations are based on the manager's judgment about how time and resources should be used:

Manager's Time	Percent
Perform Diagnostic Catheterizations	10
Perform Therapeutic Interventions	10
Improve Quality of Care	20
Improve Throughput	20
Control Supply Cost per Patient	20
Improve Patient Satisfaction	5
Improve Physician Satisfaction	10
Improve Staff Satisfaction	<u>5</u>
Total	<u>100</u>

Staff Time	Percent
Perform Diagnostic Catheterizations	40
Perform Therapeutic Interventions	30
Improve Quality of Care	10
Improve Throughput	5
Control Supply Cost per Patient	5
Improve Patient Satisfaction	5
Improve Physician Satisfaction	5
Improve Staff Satisfaction	<u>0</u>
Total	<u>100</u>

Education Resources	Percent
Perform Diagnostic Catheterizations	20
Perform Therapeutic Interventions	30
Improve Quality of Care	50
Improve Throughput	0
Control Supply Cost per Patient	0
Improve Patient Satisfaction	0
Improve Physician Satisfaction	0
Improve Staff Satisfaction	0
Total	100

Supplies	Percent
Perform Diagnostic Catheterizations	40
Perform Therapeutic Interventions	50
Improve Quality of Care	0
Improve Throughput	2
Control Supply Cost per Patient	0
Improve Patient Satisfaction	2
Improve Physician Satisfaction	5
Improve Staff Satisfaction	1
Total	100

In this example, the manager spends relatively little time performing clinical procedures. Other managerial activities include efforts to improve the quality of care, improve throughput, control the supply cost per patient, and improve satisfaction of patients, physicians, and staff. By contrast, the staff are budgeted to spend 70 percent of their time in clinical procedures (diagnostic catheterizations and therapeutic interventions). They also will devote some of their efforts to other performance areas, but not the same amount of their time as the manager.

The money to be spent on education is divided fairly equally between education to learn how to do clinical procedures and education to learn how to improve quality of care. This represents a choice in the use of resources. Another department or hospital might choose to devote all of its education dollars to learning ways to better control supply costs.

As one might expect, the vast majority of supplies in this department are used for clinical procedures.

As an intermediate step in arriving at a performance budget, it is necessary to assign operating budget costs to performance areas. The information about how each budget item is expected to be used, taken from the previous information, is summarized in [Table 3-A-1](#).

Performance Area	Expense Item			
	Manager	Staff	Education	Supplies
Perform Diagnostic Catheterizations	10%	40%	20%	40%
Perform Interventions	10	30	30	50
Improve Quality of Care	20	10	50	0
Improve Throughput	20	5	0	2
Control Supply Cost per Patient	20	5	0	0
Improve Patient Satisfaction	5	5	0	2
Improve Physician Satisfaction	10	5	0	5
Improve Staff Satisfaction	5	0	0	1
Total	100	100	100	100

Table 3-A-1

Using this summary, the costs in the operating budget can be allocated to the different performance areas, as shown in [Table 3-A-2](#). The bottom row in [Table 3-A-2](#) is the operating budget for the lab, shown earlier.

This row is multiplied by the percentages shown in [Table 3-A-1](#) to determine the budgeted cost for each performance area. In other words, the rows in [Table 3-A-2](#) are calculated using a combination of the percentages shown in [Table 3-A-1](#) and the operating budget, which is shown in the last row of [Table 3-A-2](#). For example, from the operating budget for the lab, the manager's salary is \$70,000. As seen in [Table 3-A-1](#), 10 percent of the manager's efforts go to diagnostic catheterizations. Therefore, \$7,000 (10 percent $\times$ \$70,000) of the manager's salary is in the Diagnostic Catheterization row of [Table 3-A-2](#).

Performance Area	Expense Item				Total	Percent
	Manager	Staff	Education	Supplies		
Perform Diagnostic Catheterizations	\$ 7,000	\$160,000	\$ 2,000	\$ 608,000	\$ 777,000	38.9
Perform Interventions	7,000	120,000	3,000	760,000	890,000	44.5
Improve Quality of Care	14,000	40,000	5,000	0	59,000	3.0
Improve Throughput	14,000	20,000	0	30,400	64,400	3.2
Control Supply Cost per Patient	14,000	20,000	0	0	34,000	1.7
Improve Patient Satisfaction	3,500	20,000	0	30,400	53,900	2.7
Improve Physician Satisfaction	7,000	20,000	0	76,000	103,000	5.2
Improve Staff Satisfaction	3,500	0	0	15,200	18,700	0.9
Total	\$70,000	\$400,000	\$10,000	\$1,520,000	\$2,000,000	100.0

Table 3-A-2

Consider another example: 5 percent of staff costs are for improving patient satisfaction. From the operating budget, \$400,000 is being spent on staff salaries. Five percent of \$400,000 is \$20,000. Therefore, from [Table 3-A-2](#) in the column for staff salaries and Improve Patient Satisfaction row, the cost is \$20,000.

Looking at [Table 3-A-2](#), consider the allocation of department resources. The total budget for the department is \$2,000,000. Of that amount, the largest amounts are spent on diagnostic catheterization procedures and therapeutic interventions, as one might expect. Interestingly, however, the department is spending \$103,000, or just over 5 percent of its total budget, to improve physician satisfaction. Is this an appropriate allocation of resources?

The information provided in a budget often tends to raise more questions than it answers. In some environments it might make sense to use resources to keep physicians happy. If they are not satisfied, they may take profitable procedures to other hospitals instead of this hospital. In other situations, it may be a managed care organization, rather than the physician, that determines the hospital that patients use. In that case, it might not make sense to allocate so much of the department's budget to physician satisfaction. In either case, it is valuable to be able to highlight the fact that \$103,000, or approximately 5 percent of department resources, is going toward this goal.

[Table 3-A-2](#) does not represent a performance budget, because it does not specify budgeted expectations for each of the performance areas. First, it is necessary to define measures that can be used for each area, and then a certain level of attainment can be budgeted. This is one of the most difficult aspects of developing a performance budget.

The diagnostic catheterizations and the therapeutic interventions can be measured the way they traditionally have been, using the number of procedures performed. Improvement in quality of care could be measured by the number of medical complications, patients' length of stay (adjusted for patient mix), and mortality rates. None of those are completely satisfactory outcome measures. They are proxies to get as close as possible to the underlying issue of quality. Throughput improvement could be measured by the turnaround time from one

patient to the next. Controlling the supply cost per patient could be measured in dollars per patient.

Satisfaction is difficult to measure. For patients, the number of complaints can be used. If that declines, it is likely that overall satisfaction is improving. For physicians, one could use the number of cases per doctor. If they are more satisfied, they will treat more of their patients at this hospital. For staff, the turnover rate is a possible proxy for satisfaction. More satisfied staff are less likely to quit. None of these are outcome measures. If we are interested in satisfied patients, physicians, and staff, these are just substitutes for satisfaction. A more accurate measure could be obtained if we used a survey instrument designed to measure satisfaction. It could be prepared and administered by outsiders to better ensure objectivity. However, that is a costly approach. It might be done on rare occasions by organizations, but is unlikely to be done monthly, or even annually, for every department.

Organizations need ways to get better assessments of performance than can be yielded by a single output measure, such as the number of patients treated. But they need methods that are not overly costly or time-consuming. Performance budgeting seeks that middle ground. Each department of each organization should give careful thought to trying to develop the best possible measures of performance that are available, at a reasonable data collection cost.

[Table 3-A-3](#) presents the performance budget. The first column on the left lists the performance areas. The second column highlights the type of activity to be undertaken to accomplish each of the major objectives of the department. The third column tells how attainment of the objective will be measured. The fourth column sets a specific measurable target for accomplishment. The fifth column tells how much it is expected to cost to attain that target. That number comes directly from the Total column on [Table 3-A-2](#). The last column divides the total cost for the objective by the target, to find the cost per unit.

Performance Area	Type of Activity	Output Measure	Budgeted Output	Total Cost	Average Cost
Perform diagnostic catheterizations	Catheterizations	Number of catheterizations	1,200	\$777,000	\$648/ catheterization
Perform therapeutic interventions	Interventions	Number of interventions	1,200	\$960,000	\$742 per intervention
Improve quality	Change in specific procedures	Number of complications	10% reduction in complication rate	\$ 59,000	\$5,900 per 1% reduction
Improve throughput	Develop new coordination procedures with OR and MDs	Turnaround time	5% reduction in turnaround time	\$ 64,400	\$12,880 per 1% reduction in turnaround time
Control supply cost per patient	Work on vendor contracts, work with clinical staff	Supply dollars per patient	Constrain increase to 3% versus expected industry 6% increase	\$ 34,000	\$11,333 per 1% below industry expectations
Improve patient satisfaction	Improve staff communication with patients	Number of complaints	Reduce number from 60 to 40	\$ 53,900	\$2,695 per eliminated complaint
Improve physician satisfaction	Redesign work scheduling to meet MD demands	Cases per MD	2% increase per MD	\$103,000	\$51,500 per 1% increase
Improve staff satisfaction	Allow longer breaks and free coffee/donuts	Turnover rate	Reduce turnover by 50% from 4 per year to 2 per year	\$ 18,700	\$9,350 per staff member retained

Table 3-A-3

For example, consider the Control Supply Cost/Patient row in [Table 3-A-3](#). The organization expects to work with its suppliers (vendors) to get contracts with lower prices for supplies and to work with clinical staff to use fewer, or less expensive, supplies. This area will be measured based on the supply cost per patient in

dollars. The target is to have the supply cost per patient rise only 3 percent. It is expected that without specific work in this area, supply costs would be likely to rise by 6 percent per patient. The goal here is to constrain the rate of increase, rather than actually lowering cost per patient. A total of \$34,000 has been budgeted for this effort to constrain the rate of increase in supply costs per patient.

The \$34,000 amount shown in the Total Cost column of [Table 3-A-3](#) came from [Table 3-A-2](#). The Average Cost column in [Table 3-A-3](#) shows that the organization expects to spend \$11,333 for each percent that costs are kept below the expected industrywide increase (i.e., the \$34,000 cost of controlling supply costs divided by the 3 percent expected benefit = \$11,333 for each percent savings below the industry average). Is the savings worth the investment?

Performance budgeting allows the manager to calculate the return on investment for various activities undertaken by the department. For example, the supplies budget for this department, shown earlier, is \$1,520,000. Each 1 percent difference in the cost of supplies will cost the hospital \$15,200 (i.e., \$1,520,000 × 1 percent = \$15,200). On a savings-to-cost basis, the calculation would be

$$\text{Savings/Cost} = \$15,200/\$11,333 = \$1.34 \text{ savings per dollar spent}$$

For every dollar the department spends to control supply costs, it saves \$1.34 in the cost of supplies. The return on investment would be the profit from the activity divided by the cost of the activity (\$15,200 – \$11,333 = \$3,867):

$$\text{Return on investment} = \$3,867/\$11,333 = 34\%$$

Note, however, that if the department consumed only \$500,000 of supplies per year, the effort would not be worthwhile. Each percent reduction in supply cost would yield a savings of only \$5,000 (\$500,000 cost × 1 percent = \$5,000):

$$\text{Savings/Cost} = \$5,000/\$11,333 = \$0.44 \text{ savings per dollar spent}$$

In other words, the organization would get back only 44 cents for each dollar invested. This would indicate that it would be better off not using resources for this effort. The savings/cost ratio must exceed 1.0 for the action to result in a positive financial benefit. On the other hand, the organization may choose to allocate resources to outcomes that are desirable for other qualitative reasons, even if they do not yield positive financial results. Public service organizations must always consider whether there are other reasons to do things beyond strictly financial ones.

Appendix 3-B: Forecasting Using Historical Data⁵

⁵. Abstracted and adapted from [Chapter 7](#) in Steven A. Finkler and David M. Ward. *Essentials of Cost Accounting for Health Care Organizations*, 2nd ed. Boston, Mass.: Jones and Bartlett, 1999. Used with permission.

Forecasting future volumes, revenues, and costs is a problem commonly grappled with in public sector organizations. Most often forecasts project historical information into the future. The simplest approaches to forecasting are informal “seat of the pants” type approaches. For example, we may assume that next year will be like the current year. However, underlying trends may exist that would make it unlikely that next year will simply reflect this year.

This appendix gives the reader a more detailed introduction to the complex field of forecasting than the one in the chapter. However, readers should either study forecasting techniques in more depth or consult an expert when making forecasts.

Forecasting Based on Averages

One approach to forecasting is to take an average value for a set of historical data points. Such an approach assumes that the data have neither seasonality nor trend. If the ups and downs over time are caused by random events, such an approach is reasonable. However, the result is just a prediction for the year as a whole.

Forecasting can be much more useful if the forecasts are broken down by month. The user can then benefit from the knowledge of anticipated variations within the year. When an averaging approach is used for monthly data, a problem arises because it does not allow for longer and shorter months. The variation in the number of days in a month from 28 days to 31 days can create a problem. Also, if one is forecasting for a department that is open only on weekdays, there is a variation from 20 to 23 possible weekdays per month. Thus, a forecast based on the average value of data for a number of months might be inaccurate. One would have to find an average forecast value per day (or per weekday) and apply that value to the number of days in each month in the coming year. Such an averaging approach, however, assumes that there is neither trend nor seasonality—an unlikely situation for many organizations.

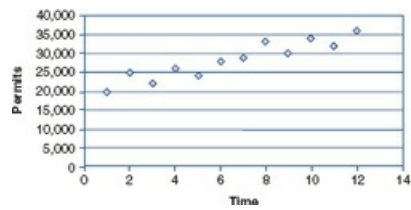
This appendix uses an example to consider forecasting techniques. For simplicity, an example with quarterly data for 3 years is used. Generally, the more historical data points you use, the more reliable the resulting forecast. Some analysts consider 5 years of monthly data to be the minimum data set for good forecasts. However, if any major change has taken place that would make data before the change a poor predictor of the future, then such data should be used cautiously, if at all.

Suppose that a state agency needed to project volume for the coming year to prepare its budgets. The data for this hypothetical example is shown in [Table 3-B-1](#).⁶ A critical first step after collecting the data is to graph it. The data from [Table 3-B-1](#) are shown in [Figure 3-B-1](#).⁷ The graph or chart can help the user get a quick sense of any trends or patterns in the data. [Figure 3-B-1](#) clearly shows an upward trend. Suppose one were to simply average the values of all of the data points from [Table 3-B-1](#) and use that average as a forecast for each quarter going into the future. That means we would be predicting the value for each quarter of the coming year to be identical, at the average value of the prior 3 years. That forecast makes little sense given the upward trend observed in [Figure 3-B-1](#).

	Quarter	Data Point	Permits
Year 1	July–September	1	20,000
	October–December	2	25,000
	January–March	3	22,000
	April–June	4	26,000
Year 2	July–September	5	24,000
	October–December	6	28,000
	January–March	7	29,000
	April–June	8	33,000
Year 3	July–September	9	30,000
	October–December	10	34,000
	January–March	11	32,000
	April–June	12	36,000

Table 3-B-1

Figure 3-B-1 Graph of Data From Table 3-B-1



6. Microsoft Excel 2002 Version (10.4524.4219) SP-2 was used for the examples in this appendix. Other versions of Excel may differ somewhat from the descriptions used here.

7. This appendix assumes that the reader is familiar with the basic functions of Excel, such as creating a chart and using pull-down menus. Readers new to Excel should refer to a basic guide such as Greg Harvey. *Excel 2013 All-in-One for Dummies*. Hoboken, N.J.: John Wiley & Sons, 2013.

Using Linear Regression for Forecasting

To improve on forecasts generated by using a simple average, linear regression is often used for forecasting. Regression is a technique that can plot a single line that will provide a reasonably good predictor, based on existing data, for a trend. Regression is used for both causal and time-series analyses.

Causal and Time-Series Analyses

A *causal analysis* is one in which we theorize that the variations in the *independent variable(s)* cause or result in changes in the *dependent variable*. For example, suppose that one department in a state agency issues hunting permits. Based on past experience, the department manager believes that the more permits issued, the more costly it is to run the department. That is, the cost depends on the volume. If we know the cost and the volume of permits from each past period, we can use that information to predict future costs for any given volume. However, to predict those costs, we would also have to have some idea of future volume.

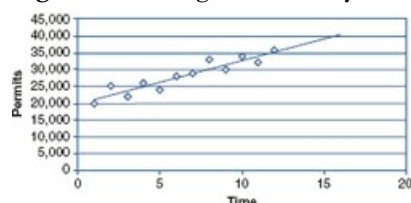
In time-series analysis, time becomes the independent variable used in the regression model. The manager might believe that there is a trend in the number of permits issued over time. Thus, we might review how many permits have been issued in past periods and use a time-series approach to estimate the number that will be issued in the future. Then we could use a causal analysis to predict the department's cost, using the predicted future volumes.

This appendix gives an introductory look at relatively simple forms of time-series analysis. More sophisticated techniques can handle more complex sequences of data, such as a situation in which a single event or series of events have created shifts in the trends. However, those advanced approaches, such as the Box-Jenkins model, are beyond the scope of this appendix.

Example

For example, consider the data in [Table 3-B-1](#). We would like to know the number of permits we are likely to issue for each of the four quarters of the coming Year 4. The volumes from [Table 3-B-1](#) have been plotted on the graph in [Figure 3-B-1](#). The vertical axis represents the number of permits (the dependent variable), and the horizontal axis represents time (the independent variable). [Figure 3-B-2](#) presents the forecast for the coming year using a regression line.

Figure 3-B-2 Regression Analysis Forecast



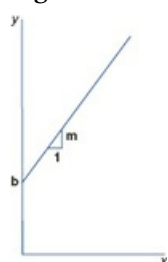
Ordinary Least Squares

Linear regression, using a technique called the ordinary least squares (OLS) method, attempts to find a straight line that comes as close as possible to all of the historical points. The underlying concept is that if the line we find comes close to the historical points, it is likely to come close to the actual future values for the variable we are predicting as well. The OLS model is derived from the equation used to define a straight line:

$$y = mx + b$$

where y is the dependent variable, m is the slope of the line, x is the independent variable, and b is the point at which the line crosses the vertical axis, called the y intercept (see [Figure 3-B-3](#)).

Figure 3-B-3 Graph of a Straight Line



Suppose that we were interested in forecasting permits for the first quarter of Year 4. The x value would be data point 13 (following the 12 data points in [Table 3-B-1](#)). Assume that the slope (m) of the line was 1,400 and that the intercept (b) was 19,000 permits. Then we could solve for y as follows:

$$y = mx + b$$

$$y = (1,400 \times 13) + 19,000$$

$$y = 37,200$$

Clearly, if we know the slope m and intercept b we can predict the future value y (in this case the volume of permits) for any particular time period x . The key is that we generally do not know the values for the slope m and intercept b , and we have to find those values. Linear regression uses a set of paired x and y values to estimate the slope and intercept. In regression analysis, the traditional equation for a straight line is generally shown as:

$$y = \alpha + \beta x$$

where α , the Greek letter alpha, is equivalent to b and is referred to as the *constant*. The Greek letter beta, β , is the same as m and is referred to as the x coefficient because it is multiplied by x . Often this equation would be shown with an additional variable on the right side to represent the fact that it is likely that there will be some variation, or error, not accounted for by the independent variable.

Historical points probably will not all lie along a straight line. Therefore, the goal of the linear regression process is to estimate a line that is as close as possible to the given data points. Any line other than the regression line would be further from the historical data points, and therefore likely to be further from the actual points in the future as well. Most statistical forecasting software programs provide not only a forecast,

but also a confidence interval for the forecast, which indicates the likelihood that the future result will fall within a given range of values. The mathematics of regression analysis will not be discussed here. The reader who is unfamiliar with linear regression is referred to any statistics text that covers regression analysis.

Regression analysis can be performed using either specialized statistical computer software such as SPSS or more general programs such as Excel. Using the Data Analysis choice from the Tools menu in Excel, regression analysis can be performed on the data in [Table 3-B-1](#).⁸ The resulting values are as follows:

⁸ Instructions for using Microsoft Excel to perform regression analysis are included in the web page for *Essentials of Cost Accounting for Health Care Organizations*, 3rd ed., at <http://www.jblearning.com/catalog/9780763738136>.

Note: If Data Analysis is not available on the Tools menu in your Excel software, follow the directions in Excel help to load the Analysis Toolpack.

Intercept = 19,818

x coefficient = 1,297

Using that information, we can forecast the number of permits for each quarter of Year 4:

Year 4	Time Period	$y = mx + b$
July–September	13	$y = (1,297 \times 13) + 19,818 = 36,679$
October–December	14	$y = (1,297 \times 14) + 19,818 = 37,976$
January–March	15	$y = (1,297 \times 15) + 19,818 = 39,273$
April–June	16	$y = (1,297 \times 16) + 19,818 = 40,570$

Similarly, we could do a causal regression analysis using historical values for departmental costs and volumes. The regression would generate an intercept and slope (x coefficient) as indicated. The four volumes shown for Year 4 can then be used to predict the Year 4 department costs. Assume that historical data for costs and volume were used in a regression analysis, and the resulting intercept and slope were:

Intercept = \$142,100

x coefficient = \$10

Using that information, we can forecast the department cost for each quarter of Year 4:

Year 4	Volume	$y = mx + b$
July–September	36,679	$y = (\$10 \times 36,679) + \$142,100 = \$508,890$
October–December	37,976	$y = (\$10 \times 37,976) + \$142,100 = \$521,860$
January–March	39,273	$y = (\$10 \times 39,273) + \$142,100 = \$534,830$
April–June	40,570	$y = (\$10 \times 40,570) + \$142,100 = \$547,800$

Regression Analysis Cautions

Regression analysis is often used without being given adequate thought. Managers or policy makers must use this tool cautiously. It is generally sensible to try to keep forecasting models as simple as possible. Simpler models have been shown to generate more reliable results than complex ones, unless the complexity is addressing a particular problem. A number of factors must be considered when using regression. First, always

ensure that the relationship between the variables makes sense. Second, the results should indicate that the independent variable is responsible for the variations in the dependent variable. Third, assess the significance of the independent variable(s). Fourth, also consider the reasonableness of the assumptions made in the analysis. Finally, consider the potential problem caused by outliers. Each of these five areas will be discussed briefly. Although a more detailed examination of these technical statistical issues will not be presented, the forecaster should be aware of their existence and should try to ensure that there are not serious problems related to any of them.

Plausibility.

Regression analysis uses a relationship between two variables as a basis for prediction. However, it is important to assess whether it makes sense that one variable would be predictive of another. For example, we could do a regression analysis using the population in China and a U.S. town government's budget as the two variables. However, just because the population in China is growing and the government's budget is growing does not mean that the number of people living in China is actually having any impact on the town government's costs.

This issue is referred to as plausibility—the relationship between the variables must make reasonable sense. There should be some reason that we believe that the independent variable is *causal*, that it causes the dependent variable to vary. Similarly, if we are using time as the independent variable, and predicting the behavior of some variable over time, we need to have some reason to believe that the relationship makes sense.

Goodness of Fit.

The ability of one variable to explain the variations in another is referred to as the *goodness of fit*. If the independent variable rises and falls in direct proportion with the dependent variable, the goodness of fit will be excellent. Goodness of fit is usually not perfect because it is rare for one variable to be influenced only by one or several other variables. Usually, some variables that impact the dependent variable are not taken into account in a forecasting model. For example, the weather, changes in social values, and the animal population affect the number of permits issued, but would not be considered in a time-series forecast of permits.

Goodness of fit is measured by the *coefficient of determination*, referred to as the *R-squared* (R^2). Most calculators or computer software programs with linear regression capability will calculate the *R-squared*, which can range from 0 to 1. The closer the value is to 1, the better the equation is as a predictor. A value close to 0 would indicate that our independent variable is not a good basis for predicting the dependent variable.

Independent Variable's Statistical Significance.

For the independent variable to be responsible for changes in the dependent variable, the cause-and-effect relationship must be clear. The regression analysis will indicate the slope of the estimated line. If the slope of the line is 0, the dependent variable will not vary as the independent variable changes. For example, there would be no change in permit volume over time. To ensure that this is not the case, a *t-test* is performed to

ascertain that the value for the slope is indeed significantly different from 0. The t -value of the slope measures significance. If the t -value is sufficiently high, then the slope is assumed to be statistically different from 0. This doesn't ensure that there is a cause-and-effect relationship—it only indicates a correlation between the variables. But unless that correlation exists, there is no cause-and-effect relation.

The t -value, or t statistic, and a corresponding p -value are automatically calculated by most statistical computer programs. The t statistic consists of the value estimated for the slope divided by its standard error. For any given t statistic, we can determine the likelihood that there really is no relationship among the variables. That likelihood is indicated by the p -value. If the p -value is .01, that would imply that the result is significant at the .01 or 1 percent level of significance. This would imply that there is less than a 1 percent chance that there is not really a relationship between the variables. The p -value levels of .05 and .01 are commonly used. The .05 level is probably the most common cutoff that is cited in determining whether results are considered to be statistically significant and reliable.

Reasonableness of Assumptions.

Whether or not the assumptions made in preparing the linear regression forecast are reasonable is referred to as specification analysis. Specification analysis has four elements: (1) *linearity*, (2) *constant variance*, (3) *independence*, and (4) *normality*. If the requirements of all four of these factors are met, then the resulting estimates are considered to be the best linear, unbiased estimates.

Linearity refers to a straight-line relationship. We are concerned with whether regression analysis, which projects a straight line, can reasonably estimate the relationship between the variables. It makes sense to use a linear estimator only if the relationship between the variables is linear. If one looked at the points on a scatter diagram, it should be reasonable to believe that a straight line could be an approximation. This is one of the reasons that it is critical to graph the data and examine it before beginning the forecast analysis.

Constant variance refers to the fact that the scatter of actual historical data points around the estimated line should be fairly uniform. This is referred to as *homoscedasticity*. If for some reason the scatter of points is consistently near the regression line in some areas and systematically further away in other areas (*heteroscedasticity*) it would indicate that the results are less reliable.

The third element of specification analysis relates to the independence of the residuals. The residuals are a measure of the distance from the regression line to each of the actual historical points. Each of these should be independent. If the residuals are not independent of each other, a problem called *serial correlation* arises. This problem can also be identified by looking at the scatter and the regression line, or by using a test called the Durbin-Watson statistic. If there is serial correlation, the reliability of the results decreases.

The fourth element of specification analysis is that a normal distribution of historical points occurs around the regression line.

Outliers.

Outlier data points are not representative of typical results and can throw off the results.⁹ Regression can only

predict the future based on information it has about the past. The intelligence and judgment of a manager are called for to interpret the results. If there is reason to believe that the future will not be like the past, then the results must be adjusted. Outlier points represent unusual conditions that often are not expected to reoccur in the future.

[9.](#) For a discussion of the treatment of outliers, see Steven A. Finkler. "Regression-Based Cost Estimation and Variance: Resolving the Impact of Outliers," in *Issues in Cost Accounting for Health Care Organizations*, 2nd ed. Boston, Mass.: Jones and Bartlett, 1999.

Curvilinear Forecasting

The most significant limitation of regression is that it is based on a straight line. Seasonal patterns cannot be estimated well with straight lines. Trends and seasonal patterns occurring at the same time increase the complexity further. *Curvilinear* forecasting uses curved lines for making estimates of the future. Because the forecast line can curve, it can more closely match a seasonal historical pattern. This results in a much more accurate forecast.

Sometimes, to deal with the nonlinear patterns that we observe in data, simple mathematical transformations are made. Log or exponential transformations may make it possible to observe trends that one could not see before the transformation was made. As Moore notes,

Data [with] ... sharp spikes ... must be “smoothed”.... [With] smooth data ... [that] is nonlinear or curvilinear, you will have to transform the original X variable. The two most common transformations are squaring the variable and taking [its] logarithm.... Either approach requires ... [the inclusion of] a new transformed X variable ... along with the original X variable you may wish to consult ... an expert or refer to materials [like] Gupta, Dipak K. (2001), *Analyzing Public Policy: Concepts, Tools and Techniques*, CQ Press. (William S. Moore, Appendix from *Evaluating Financial Condition: A Handbook for Local Government*. Washington, D.C.: International City/Country Management Association, 2003, p. 217.)

In addition to transforming data, some forecasting approaches are specifically designed to deal with nonlinear data. A number of specialized forecasting programs, such as SmartForecasts,¹⁰ perform curvilinear forecasting. Spreadsheet programs, such as Excel, can also develop curvilinear forecasts, although they are not as sophisticated. Excel allows the user to develop a variety of trendlines. For example, the data in [Table 3-B-1](#) was graphed in [Figure 3-B-1](#). Once the graph or Excel chart has been created from the data, users can right-click on the chart and choose the type of trendline they want to add to the graph. In Excel 2010, after you right-click on the chart, go to the Chart Tools menu at the top of the screen. Click on Layout, choose Trendlines and select more trendline options at the bottom of the trendlines pop-up menu. That will bring up the Format Trendline box shown in [Figure 3-B-4](#). As you can see, linear regression is only one of six types of trendlines that Excel can calculate.

¹⁰. SmartForecasts. Belmont, Mass.: SmartSoftware, <http://www.smartcorp.com>.

Figure 3-B-4 Trendlines



To arrive at the regression trendline such as the one shown in [Figure 3-B-2](#), the second choice, Linear, would be selected. Then near the bottom of [Figure 3-B-4](#), we need to indicate how far forward we want the trendline to project. In our example, we wanted to know the number of permits that are likely to be issued for the coming year. Since the data were quarterly, we would indicate that we want the forecast Forward 4 units. Clicking okay results in the trendline similar to the one we saw in [Figure 3-B-2](#).

Linear regression is just one of our choices. It may be that upon examining the graph of our data, the forecaster feels that another equation form (other than the equation for a straight line) will generate a trendline that is a better fit for the data. [Figure 3-B-4](#) indicates that six trendline approaches are available in Excel:

- *Exponential*: If the underlying pattern shows that the data points are rising or falling at progressively faster rates, then an exponential equation would fit the data well. This approach cannot be used if any of the data points are zero or negative.
- *Linear*: A linear equation will provide the best fit, if the data on the graph present a pattern that looks very much like a straight line. Typically linear data will increase or decrease at a steady rate.
- *Logarithmic*: If we observe data where the rate of change increases or decreases rapidly, and then tapers off to become fairly horizontal, a logarithmic trendline may yield the best result.
- *Polynomial*: A polynomial trendline tends to work well if the data vary up and down. For example, if the length of the hunting seasons were to vary drastically up or down from year to year, this might be helpful. The specific polynomial equation that provides the best fit will be influenced by the number of up and down variations in the data.
- *Power*: If we observe that the data are increasing at a specific rate, then a trendline based on the equation of a power may make sense. Note that such a trendline cannot have data points that are zero or negative values.
- *Moving Average*: The approach taken by a moving average is to smooth out the variations in the data to reveal the underlying pattern. For example, we can take an average of the first 2 months of a year to get the first predicted value on the trendline. Then the actual values for the second and third month can be used to predict the next month, and so on. In Excel you must indicate the specific number of data points to be averaged (using the Period option that can be seen in [Figure 3-B-4](#)). For example, if Period is set to 4, then the average of the first four data points is used as the first point in the moving average trendline.

Even though these curvilinear approaches are available, sometimes it is necessary to use data transformations, as discussed briefly at the beginning of this section. For example, Moore points out that

the use of techniques such as moving average or exponential smoothing is available in Excel. Note however that for example when using the moving average method, you will “lose” one or more data points depending on the interval you choose to smooth the data. Thus ... you may lose valuable information that will make forecasting more difficult and care should be taken prior to using this technique. You may wish to consult with an expert or refer to materials on the issue of degrees of freedom and prediction. (William S. Moore, Appendix from *Evaluating Financial Condition: A Handbook for Local Government*. Washington, D.C.: International City/County Management Association, 2003, p. 217.)

How do you select the trendline type from among the six alternatives discussed above? Your data should dictate your choice. Keep in mind that you desire a reliable forecast. As was discussed above, the higher a trendline’s *R*-squared value, the more reliable it is. Fortunately, for each type of trendline it calculates, Excel automatically calculates the *R*-squared value. Notice near the bottom of [Figure 3-B-4](#) that the *R*-squared may be displayed on the chart. Therefore, if you are unsure of which approach is likely to give the most reliable result, you can forecast using several or all of the methods and select the one that yields the highest *R*-squared.

How Far into the Future Can You Forecast?

Forecasting models allow you to select the number of periods into the future that you wish to forecast. However, the accuracy of forecasts tends to decline the further into the future you go. A forecast for the coming month is likely to be far more accurate than a forecast for the same month 5 years in the future. Therefore, forecasts should be updated frequently (at least annually), incorporating the latest historical information available to assure the greatest possible degree of accuracy.

The Role of Human Judgment

Forecasting is often viewed as being a mechanical process. However, an underlying assumption is that the results of the past are a good indication of what will happen in the future. To the extent that the future differs from the past, the ability of regression to provide accurate information is limited. The human role in forecasting should not be understated. Forecasts must be tempered by an understanding of circumstances that might cause the future to be something other than merely a reflection of the past.

Furthermore, despite the sophisticated analytical models employed in forecasting, the user should be aware that the process is part science, part art. The person preparing the forecast should consider the use of the forecast results. For example, earlier we discussed adjusting for the number of days in different months. Some months have as few as 20 weekdays, while others have as many as 23. Suppose you are forecasting labor costs, and staff is paid by the day. The number of weekdays may be a critical factor. However, what if staff is paid by the month rather than by the day? In that case, the difference in weekdays per month might have no impact on costs. The person preparing the forecast model must consider the context and ultimate use of the forecast. Based on that context and use, choices can be made such as whether a forecast based on a simple average would suffice, whether a more sophisticated regression or curvilinear model is needed, or whether someone with particular expertise in forecasting should be brought in to assist with the forecast.

Key Terms from This Appendix

causal analysis, 117
coefficient of determination, 120
constant variance, 121
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dependent variable, 117
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Chapter 4 Understanding Costs

Learning Objectives

The learning objectives of this chapter are to:

- define cost terms, including direct costs, indirect costs, average costs, fixed costs, variable costs, marginal costs, relevant range, mixed costs, and step-fixed costs;
- discuss the behavior of costs, with a focus on the impact of changes in the volume of services provided;
- introduce the use of graphs for cost analysis;
- discuss outsourcing decisions using marginal cost analysis;
- explain break-even analysis and provide an example of the technique;
- extend the use of break-even analysis to situations with multiple products or services;
- discuss the managerial implications of break-even analysis;
- define and discuss the concept of margin of safety;
- introduce the concept of cost measurement;
- discuss cost allocation, including the selection of the base for allocation, approaches for allocation from mission centers to service centers, and allocation to units of service; and
- introduce and explain activity-based Costing.

As managers work on the preparation of plans, one of the critical requirements is a good understanding of costs. The better managers understand costs, the more accurate their plans will be. Further, a solid understanding of costs will improve a manager's ability to make effective decisions.

Costs, however, are complicated. Many cost terms are widely used but are not well understood. Direct costs, indirect costs, average costs, fixed costs, variable costs, and marginal costs are concepts that managers should understand. This chapter provides definitions of these and other key terms.

After defining costs, this chapter considers how costs change as volume changes. The relationship between costs and volume has a dramatic impact on the profits or losses incurred by an organization. An understanding of this relationship can be instrumental in decision making. As part of the planning process, organizations must decide whether it makes sense to expand or contract volume, or whether to add or eliminate services. Issues such as these require sophisticated thinking in order to optimize the results for both the organization and its clientele. Managers must learn which costs are relevant for evaluating these decisions.

The chapter then examines a decision method called break-even analysis, a technique that assists the manager in determining what volume of activity is required for a program or service to become financially self-sufficient. Although many not-for-profit organizations are willing to undertake projects that lose money, the organization's survival depends on managers knowing when that will happen and how much money projects will probably make or lose. An awareness of likely losses will give managers critical information. They can then respond by finding other profitable activities that will make up for the losses or by trying to obtain grants or donations to subsidize specific services.

The chapter concludes with a discussion of cost measurement. The measurement of costs is complicated by

the fact that some responsibility centers provide services to other centers. To determine the costs of products or services provided by the organization, it is necessary to allocate all of the costs of the organization to the centers that produce the organization's products or services. In addition to addressing cost allocation, this section also discusses activity-based costing, a technique designed to improve the accuracy of cost measurements.

Basic Concepts and Definitions

Cost measurement is more complex than one might expect. When someone asks what something costs, accountants usually respond that “it depends.” The reason for this apparently evasive answer is that the appropriate measure of cost depends substantially on the intended use for the cost information. For Steve Netzer, chief operating officer of the Hospital for Ordinary Surgery (HOS), to find out what it cost to treat each patient in the hospital the previous year is very different from calculating what it might cost to treat one more patient the following year. The cost per patient when 100 patients are treated may be very different from the cost per patient when 500 patients are treated.

Cost is measured based on the amount that must be paid to obtain resources for the organization’s desired use. The amount paid for resources is their value, and the consumption of those resources are an organization’s expenses. Specific measurement of that amount is sometimes difficult. To make sense in this complicated area, managers rely on a set of definitions. These definitions provide the basis of a common language so that when the Millbridge town controller and Dwight Ives, the town manager, have a discussion, both managers can interpret that information in the same way and effectively communicate with each other. Communication about costs should begin by identifying the *cost objective*:

Cost objective: anything for which a measurement of cost is desired. This could be a unit of service, program, department, or organization.

For example, one might be interested in the cost of plowing snow from the roads of the town of Millbridge.

The cost objective must be defined clearly. Suppose that Dwight Ives asks the Public Works manager how much the latest snowfall cost the town. In Ives’s mind, he may be wondering about the cost of plowing the snow. In the mind of the Public Works manager, the cost of the snowfall includes both plowing and subsequently filling the potholes caused by the snow and plows. If the Public Works Department reports a cost to Ives that includes pothole repair, there will be a miscommunication. Ives may compare the cost with that reported by other towns and wonder why Millbridge’s costs are so high. It may turn out the other towns are reporting only the cost to plow the roads, whereas Millbridge also includes the cost of road repair. The most basic point in costing is to clearly define and communicate the cost objective. Communication is critical, and data become useful information only if they are communicated in a way that everyone understands.

Costs are often measured both in total and per some unit of measurement. Millbridge may want to know the total cost of plowing snow and also the cost per unit. However, the units could be miles plowed, inches of snow, or labor hours. The town may want to know the cost per mile, cost per inch of snow, or cost per labor hour. The total cost is also referred to as the *full cost*:

Full cost: the total of all costs associated with a cost objective. This includes direct and indirect costs.

The terms *direct* and *indirect* often cause some confusion. They are defined here as follows:

Direct costs:

1. costs that are incurred within the organizational unit for which the manager has responsibility, or
2. costs of resources that are used for the direct production of a good or service.

Indirect costs:

1. costs that are assigned to an organizational unit from elsewhere in the organization, or
2. costs of resources that are not used for direct production of a good or service.

Direct and indirect costs are particularly difficult to understand because their definitions relate to the object of the analysis. If one is interested in the direct cost of the Public Works Department, it is appropriate to include department supervisory personnel in that cost. By contrast, if one is interested in the direct cost per mile of road plowed, that would include the plow, the driver, and the cost of the salt spread on the road, but not the cost of supervisory personnel. In that example, the supervisors are direct costs of the Public Works Department (i.e., what it costs to operate the Public Works Department) but indirect costs of plowing the road (i.e., what it costs to plow the roads). The various scheduling and other administrative activities carried out by supervisory personnel are essential to running the department, but they are not a direct cost of plowing snow. If part of the cost of the town manager's salary is allocated to each department, including the roads department, that cost would be an indirect cost of both the department and each mile of road plowed. Direct and indirect costs, when added together, make up the full costs of the cost objective.

Thus, the full cost of plowing the road includes all of the costs that the organization incurs, including indirect costs. Indirect costs are often referred to as *overhead*. In general, the terms *indirect cost* and *overhead* are used interchangeably. However, one should always determine the meaning of technical terms in specific situations. The Public Works manager may consider the plow driver to be a direct cost of plowing roads, his administrative assistant to be an indirect cost, and a share of Dwight Ives's salary to be an overhead cost. In other words, the department manager considers indirect costs within the department to be different than overhead costs.

Think of this distinction another way. A department has the direct costs of providing some specific service (e.g., the plow driver). There may also be indirect costs incurred within the department that are needed to run the department but are not directly related to the service (e.g., an administrative assistant). Indirect costs that are needed to run the organization may also be incurred outside of the department (e.g., the town manager's salary or the costs of the Payroll Department).

In some instances, only the indirect costs generated outside of the department are considered overhead. In other cases, all indirect costs may be referred to as overhead. This is often the result of different people defining the cost objective differently. If one person believes that determining the direct cost of plowing the road is the cost objective, the administrative assistant and Payroll Department may both be indirect costs and, therefore, overhead. If another person views the costs of running the Public Works Department as being the

cost objective, then both the plow driver and administrative assistant are considered to be direct costs, and only the Payroll Department is an indirect cost, or overhead.

There is no question that this haziness in the use of terms can cause confusion. The confusion generally is the result of miscommunication. Managers should explicitly define the cost objective, the types of costs being treated as direct, and those being treated as indirect.

Suppose that all town workers, including snowplow drivers, wear a uniform that is cleaned by the town in its own laundry. What type of cost is the worker who does the laundry? Well, it is an indirect cost of plowing the roads. It is also an indirect cost of the Public Works Department, so it is an indirect cost.

To the Laundry Department, however, the worker doing the laundry is a direct cost. So a specific cost can be measured as both a direct cost and an indirect cost for the same organization! The classification depends on the cost objective. If one is interested in the cost of doing laundry for the town, it is a direct cost. If one is interested in the cost of plowing snow off roads, it is an indirect cost.

Average cost: the full cost of any cost objective divided by the number of units of output provided.

If all of the costs of plowing snow, both direct and indirect, are added and the total is divided by the number of units of output, the result is the cost per unit or the *average cost*. The total cost could be divided by the number of miles to find the cost per mile plowed, for instance. Often managers require information on the cost per mile, cost per patient, cost per meal, and so on. Each unit of a good or service provided (e.g., a plowed mile of road, a patient treated, or a meal served) is considered output or volume. Here, *output* and *volume* are used interchangeably.

Fixed costs: costs that do not vary as the volume of output changes over a relevant range of activity.

Variable costs: costs that vary directly with changes in the volume of output over a relevant range of activity.

Once Meals for the Homeless (Meals) rents space for a soup kitchen, the rent will not change from day to day, even if the number of meals provided varies by a substantial amount. Perhaps Meals is serving 300 people a day at a given soup kitchen. If Meals were to feed another person, the rent would stay the same. Therefore, it is a *fixed cost*. By contrast, the food that Meals purchases is a *variable cost*. If more people are served, Meals will need more food. If cost and output are directly related, as they are in the case of any variable cost, each additional unit of output results in an increase in total cost. It is important to remember that with additional output, it is the total variable cost that increases if there are variable costs. The per-unit variable cost does not change unless there are unique circumstances as described below.

Relevant range: the normal range of expected activity for the cost center or organization.

Fixed costs are fixed over the *relevant range* of activity. Suppose that Meals expects that each of its soup kitchens will serve between 250 and 500 people. Within that normal expected range, costs that are fixed will remain fixed. Rent would not change regardless of whether 250, 300, or 500 are people served. However, what if the demand suddenly jumped to 1,200 people? That might be more than Meals could physically handle at one location. It might be necessary to lease additional space, which would increase the cost of rent. Thus, fixed costs are only fixed within the relevant range for an activity. However, most managers can accurately predict the likely range of activity for a coming year and plan their fixed and variable resources accordingly.

As in the case of activity, fixed costs are fixed only over a relevant period of time. Rent that is a fixed cost today, this month, or this year can change when the lease expires. Salary costs for a manager may be fixed for a period of one year. After that, the manager may earn a raise in salary. Thus, fixed costs remain fixed only within the relevant range of activity and within a relevant period of time. Different fixed costs have different periods of time over which they remain fixed: Rent may be fixed over a 5-year lease period; managers' salaries might change once a year.

Marginal costs: the additional costs incurred as a result of providing one more unit of output (such as one more meal served or one more patient treated).

At first, *marginal costs* appear to be identical to variable costs. In both cases, if there is one more unit of activity, there will be an increase in total cost due only to the variable costs. Marginal costs, however, more broadly look at all costs that might change as a result of a decision. Suppose that HOS has a staff of surgeons who are paid salaries and can perform 5,000 surgeries per year. Assuming that HOS expects to do 3,000 surgeries, the cost of surgeons' salaries is a fixed cost. But what if HOS is already doing 5,000 surgeries? What is the cost of doing one more surgery?

If HOS has to hire another surgeon to do the 5,001st surgery, then on the margin—that is, from the 5,000th surgery to the 5,001st—the increase in total cost of the additional patient is the variable cost of one more patient plus the cost of hiring another surgeon. It would be reasonable to argue that instead of hiring another surgeon, HOS should try to push the existing surgeons a little further. And that might be done. But at some point, whether it is at patient 5,001 or 5,002 or 5,500 or 6,000, the hospital will have to hire another surgeon. The cost for that marginal patient would include both the variable costs for that patient and the increase in fixed costs. In other words, marginal cost is equal to variable cost unless the relevant range of an existing fixed resource is exceeded, in which case marginal cost is equal to variable cost plus new fixed costs.

Mixed costs: costs that contain both fixed and variable cost elements.

Some costs are both fixed and variable. For example, electricity is a mixed cost. Meals for the Homeless uses electricity to provide general lighting for its soup kitchens and offices, and also to run its ovens. Since the lights are on every day, the electricity consumed for that purpose is a fixed cost. But the more meals it cooks,

the longer the ovens are on and the more electricity it uses.

Mixed costs create some problems for managers. If the number of meals served by Meals for the Homeless is expected to increase by 20 percent next year, how much should Leanna Schwartz, the executive director, budget for electricity? Electricity use will clearly rise as a result of cooking the extra meals. But lighting costs will probably not change. So costs will rise, but by less than 20 percent. Regression analysis can be used to separate the mixed cost into its fixed and variable cost components. That approach is described in statistics and advanced financial management texts and is beyond the scope of the discussion here.

Step-fixed or step-variable costs: costs that are fixed over ranges of activity that are less than the relevant range.

Often organizations require a fixed number of employees for a range of activity. Within that range, the personnel costs will remain fixed. However, if the volume increases by a large enough number, additional personnel will be needed. That personnel level will then be fixed for a new, higher range of activity. The key to understanding step costs is that they are fixed over volume intervals but do vary within the relevant range.

Cost Behavior

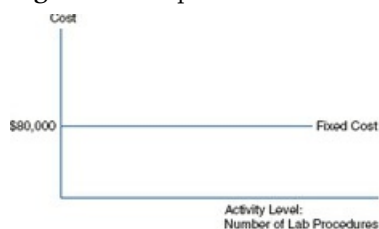
One of the most critical cost issues relates to *cost behavior*. Cost behavior is the way that costs change in response to changes in volume. If the volume of activity rises by 5 percent, what do costs do? What if volume falls? How can one predict whether total costs will exceed revenues or remain at a level less than revenues?

Cost behavior depends on the specific elements of cost in any organization and its cost centers. A *cost center* is any unit or department in an organization for which a manager is assigned responsibility for costs. Some types of costs are stable, changing little, if at all, even in response to significant changes in the volume of services provided. Other costs are highly changeable, reacting directly to changes in volume. The goal of this section is to lay out a framework for understanding cost behavior.

Fixed versus Variable Costs

As above, the total costs of running an organization, program, or department are generally divided into those costs that are fixed and those costs that are variable. Graphs help clarify the concepts of cost behavior. In the following example, the service unit measure is assumed to be patient days at HOS. [Figure 4-1](#) provides an example of a fixed cost. Specifically, the graph shows the \$80,000 annual salary for a gastrointestinal (GI) endoscopy lab manager for the coming year.

Figure 4-1 Graph of Fixed Cost



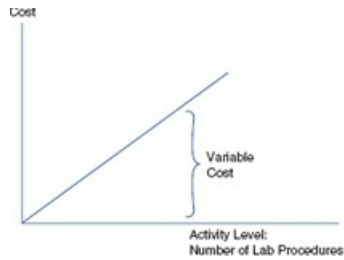
That salary is a fixed cost for HOS. The salary paid to a lab manager is not dependent on patient volume. In [Figure 4-1](#), the vertical axis shows the cost to the institution. As one moves up this axis, costs increase. On the horizontal axis are the number of lab procedures. The farther to the right one moves, the more procedures the lab has done. Regardless of the volume, the \$80,000 salary for the lab manager will remain the same.

Therefore, the cost is the same for 400, 700, or 1,000 procedures.

Variable costs, as noted earlier, vary with the volume of activity or output. Suppose that each procedure in the GI lab at HOS uses a disposable set of supplies. The cost of those supplies would increase in proportion with the number of procedures. Assuming that each set of supplies costs \$500, the expected supply cost would be \$500 multiplied by the number of procedures.

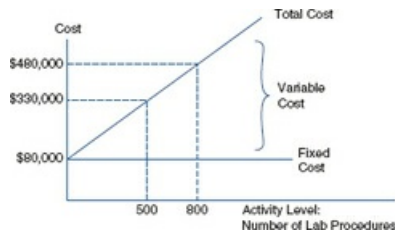
Consider [Figure 4-2](#). This graph plots the cost for disposable supplies as they vary with patient volume. As in [Figure 4-1](#), the vertical axis represents the cost to HOS, and the horizontal axis represents the procedure volume. Unlike [Figure 4-1](#), which showed some positive cost even at a volume of zero, this graph shows zero cost at a volume of zero, since zero procedures implies that none of these particular supplies will be used.

Figure 4-2 Graph of Variable Costs



In [Figure 4-3](#), dashed lines have been inserted to show the total cost when there are 500 and 800 procedures. As can be seen, there is \$80,000 of fixed cost regardless of volume. At 500 procedures, the total cost is the \$80,000 fixed cost plus \$500 variable cost per procedure for 500 procedures ($\$500 \times 500 = \$250,000$). The total cost is \$330,000. At 800 procedures, the variable cost is \$400,000 ($\$500 \times 800$) and the total is \$480,000. Note that the total costs start at \$80,000, even at a volume of zero, due to the fixed costs of the manager's salary.

Figure 4-3 Graph of the Total Cost



Cost Graphs and the Relevant Range

In [Figures 4-1](#) and [4-2](#), it is assumed that fixed costs are fixed throughout the entire range of the graph and that variable costs vary in direct proportion throughout the entire range of the graph. This is likely an oversimplification.

If volumes were extremely low, it is unlikely that the lab would be kept open. The manager would be let go, and the fixed cost would be eliminated. If volume were extremely high, an assistant manager might have to be hired, thus causing a jump in fixed costs. For many analyses done by managers, however, the true expected range of changes in volume is relatively small. If the organization currently does 500 procedures a year, next year it might do 400 or 600, but it is unlikely that volume would fall to 50 or rise to 2,000. Within typical volume swings, fixed costs are generally likely to remain fixed.

Variable costs increase proportionately over the relevant range. However, if the volume of a lab fell from 500 to 50, the organization might have to pay more per unit for supplies because it is no longer purchasing a reasonably high volume. By contrast, if volume rose to 5,000, it might get a lower price for each unit of supplies. So the cost of supplies does not vary exactly proportionately (doubling the cost with each doubling of volume) over any range of activity.

Again, however, such wide swings in activity are unusual, and it is reasonable for most managerial analyses to assume that within the relevant range, variable costs will vary proportionately. But it is important to be aware

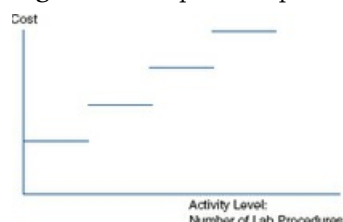
that fixed costs are fixed and variable costs are directly variable only over a reasonable relevant range of activity.

Many costs are step-fixed and vary within the relevant range but not smoothly. This is quite common with personnel. The GI lab in the example might need the following staff in addition to the managers:

Staff	Activity Level
One technologist	Up to 250 procedures per year
Two technologists	251–500 procedures per year
Three technologists	501–750 procedures per year
Four technologists	751–1,000 procedures per year

If somewhere between 400 and 600 procedures are expected, then there will be a need for at least two technologists, and perhaps three. The cost behavior pattern for these *step-fixed costs* is shown in [Figure 4-4](#).

Figure 4-4 Graph of Step-Fixed Costs



The Impact of Volume on Cost per Unit of Activity

If the GI lab manager were to ask what it costs to do each procedure in the lab, accountants would probably answer that it depends, as noted earlier. Costs are not always the same. The cost to treat a patient depends on several critical factors. One of these is the volume of procedures or, more generally for any organization, the overall volume of activity. The cost per meal at Meals for the Homeless depends on how many meals are served. The cost per person arrested by the Millbridge Police Department depends on the total number arrested. The cost per patient procedure at HOS depends on the number of procedures.

Suppose that the Millbridge School System has annual fixed costs of \$15,000,000 and variable costs of \$3,000 per student.¹ Using these hypothetical data, what is the average cost per student per year? If there are 3,000 students for the year, the total costs will be the fixed cost of \$15,000,000 plus \$3,000 per student for each of the 3,000 students. The variable costs would be \$9,000,000 (i.e., \$3,000 per student × 3,000 students). The total cost would be \$24,000,000 (i.e., \$15,000,000 fixed cost + \$9,000,000 of variable cost). The cost per student would be \$8,000 (i.e., \$24,000,000 total cost ÷ 3,000 students).

¹ The existence of high fixed costs, relative to variable costs, is not uncommon. For example, a school system may have many tenured faculty members. Salary requirements for those faculty will not vary with the number of pupils. Similarly, administrative costs (e.g., principals, vice principals, administrative assistants) and maintenance costs (e.g., electric, heat, custodial services) may not vary substantially with volume changes.

However, what if there were only 2,500 students? Then the variable costs, at \$3,000 per student, would be \$7,500,000 and the total cost would be \$22,500,000. In that case, the cost per student would be \$9,000. The

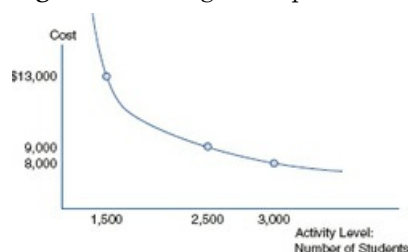
cost is higher because there are fewer students sharing the fixed costs. Each student causes the Millbridge School System to spend another \$3,000 of variable costs. The \$15,000,000 fixed cost remains the same regardless of the number of students. If there are more students, each one shares less of the \$15,000,000 fixed cost. If there are fewer students, the fixed cost assigned to each rises. [Table 4-1](#) calculates the fixed, variable, total, and average cost per student at a variety of student volumes.

Volume (A)	Fixed Cost (B)	Variable Cost (C = \$3,000 × A)	Total Cost (D = B + C)	Average Cost (E = D ÷ A)
1,500	\$15,000,000	\$4,500,000	\$19,500,000	\$13,000
2,500	15,000,000	7,500,000	22,500,000	9,000
3,000	15,000,000	9,000,000	24,000,000	8,000

Table 4-1

[Figure 4-5](#) shows the average cost at different student volumes. The cost declines as the volume of students increases because more students are sharing the fixed costs. The impact of sharing fixed costs over increasing levels of volume is referred to in economics as “short-run economies of scale.” Suppose there are only 1,500 students. The total variable costs of \$3,000 per student would be \$4,500,000, and the total cost would be \$19,500,000. The cost per student would be \$13,000—substantially more than the cost per student with 2,500 or 3,000 students.

Figure 4-5 Average Cost per Student



In trying to understand costs, it is essential to grasp the concept that because fixed costs do not change in total, the cost per student does change as volume changes. The school superintendent receives a set salary, it costs a fixed amount to maintain the school buildings and athletic facilities, and so on. The greater the number of students who share those fixed costs, the lower the cost per student. There is no unique answer to the question, “What is the cost per student?” That question can be answered only by giving the cost per student assuming a specific volume of students. The volume is critical.

One implication of this result is that most organizations generally are better off with higher rather than lower volume. As volume increases, the average cost per unit of service declines. If prices can be maintained at the original level for an organization that charges for its services, the declining cost will result in lower losses or higher profits.

Outsourcing and Marginal Cost Analysis

Often public service organizations have to decide whether to provide services themselves or to purchase them from an outside consultant or other provider. When an organization decides to have activities performed by an outside provider rather than doing them itself, it is said to be *outsourcing* that service or activity. An example is a government’s decision to collect garbage itself or to outsource that activity to a private company. This is

sometimes referred to as a *make-or-buy* decision. In recent years, outsourcing has become much more popular. The range of activities being outsourced has increased, and the use of offshore companies to provide services has soared.

One form of outsourcing is hiring workers from a temp agency on a long-term basis in lieu of hiring full-time employees. The workers do the same work as if they had been hired as full-time employees, but the organization receives two major benefits for hiring them. First, even though there is an agency fee and typically a higher hourly wage for a temp worker than for a full-time employee, the organization does not have to pay as much for benefits such as healthcare and retirement for temp workers. Second, the organization retains flexibility. It is much easier to reduce staff by simply discontinuing an agency temp worker as opposed to firing an employee.

The other major form of outsourcing is one in which an activity is taken over by an outside firm that specializes in that activity. For example, we have long seen private laundry companies that provide laundry services to a number of hospitals. But in recent years, the range of activities being outsourced has grown dramatically. Information systems, training, payroll, billing, receivables, public relations, insurance claims processing, technical assistance, and customer service are some examples of outsourcing activities.

A laundry service that provides laundry to 10 hospitals in a large city may be much more efficient than 10 individual laundry departments. That efficiency can result in a profit for the laundry company and reduced costs for each of the 10 hospitals. However, in recent years a great deal of outsourcing has resulted in activities being done in other countries (outsourcing overseas is referred to as “offshoring”), where workers earn lower wages. More and more often, organizations are scanning documents and then sending them electronically to other countries, where data from the documents are entered in databases for processing or analysis.

A full discussion of the political and economic implications of outsourcing is beyond the scope of this text. In short, the trend toward outsourcing has grown over the last decade, but more recently opposition because of the potential domestic job loss that it creates has also grown. An organization first needs to assess the financial implications of a make-or-buy decision. Once it understands whether a specific outsourcing proposal makes financial sense, it can then consider the various social and political implications of the decision and take them into account as well.

From a financial perspective, the decision of whether to outsource is one that is best addressed using an approach called *marginal cost analysis*. This approach is sometimes referred to as *incremental analysis* or *out-of-pocket analysis*. The essence of the approach is that decisions such as whether to provide a service or to change the volume of a service should be based on marginal rather than average costs.

As discussed in the previous section, the cost per pupil will depend on the number of pupils in the school system. The measurement of cost also depends on what the measurement will be used for. If the question is just one of historical curiosity, the average cost is an adequate response. However, if the information will be used for decision making, that response may well be incorrect.

Suppose that the town has recently had a large influx of families with young children. Dwight Ives realizes

that in a few years the population in the Millbridge School System will start to grow dramatically. The town can hire additional staff and accommodate the additional students with the existing buildings. Alternatively, an adjacent town has offered to educate Millbridge students for \$7,000 per student. Although this would be somewhat unusual, it is not unheard of. And if the neighboring town has excess capacity, why should Millbridge add more classes? This is an example of a make-or-buy or outsourcing decision: Educate the students in the township, or purchase the services.

Suppose that the township currently has 2,500 students and believes that the new influx will cause the size of the town's student body to rise to 3,000. Looking at [Table 4-1](#), the immediate reaction would be to accept the offer. The \$7,000 price that has been offered would be less than the \$8,000 average cost per pupil within the town, at a volume of 3,000 students. It looks like a good deal. However, [Table 4-1](#) shows the average cost, rather than the marginal cost.

The marginal cost is the additional cost that results from a decision. If one more student is added, the marginal cost would be the cost of that one additional student. If 500 more students are added, the marginal cost would be the cost incurred because of those 500 additional students. Clearly, the marginal cost includes variable costs. If new schools must be built for the additional students, the cost of those schools (depreciation, maintenance, etc.) would also be included in the marginal costs. But if the fixed costs can remain the same, then they would not be included.

Assuming that the fixed costs would not change going from 2,500 to 3,000 students, what is the marginal cost? It is the amount that costs increase as a result of the additional students. In this example, the marginal costs would be \$3,000 per student. That is substantially less than the offer from the other town.

If the decision is made to purchase the services, the town will pay \$7,000 additional for each of the extra students, in addition to what it is paying currently for its students. If the additional students are educated within the town, the cost will be \$3,000 per student in addition to current costs.

Another way to view this is to consider the total costs of the school system. From [Table 4-1](#), it can be seen that with the current student population of 2,500, the total cost of the system is \$22,500,000. If 3,000 students are educated within the town, the total cost rises by \$1,500,000 to \$24,000,000. However, if Millbridge were to pay the adjoining town \$7,000 for each of 500 students, the total costs would rise \$3,500,000 ($\$7,000 \times 500$ students) to \$26,000,000 ($\$22,500,000 + \$3,500,000$). It clearly is less expensive for the town to educate the students itself.

These same principles apply any time an organization must decide whether to add or eliminate a service, or expand or contract volume of an existing service. The decision always requires the organization to consider how much additional cost it will incur if it makes one choice versus another. In some cases, revenues will also change, and the change in revenue must be considered as well. It is, however, the change in revenues and costs that is the key measurement when one is considering making a change.

In recent years, many government, not-for-profit, and healthcare organizations have focused on the issues of outsourcing and privatization. However, if an organization is considering eliminating a current service,

caution is necessary. Often, an outside vendor can offer a price that is less than the average cost. The organization, however, must assess the marginal costs and marginal revenues. If a hospital can eliminate many fixed costs of running its laundry, there may be a cost savings from outsourcing. However, what if most of the fixed costs of running the laundry will be incurred anyway? In that case, it may not pay to shift to the outside supplier. The organization must consider its likely reduction in internal spending versus the price that it will be charged by the outside provider.

Marginal cost analysis is sometimes referred to as *relevant costing*. This is because all decisions should be made based on those costs that are relevant to the decision. The simplest way to think about this concept is to consider costs before and after a change. The relevant costs are those that change as a result of the decision. The approach applies equally to revenues.

In the Millbridge School System example, the many fixed costs were not relevant. This is because they would not change as a result of adding the extra students. If the town would have had to build an additional school, the new fixed costs of that school would have been relevant costs. It would have had to consider those fixed costs in determining whether the total costs to the town would be higher or lower if it kept the students versus sending them to the next town for their classes.

Break-Even Analysis

Many health, not-for-profit, and public organizations are moving toward adding new projects and ventures as a way of improving the financial stability and results of the organization. Profitable new ventures are seen as a way to subsidize other activities of the organization that lose money. However, managers must be able to determine whether a new venture will indeed be profitable. *Break-even analysis* is a useful tool for making such determinations in situations in which there is a specific price associated with the service. The price may result from a charge for the service or perhaps from a cost reimbursement.

At first blush, this would seem to be a fairly transparent exercise. First, find out the likely price or reimbursement that can be earned for each unit of the new service—that is, for each unit of output. Then determine the cost per unit for the service. If the price is greater than the cost, a profit will be made. If the price is less than the cost, the new activity will lose money. The only problem is that when one tries to determine the cost per unit, the result is “it depends.”

The cost per unit depends on volume, as discussed earlier in this chapter. At low volumes, the cost per unit will be higher than it is at high volumes. It is possible that at low volumes the cost per unit will exceed the average price that can be earned for the service.

At higher volumes, the service may become profitable. The goal of break-even analysis is to determine the volume at which the activity moves from losing money to making money. Understanding whether a particular unit or output will lose money, make money, or just break even is useful for the evaluation of both new and continuing projects and services.

The profitability of an activity is determined by whether its revenues are greater than its expenses. If revenues exceed expenses, the organization earns a profit. If revenues are less than expenses, the organization incurs a loss. *Only when revenues are exactly equal to expenses does the activity or organization break even.* An activity's or organization's revenues are the average price collected multiplied by the number of units of service. The equation is:

$$\text{Total Revenues} = P \times Q \quad (4-1)$$

where P is the price and Q represents the volume. The price, P , is not the amount we charge, but rather the average amount that we can expect to collect. There are situations in which we will collect less than our official price. Therefore, the revenue per unit of service is sometimes shown as variable revenue, or VR . The expenses of the organization are the sum of the fixed and variable costs:

$$\text{Total Expenses} = (VC \times Q) + FC \quad (4-2)$$

where VC is the variable cost per unit, Q is the volume or quantity of output, and FC is the total fixed cost. At the volume at which we precisely break even, we refer to Q as the BEQ (for break-even quantity). Since the organization will break even only when the total revenues equal total expenses, the volume needed to just break even can be found by solving the following equation for BEQ :

$$(P \times BEQ) = (VC \times BEQ) + FC \quad (4-3)$$

Next subtract $(VC \times BEQ)$ from both sides of the equation (see Equation 4-4), factor out the BEQ from all

items on the left side of the equation (see Equation 4-5), and divide both sides of the equation by $(P - VC)$ (see Equation 4-6), as follows:

$$(P \times BEQ) - (VC \times BEQ) = FC \quad (4-4) \quad BEQ \times (P - VC) = FC \quad (4-5)$$

$$BEQ = \frac{FC}{P - VC} \quad (4-6)$$

This results in a formula for the quantity, BEQ , that is needed to break even.

Break-Even Analysis Example

Suppose that the hypothetical Feed-a-Child Foundation is contemplating starting a new program in South America. It does not currently have any operations on that continent and does not have sufficient funds to provide a subsidy to a new program. The program would have to be completely self-sufficient.

The proposal is to generate donations of \$50 per donor to feed each child. There would be new fixed costs of \$10,000 for a special mailing (postage and printing) to solicit funds for the program and also new variable costs of \$30 per child. In the unlikely event that there are no donors, then no children would be fed because there would be no revenue, but there would still be fixed costs of \$10,000, resulting in a \$10,000 loss. If there are 100 donors at \$50 each, there would be \$5,000 of revenue ($\$50 \times 100$ donors), \$10,000 of fixed costs, and \$3,000 of variable costs ($\$30 \times 100$ children). Total costs would be \$13,000 (\$10,000 of fixed cost + \$3,000 of variable cost), revenues would be \$5,000, and the loss \$8,000.

How many donors would the Feed-a-Child Foundation need for the program to break even? Each additional donor contributes \$50 of support but causes the foundation to spend an additional \$30. The difference between the \$50 donation and the \$30 variable cost is called the *contribution margin*; it is the amount available to contribute to paying fixed costs and, if all fixed costs are covered, to contribute to profits.

When the contribution margin is negative, the organization can never expect to break even. Instead, the organization's price per unit does not cover variable cost per unit, implying that there is no marginal profit (marginal revenues in excess of marginal costs) that can be used to pay fixed costs. It is a common misunderstanding that an organization can make up for a negative contribution margin by increasing volume. In reality, when the contribution margin is negative, higher volume only results in a greater loss. In the for-profit sector, some products—like video game consoles—are sold at a negative contribution margin and are known as *loss leaders*. If the companies producing loss leaders are to stay in business, the loss leaders must be counterbalanced by products that have positive contribution margins. In the case of video game consoles, it is the software that consumers use on those consoles that has a positive contribution margin. Loss leaders are much more common in the for-profit sector than in the public and not-for-profit sectors.

If the contribution margin is positive, it means that each additional unit of activity makes the organization better off by the amount of the contribution. In that case, the organization will break even if the volume is high enough that the contribution margins from all donors add up to enough to cover the fixed costs. In cases where the contribution margin is positive, an organization can turn a loss into a profit by increasing volume.

For the Feed-a-Child Foundation, when there are 100 donors, there is a total contribution margin of \$2,000

($100 \times \$20$). Note that the loss with zero donors is shown previously to be \$10,000; it is only \$8,000 when there are 100 donors. The loss decreased by \$2,000, exactly the amount of the total contribution margin for those 100 donors.

How many donors at \$50 each would the foundation need for the new program to break even? The answer is 500. If each additional donor generates \$20 of contribution margin, then 500 donors would generate \$10,000 of contribution margin ($500 \text{ donors} \times \$20 = \$10,000$), exactly enough to cover the fixed costs of \$10,000.

This can be calculated directly using the formula from Equation 4-6, derived earlier:

$$BEQ = \frac{FC}{P - VC}$$

BEQ is the break-even quantity. It is the volume at which the organization, program, or service precisely breaks even. In the Feed-a-Child Foundation example,

$$\begin{aligned} BEQ &= \frac{\$10,000}{\$50 - \$30} \\ &= \frac{\$10,000}{\$20} \\ &= 500 \end{aligned}$$

Note that the price less the variable cost, $P - VC$, is the contribution margin.

The concept of break-even analysis is illustrated in [Figure 4-6](#). The total cost line starts at a level of \$10,000 because of the fixed costs. The total support or revenue line starts at zero because there is no money coming in if there are no donors. Where the revenue line and the cost line intersect, they are equal and the foundation precisely breaks even. Note that at quantities of donors below the break-even point (i.e., to the left of BEQ on the graph), the total cost line is higher than the total revenue line. The program is then losing money, or operating in the red. At quantities of donors higher than the break-even point (to the right of the intersection), the organization is making money, or operating in the black. At the intersection point, it breaks even.

Figure 4-6 Break-Even Graph



The intuition of break-even analysis is expressed by the break-even formula: It is a ratio of fixed costs to the contribution margin. The higher the ratio, the more volume or output that is required to cover the fixed costs. And of course, the lower the ratio, the less volume or output that is required. Once the fixed costs are covered, an organization can profit.

Break-Even With Multiple Products

When there are different types of services or products, break-even analysis becomes somewhat more complicated. The formula for break-even requires assuming that there is only one price and one variable cost,

and therefore one contribution margin. If there are different prices and different variable costs for differing services, which price or variable cost should be used? It is necessary to use all of them, and in order to get the correct result, it is necessary to find a weighted average contribution margin. That weighted average can be divided into the fixed costs to find the break-even volume in total.

For example, suppose that the Feed-a-Child Foundation is interested in knowing the total number of donors needed for the entire foundation to break even for the coming year. The foundation has current programs for feeding children in Africa and Asia. The African program solicits \$36 per donor, under a campaign that 10 cents will feed an African child for a day (10 cents $\times$ 365 days per year is approximately \$36). Its variable costs are \$32. Although the contribution margin is much lower than the proposed South American program, there are many donors for the long-standing African program. The Asian program solicits donations of \$40, and the variable costs for this program are \$29. The contribution margin for each program can be calculated by subtracting the variable cost from the price, as shown in [Table 4-2](#).

	Donation (A)	Variable Cost (B)	Contribution Margin (C = A – B)
Africa	\$36	\$32	\$ 4
Asia	40	29	11
South America	50	30	20

Table 4-2

The crucial piece of information for calculating the break-even point is the relative proportion of donors to each program. Management of the foundation expects that 70 percent of all donations will be to the African program, 25 percent will be to the Asian program, and 5 percent will be to the new South American program. This information can be used to determine a weighted average contribution margin. This is done by multiplying each program's contribution margin from [Table 4-2](#) by the percentage of total donors who donate to that program. The results are summed to arrive at an overall weighted contribution margin, as shown in [Table 4-3](#).

Program	Percentage of Donations		Contribution Margin		Weighted Average Contribution Margin
Africa	70%	$\times$	\$ 4	=	\$2.80
Asia	25	$\times$	11	=	2.75
South America	5	$\times$	20	=	1.00
Total	100				\$6.55

Table 4-3

This \$6.55 weighted contribution margin represents the average contribution margin for all types of donations. It can be used to calculate the break-even quantity. Assume that fixed costs for the entire organization, including all three programs, are \$100,000 per year. The break-even quantity of donors can be calculated using the basic formula, but using the weighted average contribution margin instead of the individual contribution margins:

$$BEQ = \frac{FC}{P - VC}$$

or

$$BEQ = \frac{FC}{CM}$$

where CM is the contribution margin.

$$BEQ = \frac{\$100,000}{\$6.55} = 15,267$$

The Feed-a-Child Foundation will need to receive 15,267 donations over the next year to cover all of its costs. Of that total, 70 percent would be \$36 donations to the African program, 25 percent would be \$40 donations to the Asian program, and 5 percent would be \$50 donations to the South American program.

This method works for three different programs. What if there are more than three kinds? The same weighted average approach can be used to find the break-even volume whether there are three different types of programs or hundreds of programs. It would simply make the arithmetic more time-consuming. This is a good reason to use computer spreadsheets for financial management calculations.

Additional Break-Even Applications

Break-even analysis is a powerful method to help managers make decisions. In addition to determining the volume of services that are required to achieve a financial break-even situation, it can answer other questions as well.

For example, organizations are not always able to provide an unlimited amount of service. An ambulance service may be limited in the amount of trips it can make because it has a limited number of vehicles. A soup kitchen may have a limited capacity for cooking meals. A city golf course may have a limited number of tee-off times. Break-even analysis can be used to determine the price that would have to be charged in situations in which capacity is constrained so that the organization could still break even. The manager would then have to assess whether there would be sufficient demand at that price to reach the capacity constraint.

Sometimes, the total revenue is constrained. For example, a charity may have received a donation to be used to provide a specific service. The donation is the total amount of revenue available. Break-even analysis can be used to determine the maximum number of units of service that could be provided without losing money.

In some cases, an organization may know both its price and production volume. Break-even analysis can be used to determine the maximum costs that can be incurred without losing money.

Another use of break-even analysis would be if the organization receives a grant allowing it to lower the charge for a particular service. The analysis can be used to determine how much the price can be lowered without losing money.

In each of these situations, one must consider the elements of Equation 4-6:

$$BEQ = \frac{FC}{P - VC}$$

As the various elements of this equation are varied, the equation can be solved for any one missing element.

Solving for Price, Fixed Cost, and Variable Cost

The break-even formula can be used to find the fixed cost, price, or variable cost that will allow an activity, program, or organization to break even at a particular volume level. For example, suppose that we know the HOS has a clinic with fixed costs of \$250,000, average collected revenue of \$95 per patient, variable costs of \$80, and operates at its maximum capacity of 12,000 patient visits per year. Unfortunately, the clinic is losing money. How much would it have to collect per patient, on average, to break even at its 12,000 maximum

capacity volume?

$$\begin{aligned}
 BEQ &= \frac{FC}{P - VC} \\
 12,000 &= \frac{\$250,000}{P - \$80} \\
 12,000 \times (P - \$80) &= \$250,000 \\
 12,000P - \$960,000 &= \$250,000 \\
 12,000P &= \$250,000 + \$960,000 \\
 12,000P &= \$1,210,000 \\
 P &= \$100.83
 \end{aligned}$$

If HOS could collect \$100.83 per patient visit, it would break even. Solving for the break-even price (BEP) is quite common in financial management. Here is the general formula:

$$BEP = \frac{FC}{Q} + VC \quad (4-7)$$

(4-7)

Note that the break-even price is the average of the fixed costs plus the variable cost per unit. In other words, the price at which an activity, program, or organization breaks even is that at which the fixed and variable costs are covered by the charge.

Suppose, however, that studies have shown the clinic that if it were to raise prices to a point where it collects more than \$95 per visit, the price increase would dramatically lower demand. There would be far fewer than 12,000 visits, and the loss would be even greater. Suppose the clinic keeps the average collection per patient at \$95, keeps its variable costs at \$80 per visit, and retains its volume of 12,000 visits; what is the most that it could spend on fixed costs and still break even?

$$\begin{aligned}
 BEQ &= \frac{FC}{P - VC} \\
 12,000 &= \frac{FC}{P - VC} \\
 12,000 \times (\$95 - \$80) &= FC \\
 FC &= 12,000 \times (\$95 - \$80) \\
 FC &= 12,000 \times \$15 \\
 FC &= \$180,000
 \end{aligned}$$

The clinic would break even if it lowered its fixed costs to \$180,000. After further study, the clinic determines that it can cut its fixed costs to \$200,000, but no lower. If the clinic keeps the average revenue collected per patient at \$95, patient volume at 12,000 visits, and lowers fixed costs to \$200,000, what is the most it could spend per visit on variable costs and still break even?

$$\begin{aligned}
 BEQ &= \frac{FC}{P - VC} \\
 12,000 &= \frac{\$200,000}{\$95 - VC} \\
 12,000 \times (\$95 - VC) &= \$200,000 \\
 12,000 \times \$95 - 12,000 VC &= \$200,000 \\
 \$1,140,000 - \$200,000 &= 12,000 VC \\
 \$940,000 &= 12,000 VC \\
 VC &= \$940,000 / 12,000 \\
 VC &= \$78.33
 \end{aligned}$$

At a variable cost of \$78.33, the clinic would break even.

Break-Even and Fixed Revenues

Sometimes organizations have both variable and fixed revenues. For example, not-for-profit Eye Care Services earns an average of \$100 per patient visit and also receives an annual donation of \$50,000 from a healthcare foundation. If Eye Care Services has fixed costs of \$250,000 and variable costs of \$80 per visit, what is the break-even quantity of visits? Fixed revenues (FR) serve to offset some of the fixed costs of the organization. We can restate the break-even formula as:

$$BEQ = \frac{FC - FR}{P - VC} \text{ or } BEP = \frac{FC - FR}{Q} + VC$$

Solving for the BEQ, taking the *FR* into account:

$$BEQ = \frac{\$250,000 - \$50,000}{\$100 - \$80} = 10,000 \text{ visits}$$

The intuition of break-even analysis remains the same. For break-even quantity, the formula is a ratio of fixed costs to the contribution margin. Once the fixed costs are covered, an organization can profit. For break-even price, the formula is the summation of the average of the fixed costs and the variable cost per unit. An organization can profit once these costs are covered. In both cases, fixed costs are offset by fixed revenues.

Margin of Safety

The *margin of safety* is a useful managerial tool related to break-even analysis. The margin of safety is the amount by which expected volume or revenues exceed the volume level or revenues required to break even. For example, suppose that HOS is considering a new outpatient mental health clinic. Its managers believe that the clinic will have 12,000 visits per year and will collect an average of \$100 per visit, generating total revenue of \$1,200,000 (12,000 visits × \$100 per visit). However, what if they are wrong? What if the number of visits falls short of expectations?

The margin of safety compares the expectations with the break-even point. Assume that HOS expects to collect \$100 per patient on average, have variable costs of \$70 per patient, and have fixed costs per year of \$300,000. The break-even volume is 10,000 patient visits per year, as follows:

$$BEQ = \frac{FC}{P - VC}$$

$$BEQ = \frac{\$300,000}{\$100 - \$70} = 10,000 \text{ patient visits}$$

At that level the revenue would be \$1,000,000 per year (10,000 visits × \$100 per patient). Since HOS expects 12,000 visits and the break-even point is 10,000, there is a margin of safety of 2,000 visits. In their planning, HOS managers know that even if the number of visits falls as much as 2,000 visits below expectations, there will not be a loss on the new clinic. Alternatively, if they are focusing on the total revenues, if a decline in the number of visits causes revenues to fall by \$200,000, HOS will still break even.

Managerial Implications of Break-Even Analysis

If a particular program, service, or activity is expected to have a volume of activity well in excess of the break-even point, managers have a clear-cut decision to start or continue the service. If the volume is too low to break even, the activity may not be feasible. However, sometimes changes in the activity can be made to achieve a break-even status.

One approach is to lower the volume needed to break even. The required break-even level can be reduced in three ways. One can lower the fixed costs by getting by with less expensive or fewer fixed resources. That may or may not be possible, depending on the specific circumstances. A second way to lower the break-even point is to increase prices. Price increases would increase the contribution margin per unit. That would have the effect of lowering the break-even point. However, price increases might reduce the expected volume for many activities or services.² In that case, the price increases may be defeating their purpose. Also, prices are sometimes regulated and beyond the control of the organization. Finally, one could try to reduce the variable cost per unit. This might be accomplished by increased efforts toward improved efficiency.

2. Based on economic theory, price and quantity are related. Price increases are likely to reduce quantity. However, the extent to which this occurs depends on the shape of the demand curve and the elasticity of demand. In some cases, minor price changes can have dramatic impacts on quantity (high elasticity), but in other cases it is possible that substantial price changes have only minor impacts on quantity.

If it is not feasible to change the fixed costs, price, or variable costs, an organization can try to increase the number of units of activity. In the Feed-a-Child Foundation example presented, what type of donor would be desirable? The most desirable type is the one with the highest contribution margin. Every donation to the South American program provides a contribution margin (CM) of \$20 (Table 4-2). Although this type of donation provides the highest support or revenue, it is not the revenue but rather the CM that is important. If an organization has a service with very high revenue, and also very high variable cost and low CM, it would not be as financially attractive as another with a higher CM.

Break-Even Analysis Cautions

A few words of caution are advisable when working with break-even analysis. First, once a break-even point is calculated, one must decide whether it is likely that the actual volume will be sufficient to meet or exceed that point. That will require managers to predict the volume that will occur. If the forecast of volume is incorrect, the decision to go ahead with a new service may turn out to be a bad one, even if the break-even analysis is otherwise done correctly. Also, correct classification of costs as being either fixed or variable is critical to the analysis.

Another potential problem is that break-even analysis assumes that prices and costs are constant. If it can be reasonably expected that prices will fall over time, then a higher volume would be needed to keep a service viable, unless variable or fixed costs would be falling as well. When a new service is first offered, the price may be high because only one organization provides that service. It has the ability to set prices based on a temporary monopoly situation. If competitors start offering the product, prices may fall. By contrast, if prices are expected to rise faster than costs, then a marginal service today may become profitable over time, even without an increase in volume.

Finally, a technical note of caution: Doing break-even analysis in the real world requires working with messy data. Some variables may be in weekly units of time, while others are in monthly or annual units of time. Some variables may be totals, while others are averages. A straightforward way to ensure one arrives at the correct solution is to express the fixed costs and revenues per unit of time, and the variable costs and revenues per unit of quantity/volume and per unit of time. For instance, if one were calculating the monthly break-even quantity or price for a job training program, fixed costs and revenues should be monthly, and variable costs and revenues should be per participant, per month.

As with all budgeting tools, judgment is essential. Based on experience, insight, and thought, the manager must examine the assumptions of any modeling technique and consider the reasonableness of the results. If a result does not seem to make sense, often that is because it does not make sense. Break-even analysis is a tool that can help give a manager a firm starting point in understanding whether a project or service is likely to be

financially viable.

Cost Measurement

Up to this point, the focus of the chapter has been on understanding costs for planning. Another important concern is the measurement of costs that have been incurred. One might expect that cost measurement would be a relatively straightforward process of tracking the amount spent. How much did Meals for the Homeless spend on labor? How much was spent to acquire food? In practice, cost measurement is more complicated.

For example, suppose that a government agency agrees to reimburse Meals for the Homeless for all of its costs related to providing meals in its soup kitchens. However, the agency has made clear that it is against its policy to reimburse any of the costs for the counseling services that Meals provides. Suppose that Meals is organized into departments, two of which are Soup Kitchens and Counseling. The government agency is willing to reimburse all of the costs incurred by the Soup Kitchens Department but none of the costs of the Counseling Department.

Some of the costs that Meals for the Homeless incurs are clearly direct costs of the Soup Kitchens Department. For example, the amount paid to buy food and the wages of the workers who place the food onto each person's plate would be direct costs. Those direct costs would be included in the calculation of cost for reimbursement by the agency. However, Meals also incurs a number of indirect costs.

Indirect costs are more difficult to deal with. Suppose that one manager supervises both the Soup Kitchens and Counseling Departments. How much of that manager's salary should be treated as part of the cost of the Soup Kitchens Department? The part of the manager's salary that is assigned to the soup kitchen operations will be reimbursed by the agency. So the decision concerning how to assign the manager's salary is an important one. The process of assigning indirect costs is generally referred to as *cost allocation*.

Cost Allocation

Cost allocation refers to taking costs from one area or cost objective and allocating them to other areas or cost objectives. Indirect costs must be allocated to arrive at an accurate measurement of the cost of running a department or providing products or services. For example, a portion of the cost of heating and lighting the Soup Kitchens Department should be included in that department's costs.

Often this involves allocating indirect costs from some departments or cost centers to other departments or cost centers. For example, suppose that Meals has a Purchasing Department that is responsible for everything that Meals buys. This includes not only food and kitchen equipment, but also administrative and counseling equipment and supplies. The Soup Kitchens Department could not function without the services provided by Purchasing. Meals should allocate part of the cost of Purchasing to the Soup Kitchens Department.

To assign costs from one area to another, it is necessary that there be a *cost pool* and a *cost base*. A cost pool is any grouping of costs to be allocated. A cost base is the criterion on which the allocation is to be made. For example, costs could be allocated based on the number of purchase orders processed. The cost pool in this example would be the costs of operating the Purchasing Department, and the cost base would be the number

of purchase orders (POs) processed.

If the base is divided into the cost pool, an *overhead rate* can be calculated. For example, suppose that it costs Meals \$25,000 in direct costs to run the Purchasing Department for the year, and the department processes 5,000 purchase orders for the year. The \$25,000 cost of the Purchasing Department is the cost pool. The 5,000 POs processed is the base.

$$\frac{\$25,000}{5,000 \text{ orders}} = \$5 \text{ per PO processed}$$

The overhead rate is therefore \$5 per PO processed. Suppose that 3,000 of the purchase orders were to acquire items for the Soup Kitchens Department. Then Meals would allocate \$15,000 (\$5 per order × 3,000 orders) to the Soup Kitchens Department. That would become part of the cost of providing meals by the soup kitchen. From the perspective of the Soup Kitchens Department, this \$15,000 is an indirect cost, but it is part of the total cost of the department.

Selecting the Base for Overhead Rates

Selecting the base to use for the allocation is an important issue. It is critical to use a base that makes sense. If a department or cost center can vary the amount of services it consumes from other departments or cost centers, then the base should relate to use.

Suppose that the Soup Kitchens Department could request that canned food be ordered daily, weekly, or monthly. The more frequently the orders are made, the more Purchasing spends to process the orders. In that case, the number of purchase orders processed is a good base. The Soup Kitchens Department will be charged more if it causes Purchasing to spend more money processing orders. The Soup Kitchens Department knows that by ordering something once a month it will be assigned \$5 of cost (\$5 per PO × 1 order per month), whereas if it ordered that item daily it would be charged approximately \$150 of cost (\$5 per PO × 30 orders per month). This causes the Soup Kitchens Department to act in a responsible manner in deciding how frequently to order.

By contrast, some organizations select arbitrary bases, such as the number of square feet that a cost center occupies. Suppose that the soup kitchen occupied half of Meals's space and the counseling service occupied the other half. Suppose that Counseling orders almost nothing each year, whereas the Soup Kitchens Department processes many, many orders. In this simple scenario, Counseling would be charged for half of the Purchasing costs even though it did not cause much of those costs to be incurred. The result is inequitable to the Counseling Department and also does not cause the Soup Kitchens to realize the impact of placing frequent orders on the costs of running the Purchasing Department.

However, it is simpler to track how many square feet are in each cost center than it is to track which cost center was responsible for each purchase order processed. Managers must always consider whether the benefits of improved information justify the cost incurred to obtain that information.

Allocation from Support Centers to Mission Centers

If Meals consisted only of Soup Kitchens, Counseling, and Purchasing Departments, the preceding discussion

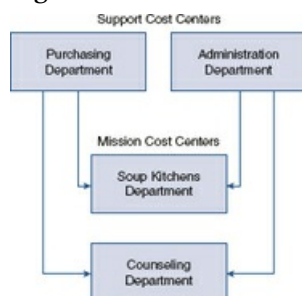
of cost allocation might suffice. However, most organizations have more than one cost center or department providing direct services to clients and also have more than one cost center generating indirect costs. For example, a hospital might charge patients for services from the pharmacy, the lab, radiology, the operating room, and so on. And indirect or overhead costs would likely be incurred in housekeeping, maintenance, security, purchasing, and many other areas. The existence of many different departments complicates the cost allocation process.

The first thing that must be done is to classify each cost center as being either a *mission center* or a *support center*. A mission center is simply one that produces the final product or service provided by the organization. For some organizations such as healthcare providers, mission centers are referred to as *revenue centers*. Revenue centers often charge customers for the services they provide. Support centers are those departments or cost centers that are not mission centers. Healthcare providers frequently refer to support centers as *nonrevenue centers*.

All support center costs must be allocated to mission centers. That way, when the costs of providing all of the organization's products or services are tallied up, the full costs of running the organization will be measured. Consider a highly simplified example: Assume that Meals for the Homeless has just four cost centers. Two of these cost centers are mission centers: Soup Kitchens and Counseling. The other two are support centers: Purchasing and Administration. Further assume that the government has agreed to reimburse Meals for all costs of providing meals but not for counseling. Meals must determine which of its costs appropriately belong in each mission center. Once the total costs (direct and indirect) of running the Soup Kitchens Department are determined, Meals will know how much reimbursement it can request.

To make that determination, Meals must allocate all of the costs of Purchasing and Administration to the Soup Kitchens and Counseling Departments. [Figure 4-7](#) provides a simplified image of what this allocation attempts to do. As the arrows indicate, all of the costs of the support centers must be transferred to the mission centers.

Figure 4-7 Direct Distribution Allocation of Support Centers



[Table 4-4](#) provides a simplified numerical example. As in [Figure 4-7](#), Purchasing and Administration Departments are support centers, and the Soup Kitchens and Counseling Departments are mission centers. The Direct Cost column in the table shows the direct costs that were incurred in each of the four centers. The next two columns show the allocation base chosen and the proportion of the base related to each department.

Cost Centers	Direct Cost (\$)	Allocation Statistics	
		Purchasing: Purchase Orders (%)	Administration: Personnel (%)
Support			
Purchasing	25,000	—	2
Administration	280,000	95	—
Mission			
Soup Kitchens	500,000	1	92
Counseling	50,000	4	6
Total Cost	855,000	100	100

Table 4-4

Purchasing will be allocated on the basis of the number of purchase orders, and Administration will be allocated based on the number of personnel. The use of purchase orders as a base was discussed earlier. Meals considers the primary role of administration to be supervision of employees. Therefore, the number of personnel in each department is the basis used for allocating administrative costs. Other organizations might choose a different base for allocating administrative costs.

[Table 4-4](#) shows the percentage of all purchase orders originating from each cost center and the percentage of all employees working in each cost center. The purchase orders originating from the Purchasing Department and the number of people working in the Administration Department cost center are excluded because no support cost center allocates its own costs to itself. If it did, it would not achieve the goal of allocating all support center costs to the mission centers because each support center would be allocating some of its costs back to its own cost center.

[Table 4-4](#) shows that 95 percent of all purchase orders originate in Administration, 1 percent come from the Soup Kitchens, and 4 percent from Counseling. It would appear in this scenario that Administration is probably handling most of the ordering of food and other supplies used in the soup kitchens. The table also shows that 2 percent, 92 percent, and 6 percent of the Administrative cost is to be allocated to Purchasing, Soup Kitchens, and Counseling, respectively, based on the number of personnel they employ.

Several approaches can be used to allocate the costs of the support centers to the mission centers: the *direct distribution* approach, the *step-down* method, and a group of more sophisticated *multiple distribution* techniques.

Direct Distribution

[Table 4-5](#) shows an allocation of the direct costs to the mission centers. The allocation in this table is called a direct distribution. In the direct distribution method, support center costs are allocated only to mission centers since that is where all of the costs must ultimately wind up. However, a problem arises in trying to make the allocation. [Table 4-4](#) shows 95 percent of all purchase orders being done for Administration, which is a support center. That leaves only 5 percent of POs done directly for mission centers (1 percent of purchase orders for the Soup Kitchens + 4 percent for Counseling). If only 5 percent of Purchasing costs are allocated, most of the costs of that cost center will not wind up in the mission centers.

Cost Centers	Direct Cost	Purchasing	Administration	Total
Support				
Purchasing	\$25,000	\$(25,000)	\$ 0	\$ 0
Administration	280,000	0	(280,000)	0
Mission				
Soup Kitchens	500,000	5,000	262,857	767,857
Counseling	50,000	20,000	17,143	87,143
Total Cost	<u>\$855,000</u>	<u>\$ 0</u>	<u>\$ 0</u>	<u>\$855,000</u>

Table 4-5

Purchasing column: $\$5,000 = \$25,000 \times [1/(1 + 4)]$; $\$20,000 = \$25,000 \times [4/(1 + 4)]$

Administration column: $\$262,857 = \$280,000 \times [92/(92 + 6)]$; $\$17,143 = \$280,000 \times [6/(92 + 6)]$

This problem is resolved by allocating to the mission centers based on the relative proportion of POs processed for each mission center. Since 5 percent of the purchase orders are in all of the mission centers combined (1 percent Soup Kitchens + 4 percent Counseling), the 1 percent in the Soup Kitchens divided by the 5 percent total for the mission centers gives the proportion of the Purchasing cost allocated to the Soup Kitchens. Similarly, the 4 percent in Counseling divided by 5 percent gives the portion of the Purchasing cost allocated to Counseling; 1 percent divided by 5 percent (1/5 or 20 percent) is multiplied by the \$25,000 direct Purchasing Department cost. This results in \$5,000 of cost being allocated to Soup Kitchens.

Note in [Table 4-5](#) that the Purchasing cost is reduced by \$25,000 on the Purchasing line and the allocation to the mission centers increases by \$5,000 and \$20,000 on the mission center lines in the Purchasing column. Administration costs are allocated to mission centers in a similar fashion. Also notice that when the allocation is done, there is no cost remaining in the Purchasing or Administration cost center lines (see the Total column), and the total cost in the Soup Kitchens and Counseling cost centers (\$767,857 and \$87,143, respectively) equals the \$855,000 that was the original direct cost for all four cost centers. In other words, after the cost allocation has been completed, we would say that the full costs of operating the Soup Kitchens Department is \$767,857, and the full cost of operating the counseling service is \$87,143. These full costs include an allocation of overhead.

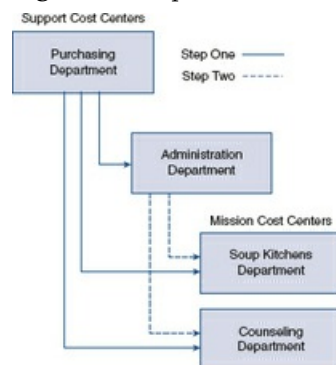
The direct distribution approach fails to take into account that some support cost centers provide service to other support centers. Purchasing has primarily processed purchase orders requested by Administration. If all Purchasing costs are allocated directly to mission centers, none would be allocated to Administration and a distortion in costs might occur.

For example, note that Purchasing is primarily processing purchase orders for Administration (95 percent of POs, from [Table 4-4](#)). Suppose that most of the purchases by Administration are for food used by the Soup Kitchens Department. It would be logical for most of the Purchasing cost to be allocated to Administration, and then most of Administration cost to the Soup Kitchens. However, because direct distribution does not allocate costs from some support centers to other support centers, Purchasing did not allocate to Administration, and only \$5,000 of Purchasing cost was allocated to the Soup Kitchens. The bulk of the Purchasing costs, \$20,000, was allocated to Counseling, which used only 4 percent of Purchasing's services. This is not a reasonable result. The potential distortions of direct distribution are so great that the method is not generally used.

The Step-Down Method

Instead of direct distribution, a cost allocation approach called the step-down method is commonly used. This approach is shown in [Figure 4-8](#). The step-down method requires the organization to allocate all of the cost of a support cost center to all other cost centers (both mission and support). First, one support center's costs are allocated to every other cost center. Then, another support center is allocated. As each center is allocated, its cost balance becomes zero, and it is no longer part of the process. In other words, no costs can be allocated to a support center once it has allocated its costs.

Figure 4-8 Step-Down Allocation of Support Centers



Note in [Figure 4-8](#) that Purchasing would allocate costs to Administration, Soup Kitchens, and Counseling in the first step of the allocation (solid lines). In the second step, Administration allocates costs to Soup Kitchens and Counseling only (dashed lines). Therefore, some amount of distortion still remains in the allocation process, because Administration does not allocate any of its costs to Purchasing even though Purchasing probably uses some services provided by Administration. If Administration and Purchasing provide services to the mission centers in different proportions, this creates a somewhat inaccurate allocation of costs.

Table 4-6 provides the results of the allocation using the step-down method. First, the \$25,000 of purchasing costs are removed from Purchasing and placed in the other cost centers using the allocation statistics from [Table 4-4](#); that is, 95 percent of the \$25,000 goes into Administration, 1 percent into Soup Kitchens, and 4 percent into Counseling (all in the Purchasing column). The total in the Purchasing column is now zero, as all of the Purchasing costs have been allocated to the other three cost centers.

Next, a Subtotal column is added, showing the remaining cost in each cost center. Note that the Administration costs in this Subtotal column are higher than when they started because they include both the \$280,000 direct costs of Administration as well as \$23,750 of the Purchasing costs. This makes sense since Administration requested most of the POs. The total of the Subtotal column is the full \$855,000 of cost that was incurred originally as direct costs in the four cost centers combined.

Cost Centers	Direct Cost	Purchasing	Subtotal	Administration	Total
Support					
Purchasing	\$ 25,000	\$(25,000)	\$ 0		
Administration	280,000	23,750	303,750	\$(303,750)	\$ 0
Mission					
Soup Kitchens	500,000	250	500,250	285,153	785,403
Counseling	50,000	1,000	51,000	18,597	69,597
Total Cost	\$855,000	\$ 0	\$855,000	\$ 0	\$855,000

Table 4-6

The next step in the step-down is to allocate the \$303,750 of Administration costs to the remaining cost

centers. None of the cost will be allocated to Purchasing, since that support center has already allocated its costs. The \$303,750 must therefore be allocated in a manner similar to that used in the direct distribution method. From [Table 4-4](#), it can be seen that 92 percent of all Administration costs should be assigned to the Soup Kitchens and 6 percent to the Counseling cost center. A proportion is used, with 92 out of a total of 98 going to Soup Kitchens ($\$303,750 \times 92/98 = \$285,153$) and 6 out of a total of 98 going to Counseling ($\$303,750 \times 6/98 = \$18,597$). After this allocation, the total in the Administration column is zero. No costs are left in that cost center.

By adding the Subtotal column together with the values in the Administration column, the total costs for each cost center can be determined. The total costs in the Soup Kitchens and Counseling rows (\$785,403 and \$69,597, respectively) equal the full \$855,000 that Meals has spent. Notice that the result differs substantially from the direct distribution results in [Table 4-5](#). For example, the Soup Kitchens cost found in the step-down allocation is \$785,403, whereas [Table 4-5](#) showed it as \$767,857. If Meals is being reimbursed the cost for the Soup Kitchens and is not being reimbursed the cost of Counseling, the total reimbursement to be received will be approximately \$17,500 higher under the more accurate step-down cost allocation.

The use of step-down does create another problem: Should Purchasing Department costs be allocated before or after Administration Department costs? The order of the allocation may affect the ultimate outcome. [Table 4-7](#) changes the order of allocation. Administration is allocated in that table before Purchasing.

Cost Centers	Direct Cost	Purchasing	Subtotal	Administration	Total
Support					
Administration	\$280,000	\$(280,000)	\$ 0		
Purchasing	25,000	5,600	30,600	\$(30,600)	\$ 0
Mission					
Soup Kitchens	500,000	257,600	757,600	6,120	763,720
Counseling	50,000	16,800	66,800	24,480	91,280
Total Cost	<u>\$855,000</u>	<u>\$ 0</u>	<u>\$855,000</u>	<u>\$ 0</u>	<u>\$855,000</u>

Table 4-7

The results from [Table 4-7](#) differ substantially from [Table 4-6](#). For example, in [Table 4-7](#) the costs of the Counseling Department are \$91,280; they were only \$69,597 in [Table 4-6](#). Suppose that Meals did not have an arrangement to get the costs of meals reimbursed but did have an arrangement to get reimbursement from a foundation for all costs related to providing counseling services. It would be in Meals's interest to use the allocation in [Table 4-7](#) rather than the allocation in [Table 4-6](#) because the Counseling Department costs are calculated as being more than \$20,000 higher. Therefore, Meals would receive a much higher reimbursement from the foundation if it used the step-down order shown in [Table 4-7](#) rather than the order shown in [Table 4-6](#).

However, [Table 4-6](#) gives a more accurate result. Recall that most of the purchase orders were processed for Administration and that Administration's efforts go largely to the Soup Kitchens cost center. In [Table 4-6](#), it can be seen that \$23,750 of the Purchasing costs are allocated to Administration in the first step. Those costs later are allocated primarily to Soup Kitchens in the second step. However in [Table 4-7](#), only \$6,120 is being allocated from Purchasing to Soup Kitchens. The resulting Soup Kitchens total cost of \$763,720 is not as accurate as the cost measured in [Table 4-6](#).

Other Allocation Approaches

Other allocation approaches eliminate most or all of the cost distortion. The methods are referred to as multiple distribution techniques. Most common are the double distribution and the algebraic approaches. The latter is sometimes referred to as the reciprocal or matrix distribution approach. These rely on each support center distributing its costs to *all* centers, including both mission and support centers. These approaches greatly reduce not only distortion, but also the ability to manipulate the resulting costs.

If every support center distributes costs to every other cost center, at the end of the allocation, there will still be some costs remaining in the support centers. For example, suppose that Purchasing allocated its costs to Administration, Soup Kitchens, and Counseling. At that point there is no cost in the Purchasing Department. Then Administration allocates its costs to Purchasing, Soup Kitchens, and Counseling. Now all support centers have allocated their costs, but Purchasing now has some costs that were allocated to it from Administration. This process did not achieve the goal of getting all support center costs into mission centers. Therefore, at least one more distribution must take place. The distribution process must be repeated until no costs remain in the support centers—hence the name *multiple distribution*. The double distribution method distributes all support center costs to all other cost centers in the first allocation. It then uses the step-down approach for its second and final allocation of costs. There is less distortion, but using the step-down method in the second pass still leaves some distortion and some room for manipulation of the results.

The algebraic or reciprocal approach is based on solving a set of simultaneous equations. This generates the same result as an infinite number of distributions. Under this method, the percentage relationships are set up as equations. The equations can be solved simultaneously using matrix algebra and inverting the matrix of the equations. Although the allocation that results from this method is more accurate, it is more complicated to understand and implement. Step-down allocation is generally considered to be sufficient, despite its inherent limitations.

Allocating Costs to Units of Service

Up to this point, the discussion has focused on allocating all costs of the organization into the cost centers that are mission centers. The next part of the cost measurement process is to assign each mission center's costs to the units of service that it provides. For example, Meals could take the total costs of the Soup Kitchens Department and divide it by the number of meals served to find the cost per meal. Counseling could take its total costs and divide them by the number of persons counseled to find the cost per person.

Activity-Based Costing and Activity-Based Management

Activity-based costing (ABC) is a process-based approach for allocating indirect or overhead costs to determine the cost of products or services. It attempts to model the production process in an effort to measure costs more accurately. ABC attempts to determine the underlying activities that cause an organization to incur costs and then to assign costs based on the amount of each activity undertaken, rather than using an arbitrary allocation base. Activity-based management refers to using ABC information when making decisions.

To measure the costs of a product or service, an organization must know the direct and indirect costs of providing that product or service. Direct costs are generally considered to be easy to assign. For example, if the

organization consumes identifiable supplies to produce a specific product or service, it would directly assign the cost of those supplies to that product or service. Managers try to trace or track the various costs of the organization to the output it is producing.

For example, suppose that the Millbridge School System is interested in knowing the distinct costs of elementary, middle, and high school education. A third-grade classroom teacher is clearly a direct cost of the elementary school. So are the textbooks used by students in that teacher's class. In the school system's accounting records, someone would track those costs directly to the category of elementary school education.

By contrast, indirect costs are generally not product- or service-specific and cannot easily be directly assigned to products or services. A school system superintendent is an indirect cost of elementary school education. What part of the superintendent is devoted to elementary versus middle versus high school education? That is a difficult question to answer. Without an ABC system, indirect costs are allocated based on some general measure such as units or labor hours. For example, one might find the total number of students in the Millbridge School System at all levels and allocate the superintendent to the various school levels based on the number of students in each level. If 30 percent of the students are in the elementary school, then 30 percent of the superintendent's salary would be assigned to the elementary school.

Whether a cost is direct or indirect often depends on the unit of analysis and the cost objective. Consider all government costs, and assume that school costs are part of overall government costs. Even though the superintendent is an indirect cost of elementary school education, she is a direct cost of the school system as a whole.

Consider another example. The Hospital for Ordinary Surgery has a housekeeping staff to empty wastebaskets, wash floors, and so on. Is the cost of a housekeeper a direct or an indirect cost? From the perspective of the Housekeeping Department, a housekeeping staff member is a direct cost of providing housekeeping services, just as the third-grade teacher is a direct cost of elementary school education. On the other hand, if a manager is trying to find out the cost of providing patient care, housekeeping staff costs are indirect. The housekeeping cost might be allocated to each patient-care department based on the number of square feet that the department occupies. If there are 100,000 square feet in total and the Radiology Department occupied 10,000 square feet, then it would be allocated 10 percent of the cost of housekeeping ($10,000/100,000 = .10$, or 10 percent). In turn, if the Radiology Department performed 1,000 X-rays, a patient receiving 10 X-rays would be assigned a cost that would include 1 percent of the housekeeping costs that had been charged to radiology ($10 \text{ X-rays}/1,000 \text{ X-rays} = .01$, or 1 percent).

In recent years, it has become apparent that the traditional approach used to allocate indirect costs may cause distortions in determining the cost of specific products or services. Suppose that the superintendent spends 90 percent of her time dealing with problems related to the high school. The simplistic allocation based on the number of students may not generate useful information. The ABC approach aims at improving the overhead allocation process so that product and service costs are measured more accurately.

The problem with the traditional approaches to cost allocation is that many indirect costs do not vary in direct

proportion with the allocation base used. For example, as noted earlier, square feet would be a poor allocation base for Purchasing Department costs. The number of purchase orders would be a better base. ABC takes this one step further. ABC questions whether the costs of the Purchasing Department really vary based on the number of purchase orders. Perhaps the costs of the Purchasing cost center vary as the result of some specific types of activities that are carried out by that cost center. The things that cause us to undertake those activities are referred to as *cost drivers*.

From the ABC perspective, the production of goods and services requires a set of activities. If we focus on the activities, we can seek to minimize the cost of, and even completely eliminate, activities that do not enhance the final product or service.

Consider an example. Suppose that a Purchasing Department spends \$25,000 to process 5,000 purchase orders. The simple way to allocate the cost of the Purchasing Department to other areas of the organization is to divide the \$25,000 cost by the 5,000 purchase order volume, and assign the resulting overhead rate of \$5 for each purchase order. For example, suppose that Millbridge's Purchasing Department issued 200 purchase orders to acquire supplies and equipment for the Public Works Department. Public Works would receive an overhead allocation of \$1,000 as follows:

$$200 \text{ purchase orders} \times \$5 \text{ per purchase order} = \$1,000$$

However, ABC argues that it is not simply the volume of purchase orders that accounts for the costs of running the Purchasing Department but rather the activities involved in issuing purchase orders. Perhaps routine orders require a certain simple process of taking the purchase request, filling out a form, and mailing it. We can refer to that process as Activity A. Rush orders require Activity A, but they are also disruptive as the Purchasing Department has to drop everything to process them. After processing the rush order, purchasing clerks lose time as they find the place where they were when the rush order arrived and resume normal processing. We can call the activities related to dropping everything and then picking up where you left off Activity B. So a rush order requires one unit of Activity A and one unit of Activity B.

Rush orders also require that items be shipped by an overnight express service. In the pre-ABC approach, these express costs might be lumped in with all other costs, and in this example would be included in the \$5 per purchase order for all purchase orders. However, the amount paid for express shipping can be treated as a direct cost and charged directly to each order that is shipped overnight, in the exact amount that it cost for that order to be shipped.

Orders over a certain dollar amount might require competitive bids. Soliciting and processing competitive bids is extremely time-consuming and costly. Those activities can be referred to as Activity C. All orders over the dollar limit for competitive bids would require one unit of Activity A and one unit of Activity C.

ABC would advocate undertaking a special study to determine the costs related to each activity. Suppose we found that Activity A consumes resources that cost \$2. Assume that 4,000 purchase orders are routine. The study found that Activity B imposes \$1 of cost each time it occurs. Assume that 800 purchase orders require Activity B. The study finds that Activity C, soliciting competitive bids, costs \$56 because of the extensive

process involved in getting competitive bids. Assume this occurs 200 times. In addition, the study might find that \$3,000 of freight costs are incurred specifically for overnight shipment of rush orders, charged to Millbridge at the rate of \$8 per pound. Purchasing cost center costs would then consist of the following:

Activity A	5,000	×	\$ 2.00	=	\$10,000
Activity B	800	×	\$ 1.00	=	800
Activity C	200	×	\$56.00	=	11,200
Express Shipping					3,000
Total					<u>\$25,000</u>

Recall that without an ABC system, the Purchasing Department would allocate \$5 per purchase order. Public Works would be charged \$1,000 for their 200 purchase orders. Under ABC, however, we would examine the activities generated by Public Works a bit more closely. Suppose that the purchase orders generated as a result of Public Works Department activity consisted of 100 routine orders, 60 rush orders, and 40 orders that had to go out for competitive bidding. The Public Works rush orders had a total weight of 100 pounds. Under ABC, Public Works would be assigned \$3,500 of purchasing cost as follows:

Purchasing Department Costs Allocated to the Public Works Department					
Activity	Cost Driver	Cost Driver Volume		Cost per Unit of Activity (\$)	Public Works Purchasing Cost (\$)
A	All orders	200	×	2.00	= 400
B	Rush orders	60	×	1.00	= 60
C	Competitive bids	40	×	56.00	= 2,240
FedEx	Weight	100	×	8.00	= 800
Total					<u>3,500</u>

Each of the 200 purchase orders generated for Public Works requires the normal processing that makes up Activity A. Additionally there are 60 rush orders, so we must include the extra Activity B cost related to a rush purchase. Further, 40 of the orders require the extra Activity C for orders requiring a competitive bid. Finally, Public Works is being charged for the cost of express shipment on their rush orders, at a rate of \$8 per pound.

The resulting \$3,500 charge is much more than the \$1,000 charge under the pre-ABC system. This would indicate that Public Works orders are more likely to be rush orders or require competitive bids than the average purchase processed for all departments. This more accurate costing creates greater equity across departments. Until now, other departments were being assigned some of the costs resulting from Public Works orders. Additionally, the \$3,500 allocation allows the Public Works manager to better understand the impact the Public Works Department has on overall spending. This is where activity-based management comes into play. Perhaps upon seeing the extra \$60 of Activity B costs and \$800 of FedEx costs, Public Works will try to reduce the number of rush orders it requests. If managers perceive that a rush order costs the same \$5 as any other order, there doesn't seem to be much need to plan in advance. If the same managers find out that the 60 rush orders added an extra \$860 to the costs of running the department, they might plan more carefully so that fewer rush orders are needed. In other words, ABC not only improves the accuracy of cost measurement, which is useful for decision making and external reporting, it also provides information to help managers manage better.

Public Works can now assign all of its costs, including the Purchasing Department allocation, to its own services to generate a more accurate measure of the cost of each of its services, such as snow removal, pothole

repair, and garbage collection. In turn, activity-based management uses that improved information from the ABC measurement process to make improved decisions for the organization.

Reflections on ABC

is primarily viewed as a superior method for allocating overhead or indirect costs. However, it is worth examining this view a bit closer. When a product or service is produced, direct and indirect costs are incurred. Direct costs have a cause-and-effect relationship with the product or service an organization provides. In other words, generating a product or service causes the organization to incur certain costs. If it didn't offer the product, it wouldn't incur the cost. Those are direct costs. The organization also incurs other costs that are not due to producing the specific product or service. Those are indirect costs.

Consider a simple example. When Millbridge's Public Works Department plows snow, it pays the plow driver. Assume the driver is paid on an hourly basis and would not have been paid anything if it hadn't snowed. Clearly, the driver is a cost of plowing the streets. Millbridge can assign the cost of the driver directly to snow removal on a cause-and-effect basis. Even though the Public Works Department plows snow, fills potholes, and collects garbage, managers don't have to use a cost allocation methodology to determine the portion of the driver that related to snow removal. It is really a direct cost.

On the other hand, the mayor is an indirect cost. The salary of the mayor does not change in any way if it snows. If Millbridge wanted to allocate the mayor's salary to the various functions of the city, it could allocate some of it to plowing the streets. However, the allocation of the mayor's salary is not really the key focus of ABC because it is a true indirect cost. The mayor works for the general good of the town, and there may be no way to identify activities that will allow Millbridge to assign the mayor's time in any but an arbitrary manner to Public Works or other departments, because there is no discernible cause-and-effect relationship.

The key focus of ABC should be less on true indirect costs and more on direct costs that are treated as if they were indirect. Many organizations, in their attempt to become more efficient, have streamlined their accounting systems. Rather than measuring every direct cost as a direct cost, they take shortcuts that wind up treating direct costs as if they were indirect.

For example, suppose that City Hall orders 10 boxes of paper clips for \$2. The cost is 20 cents per box. The paper clips are then consumed by the mayor's office, the tax assessor's office, the city engineer's office, and so on. Does it make sense to try to measure exactly how many paper clips were used by each office? No. That measurement would cost a lot more than the paper clips. Often, we allow costs that are directly associated with a department or product or service to be allocated *as if* they were indirect costs. A prorata share of the paper clip cost can be assigned to each department without examining how many clips were used by each department. Will this accurately assign the costs to the departments that use them? Probably not. Probably some departments use more paper clips and others use fewer. But what if we counted every single paper clip used by each department and assigned the cost directly based on the exact number of paper clips used? It would cost a lot to do that and would probably improve accuracy only by a little bit.

However, it is not always best to treat a direct cost as indirect. The salt that Millbridge spreads on the streets

to melt snow and ice is a direct cost of the Public Works Department. It is also a direct cost of clearing the streets of snow and ice. But it has nothing to do with garbage collection. Many governments, not-for-profit, and healthcare organizations extend the paper clip philosophy to a variety of direct costs. It is a slippery slope. Once one justifies treating a very low-cost direct item such as paper clips as if they were an indirect cost, the next step is to treat more and more costly direct costs as if they were overhead items.

Why would anyone do this? Because it is easier. Millbridge's Public Works Department may not bother tracking any of its supplies to any of their services. It uses salt to melt snow and ice. It uses blacktop to fill potholes. It uses trash bags in city garbage cans. All of these supplies may be lumped together as if they were paper clips. Rather than trying to track the salt to the function of clearing the streets of snow and ice, it is easier to simply allocate the cost of Public Works supplies on some arbitrary basis—for example, one-third to snow, one-third to potholes, and one-third to garbage removal.

Is this any worse than paper clip allocations? It depends. How much is Public Works spending on supplies? Suppose that it spends \$5,000,000 a year on salt, \$2,000,000 on pothole filler, and \$500,000 on garbage bags. The total spending on supplies is therefore \$7,500,000. If those costs are treated as if they were indirect, the department would allocate \$2,500,000 of cost to each area, simply by dividing supply costs by three. However, the salt is really a direct cost of snow removal. Snow removal should be charged \$5,000,000 rather than \$2,500,000 if we are concerned about accuracy. By contrast, the supply costs for garbage collection are allocated as \$2,500,000, even though the trash bags cost only \$500,000. Treating direct costs as if they were indirect, and then allocating those costs, results in inaccurate measurement of cost. The town might decide to privatize garbage collection to save money because it thinks that it costs \$2,000,000 more to collect garbage each year than it really does. This might well be the wrong decision. More accurate cost information would help the organization avoid making costly errors.

The problem is created by treating direct costs as if they were indirect, because it is easier to collect cost information if we treat the costs as if they were indirect. However, cost measurement will be most accurate if we assign direct costs directly on a cause-and-effect basis. But that is costly. ABC provides a middle ground. It says, "If you are not willing to assign all direct costs on a direct assignment basis, at least allocate these so-called indirect costs based on the activities that cause them to be incurred." This approach may be less costly than treating all direct costs on a direct basis. However, do not be fooled into thinking that ABC is easy. Determining the activities that drive costs, then measuring the amount of the activity, and ultimately allocating costs based on activities are time-consuming and expensive.

The Theory of Constraints

Sometimes organizations have bottlenecks that impact on the efficiency with which they produce products or services. The *theory of constraints* has been developed to minimize the financial impact of such bottlenecks. Organizations employ costly resources, and bottlenecks can result in use of more resources than are necessary.

For example, suppose that a blood bank collects blood by sending a crew to various locations, such as a large employer's factory. Assume that the crew includes two people who interview potential donors to ensure their

suitability for donation (e.g., they are not currently sick or on medications that would disqualify them) and six people who collect blood from donors. Over the last decade, the interview process has become more detailed and time-consuming to better protect our blood supply. However, assume that the ratio of one interviewer for three technicians (techs) has not changed over time. It is possible that the techs may be waiting for donors, while donors are waiting to be interviewed. In that case, there is a bottleneck at the point where donors are interviewed. Since the techs that collect the blood are being paid an hourly wage while they are waiting for donors, clearly resources are being wasted.

The theory of constraints (TOC) focuses our attention on how to best address this bottleneck issue. Three main factors are taken into account: *throughput contribution*, *investment*, and *operating costs*. Throughput contribution represents the revenues less the costs of direct materials related to output. Investment represents the costs of buildings, equipment, and materials. Operating costs are the costs other than materials (e.g., labor, rent, and utilities). The TOC attempts to increase throughput contribution while decreasing investment and operating costs. Unlike ABC, which takes a long-term perspective on cost management, TOC assumes that most operating costs are fixed and therefore is more focused on short-term solutions.

In the blood bank example, the throughput contribution depends on the amount the blood bank charges for blood and the cost of the materials used to draw and store the blood. The investment includes not only the materials to draw and store the blood, but also the tables that donors lie on while blood is drawn and the mobile blood center van. The operating costs would include the salaries of both the interviewers and the techs.

TOC requires that the organization first be aware that bottlenecks can cost money. Then it must investigate to determine bottlenecks that exist. Finally, everything possible must be done to ensure that the production at the bottleneck is continuous, since delays at that point are costly in other areas of production. Finally, it must implement changes to improve the efficiency or the capacity at the point of the bottleneck.

Applying TOC in the blood bank example would require a thorough review of the process of blood donation. If a line of donors is waiting to donate, but the techs are standing around without donors, it is quickly apparent that a bottleneck exists. There are many possible ways to improve results. First, there should be no idle time at the point of the bottleneck itself. If donors are waiting in line, the donors should be efficiently moved into the interview area as soon as the interviewer is free. Interviewers should not be waiting for donors if donors are available to be interviewed.

Next, we should find ways to reduce processing time at the bottleneck. For example, we might find that donors ask a lot of questions during the interview, slowing things down. A frequently-asked-questions sheet could be distributed to donors when they first get in line so that they have the answers to most questions by the time they reach the interview.

If possible, the bottleneck should be bypassed, or only the elements at the bottleneck that are essential should be processed. For example, suppose that new donors have to answer far more questions than those who have donated blood frequently in the past. As a result, an interviewer can process a new donor in 10 minutes, but a repeat donor in 4 minutes. Perhaps whenever techs are idle, an express line can be formed for frequent donors.

Another approach would be to cross-train one of the techs to perform interviews. When the bottleneck causes blood techs to wait for their next donor, the cross-trained tech can become a third interviewer until enough donors have been interviewed so that all technicians are operating at capacity. If all else fails, the interview crew could be expanded from two individuals to three.

What would be the ultimate benefit of these bottleneck changes? As a result of improved efficiency, the same number of donors can be processed with the entire team at the site for a shorter time. Or it may be that fewer potential donors will see a long line and decide not to donate. So there may be more donations of blood.

Summary

For public service organizations, an understanding of costs is essential. The better managers understand costs, the more accurate their plans will be, and the better they will be able to control spending. A solid understanding of costs improves the manager's ability to make effective decisions.

As the reader has seen in this chapter, however, costs are complicated. One focus of this chapter is on providing the reader with a solid grasp of the definitions of widely used terms such as *direct costs*, *indirect costs*, *average costs*, *fixed costs*, *variable costs*, and *marginal costs*. Another focus is on understanding how costs change as volume changes. The relationship between costs and volume has a dramatic impact on the profits or losses incurred by an organization and is critical to effective decision making.

Managers who understand the relationship between costs and volume can apply the break-even analysis technique, a tool that assists in determining the required volume level for a program or service to be financially self-sufficient.

The chapter concludes with a discussion of cost measurement. To determine the costs of products or services provided by the organization, it is necessary to allocate costs. Some responsibility center costs are allocated to other centers, and the costs of a specific responsibility center are allocated to units of service or products within that center. Methods of cost allocation, including step-down allocation and activity-based costing, are discussed.

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Questions for Discussion

- 4-1. What is a cost objective?
- 4-2. Distinguish among full, direct, and indirect costs.
- 4-3. Distinguish among average, fixed, and variable costs.
- 4-4. What are marginal costs?
- 4-5. What are several reasons that a financial manager says “it depends” rather than directly answering a question about how much something costs?
- 4-6. What are some direct and indirect costs of elementary school education? Clearly specify your cost objective.
- 4-7. Why is the relevant range the key to the difference between variable and marginal costs?
- 4-8. What is an allocation base, and how is it used in setting allocation rates?
- 4-9. What is the focus of ABC (activity-based costing)?
- 4-10. What approach should be taken in evaluating make-or-buy decisions? That is, should an organization provide a service itself or outsource it to another organization?
- 4-11. What can a manager do if a break-even analysis indicates that a venture will lose money?

Problems

4-12. When determining costs, which of the following factors will not be taken into account?

1. The cost objective
2. The relevant range of time
3. The relevant range of volume
4. Who is measuring the cost
5. Whether the person asking the question is inside or outside the organization

4-13. Relevant costs are those that change because of the action being considered or undertaken by an organization. Which of the following factors should be considered when determining which costs are relevant in a decision to expand an after-school reading program for neighborhood children?

1. The mission of the organization
2. The number of children that will be added to the program
3. The impact of adding the children on the quality of the program
4. The impact of adding the children to the existing facility
5. All of the above

4-14. Marginal costs are not equal to variable costs when (indicate all that apply)

1. the time frame for a decision is more than 1 year
2. there is a change in fixed costs
3. there is excess capacity
4. some costs are outside an organizational unit making the decision

4-15. Consider the cost of service delivery for a public service organization. Match the correct term with its definition below.

1. average cost
2. full cost
3. marginal cost

1. The direct cost and the indirect cost of service delivery equals its _____.
2. The total cost of service delivery divided by the total units of service delivered equals its _____.

3. The cost of the last unit of service delivered equals its _____

4-16. Select the best available answer to fill the blank.

1. We Give Gifts Foundation's accounting manager prepares reports about the foundation's grant making, investments, and general administrative activities. The cost of her salary and fringe benefits would be included as part of the _____ of its investment management activity.

1. direct cost
2. indirect cost
3. variable cost

2. We Give Gifts Foundation pays Beta Capital Management a fee for managing a portion of its \$83

million investment in stocks and bonds. The cost of this fee would be included as part of the _____ of its investment management activity.

1. direct cost
2. indirect cost
3. variable cost

4-17. Select the best choice from the following to answer questions 1 and 2.

1. An increase in service volume will have the following effects:
 1. Increase unit variable cost and decrease unit fixed cost
 2. Unit variable cost remains constant and unit fixed cost remains constant
 3. Decrease unit variable cost and unit fixed cost remains constant
 4. Unit variable cost remains constant and unit fixed costs decrease
2. Which one of the following is a name for the range of service volume over which an organization expects to operate?
 1. Mixed range
 2. Fixed range
 3. Variable range
 4. Relevant range

4-18. To break even, an organization's _____ must equal its _____.

1. total revenues, fixed costs
2. total revenues, variable costs
3. total revenues, total costs
4. total revenues, total support

4-19. Answer the following questions about break-even analysis.

1. Break-even is defined as the point at which _____ equals _____.
2. The contribution margin is equal to _____ minus _____.
3. The Local Town Concert Band has fixed costs of \$500 per concert and variable costs of \$2.00 per person who attends the concert. If they raise their ticket price from \$2.25 to \$2.50, their break-even level
 1. increases
 2. decreases
 3. stays the same
4. The marginal contribution or contribution margin is the difference between _____ and _____.
5. The Campaign for Better Politicians expects to have \$5,000 in fixed costs. If its fixed costs do not change but the amount of money each marcher raises through pledges (price/unit) declines from \$75 to \$60 and the variable cost/unit increases from \$40 to \$50, the break-even quantity will
 1. increase
 2. decrease
 3. stay the same
6. If all other factors remain unchanged, an increase in the variable cost per unit of service will

1. reduce the break-even volume of service
 2. reduce the contribution margin per unit of service
 3. increase total fixed costs
7. The difference between marginal revenue and marginal cost is called the _____.
8. If an organization sells 10 fewer tickets to its annual gala than are needed to break even, the gala will produce
1. a loss or deficit
 2. break-even results
 3. a profit or surplus
- 4-20. Answer the following questions about costs.
1. Whether a cost is considered to be a direct or indirect cost depends on (select the best choice)
 1. the cost objective
 2. who is doing the analysis
 3. the time frame for the analysis
 4. whether costs are inside or outside an organizational unit
 5. the expected range of volume
 2. If you are trying to determine the cost of the third-grade classes in an elementary school, the principal's salary is
 1. direct and fixed
 2. indirect and fixed
 3. direct and variable
 4. indirect and variable
- 4-21. Answer the following questions about break-even analysis.
1. Break-even analysis for multiple products requires a _____ approach.
 2. The contribution margin must be a positive number for the organization to have any chance of having a _____.
 3. The NYU Concert Band has fixed costs of \$200 per concert and variable costs of \$1.00 per person who attends the concert. If they raise their ticket price from \$1.25 to \$1.50, their break-even level
 1. increases
 2. decreases
 3. stays the same
- 4-22. Review Father Purtell's Special Purpose Budget in [Chapter 2](#). Determine which costs are fixed and which are variable. Assume that a \$10,000 subsidy is available from the two parishes. How many teens are needed for the trip to break even? What is the contribution margin per teen above that break-even point? What complicating issues exist?
- 4-23. Camp Hole-in-the-Wall provides children who have chronic medical conditions with 1-week summer vacations. The Camp owns a 500-acre facility in the Berkshire Mountains, where it brings the kids. The annual depreciation expense for the camp is \$100,000. The Camp hires one counselor for every 10 campers. It also employs a full-time doctor, a nurse, two cooks, and a camp director. It costs \$75 per week to feed each camper and an additional \$30 round-trip to transport them to and from the

camp. Which of the camp's expenses are

1. fixed
2. step-fixed or semi-variable costs
3. variable
4. not included in the camp's cash budget

4-24. Answer the following questions about the break-even analysis.

1. New City Day Care Center operates from Monday to Friday. It has fixed expenses of \$5,000 per week and charges each child who attends the program \$15 per day. It costs the Center \$5 per day for supplies and snacks for each child. How many children must come to the Center each day for it to break even?
2. If the Center gets a contribution of \$1,000 per week, its break-even point (choose the correct answer)
 1. increases
 2. decreases
 3. stays the same

4-25. Youth For America had annual total costs of \$800,000 at a volume of 2,000 volunteers. The fixed costs for the year were \$400,000.

1. What are the total variable costs for the year?
2. What would the total costs be if the volume increased by 10 percent?

4-26. Doctors Without Borders (DWB) operates health programs around the world. It has a central staff of 100 people who administer its worldwide programs. DWB's central operation buys and distributes all of the supplies used in its various country operations. DWB's country director for Afghanistan and her staff run 20 clinics around the country. At the clinic level, doctors and nurses hired under 2-year fixed contracts administer medical treatment free of charge to the local population using supplies shipped to them by DWB's central staff.

1. From the perspective of the program director for Afghanistan, which of the program's expenses are
 1. direct
 2. indirect
 3. fixed
 4. variable
2. Which of the direct expenses for Afghanistan would be classified as indirect from the perspective of a clinic director?

4-27. Mike Shiau is the finance director for faculty research at Big and Prestigious University (BPU). The research division has an administrative staff that is responsible for managing the administrative aspects of all of BPU's research grants. Faculty research is carried out in a dedicated research building that is divided into 20 specialized laboratories. Grants are expected to pay for a share of the building expenses as well as the cost of the portion of the laboratory they use. When a grant is awarded, a faculty researcher is paid to manage the project, and she hires graduate assistants to work on the grant. Faculty researchers and research assistants are paid fixed amounts for their work on a grant. In general, carrying

out the research funded by a grant also requires the use of supplies.

If Mike is trying to measure the costs associated with one specific grant, which of the grant expenses would be considered

1. direct
2. indirect
3. fixed
4. variable

4-28. If the contribution margin for Independent Lab stays constant and its fixed costs increase from \$8,000 to \$12,000, then the lab's break-even quantity

1. increases
2. decreases
3. stays the same

4-29. The Center for Shaker Crafts (CSC) is thinking about bringing a new exhibit to the Center. It will cost the Center \$30,000 to bring the exhibit to town, an additional \$12,000 for lighting and security equipment, and \$5,500 for an insurance policy. The manager of the Center thinks she can charge \$12 per person to see the exhibit; she estimates that 350 people per day will come to see the exhibit. If the total costs for additional security guards, power, and added custodial services are 1,500 per day, how many days will the exhibit need to be at the Center in order to cover the costs?

4-30. Millbridge Memorial Hospital provides comprehensive physical exams. The charge per exam is \$100, while the variable cost per exam is \$65. Thirty percent of the patients who come in for exams are private pay. They must pay the full charge. Seventy percent of the patients are covered by an insurance company that has an agreement with the hospital that reduces the charge by 20 percent. The hospital has \$210,000 in fixed costs per year. How many exams must the hospital provide in order to break even?

4-31. The fixed costs of running a fundraising dinner for Meals for the Homeless are \$10,000 and the variable costs are \$75 per attendee. The facility where the event is being held can accommodate 500 people. Answer the following questions about the event.

1. If Meals charged \$275 per ticket, how many people would have to attend the gala for the organization to break even on the event?
2. If Meals charged \$300 per ticket, what would the contribution margin from each ticket sold be?
3. If 500 people attend the event, how much does the organization have to charge each attendee to earn a profit of \$100,000? (Assume costs from original problem are still in effect.)

4-32. A Greener World expects to have \$15,000 in fixed costs. If its fixed costs do not change but the amount each marcher raises through pledges declines from \$55 to \$50 and its variable cost/unit increases from \$25 to \$30, how much will its break-even quantity increase?

4-33. The Helensville Symphony incurs \$3,000,000 of fixed cost each year. The variable cost for each person attending one of the orchestra's performances is \$24. If the average charge for a ticket to attend a performance of the Helensville Symphony is \$100, how many tickets must it sell each year to break even?

4-34. Millbridge Family Services (MFS) currently operates a foster care program that is fully funded by

the state. Changing government priorities are expected to result in a 20 percent reduction in its state foster care funding for the upcoming fiscal year. MFS's management is considering eliminating the foster care program in the next fiscal year in light of these anticipated funding cuts. The total foster care program expenses for the upcoming fiscal year are \$120,000. The foster care program's budgeted expenses include \$25,000 of salaries and occupancy costs that are allocated to its program budget from MFS central administration. These allocated expenses of \$25,000 are unavoidable even if the foster care program is eliminated. What is the total relevant cost that should be considered in making this decision?

4-35. Hudson University has just received a proposal from Speak and Tell (S&T), a New York public relations firm. Under the terms of the proposal, S&T has offered to meet all of the university's external media relations needs at a fixed cost of \$750,000 per year. These activities are currently performed by Hudson staff. The expenses associated with the media relations department during the current year were as follows:

Staff salaries: \$650,000 including a senior staff member who is paid \$80,000 and who will remain on staff to oversee the university's interests in dealings with the public relations firm. All other staff would be let go. The university incurs additional costs for healthcare and other benefits at a rate of 30 percent of staff salaries.

Fixed equipment: The computers and media equipment in the department were purchased 4 years ago. They cannot be used by any other department at Hudson and cannot be sold. Depreciation expenses from the equipment are \$20,000 per year. The net book value of the equipment is \$60,000.

Printing costs: If the university contracts out it will no longer have to print external media documents, which cost \$150,000 this year.

1. Which of the costs listed above should be included in Hudson's consideration of the proposal?

Why should they be included?

2. Based solely on financial considerations, should Hudson accept the contract? Why?

4-36. Millbridge Animal Protective Services (MAPS) is planning its spring awards dinner as a fundraising event. It is planning to charge each attendee \$150. Feast Hall, the site of the dinner, will charge MAPS \$5,000 for the use of its posh VIP Room and \$50 per plate for food. The VIP Room has a capacity of 180 people. Rocky Mount and the Tar Heels (one band) will provide the entertainment for their standard performance fee of \$1,000 per night.

1. How many people would need to attend in order for MAPS to break even?

2. If MAPS sells 100 tickets for the dinner, what is the average cost to MAPS for each person with a ticket?

4-37. The Children's Museum of Millbridge is considering catering birthday parties for members as a way to generate additional revenue. The costs associated with each party are:

Staff	\$90
Cake and Food	\$60
Decorations	\$30
In addition, party favors are \$5 per child.	

In addition, party favors are \$5 per child.

1. Find the break-even price per child assuming that 12 children attend each party.
2. The museum expects to make a profit of \$300 on every party. Find the price per child to break even and produce the \$300 profit on every party (again, assume that 12 children attend each party).

4-38. The Millbridge Fine Arts Museum (MFAM) is thinking about bringing a Van Gogh exhibit to Millbridge for 30 days. MFAM expects 2,000 people per day to visit the exhibit, each paying the \$10 entrance fee. Daily costs for security, extra power, and added custodial services will be \$1,000. What is the maximum amount that MFAM can afford to spend on fixed costs, such as organizing and bringing the exhibit to town, and still break even? Hint: “break-even quantity” in this problem is measured in days.

4-39. Answer the following questions about break-even analysis.

1. Millbridge Day Care Center operates from Monday to Friday. It has fixed expenses of \$18,000 per week and charges each child who attends the program \$300 per week. It costs the center \$30 per week for supplies and snacks for each child. How many children have to come to the Center each day for it to break even?
2. If the Center gets a rent increase of \$1,000 per week, its break-even point (choose the correct answer)
 1. increases
 2. decreases
 3. stays the same

4-40. Kids Early Start (KES) operates from Monday to Friday. KES provides childcare and educational services for inner-city kids between the ages of 3 months and 5 years. It has fixed expenses of \$35,000 per week and charges parents \$15 per day for each child who attends the program. A city contract pays the center \$25,000 per week. It costs KES \$5 per day for supplies and snacks for each child. KES also offers an optional early-reading program for children over the age of 3. Parents pay an additional \$3 per day to enroll a child in the reading program. It costs KES an additional \$4 per day for each child in the program. Thirty percent of the children attending KES are enrolled in the reading program.

1. How many children have to come to KES each week for it to break even?
2. If the percentage of children in the reading program rises from 30 to 35 percent, the break-even level
 1. increases
 2. decreases
 3. stays the same

4-41. The Walk for Kids is an annual fundraising event that raises money for research on children’s blood disorders. The Walk costs \$120,000 to stage even if nobody shows up. To encourage people to participate, each walker is given a T-shirt that costs the Walk \$8 and refreshments that cost an average of \$10 per person. This year, the organizers of the Walk got a \$20,000 grant from the City Foundation to offset part of the costs associated with staging the Walk. The Walk raises money by asking each walker to pay \$10 to register and requires each walker to solicit sponsors who agree to pay \$.75 (75

cents) per mile for each of the 10 miles that the walker completes. In the past, all of the walkers completed the 10-mile course and had an average of 20 sponsors.

1. How many walkers have to participate in the Walk for the event to at least break even?
2. If the cost of refreshments per walker increases from \$10 to \$11, the break-even number of walkers will
 1. increase
 2. decrease
 3. stay the same

4-42. PPO of Millbridge Township (PPOMT) sells health benefit plans to local employers. PPOMT charges its clients (local employers) \$50 for each office visit provided to a covered employee. PPOMT contracts with individual physicians to provide the office visits to its health plan beneficiaries. PPOMT pays its contracted physicians a fee of \$40 for each new patient visit and \$30 for each follow-up office visit. Twenty percent of all office visits are new patient visits. PPOMT maintains an office building where all routine office visits are conducted and pays \$6,000 in occupancy expenses each month for the building. PPOMT also incurs monthly staffing costs of \$12,000 for maintenance and administrative staff at its facility.

1. How many office visits must PPOMT deliver to break even?
2. Assuming that PPOMT's facility is open 21 days in a typical month, how much profit will it earn if each of its five contracted physicians sees an average of 12 patients each day?

4-43. The Millbridge High School Student Association (MHSSA) is planning a fundraising event for the spring semester. The MHSSA is planning to hire the Dizzy Gillespie Heritage Band as entertainment for a fee of \$750. The Fine Arts Museum was selected as the site for the event. The museum will charge the MHSSA \$600 for the use of its banquet room. Good Eats Restaurant was selected to cater the event. Good Eats will charge the MHSSA a flat fee of \$400 and a \$20 per meal charge.

1. The MHSSA expects 250 students and alumni to attend its spring fundraising event. What is the minimum (break-even) ticket price for the event?
2. The MHSSA is considering two ticket prices, a \$25 price for students and a \$75 price for alumni. If three students are expected to attend the event for each alumni, how many students and alumni must attend the spring fundraising event if it is to break even?

4-44. You are given the following information about We-Save-Um Animal Rescue (WSU):

Number of dogs rescued and placed by WSU—600

Average length of stay for a dog—10 days

Daily cost of feeding one dog—\$.90

Number of veterinary visits per dog—1.2

Cost per veterinary visit—\$35

Cost of spay/neuter and transportation per dog rescued—\$45

Cost of the kennel and related equipment—\$300,000

Useful life of the kennel and related equipment—20 years

WSU uses straight-line depreciation.

Salvage value of the kennel and related equipment—\$0

WSU has three full-time employees—an executive director who earns \$40,000 per year, an evaluator/trainer who earns \$30,000 per year, and a kennel manager who earns \$25,000. Fringe benefits equal 25 percent of each employee's annual salary.

WSU expects to place all of the dogs that it takes into the program by the last day of the fiscal year. It charges an adoption fee of \$225 per dog. Experience has shown that 15 percent of the people elect to make an additional donation to WSU at the time of adoption. Historically, these extra donations have averaged \$200. In addition, WSU has an active fundraising program and expects to raise \$40,000 in donations during the fiscal year.

The executive director wants to know how many dogs she has to place next year to break even. Calculate WSU's break-even.

4-45. The Stick-em-Quick Inoculations Center provides early childhood checkups and vaccinations for children in the South Bronx. It pays annual rent of \$25,000 and has a permanent staff consisting of a nurse practitioner and an administrative assistant, who are paid \$125,000 per year. The Center hires doctors on a per-diem basis to provide exams and uses \$15 worth of supplies for each exam, not including vaccines. Inoculation appointments are scheduled in advance, and the Center needs one per-diem doctor for every 100 children it has scheduled on any given day. It also spends \$7.50 per child for the vaccines used in its inoculations program. Which of Stick-em's expenses are

1. fixed
2. step-fixed or semi-variable costs
3. variable

4-46. Jamestown Clinic had the following fixed and variable costs:

Variable Costs (VC) per Patient		Fixed Costs per Year	
Personnel	\$150	Rent	\$100,000
Supplies	20	Administration	120,000
Laundry	90	Other	80,000
Other	50		
Total VC/Patient	\$250	Total Fixed	\$300,000

1. What are the fixed, variable, total, and average costs per patient for volumes of 100, 500, 1,500, 2,500, and 3,000?
2. Draw a graph of the average cost per patient. Plot cost on the vertical axis and the number of patients on the horizontal axis.
3. An outside organization, such as a health maintenance organization, offers to send Jamestown 500

patients per year but offers to pay only \$300 for each one. Should Jamestown agree to this arrangement? It currently has 2,500 patients per year and can easily handle 3,000.

4-47. Millbridge Township provides a variety of summer recreation alternatives. You can belong to the town pool, play tennis, or play golf. Summer passes allowing residents to use these facilities are sold each year. Twenty-five percent of the season passes that are purchased are golf passes, 35 percent are for tennis, and the rest are for the pool. The golf passes are \$30, the tennis passes are \$50, and the pool passes are \$70. The cost of providing these services is mostly fixed, with a \$3 variable cost per pass, regardless of type. The fixed cost of operating the summer recreation program is \$250,000. How many people must buy recreation passes for the town to break even? How many passes would be sold for the pool at that break-even volume?

Annual Number of Arrests	Police Officers	Desk Clerks	Supervisors
0-1,000	11	6	2
1,001-2,000	12	6	2
2,001-3,000	12	7	2
3,001-4,000	13	8	3

4-48. Calabrese City allocates some indirect or overhead costs to each of its police stations. The city charges each station for common services such as the city food service and for administrative services such as payroll. For the coming year, the Washington Square Police Station will have a total budget allocation of \$1,400,000. That will be its only revenue. All direct and indirect charges have to be paid from that budgeted amount.

Each police station must pay \$100,000 for processing its payroll. In addition, once arrests are made, the prisoners spend a day or two in the local police station, where the city must feed them. On average, the city food service charges each police station \$40 for meal service for each arrest.

The station would like to maximize its number of arrests to reduce the number of criminals on the street. However, more arrests require not only more food, but also more police officers.

The personnel employed by the Washington Square Station are supervisors, desk clerks, and police officers. The minimum staffing levels based on total budgeted arrests are as follows:

Annual salaries for each class of employee follow: supervising officers, \$68,500; desk clerks, \$59,000; and police officers, \$54,000. Note that this police station cannot process more than 4,000 arrests per year.

Calculate the maximum number of arrests that Washington Square can budget and still expect to break even for the coming year.

4-49. The New City Subway has 40,000 passengers every day. However, they are fairly price sensitive. If the current price of \$2 were to increase to \$2.50, it is likely that there would be only 30,000 passengers each day. On the other hand, if the price were to drop to \$1.50, the ridership would increase to 50,000. The variable costs are only 8 cents per passenger. The fixed costs of operating the subway are \$70,000 per day. How many passengers are needed each day to break even at the current \$2 price?

Prepare a flexible budget for the subway system at prices of \$1.50, \$2.00, and \$2.50. (Refer to [Chapter 3](#) for a discussion of flexible budgets.) Considering only the financial implications, what should be done? Why? How can you reconcile the results of the flexible budget with the results of the break-even calculation?

4-50. Millbridge Ambulance Service has been considering consolidating its three locations into just two locations. The location they are considering closing currently costs \$155,000 to operate. If the location is closed, the ambulances from that location would be moved to the other two locations. The savings from the closure would be partially offset by increased expenses at the two remaining locations. Millbridge will lose \$40,000 of state subsidy if it closes the location. Millbridge wants to close the location only if the closure results in an overall financial improvement. The current costs of the location are as follows:

Salaries of Staff	\$ 80,000
Rent	20,000
Repairs and Maintenance	10,000
General and Administrative	20,000
Supplies	25,000
Total	<u>\$155,000</u>

The general and administrative expenses of \$20,000 are an allocation of costs from the central office. The costs of the central office are not affected by the existence of the specific locations. If the location is closed, the staff will be transferred to the other two locations, and the lease will be canceled, so there will be no rent or repairs and maintenance. While it won't purchase supplies for this location, the supply cost of the other two locations will rise by \$20,000. What should Millbridge do?

4-51. The Millbridge tax collector's office spent \$32,000 in the first quarter of the year, during which it processed 8,000 tax bills. It took a total of 1,000 hours of clerical time to process the tax bills. What are two possible allocation bases and rates?

4-52. Mr. Robbins's detailed medical records indicated that a total of 20 labor hours were directly used in providing his care. The cost of the labor was \$380. It was expected before the beginning of the year that a total of 90,000 direct labor hours would be consumed by the healthcare organization's patients, at a cost of \$1,350,000. The total overhead to be allocated to patients was expected to be \$810,000.

Determine the overhead to be assigned to Mr. Robbins based on the data given. Solve this problem in two ways: First, assign overhead on the basis of direct labor hours, and second, assign overhead on the basis of direct labor cost. Why might your results differ?

Cost Centers	Direct Cost (\$)	Allocation Statistics	
		Purchasing: Purchase Orders (%)	Administration: Total Salaries (%)
Support			
Purchasing	80,000	—	5
Administration	40,000	15	—
Mission			
Soup Kitchens	900,000	40	90
Counseling	300,000	45	5
Total Cost	<u>1,320,000</u>	<u>100</u>	<u>100</u>

4-53. Use the information in the table above to allocate costs to the mission centers using the direct distribution method.

4-54. Using the information from Problem 4-53, allocate the costs using the step-down method.

Compare the results with Problem 4-53. Do they differ?

4-55. Using the information from Problem 4-54, allocate the costs using the step-down method, but change the order of step-down from that used when you solved Problem 4-54. Do your results differ from those you found in Problem 4-54?

4-56. Jump Hospital currently allocates all maintenance department costs based on departmental square feet. However, the manager of the pharmacy department has suggested that an ABC approach be used for the portion of the maintenance department costs that relate to repairing equipment. Her contention is that the pharmacy has relatively little equipment that breaks. However, it must subsidize many high-tech departments that require expensive equipment repairs. Using the data in the following tables, calculate the maintenance cost assigned to the pharmacy using the existing method and using an ABC approach.

	Maintenance Costs		Total
	Routine Maintenance	Repairs	
Volume (Square Feet)	100,000	800	
Labor Hours	10,000	4,000	14,000
Labor Cost/Hour	\$12.00	\$18.00	\$13.71
Supplies	\$20,000	\$80,000	\$100,000
Administration			\$15,000

	Department Information		Total
	Pharmacy	All Other Departments	
Square Feet	2,000	98,000	100,000
Volume of Repairs	3	797	800
Hours of Repairs	6	3,994	4,000
Supplies Used for Repairs	\$200	\$79,800	\$80,000

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Appendix 4-A: Additional Break-Even Analysis Issues

This appendix addresses the issue of break-even for multiple products with multiple prices, raises the issue of target profit analysis, and considers two-tier pricing models.

Break-Even with Multiple Products Extended

In this chapter, the problem of break-even analysis for multiple products was considered. An example for the Feed-a-Child Foundation was given in which there were three different programs. It was necessary to calculate a weighted average contribution margin (see [Table 4-3](#)) and use that weighted average contribution margin when solving for the break-even point. In many cases, there are not only multiple products, but also different prices and/or variable costs for each product. How can that problem be addressed?

Reconsider the problem of the Feed-a-Child Foundation. Still assume that there are three programs: Africa, Asia, and South America. However, now assume that there is more than one level of donation for each program. Although the program appeals are based on feeding one child for one year for a set amount, some people may make larger or smaller donations. The method would still work in the same way. It would be possible to list each donation amount for each program as a separate item, estimate the percentage of donations in that amount, and calculate a weighted average.

For example, assume no change in the South American and Asian programs, but assume that 50 percent of all African program donations are in the amount of \$36, 30 percent in the amount of \$50, and 20 percent in the amount of \$100. The contribution margin by program and donation size is shown in [Table 4-A-1](#). Note that there are five different classes of donation, shown as a, b, c, d, and e.

	Donation (A)	Variable Cost (B)	Contribution Margin (C = A - B)
a. Africa	\$ 36	\$32	\$ 4
b. Africa	50	32	18
c. Africa	100	32	68
d. Asia	40	20	11
e. South America	50	30	20

Table 4-A-1

To use the individual contribution margins from [Table 4-A-1](#) to calculate an overall weighted average contribution margin, it is necessary to know the percentage of total contributions that each donation makes up. The African program is expected to receive 70 percent of all donations to the foundation. It is also known that 30 percent of the African donations are type b donations for \$50. Then 21 percent of the donations to the foundation are to the African program in the amount of \$50 ($70\% \times 30\% = 21\%$). [Table 4-A-2](#) shows this calculation for each type of donation. The resulting percentages in the right-hand column can then be used in [Table 4-A-3](#) to calculate the weighted average contribution margin.

Program	Donation Size	Program's Percentage of Foundation Donations		Portion of All Donations to This Program Based on Size		Percentage of All Donations to the Foundation
a. Africa	\$36	70%	x	50%	=	35%
b. Africa	50	70	x	30	=	21
c. Africa	100	70	x	20	=	14
d. Asia	40	25	x	100	=	25
e. South America	50	5	x	100	=	5
						<u>100%</u>

Table 4-A-2

Program	Donation Size	(From Table 4-A-2) Percentage of Donations		(From Table 4-A-1) Contribution Margin		Weighted Average Contribution Margin
a. Africa	\$36	35%	x	\$4	=	\$1.40
b. Africa	50	21	x	18	=	3.78
c. Africa	100	14	x	68	=	9.52
d. Asia	40	25	x	11	=	2.75
e. South America	50	5	x	20	=	1.00
		<u>100%</u>				<u>\$18.45</u>

Table 4-A-3

The weighted average contribution margin of \$18.45 (Table 4-A-3) can be used to determine the number of donations needed to break even:

$$BEQ = \frac{FC}{CM}$$

$$BEQ = \frac{\$100,000}{\$18.45}$$

$$= 5,420$$

If the revenues, expenses, and relative proportion of donations by type can be projected, it does not matter how many products, services, or programs an organization has, or the number of different prices for each program or service. The weighted average approach can be used to determine the activity level needed to break even.

Target Profit Analysis

At times, an organization will decide that it wants to undertake a new program or project only if it will earn some minimum amount of profit. This might be because there are losses in other parts of the organization that must be subsidized. Another reason is that organizations desire to have a safety cushion, in case everything does not work out as expected. To find the volume for the activity that is required to not only break even, but also earn some minimal required profit level, the required profit is treated as a fixed cost.

Equation 4-6 then becomes

$$TPQ = \frac{FC + TP}{P - VC} \quad (4-A-1)$$

where TP is the target profit and TPQ is the volume required to achieve the target profit. Target profits have the same effect as if fixed costs had increased.

Two-Tier Pricing Models and Break-Even Analysis

Many not-for-profit and government organizations occasionally find themselves in a situation in which there is not one unique price for their services. Consider, for example, a charitable organization with an endowment. The income from the endowment is used to subsidize the services provided to its clients. This subsidy might take place in several ways. For example, the endowment income could be used to offset fixed costs. Alternatively, it could be used to provide a price subsidy.

Suppose that the Leetch Blood Bank normally charges \$100 per pint of blood. The variable costs of processing blood are \$80, and the fixed costs of running the organization are \$80,000. The break-even point would be as follows:

$$\begin{aligned} BEQ &= \frac{FC}{P - VC} \\ &= \frac{\$80,000}{\$100 - \$80} \\ &= 4,000 \text{ units of blood} \end{aligned}$$

Suppose further that Leetch generates \$20,000 in endowment income. How would that affect the break-even point? That income could be treated as a source to offset part of the fixed costs of running the blood bank, as follows:

$$\begin{aligned} BEQ &= \frac{FC - \text{Endowment Income}}{P - VC} \\ &= \frac{\$80,000 - \$20,000}{\$100 - \$80} \\ &= 3,000 \text{ units of blood} \end{aligned}$$

Alternatively, the bank could decide that it will charge the regular price to those who can pay the full amount and will charge a subsidized price to those who are poor. Assuming that the bank believes it will provide 5,000 units of blood, and 40 percent of the units will have to be subsidized, what is the lowest subsidized price the blood bank can charge and still break even?

This can be solved in a fashion similar to break-even analysis with multiple products. The break-even formula can incorporate the endowment income as a reduction of fixed costs and then can be solved for the subsidized price. Here, 60 percent of the clients pay \$100 and have variable costs of \$80, for a contribution margin of \$20. The remaining 40 percent pay the lower, unknown price. Since there is only one unknown variable in the equation, it can be solved for S, the subsidized price, as follows:

$$\begin{aligned} BEQ &= \frac{FC - \text{Endowment Income}}{P - VC} \\ 5,000 &= \frac{\$80,000 - \$20,000}{[(60\% \times \$100) + (40\% \times \$S)] - \$80} \\ 5,000 &= \frac{\$60,000}{[\$60 + .4S] - \$80} \\ 5,000 &= \frac{\$60,000}{\$4S - \$20} \\ 5,000 \times (\$4S - \$20) &= \$60,000 \\ \$2,000S - \$100,000 &= \$60,000 \\ \$2,000S &= \$160,000 \\ S &= \$80 \end{aligned}$$

If the blood bank charges \$80 to the 40 percent of the clients who are subsidized, it will still be able to break even. Thus, break-even analysis can be helpful in determining prices that are needed in two-tier pricing systems.

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Chapter 5 Capital Budgeting

Learning Objectives

The learning objectives of this chapter are to:

- introduce capital budgeting and explain why a separate capital budget is needed;
- define capital assets, in both theory and practice;
- explain the time value of money (TVM) concept and discuss the basic tools of TVM, including compounding and discounting, present and future value, and annuities;
- present the tools of investment analysis, including net present cost, annualized cost, net present value, and internal rate of return;
- define and discuss cost-benefit analysis; and
- define and discuss payback and accounting rate of return.

As discussed in [Chapter 2](#), when an operating budget is prepared, it includes costs that the organization expects to incur for the coming year. Sometimes, however, the organization spends money on the acquisition of resources that will provide benefits beyond the coming year. A capital asset is anything the organization acquires that will help it provide goods or services in more than one fiscal year.¹ When an organization contemplates the acquisition of a capital asset, it often pays special attention to the appropriateness of the decision. The special attention to the decision reflects the fact that a capital acquisition generally requires a large up-front expenditure, followed by some combination of mortgage and interest payments, rent, maintenance, and other ongoing expenses. The process of planning for the purchase of capital assets is *capital budgeting*. A capital budget is prepared separately from the operating and cash budgets, and it becomes part of the organization's master budget.

¹ A fiscal year may be a calendar year, or it may be any 12-month period. December 31 is the most common fiscal year-end. However, many not-for-profit organizations and local governments begin their fiscal year on July 1 or September 1, rather than January 1. The federal government begins its year on October 1. Generally, the fiscal year is chosen so that the end of the year coincides with the slowest activity level of the year. This allows accountants to take the time needed to summarize the year's activity. Governments may choose a fiscal year that allows sufficient time for the body that approves the budget to review, revise, and adopt the budget by the beginning of the fiscal year. This requires coordination between the choice of the fiscal year-end and the time of the year that the legislative body is in session.

In some organizations, all capital budgeting is done as part of the annual planning process. Specific items are identified, and their purchase is planned for the coming year. In other organizations, an aggregate dollar amount is approved for capital spending for the coming year. Then individual items are evaluated and approved for acquisition throughout the year as the need for those items becomes apparent.

One concern in the capital budget process is that adequate attention be paid to the timing of cash payments and receipts. Often large amounts of money are paid to acquire capital items well in advance of the collection of cash receipts earned from the use of those items. When an organization purchases a capital asset, it must recognize that by using cash today to acquire a capital asset, it is forgoing a variety of other potential uses for that money. In other words, there are *opportunity costs* of acquiring capital assets.

Rather than acquire a capital asset, an organization could put cash in an interest-earning account, and in the future it would have the original amount it invested plus interest. As a result, a \$1,000 investment today will be worth more than \$1,000 in the future. Each dollar today is worth more than a dollar tomorrow, because today's dollar can be invested and earn a return between now and some future point in time. This is referred to as the *time value of money (TVM)* concept. One would only give up \$1,000 today if the benefit to be realized from doing so is worth at least the \$1,000 plus the interest that could be earned.

Based on the TVM concept discussed in this chapter, an organization can calculate the financial appropriateness of an investment. The discussion in this chapter examines TVM techniques for investment analysis, including net present cost, annualized cost, net present value, and internal rate of return. Then, it examines an approach called cost-benefit analysis that governments often use in evaluating capital budgeting decisions. Finally, the chapter concludes with a discussion of the payback and accounting rate of return approaches. Both approaches have their limitations, but since they are sometimes used, the reader should be aware of the methods and their drawbacks.

Why do We Need a Separate Capital Budget?

Assume that the Hospital for Ordinary Surgery (HOS) is considering adding a new wing. The hospital currently has annual revenues of \$150 million and annual operating expenses of \$148 million. The cost to construct the new wing is \$360 million. Once opened, the new wing is expected to increase the annual revenues and operating costs of HOS by \$70 million and \$20 million, respectively, excluding the cost of constructing the building itself.

The operating budget for HOS would include \$220 million in revenue (i.e., the original \$150 million plus the new \$70 million). If the entire cost of the new wing is charged to operating expenses, the total operating expenses would be \$528 million (i.e., \$148 million of expenses, the same as last year, plus \$20 million in new operating expenses, plus the \$360 million for the new building). This would result in a loss of \$308 million for the year. This amount is so large that the project might be rejected as being totally unfeasible.

However, the benefit of the \$360 million investment in the new wing will be realized over many years, not just one. When large investments that provide benefits beyond the current year are included in an operating budget, they often look much too costly. However, if one considers their benefits over an extended period of time, they may not be too costly. The role of the capital budget is to pull the acquisition cost out of the operating budget and place it in a separate budget where its costs and benefits can be evaluated over its complete lifetime.

Suppose that the top management of HOS, after careful review and analysis, decides that the benefits of the new hospital wing over its full lifetime are worth its \$360 million cost. Based on the recommendation of chief operating officer (COO) Steve Netzer, as well as the hospital's chief executive officer (CEO) and chief financial officer (CFO), the Board of Trustees of HOS approves the capital budget, including the cost of construction of the new wing. The cost of the new wing will be spread out over its estimated useful life, with a portion included in the operating budget each year.

The process of spreading out the cost of a capital asset over the years the asset will be used is called *amortization*, a general term that refers to any allocation over a period of time. Amortization of the cost of a physical asset is depreciation. Each year a portion of the cost of the asset is treated as an expense called depreciation expense.² The aggregate amount of the cost of an asset that has been charged as an expense over the years the asset has been owned and used is referred to as *accumulated depreciation*.

² At times, an organization may own a capital asset that does not have physical form, such as a patent. The allocation of the cost of such an asset is simply referred to by the generic term *amortization*. Some assets literally empty out (e.g., oil wells, coal mines) and amortization of the cost of such assets is referred to as *depletion*.

For example, if HOS builds the new hospital wing for \$360 million and expects it to have a useful life of 40 years, the depreciation expense each year will be \$9 million (\$360 million ÷ 40 years). Rather than showing the full cost of \$360 million as an expense on the operating budget in the first year, only \$9 million is shown

as an expense for the first year—and every year for the next 39 years after that. After using the building for 3 years, the accumulated depreciation will be \$27 million ($\$9 \text{ million} \times 3 \text{ years}$).³ If HOS expects that the building will retain some resell value at the end of its useful lifetime, however, that *residual*, or *salvage, value* would be deducted from the purchase cost before calculating the annual depreciation expense. For example, if HOS expects the building to be worth \$40 million after 40 years, then only \$320 million ($\$360 \text{ million cost less } \$40 \text{ million salvage}$) would be depreciated. The annual depreciation expense would be \$8 million ($\$320 \div 40 \text{ years}$) instead of \$9 million, and the accumulated depreciation after 3 years would be \$24 million ($\$8 \text{ million} \times 3 \text{ years}$).

[3.](#) From an economic perspective, true depreciation represents the amount of the capital asset that has been consumed in a given year. We could measure that by assessing the value of the asset at the beginning and end of the year. The depreciation expense would be the amount that the asset had declined in value. In practice, it is difficult to assess the value of each capital asset each year. Therefore, accounting uses simplifications such as an assumption that an equal portion of the value of the asset is used up each year. Alternatives, referred to as accelerated depreciation methods, are designed to better approximate true economic depreciation. They are discussed in Appendix 11-A at the end of [Chapter 11](#).

Note that the lifetime chosen for depreciating assets is just an estimate, and that estimate is often conservative. Accountants would prefer to err on the side of expecting capital assets to be used up sooner than they actually are, rather than to err on the side of expecting capital assets to last longer than they actually do. If the latter were to occur, then our depreciation expense recorded each year during the years we owned and used the asset would have been too low, and our profits would have been overstated in each of those years. Accountants try to avoid allowing organizations to overstate their profits, even if unintentionally. As a result of these conservative estimates of useful lifetimes for capital assets, there are times that a capital asset will still function as intended and be kept in use after the end of its depreciable lifetime. For instance, many office workers use computers that have exceeded their estimated useful lives, but those computers are not necessarily unusable, nor must they be immediately discarded once they have been fully depreciated (though they might be). Similarly, while some buildings are torn down and replaced at the end of their depreciable lifetime, others may be used for many decades after they have been fully depreciated. Also, depreciation refers only to a particular capital asset per se. In the case of a building, the land on which it sits is a separate asset with its own accounting treatment. Therefore, the salvage value of a building may be the estimated value of the scrap after it is demolished.

Definition of Capital Assets: Theory and Practice

In theory, a capital asset is any resource that will benefit an organization in more than one fiscal year. This means that, in theory, if one were to buy something that will last for just 6 months, it could be a capital item if part of the 6 months falls in one year and part falls in the next. In practice, however, organizations only treat items with an estimated useful lifetime of more than 1 year as being capital assets. This is done to keep the bookkeeping simpler.

Similarly, most organizations only treat relatively costly acquisitions as capital assets. In theory, there should be no price limitation. A ballpoint pen purchased for 50 cents can be a capital asset if its life extends from one accounting year into the next. However, no organization would treat the pen as a capital asset. The pen would simply be included in the operating expenses in the year it is acquired. This is because its cost is so low. The cost of allocating 25 cents of depreciation in each of 2 years would exceed the value of the information generated by that allocation.

What about something more expensive, like a \$200 laser printer? In practice, most organizations would not treat a \$200 machine that is expected to last 10 years as a capital asset, simply because it is relatively inexpensive. If an organization were to depreciate the printer, it would divide the \$200 cost by 10 years and add \$20 per year to the operating budget. For some very small organizations, the difference between charging \$200 in year 1 and zero in the subsequent 9 years versus charging \$20 per year for 10 years might be significant. However, that would generally not be the case.

Accounting information rarely perfectly reflects the actual use of an asset. For the sake of uniformity and comparability, accounting conventions forgo precision. Some estimates are unavoidable. Did you use half of the ink of the 50-cent pen in each of 2 years? Perhaps you used 40 percent of the ink 1 year, and 60 percent of the ink the next. A truly correct allocation would therefore require charging 40 percent of the cost of the 50-cent pen in 1 year, and 60 percent of the cost the next year. Similarly, we do not know exactly how much of the laser printer is used each year. Will it really last 10 years, or will it last 11 years? Accounting records should be reasonable representations of what has occurred from a financial perspective and should allow the user of the information to make reasonable decisions.

It is true that charging the full \$200 cost of the laser printer in the year it is purchased will overstate the amount of resources that have been used up in that year. However, it is easier to do it that way, and the extent to which expenses are overstated is trivial. The organization must weigh whether the simplified treatment is likely to create a severe enough distortion that it will affect decisions. For the 50-cent pen, that is never likely to happen. For a \$360 million building construction project, by contrast, treating the full cost as a current-year expense would likely affect decisions. The hard part is determining where to draw the line.

Organizations must make a policy decision regarding what dollar level is so substantial that it is worth the extra effort of depreciating the asset rather than charging it all as an expense in the year of acquisition. To most organizations, the difference between charging \$200 in 1 year or \$20 a year for 10 years will not be large

enough to affect any decisions. In some organizations, the difference between charging \$50,000 in 1 year versus \$5,000 per year for 10 years would not be large enough to affect any decisions. A threshold of \$1,000, or \$5,000, or even \$10,000 would be considered reasonable by many public, health, and not-for-profit organizations. Many organizations use even higher levels.

Why do Capital Assets Warrant Special Attention?

It seems reasonable to include just 1 year's worth of depreciation expense in an operating budget. However, that does not fully explain why a totally separate budget is prepared for capital assets or why there are special approaches to evaluating the appropriateness of individual capital asset acquisitions. Here are some additional reasons that capital assets warrant special attention:

- Their initial acquisition cost is large.
- They are generally used for a long time.
- We can understand the financial impact of acquiring them only if we evaluate their entire lifetime.
- Since we often pay for them immediately and get cash receipts only as we use them later, the time value of money must be considered.

Since small capital expenditures (e.g., the ballpoint pen, the laser printer) are often not treated as capital assets, generally the items that are included in the capital budgeting process are very expensive. When the cost of an item is high, a mistake can be costly. Long-term acquisitions lock in an organization, and a mistake may have repercussions for many years.

For example, suppose that HOS unwittingly buys 10 inferior patient monitors for \$50,000 each. As medical staff use them, they learn of the monitors' shortcomings and hear of another type of monitor HOS could have purchased that performs better. Although HOS may regret the purchase, it may not have the resources to discard the monitors and replace them. HOS may have to use the inferior machines for a number of years. To avoid such situations, the capital budgeting process requires a thorough review of the proposed investment and a search for alternative options that may be superior.

The financial impact of a *capital acquisition* can be understood only if one considers the asset's full lifetime. Suppose that a donor offers to pay the full acquisition cost of a new, larger building for an organization. The executive director is ecstatic. The building will be free! However, that is not quite correct. Perhaps the new building will cost money to operate (for heat, power, maintenance, security, etc.) but will not generate any additional revenue or support for the organization beyond the donation to acquire it. The operating costs of the building must be considered. Capital budgets should consider all revenue and expense implications of capital assets over their useful lifetimes.

Governments face similar issues when they decide whether to build a new school. An analysis of the feasibility of the new school building must consider whether the government will be able to afford to run it once it is built. Governments must try to assess the likely impact of the added annual operating costs on their budgets, especially if the new costs may have implications for taxes. Thus, capital budgeting takes a broad view, considering all the likely impacts of making a capital acquisition.

A last, and critical, issue relates to the timing of payments and receipts related to capital assets. Capital assets are often acquired by making a large cash payment at the time of acquisition. However, the cash the organization will receive as it uses the asset comes later. In the meantime, the money that has been invested in

the project entails both explicit costs and opportunity costs.

When we use someone's office or apartment, we pay rent for it. When we use—that is, borrow—someone's money, we also pay rent for that use. Rent paid for the use of someone's money is called interest expense. For capital assets, the rental cost for money used over a period of years can be substantial, and its effect must be considered when we decide whether it makes sense to acquire the item. The interest expense is equal to the amount of a loan multiplied by the annual interest rate multiplied by the fraction of the year that the loan is outstanding, as shown in Equation 5-1:

$$\text{Interest} = \text{Loan Amount} \times \text{Interest Rate per Year} \times \text{Fraction of Year} \quad (5-1)$$

As above, there also is an opportunity cost for all resources used by an organization. Each resource could be used for some other purpose. We often refer to the opportunity cost of using resources in an organization as the *cost of capital*. Part of the cost of capital is reflected in the interest that the organization pays on its debt. In fact, many organizations use their borrowing cost to estimate their opportunity cost. Calculations related to the cost of capital or cost of money are referred to as time value of money calculations.

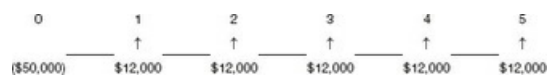
The Time Value of Money

A dollar today is worth more than a dollar tomorrow. Imagine deciding whether to lend someone \$10,000 today with the expectation that they would give us back \$10,000 in 5 years. Would we consider that to be a reasonable investment? Probably not. If we had instead invested the money in an insured bank account or U.S. Treasury security that pays interest, at the end of 5 years we would have our initial \$10,000 plus interest. Getting \$10,000 in 5 years is not as good as having \$10,000 today, simply because if we have \$10,000 today it can be invested and earn a return.

This is the concept of the time value of money (TVM). Suppose that the Museum of Technology is considering buying \$50,000 of computers for an exhibit. The money would come from cash that the museum currently has on hand. It will be able to charge \$12,000 per year in special admissions fees for the exhibit for 5 years. At that point, the exhibit will be closed, and the computers will be obsolete and will be thrown away.

If the museum uses a capital budget, it will show the initial cash outlay of \$50,000 in addition to the full 5 years of revenues. The \$12,000 of admission revenues per year for 5 years total \$60,000. However, can the museum compare the \$50,000 to acquire the exhibit with the \$60,000 that it will receive and conclude that there will be a \$10,000 profit from the exhibit? No. The two numbers appear to be comparable, but the cash is paid and received at different times. A dollar received at some point in the future is not worth as much as a dollar today. TVM provides a mechanism to help make a reasoned comparison.

It is sometimes easier to understand TVM mechanics using a timeline such as the following:



The initial \$50,000 outlay is made at the very beginning of the project, or time 0. It is shown in parentheses to indicate that the museum is paying \$50,000, rather than receiving it. Each year the museum collects \$12,000 in admissions fees. In this example, we are assuming that \$12,000 is collected at the end of each of the 5 years. For example, the \$12,000 shown at time period 1 on the timeline is received at the end of the first year.

Although a timeline, as it appears above, is a helpful conceptual tool, in practice managers tend to do their calculations in a spreadsheet, such as Excel. The same information in Excel might be shown as:

Time Period	0	1	2	3	4	5
Cash Flow	(\$50,000)	\$12,000	\$12,000	\$12,000	\$12,000	\$12,000

To evaluate the investment, we use a methodology that is based on compound interest calculations. If the museum had borrowed the \$50,000 for the exhibit, it would be clear that in addition to covering the cost of constructing the exhibit, the admission fees would have to be enough to pay the interest that the museum would pay on the money it borrowed. In this example, however, the museum has not borrowed money. It is using money it already has.

However, TVM calculations are still required. Why? Because the museum could have put the money into

some safe investment and earned a return if it did not open the proposed exhibit. In every case that a capital acquisition is considered, we must recognize that the acquisition is paid for either by borrowing money (and therefore paying interest) or by deciding not to invest the money elsewhere (and therefore opting not to earn a return). There is a cost-of-capital opportunity cost for all capital asset purchases. If this were not the case, we would not mind lending our own money to someone at a zero interest rate.

Compounding and Discounting

TVM computations are based on the concepts of compounding and discounting. *Compound interest* simply refers to the fact that when money is invested, at some point going forward in time the interest earned on the money starts to earn interest itself. *Discounting* is just the reversal of this process as we go backward in time. Compounding and discounting can be applied to any returns for an investment, whether they are earned as interest on a bank account or profits on a venture.

For example, suppose that Meals for the Homeless (Meals) invests \$100 of cash in a certificate of deposit (CD) that pays 6 percent interest per year for 2 years. Notice that the interest is stated as an annual rate. All interest rates are annual unless specifically stated otherwise. What will be the value of the investment after 2 years? Six percent of \$100 is \$6. If the investment earns \$6 a year for 2 years, will Meals have a total of \$12 of interest and end the 2 years with \$112? Only if the CD pays *simple interest*. By simple interest, we mean the initial investment earns interest, but any interest earned does not itself earn interest. We can see the simple interest process as follows:

\$100.00 investment	\$ 6.00 interest / year	\$100.00 investment
$\times .06$ interest rate	$\times 2$ years	$+ 12.00$ interest for 2 years
\$ 6.00 interest / year	\$12.00 interest for 2 years	\$ 112.00 ending value

By contrast, what if the CD compounds interest annually? In that case, at the end of year 1, interest will be calculated on the \$100 investment. That interest will be \$6 ($6\% \times \$100 = \$6$). At that point, the \$6 of interest will be added to the initial investment. In the second year, HOS will earn 6 percent of \$106. That comes to \$6.36 ($6\% \times \$106 = \$6.36$). At the end of 2 years, the investment will be worth \$112.36. The difference between simple and compound interest seems to be trivial, because it adds up to only \$.36 in this example. We can see the compound interest process as follows:

\$100.00	\$100.00	\$106.00	\$106.00
$\times .06$	$+ 6.00$	$\times .06$	$+ 6.36$
\$ 6.00	\$106.00	\$ 6.36	\$112.36

Suppose that you invested \$10,000 this year for retirement and that your investment will earn 8 percent interest. Assume that you plan to retire in 40 years. Eight percent of \$10,000 is \$800. If you earn \$800 per year for 40 years, your total earnings will be \$32,000. Together with the initial investment of \$10,000, you will have \$42,000 in the retirement account using simple interest.

By contrast, assume that the 8 percent interest will be compounded annually. That is, every year the interest earned is added to the principal and earns interest itself. Then, the total investment at the end of 40 years will be worth \$217,245. If the interest is instead compounded quarterly, the total will be \$237,699 (see [Table 5-1](#))—quite a difference from \$42,000. The compounding of interest is a powerful force. Note that with simple

interest, it does not matter how frequently the interest is applied to the initial investment. The total is \$42,000 with annual or quarterly calculations.

Table 5-1

	Simple Interest	Compound Interest
Annual Interest Calculations	\$42,000	\$217,245
Quarterly Interest Calculations	\$42,000	\$237,699

Compound interest is a valuable concept if we would like to know how much a certain amount of money received today is likely to be worth in the future, assuming that we could earn a certain rate of return. Often, however, our concern is figuring out how much an amount to be received in the future is worth today. For example, the Museum of Technology is trying to decide if it makes financial sense to invest \$50,000 today to earn admission revenues of \$12,000 per year for the next 5 years. Here, the museum is concerned with taking those future payments of \$12,000 each year and determining what they are worth today. The approach needed for this calculation is called discounting.

Discounting is merely the reverse of compounding. If we expect an investment to earn \$60,000 five years from now, how much is that worth today? Is it worth \$60,000 today? No, because if we had \$60,000 today, we could earn interest and have more than \$60,000 five years from now. \$60,000 five years from now is worth less than \$60,000 today. A dollar today is still worth more than a dollar tomorrow. Discounting is the process of reversing the compounding of interest.

Present Value Versus Future Value

There are two sides to the time value of money: *present value (PV)* and *future value (FV)*. The PV is the starting point of the TVM timeline. It is the value of money that will be received or paid in the future. The FV, conversely, is the endpoint of the TVM timeline. It is the value of money after time has passed. In either case, money may be a single lump-sum payment or receipt, or it may be a stream of receipts or payments. Any TVM calculation is a variation of solving for either the PV, the FV, or one of the variables that determines PV and FV.

Time Value of Money Calculations

We use the following notation for TVM calculations:

PV = present value

FV = future value

i or rate = interest rate

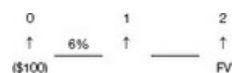
N or nper = number of periods

The FV can be calculated from the following formula:

$$FV = PV(1 + i)^N \quad (5-2)$$

This formula says that the amount that we will have in the future (FV) is equal to the amount we start with

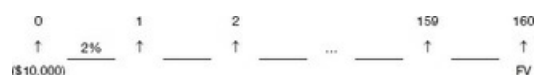
(PV), multiplied by the sum of one plus the interest rate (i) raised to a power equal to the number of compounding periods (N). For example, suppose that we want to calculate the amount of money we would have after 2 years if we invested \$100 today (called time period 0) at 6 percent compounded annually. A timeline for this problem would look like this:



We are investing (paying out) \$100 at the start, time period 0, and expect to get an amount of money, FV, 2 years in the future (by retrieving or money from the investment). The 6 percent interest rate is shown on the timeline between the start and the end of the first compounding period. We could use the formula from Equation 5-1 to solve this problem as follows:

$$\begin{aligned}
 FV &= \$100 \times (1 + .06)^2 \\
 &= \$100 \times [(1.06) \times (1.06)] \\
 &= \$100 \times (1.1236) = \$112.36
 \end{aligned}$$

This simply formalizes the process that we followed earlier. Similarly, for the retirement investment calculated earlier with quarterly compounding, the timeline would be as follows:



The number of compounding periods, N, is 160. This is because the investment is compounded quarterly for 40 years. There are four quarters in a year. Therefore, four compounding periods each year for 40 years results in a total of 160 periods ($4 \times 40 = 160$).

Note that time periods and interest rates must be adjusted for the compounding period. The annual interest rate must be divided by the number of compounding periods per year to get the interest rate per period. The number of compounding periods per year must be multiplied by the total number of years to get the total number of compounding periods.

Using the formula to solve for the FV, we find the following:

$$\begin{aligned}
 FV &= \$10,000 (1 + .02)^{160} \\
 &= \$10,000 \times (1.02)^{160} \\
 &= \$10,000 \times (23.7699) = \$237,699
 \end{aligned}$$

This is the result seen in [Table 5-1](#). The interest rate, i, is .02, or 2 percent. This is because of the quarterly compounding. The interest rate of 8 percent per year (as used earlier for this retirement example) must be divided by four, the number of quarters in each year, to get the quarterly interest rate. For discounting, the process is the reverse. If we start with the same formula,

$$FV = PV(1 + i)^N \quad (5-2)$$

we can rearrange the equation in terms of the PV:

$$PV = \frac{FV}{(1+i)^n} \quad (5-3)$$

If someone offered to pay us \$237,699 in 40 years, how much would that be worth to us today if we anticipate that we could invest money at 8 percent per year, compounded quarterly? The timeline would be as follows:



We could use Equation 5-2 to solve for the PV, as follows:

$$PV = \frac{\$237,699}{(1+.02)^{160}}$$

$$PV = \frac{\$237,699}{23.7099}$$

$$= \$10,000$$

As we can see, discounting is merely a reverse of the compounding process. If we invest \$10,000 today, it would grow to \$237,699 forty years in the future at 8 percent interest with quarterly compounding. Making the same assumptions, then, \$237,699 paid 40 years in the future is worth only \$10,000 today. Financial calculators and electronic spreadsheet software programs have been programmed to perform TVM computations. Since most managers usually do their TVM calculations using a spreadsheet program, that is the approach we will take in this chapter. For those interested in learning how to use calculators for TVM computations, see Appendix 5-A.

Using Computer Spreadsheets for TVM Computations

A number of different computer spreadsheet software programs can be used to solve TVM problems. They are particularly useful for the more complicated calculations where using a calculator may be tedious. Some of the most popular spreadsheet programs are Microsoft Excel, Apple Numbers, and Google Sheets. Appendix 5-B provides examples of how to solve TVM problems with Excel. The approach is similar in other spreadsheet programs.

Consider the problem of finding the future value of \$100 invested for 2 years at 6 percent interest. Using Excel, begin by entering the data that will be used to solve the problem. In this example, the problem could be set up as shown in [Figure 5-1](#). This figure shows the data you have, the variable FV that you are looking for, and indicates where the answer will be shown.

Figure 5-1 Initial Data Entry

	A	B	C	D
1				
2	Future Value Calculation			
3				
4	PV	=	\$	100
5	rate	=		6%
6	nper	=		2
7	pmt	=		0
8	FV	=		???
9				
10	FV	=		
11				

Once data have been entered, move the cursor to the cell where you want the solution to appear (in this case, Cell D10). Type an equal sign followed by the variable we are trying to find, followed by an open parenthesis, as follows:

= FV(

Once you have done that, Excel will show the complete formula for computing the present value. On the screen near the cell you are working on, you will see:

FV(rate, nper, pmt, [pv], [type])

This will guide you in providing Excel with the data needed to solve for the FV. Following the open parenthesis you have typed, you next insert the rate (interest rate), nper (number of compounding periods), and PV (present value). We have not yet discussed pmt, but for now we can leave a blank space and extra comma for that variable, or we can use a value of zero for the pmt variable. Type refers to whether the payments come at the beginning or end of each period. This pertains primarily to annuities, which will be discussed below. For now, we can ignore it as well and the value for type can be omitted.

Two things should be noted in [Figure 5-1](#). First, the interest rate should be shown in the spreadsheet as 6% (see Cell D5). In Excel, it is critical that the rate be entered either with a percent sign, such as 6%, or as a decimal, such as .06. If you enter 6 rather than 6% the answer will be grossly incorrect.

Second, the PV in the formula should be entered as a negative number. Excel follows the logic that if you pay out money today, you will get back money in the future. So if the FV is to be a positive amount, representing a receipt of cash in the future, the PV must be a negative amount, representing a payment of cash today. You cannot have a positive number for both the PV and the FV because that would imply that you receive money at both the beginning and end of the investment. That is not logical. Either you pay out money at the start and receive money later, or vice versa. We can handle this in several ways. In [Figure 5-1](#), we could show the value for the PV in Cell D4 as being negative \$100, or when we complete the formula for FV, we can put a minus sign in front of our reference to the cell with the PV. That is, we can enter the PV into the FV formula as either -100 or by the cell reference to -D4. It is important to get into this habit. In many TVM calculations, not entering opposing signs for cash inflows and outflows will produce an error.

Each variable can be inserted as either a numeric value or a cell reference. Given the cell locations of the raw data in the worksheet in [Figure 5-2](#), a *cell reference formula* to solve the above problem would be:

Figure 5-2 Using Formulas in Future Value Calculations

= FV(D5, D6, D7, -D4)

An advantage of a formula that uses cell references is that it will automatically recalculate the future value if

the numeric value in any of the indicated cells is changed. If we were to change the rate in Cell D5 from 6% to 8%, a new future value would automatically appear on the worksheet.

Alternatively, we could insert the values directly with rate as 6%, nper as 2, and PV as -100 as shown below.

$$= \text{FV}(6\%, 2, 0, -100)$$

The advantage of this approach is that it not only will calculate the answer in your Excel spreadsheet, but it can also be communicated to a colleague who can tell exactly what information you have and what you are trying to calculate. Anyone can drop this into their spreadsheet without needing to know the specific cells in which the raw data appear in your spreadsheet. TVM Excel problems will be discussed in the form of providing the basic Excel formula, as well as the *numeric value formula*, for a variable, such as:

$$= \text{FV}(\text{rate}, \text{nper}, \text{pmt}, [\text{pv}], [\text{type}])$$

$$= \text{FV}(6\%, 2, 0, -100)$$

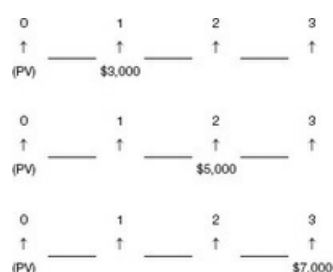
Note that if you enter = FV(6%, 2, 0, -100) into an Excel spreadsheet cell and press the Enter key, the solution of 112.36 will automatically be calculated. Excel can be used to solve for other TVM variables as well as the FV. See Appendix 5-B for a detailed discussion.

Annuities

Although there are many times that we anticipate paying or receiving a single amount of money paid at one point in time, sometimes capital assets result in a number of cash flows over a number of different compounding periods. For example, one might wish to determine the maximum amount that should be paid for a piece of equipment that will result in receipts of \$3,000, \$5,000, and \$7,000 over the next 3 years.



To find out how much this is worth today, we would have to add up the present value of each of the three payments. Essentially, one could break the preceding timeline down into three separate problems, as illustrated below:



Then, add the PV solutions from the three problems together.

However, if all three payments are exactly the same and come at equally spaced periods of time, the payments are referred to as an *annuity*. Computations are somewhat easier for this special case.

Although we may think of annuities as being annual payments, that is not necessarily the case for TVM computations. An annuity is any amount of money paid at equal time intervals in the same amount each time. For example, \$110 per week, \$500 per month, and \$1,250 per year each represent annuities.

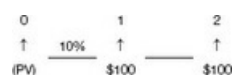
In notation, an annuity is often referred to as PMT, an abbreviation for payment. Formulas have been developed that can be used to calculate both the future value and the present value of a stream of *annuity payments*.⁴ These formulas have been included in computer spreadsheet programs and in handheld calculators that perform TVM computations. Note that annuities generally assume the first payment is made at time period 1, not time period 0. An annuity with the first payment at time period 1 is referred to as an *ordinary annuity* or an *annuity in arrears*. Some annuities, such as the rent one pays on an apartment, are called *annuities in advance*, and the first payment is made at the start, or time period 0. Computer spreadsheets assume annuities are ordinary (first payment at time period 1), unless the user indicates the type of annuity.

⁴ The present value of an annuity of \$1 equals $\{(1 - [1/(1 + i)^N])/i\}$ and the future value of an annuity of \$1 equals $\{(1 + i)^N - 1\}/i$.

Suppose that we expect to receive \$100 per year for the next 2 years. We could normally invest money at an interest rate of 10 percent compounded annually. What is the present value of those payments? If we put our cursor in an Excel cell and type =PV(we will then see the formula that needs to be completed for Excel to solve for the PV. It will appear as:

PV(rate, nper, pmt, [fv], [type])

Using the timeline and a spreadsheet, we can solve the problem as follows:

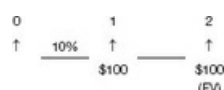


PV = PV(rate, nper, pmt, [fv], [type])

= PV(10%, 2, 100)

= -173.55

The result shows that receiving two annual payments of \$100 each for the next 2 years is worth \$173.55 today if the interest rate is 10 percent. The \$173.55 is shown as a negative number because you would have to pay that amount today to receive \$100 a year for 2 years. How much would those two payments of \$100 each be worth at the end of the 2 years?



FV = FV(rate, nper, pmt, [pv], [type])

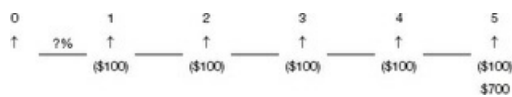
= FV(10%, 2, 100)

= -210.00

Observe that there is a great deal of flexibility. If we know the periodic payment, interest rate, and number of compounding periods, we can find the FV. However, if we know how much we need to have in the future and know how many times we can make a specific periodic payment, we can calculate the interest rate that must be earned. Or we could find out how long we would have to keep making payments to reach a certain future value goal. Given three variables, we can find the fourth. For example, suppose that we are going to invest \$100 a year for 5 years and we want it to be worth \$700 at the end of the fifth year; what interest rate must we earn? If we put our cursor in an Excel cell and type **=Rate(** we will then see the formula that needs to be completed for Excel to solve for the rate. It will appear as:

Rate(nper, pmt, pv, [fv], [type], [guess])

Using the timeline and a spreadsheet, we can solve the problem as follows:



Rate = Rate(nper, pmt, pv, [fv], [type], [guess])

= Rate(5, -100, 0, 700)

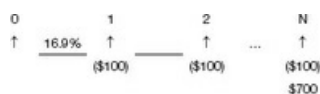
= 16.9%

If we are investing \$100 each year, we pay that money out into the investment, so it is shown as a negative amount. The \$700 will be received at the end, so it shown as a positive amount. As you can see, we have calculated that if we pay out \$100 a year for 5 years, in order to receive \$700 at the end of the fifth year, we would have to earn a rate of 16.9 percent per year. If we did not enter opposing signs for the PMT and FV, the spreadsheet would not be able to calculate Rate and would give you an error message.

Similarly, we can solve for the number of periods. Suppose we know that if we are investing \$100 a year, we can earn a 16.9 percent annual rate of return, and we want to have \$700 at the end of our investment. We can find the number of periods before we will accumulate the desired amount. If we put our cursor in an Excel cell and type **=Nper(** we will then see the formula that needs to be completed for Excel to solve for the Nper. It will appear as:

Nper(rate, pmt, pv, [fv], [type])

Using the timeline and a spreadsheet, we can solve the problem as follows:



Nper = Nper(rate, pmt, pv, [fv], [type])

= Nper(16.9%, -100, 0, 700)

= 5

We see that if we invested \$100 a year at 16.9 percent, it would take 5 years for it to grow to \$700.

We can also solve for the payment. Suppose we need \$700 in 5 years and believe that we can earn 16.9 percent per year on our investment. We can find the amount we will need to invest each year to reach that goal. If we put our cursor in an Excel cell and type =PMT(we will then see the formula that needs to be completed for Excel to solve for the PMT. It will appear as:

PMT(rate, nper, pv, [fv], [type])

Using the timeline and a spreadsheet, we can solve the problem as follows:



PMT = PMT(rate, nper, pv, [fv], [type])

= PMT(16.9%, 5, 0, 700)

= -100.00

We would have to invest \$100 a year for 5 years at 16.9 percent in order to have \$700 at the end of the 5-year period.

Cash Flow versus Revenue and Expense

Note that TVM computations are always done based on *cash flow* rather than accrual-based revenues and expenses. This is because we can only earn a return on resources that are actually invested. For example, interest on a bank account is calculated from the time that money is deposited. Therefore, one should remember that all TVM computations are based on the timing of cash receipts and payments rather than the recording of revenues and expenses. For this reason, TVM calculations are often referred to as *discounted cash flow* analyses.

Capital Asset Investment Analysis

Investment analysis for the acquisition of capital assets requires careful consideration of the item to be acquired. Alternatives should be examined so that we can be assured that we are making an appropriate selection. Several different analytical approaches can help evaluate alternatives: *net present cost*, *annualized cost*, *net present value*, and *internal rate of return*.

In some cases, there may be qualitative benefits from an investment, even though it does not have a solid financial result. Public, health, and not-for-profit organizations may decide that something is worth doing, even if it loses money, because of its benefit to the organization's clientele. Management must decide whether to invest in a capital asset because of its nonfinancial benefits after considering all factors.

Four general issues should always be considered in the evaluation of alternative capital investments. First, the evaluation should include all cash flows. The consideration of all cash inflows and cash outflows is essential to the calculation. Second, the time value of money must be considered. Since dollars are not equally valuable at all points in time, the analysis should clearly consider not only the amount, but also the timing of the cash flows. Third, there should be some consideration of risk. The expected receipt of a cash interest payment in 10 years from a U.S. Treasury bond investment is much less risky than a similar amount expected to be received in 10 years from a current start-up business, which may not even survive for 10 years. There should be a mechanism to incorporate different levels of risk into the calculation. Fourth, there should be a mechanism to rank projects based on the organization's priorities. These issues are addressed below.

Net Present Cost

Many times, an organization will find that it must acquire a new piece of equipment and is faced with a choice among several possible alternatives. For example, suppose that Leanna Schwartz, executive director of Meals for the Homeless, is trying to decide between two new industrial-size refrigerators. It has already been decided that the unit currently owned is on its last leg and must be replaced. However, several good units are available. Either of the two models would be acceptable, and Schwartz has decided to choose the less costly option.

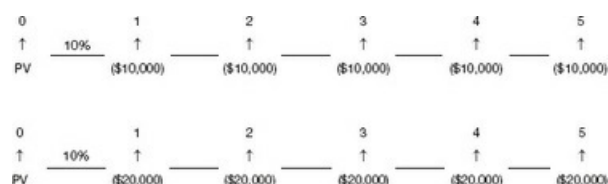
The two units under consideration are Model A, which is expensive to acquire but costs less to operate, and Model B, which is less expensive to acquire but costs more to operate:

	Model A Refrigerator	Model B Refrigerator
Purchase Price	\$105,000	\$ 60,000
Annual Outlay	10,000	20,000
	10,000	20,000
	10,000	20,000
	10,000	20,000
	10,000	20,000
Total Cost	<u>\$155,000</u>	<u>\$160,000</u>

At first glance, Model A appears less expensive because it requires a total outlay of only \$155,000 as opposed to the Model B total cost of \$160,000. However, since payments are made over a period of years for each model, we cannot simply add the costs together. Rather, it is necessary to find the PV of each of the future payments. We can add those PVs to the initial outlay to determine the total cost in equivalent dollars today.

The total of the initial outlay and the PV of the future payments is called the net present cost (NPC). Whichever project has a lower NPC is less expensive.

To determine the present values, we will need to have a *discount rate*, which is what we call the interest rate when discounting cash flows, to use to bring the future payments back to the present. For this example, we will assume a rate of 10 percent. (Later in this chapter, the appropriate choice of rates is discussed.) Since each of the annual payments is identical, they can be treated as an annuity:



The answers can be obtained solving the problem with Excel using the following formulas:

Model A: = PV(rate, nper, pmt, [fv], [type])

= PV(10%, 5, -10000)

= \$37,908

Model B: = PV(rate, nper, pmt, [fv], [type])

= PV(10%, 5, -20000)

= \$75,816

The resulting present values for Models A and B tell us what the periodic payments are equivalent to in total today. To find the NPC, we must also consider the initial acquisition price:

$$\begin{array}{ll} \text{Model A NPC} = \$105,000 + \$37,908 & \text{Model B NPC} = \$60,000 + \$75,816 \\ = \$142,908 & = \$135,816 \end{array}$$

Based on this, we see that the NPC of Model B is less than the cost of Model A, even though Model A had initially looked less expensive before the TVM was taken into account. If we were to acquire and pay for all of the other costs related to Model A, we could pay a lump sum today of \$142,908, while Model B would require a lump sum of only \$135,816. We are indifferent between paying the NPC and paying the initial acquisition cost followed by the periodic payments. The lump-sum NPC total for Model B is clearly less expensive than the lump-sum NPC for Model A.

This analysis can only assess the financial implications of the two alternatives. If it turned out that Model A was a more reliable unit, Schwartz would have to make a decision weighing the better reliability of Model A against the lower cost of Model B. The preceding example also assumes that the cost of operating each piece of equipment is the same each year. This is likely to be an unrealistic assumption. If the estimated costs aren't constant, then the annuity approach could not be used. We would have to calculate the PV for each year and sum them to find the NPC.

Annualized Cost

The NPC method is very helpful for comparing projects that have identical lifetimes. What if investments aimed at the same ends have different lifetimes? Suppose that Model A has a 5-year lifetime, but Model B has only a 4-year lifetime, as follows:

	Model A Refrigerator	Model B Refrigerator
Purchase Price	\$105,000	\$ 60,000
Annual Outlay	10,000	20,000
	10,000	20,000
	10,000	20,000
	10,000	20,000
	10,000	20,000
Total Cost	<u>\$155,000</u>	<u>\$140,000</u>

One approach would be to try to equalize the lifetimes. We could assume that each time a unit wears out it is replaced. If we repeat that process four times for Model A and five times for Model B, at the end of 20 years the two alternatives will have equal lifetimes (see [Table 5-2](#)).

Time Period	Action	Model A Refrigerator	Model B Refrigerator
0	Purchase Models A and B	\$105,000	\$ 60,000
1	Annual Outlay	10,000	20,000
2	Annual Outlay	10,000	20,000
3	Annual Outlay	10,000	20,000
4	Annual Outlay	10,000	20,000
4	Purchase Model B		60,000
5	Annual Outlay	10,000	20,000
5	Purchase Model A	105,000	
6	Annual Outlay	10,000	20,000
7	Annual Outlay	10,000	20,000
8	Annual Outlay	10,000	20,000
8	Purchase Model B		60,000
9	Annual Outlay	10,000	20,000
10	Annual Outlay	10,000	20,000
10	Purchase Model A	105,000	
11	Annual Outlay	10,000	20,000
12	Annual Outlay	10,000	20,000
12	Purchase Model B		60,000
13	Annual Outlay	10,000	20,000
14	Annual Outlay	10,000	20,000
15	Annual Outlay	10,000	20,000
15	Purchase Model A	105,000	
16	Annual Outlay	10,000	20,000
16	Purchase Model B		60,000
17	Annual Outlay	10,000	20,000
18	Annual Outlay	10,000	20,000
19	Annual Outlay	10,000	20,000
20	Annual Outlay	10,000	20,000
	Total Outlay	<u>\$620,000</u>	<u>\$700,000</u>

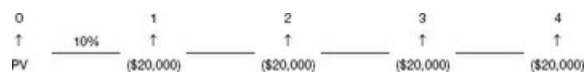
Table 5-2

We could then proceed to find the NPC for each of these two 20-year alternatives. However, the uncertainties going forward 20 years are substantial. The purchase prices will likely change, as will the annual operating costs. Our needs might change drastically in 10 years, making the acquisitions in the future unnecessary.

As an alternative to the process of equalizing the lifetimes, we can use an the *annualized cost method*. In that approach, one first finds the NPC for each alternative. Then, that cost is translated into a periodic payment for the number of years of the project's lifetime. The periodic payment is essentially the average expenditure, with the time value of money taken into account. The project with the lower annualized cost is less expensive on an annual basis in today's dollars.

Consider the refrigerator example. Assume that Model A lasts for 5 years and Model B lasts for 4 years. All of the assumptions for Model A are the same as they were originally, so the NPC is still \$142,908, as calculated earlier. Model B is different, because it now has only a 4-year life:

Model B:



The Excel spreadsheet formula to find the PV would be:

$$= PV(\text{rate}, \text{nper}, \text{pmt}, [\text{fv}], [\text{type}])$$

$$= PV(10\%, 4, -20000)$$

$$= \$63,397$$

To find the NPC, we must also consider the initial acquisition price.

$$\text{Model B NPC} = \$60,000 + \$63,397$$

$$= \$123,397$$

Although the \$123,397 NPC for Model B is lower than the \$142,908 NPC for Model A, we are comparing apples and oranges if we don't account for the difference in their useful lives. Model B will last for only 4 years, while Model A will last for 5 years. We need to account for the fact that we will have to replace it sooner. This is done by treating each NPC as a present value of an annuity and finding the equivalent periodic payment over its lifetime.

Model A:

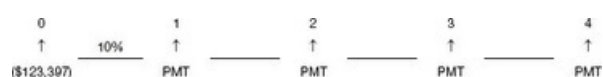


$$= PMT(\text{rate}, \text{nper}, \text{pv}, [\text{fv}], [\text{type}])$$

$$= PMT(10\%, 5, -142908)$$

$$= \$37,699$$

Model B:



$$= PMT(10\%, 4, -123397)$$

$$= \$38,928$$

Thus, adjusted for their relative lifetimes, including both the acquisition and annual outlays, Model A is less

expensive per year than Model B (\$37,699 versus \$38,928).⁵

⁵ In the case of annuities, an alternative annualization approach would be to find the annuity payment equivalent to the initial outlay and add that amount to the annual payments. That will provide an annualized cost. However, that will work only in cases in which the payments after the initial outlay are an annuity.

Net Present Value

The NPC and annualized cost methods discussed previously require assuming that the capital assets would cost money to acquire. However, neither assumes that the capital asset would have a direct effect on revenues or support. Often, one of the major reasons to acquire a capital asset is to use it to earn more revenues or generate additional financial support. In such cases, we need to consider both the revenues and costs as measured by the present value of their cash inflows and outflows. The net present value (NPV) method is one of the most common approaches for making calculations of the present value of inflows and outflows.

The NPV approach calculates the PV of inflows and outflows and compares them. If the PV of the inflows exceeds the PV of the outflows, then the NPV is positive, and the project is considered to be a good investment from a financial perspective:

$$\text{NPV} = \text{PV Inflows} - \text{PV Outflows}$$

and if $\text{NPV} > 0$, the project is economically viable.

For example, assume that HOS is contemplating opening a new type of lab. The equipment for the lab will cost \$5 million. Each year there will be costs of running the lab and revenues resulting from the lab. As a result of general financial constraints, the hospital wants to make this investment only if it is financially attractive. The hospital's borrowing cost is 8 percent. In addition, since the hospital feels that projected revenues are often not achieved by new projects, it wants to build in an extra 2 percent margin for safety. It has decided to do the project only if it earns a return of at least 10 percent.

That 10 percent rate is considered to be a *hurdle rate*, or a *required rate of return*. Only if the project can do better than this rate will it be accepted. Therefore, the NPV must be calculated using a 10 percent discount rate. If the project has a positive NPV, that means that it earns more than 10 percent and will be acceptable.

Assume the following projected cash flows from the project:

Proposed New Investment (Capital Equipment Has a 4-Year Life)						
	Start	Year 1	Year 2	Year 3	Year 4	Total
Cash In		\$2,700,000	\$2,800,000	\$2,900,000	\$3,000,000	\$11,400,000
Cash Out	<u>5,000,000</u>	<u>1,000,000</u>	<u>1,300,000</u>	<u>1,400,000</u>	<u>1,600,000</u>	<u>10,300,000</u>
Total	\$5,000,000	\$1,700,000	\$1,500,000	\$1,500,000	\$1,400,000	\$1,100,000

Although we are just assuming these cash flows, it should be noted that estimating future cash flows is often a difficult task that requires a careful budgeting effort. In total, the project shows a \$1,100,000 profit. However, that profit does not account for the timing of the cash flows. The hospital will be spending the full \$5,000,000 at the start. However, the cash receipts available to repay the cost of the investment and to pay for the cost of

capital used are spread out in the future. To determine whether the investment is worthwhile, we will have to find the NPV.

This can be accomplished by finding the PV of each cash inflow and then finding the total PV of the inflows. Then the same procedure can be done for the outflows. The PV of the inflows and the PV of the outflows can be compared to determine the NPV. Alternatively, we can simply find the PV of the net flows for each year. That is, we can take the PV of the \$5,000,000 net cash outflow at the start plus the PV of the \$1,700,000 net cash inflow from the end of the first year plus the PV of the \$1,500,000 net cash inflow from the second year and so on. In Excel this would appear as:

	A	B	C	D	E	F
1	Rate	10%				
2	Pmt	0				
3	Nper	0	1	2	3	4
4						
5		Start	Year 1	Year 2	Year 3	Year 4
6	Cash In	\$2,700,000	\$2,800,000	\$2,900,000	\$3,000,000	
7	Cash Out	\$5,000,000	1,000,000	1,300,000	1,400,000	1,600,000
8	Net Cash Flow	\$1,700,000	\$1,800,000	\$1,500,000	\$1,600,000	
9						
10	Present Value	\$1,545,455	\$1,239,669	\$1,126,972	\$ 966,219	
11						
12	Net Present Value	\$ (131,685)				

Notice that the present values in Row 10 in the above Excel spreadsheet are the values of each combined cash inflow and outflow. For example, in column C, the inflows were \$2,700,000 in Cell C6 and the outflows were \$1,000,000 in Cell C7. Cell C8 shows that the net cash flows for Year 1 were \$1,700,000, found by subtracting the outflows for that year from the inflows for that year. In Cell C10, the present value of the net Year 1 cash flow is found. Looking to the right of the f_x at the top of the spreadsheet, we see the formula used to find the present value is $=PV(B1, C3, B2, -C8)$. Cell B1 contains the discount rate, Cell C3 contains the nper for the computation, Cell B2 gives the PMT, which is 0, since there is no PMT in this computation, and Cell C8 contains the net cash flow for Year 1. There is a minus sign in front of C8 in the formula, which forces Excel to display the present value for Year 1 cash flows as a positive number, since Excel requires that cash inflows and outflows have opposite signs.

The NPV is the PV of the inflows less the present value of the outflows. If we total the results of the individual present value computations shown in summary form in the above Excel spreadsheet, we find that the NPV is $-\$131,685$. Since the NPV is negative, the investment is earning less than the 10 percent required rate of return. It is therefore not an acceptable project.

Spreadsheets typically have an NPV function to solve this more directly. In Excel, the formula to solve an NPV problem is $=NPV(\text{rate}, \text{value1}, [\text{value2}], \dots)$. The values refer to each of the future values in the problem. For the earlier proposed investment, the \$5,000,000 outlay occurs in the present and is not included in the formula. So value 1 would be \$1,700,000, value 2 would be \$1,500,000, and so on. Once the NPV is found for the future values, however, the initial \$5,000,000 outlay needs to be subtracted to find the answer. This can be combined into one formula as follows:

$$=NPV(\text{rate}, \text{value1}, [\text{value2}], \dots) - \text{Initial Outlay}$$

B9		=NPV(B1,C6:F6)				
	A	B	C	D	E	F
1	Rate	10%				
2						
3		Start	Year 1	Year 2	Year 3	Year 4
4	Cash In		\$2,700,000	\$2,900,000	\$2,900,000	\$3,000,000
5	Cash Out	\$5,000,000	1,000,000	1,300,000	1,400,000	1,600,000
6	Net Cash Flow	\$1,700,000	\$1,900,000	\$1,500,000	\$1,500,000	\$1,400,000
7						
8		NPV Computation				
9	Present Value of Net Cash Flows	\$4,866,315				
10	Less: Initial Outlay	\$5,000,000				
11	Net Present Value	\$ (131,685)				

Note the formula for Cell B9, which can be seen on the formula bar above columns A and B. The NPV formula requires the rate, 10 percent from Cell B1, and the range where the future cash flows are located in the spreadsheet, C6:F6, or Cell C6 to Cell F6. Excel will generate an error message if you enter the individual future cash flow values into the formula rather than providing the cell range in a format such as C6:F6. The initial cash outflow from Cell B6 is shown in Cell B10 and is then subtracted to finish the NPV calculation.

Organizations are often faced with multiple investment opportunities. Because resources are limited, they cannot do everything and must choose which projects to undertake. To do that, managers will sort projects based on their net present values. If decisions are made on a purely financial basis, they will reject all projects with NPVs less than zero and rank projects with NPVs greater than zero based on the size of their returns—choosing investments with higher NPVs before those with lower projected returns.

However, public service organizations may not always follow these conventions. If they feel some projects advance the organization's mission and they have sufficient funds to subsidize any anticipated NPV shortfalls, management might choose to undertake projects with negative NPVs. Similarly, managers might choose investments with lower NPVs over those with higher expected returns if they feel those projects are more important to the organization's social goals. The NPV should be computed in any case, however, so if a project is selected for other than its financial contribution, the organization's managers will be aware of the extent to which it falls short on the financial merits. Since losses on one project will have to be made up elsewhere, the manager needs to know the size of the potential loss that the organization is committing to accept.

Internal Rate of Return

The NPV approach indicates whether a project performs better than a specific hurdle rate. However, it does not indicate the rate of return that the project actually earns. The internal rate of return (IRR) is the percentage return earned by an investment. Many managers are more comfortable ranking projects of different sizes by their rates of return rather than by the NPV. Suppose that we evaluate two projects using a 10 percent hurdle rate. A small project with a 35 percent rate of return might have a lower NPV than a much larger project with a 12 percent rate of return. Both projects have a positive NPV. However, because of the relatively modest magnitude of the smaller project, its exceptional profitability may go unnoticed when compared with another project with a very large NPV. Some managers, therefore, like to use a method that assesses the project's rate of return, in addition to using the NPV approach. The IRR method can be used to generate that information.

The IRR method is derived from the NPV approach. Assume we start with the following equation:

$$\text{NPV} = \text{PV Inflows} - \text{PV Outflows}$$

Then

if $\text{NPV} > 0$, the project earns more than the discount rate, and

if $\text{NPV} < 0$, the project earns less than the discount rate.

Therefore,

if $\text{NPV} = 0$, the project earns exactly the discount rate.

So if we want to know the rate of return that a project earns, we simply need to determine the discount rate at which the NPV is equal to zero. And, since

$$\text{NPV} = \text{PV Inflows} - \text{PV Outflows}$$

for NPV to be equal to zero,

$$0 = \text{PV Inflows} - \text{PV Outflows}$$

or

$$\text{PV Outflows} = \text{PV Inflows}.$$

So we need to set the PV of the outflows equal to the PV of the inflows and find the discount rate at which that is true. Suppose we invest \$6,700 today to get a cash flow of \$1,000 a year for 10 years (i.e., invest \$6,700 to get back a total of \$10,000 in the future). What is the IRR for this investment?



$$= \text{Rate}(\text{nper}, \text{pmt}, \text{pv}, [\text{fv}], [\text{type}], [\text{guess}])$$

$$= \text{Rate}(10, 1000, -6700)$$

$$= 8\%$$

It turns out that the IRR for this investment would be 8 percent.

Note that the preceding problem assumes an annuity. If the cash flows are different each year, it is mathematically harder to determine the IRR.

Suppose, for instance, that the preceding example does not provide payments of \$1,000 per year, but rather \$1,000 in the first year and then increases by \$100 in each subsequent year as follows:



Using Excel, this problem can be solved using the IRR function. The Excel formula for internal rate of return

is:

= IRR(values, [guess])

The values represent all of the cash inflows and outflows, including the initial time 0 payments or receipts.

The guess is the user's best guess of the rate of return. The computer uses this as a starting point as it cycles in on the actual rate. Assume that the user guesses 5 percent. If a numeric value formula is used, the values must be provided to Excel within curly brackets so that the spreadsheet program can distinguish the values from the guess, as follows:

= IRR({ -6700,1000,1100,1200,1300,1400,1500,1600,1700,1800,1900}, 5%)

= 15%

Note that the IRR function also will not work unless there is at least one inflow or positive number and at least one outflow or negative number in the series of values. However, it is generally not necessary to enter a guess value for the rate of return. A step-by-step Excel solution for an IRR problem is provided in Appendix 5-B.

Limitations of IRR

Managers should be aware of three important limitations of IRR. First of all, it assumes that cash inflows during the project are reinvested at the same rate that the project earns. Second, sometimes it will cause managers to choose incorrectly from two mutually exclusive projects. Finally, it can create erroneous results if the investment does not have a conventional pattern of cash flows.

Implicit in the NPV technique is an assumption that all money coming from a project during its lifetime is reinvested at the hurdle rate. That is reasonable since the hurdle rate in some way measures the organization's other alternative opportunities. We may want a project to earn at least 10 percent because we have other opportunities that can earn 10 percent.

By contrast, the IRR method assumes that as cash flows are received, they are reinvested at the same rate as the project earns (i.e., the IRR). Suppose that a project has an IRR of 25 percent. Suppose further that this represents an unusually high rate of return for any of the organization's investments. It may be unrealistic to expect to be able to reinvest cash as it is received from the project in additional projects at 25 percent. In effect, then, the IRR method may overstate the true rate that will be earned on the project.

Another problem may arise when one is evaluating two mutually exclusive projects. It is possible that a small project may have a very high rate of return, whereas a larger project has a very good, but somewhat smaller, rate of return. For example, suppose that the golf course in Millbridge is trying to decide whether to put up a "19th Hole" restaurant and bar on a piece of land or to pave it over for additional parking. Only one piece of land is available on the golf course property to use for any kind of development.

Assume that the parking lot will cost \$50,000 and will earn an annual net return of \$20,000 per year for 20

years. The IRR for that investment is 39.95 percent. Alternatively, the 19th Hole will cost \$500,000 to build and will earn an annual profit of \$150,000 for 20 years. This results in an IRR of 29.84 percent. Normally the town and the golf course do not have any investments that earn a higher rate of return than 15 percent.

Both projects are very attractive, but we cannot do both since they both use the same piece of land. Often, when IRR is used to evaluate investments, managers rank the projects in order of IRR, first selecting those with the highest IRR. If that were done in Millbridge, it would be a mistake. Although a 39.95 percent return may appear better than a 29.84 percent return, overall the town would be better off with the 19th Hole. Why? Because if it invests in the parking lot, the town will earn 39.95 percent on an investment of \$50,000 but will then invest the remainder of the money at 15 percent. If the managers decide to invest \$500,000 for the year, they can put the entire amount into the 19th Hole and earn a 29.84 percent return on the total amount versus investing \$50,000 at 39.95 percent and \$450,000 at 15 percent.

Consider the following annual returns:

\$20,000 for the parking lot (given previously)

71,893 for other projects (PV = \$450,000; N = 20; i = 15%; PMT = \$71,893)

\$91,893 total annual return

versus

\$150,000 for the 19th Hole (given previously)

Clearly, the returns are better by investing in the 19th Hole. We would fail to see that if we simply chose the project with the highest IRR first. By contrast, the NPV method gives the correct information. The NPV for the 19th Hole evaluated at a hurdle rate of 15 percent is \$438,900, whereas the NPV for the parking lot and other projects is \$75,187.

Finally, many investment projects consist of an initial cash outflow followed by a series of cash inflows. This is referred to as a conventional pattern of cash flows. However, it is possible that some of the subsequent cash flows will be negative. In that case, the method can produce multiple answers, and the actual rate of return becomes ambiguous. In such cases, one is better off relying on the NPV technique.

A modified IRR method addresses some of these concerns.

Selecting an Appropriate Discount Rate

The rate used for PV calculations is often called the hurdle rate or required rate of return, or simply the discount rate. The discount or hurdle or required rate should be based on the organization's cost of capital.

Often not-for-profit organizations receive donations that can be used for capital investments. This complicates the measurement of the cost of capital. For projects that are specifically funded by donations, it may not be necessary to calculate the NPV. However, that involves assuming that all costs are covered by the

donation. To the extent that the organization must bear other costs, it should employ TVM techniques with a hurdle rate based on its overall cost of capital.

Selection of an appropriate discount rate for governments to use is difficult. According to Mikesell, “There is ... no single discount rate that is immediately obvious as the appropriate rate for analysis.”⁶ The two methods he proposes are using the interest rate the government must pay to borrow funds and the rate that the funds could earn if they were employed in the private sector. The problem with the former approach is that the government may be able to borrow money at a substantially lower interest rate than could be earned on money invested in the private sector. This might unduly siphon money out of the private sector. The latter approach (using the rate the funds could earn in the private sector) may be more appropriate, but is likely to be much harder to determine.

⁶ John Mikesell. *Fiscal Administration: Analysis and Applications for the Public Sector*, 9th ed. Boston, Mass.: Wadsworth, Cengage Learning, 2014, p. 327.

In practice, there is little consistency in the discount rate used across governments and even within different branches of the same government. Yet, despite these difficulties in agreeing on the most appropriate rate for a government to use, there appears to be agreement that taking into account the TVM is clearly appropriate for all types of organizations.

Inflation

In calculating the TVM, the question often arises regarding how to treat inflation. One approach would be to include the anticipated inflation rate in the discount rate. However, the weakness of that approach is that not all cash inflows and outflows will necessarily be affected by inflation to the same extent, that the “inflation rate” as we know it really represents an average impact of inflation rather than one consistent inflation rate for all things. A preferred method is to try to anticipate the impact of inflation on the various cash inflows and outflows and adjust each individual flow before calculating the PV or FV. In that case, inflation would not be included in the discount rate itself.

For example, suppose that we think that it will cost \$1,000 to operate a machine each year, but that does not take into account inflation. Then we may want to adjust the cash flows for the succeeding years to \$1,030, and then \$1,061, and so on, multiplying the cash flow each year by 103 percent, if we think the cost will rise 3 percent per year due to inflation (be careful to compound the impact of inflation—note that the third-year expected cost is \$1,061 rather than \$1,060). Other cash inflows and outflows might be expected to rise faster or slower, depending on how inflation affects them.

Uncertainty

There is no way that management can totally predict future cash inflows and outflows in many capital budgeting decisions. Things do not always go as planned. To protect against unexpectedly poor results, many organizations increase their required discount rate. The greater the chance of unexpected negative events, the more the discount rate would be adjusted. For example, in buying a new refrigeration unit, the chances of

problems may be small. However, in opening an entire new soup kitchen location, the potential for unexpected problems may be substantially higher. Thus, the hurdle rate is adjusted upward based on the riskiness of the project. The greater the risk, the higher the hurdle rate is raised.

Cost-Benefit Analysis

Cost-benefit analysis (CBA) is another technique widely used by governments for evaluating capital budget decisions. CBA compares the costs of an action or program to its benefits. The method takes into account not only private costs and benefits but public ones as well. Many people think that cost-benefit analysis is associated with large-scale public projects, such as the building of a dam. However, the technique can be extremely useful even for evaluating small purchases such as a personal computer.

Any organization attempts to determine if the benefits from spending money will exceed the cost. If the benefits do outweigh the costs, it makes sense to spend the money; otherwise it does not. In the case of the government, the benefits and costs must be evaluated broadly to include their full impact on society. In the political arena that government managers find themselves in, the careful measurement of costs and benefits provides the information needed to support a spending decision.

There are several key elements in performing a cost-benefit analysis:

- determining project goals
- estimating project benefits
- estimating project costs
- discounting cost and benefit flows at an appropriate rate
- completing the decision analysis

Determining Project Goals

To determine the benefits, it is first necessary to understand what the organization hopes the project will accomplish. So identification of goals and objectives is essential. Suppose that Millbridge's town manager, Dwight Ives, is considering buying a new garbage truck. The first question is why he feels that the town would be better off with a new garbage truck. The goals may be few or numerous, depending on the specific situation. Perhaps the old truck breaks down frequently and has high annual repair costs. One goal will be to lower repair costs. Perhaps the old truck is much smaller than newer ones. As a result, it has to make frequent trips to unload. A second goal may be to save labor costs related to the frequent unloading trips. A third goal may relate to reduction of the costs of hauling recyclables. If the new truck is appropriate for multiple uses, it may eliminate the need to pay for an outside service to haul recyclable materials such as paper or bottles.

Estimating Project Benefits

Once the goals have been identified, the specific amount of the benefits must be estimated. The benefits should include only the incremental benefits that result from the project. For instance, the manager would not include the benefit to citizens of having their garbage collected, since that will be accomplished (in this

example) whether the town uses the old truck or the new truck.⁷ However, all additional benefits should be considered, estimated, and included in the cost-benefit calculation.

⁷ The example assumes that the old truck is reliable enough to remove garbage on schedule. If collections are occasionally delayed by several days because of the unreliability of the old truck, then the benefit of prompt collection would also need to be measured.

In the Millbridge example, it is likely that the town manager or one of his assistants will be able to calculate the benefits fairly directly. For example, the town knows how many trips the current truck makes to unload its garbage. Based on the capacity of the new truck, the number of trips the new truck would need to make can be calculated. The estimated number of trips saved can then be calculated. The town can measure how long it takes for the driver to make trips to unload the truck and use that information along with the driver's pay rate to estimate labor savings. This assumes that the driver is an hourly employee and that there really would be reduced labor payments. If the driver is to be paid the same amount no matter how many hours of work are required, then there would be no labor benefit.

The labor savings is one component of the benefits. The town manager will also have to estimate the repair cost savings, the savings from not using an outside service to haul recyclables, and so on. All impacts of the change, as well as future circumstances, must be considered. For example, if the town is growing in population, it is likely to have more garbage in the future. That could mean the new truck would result in saving even more trips in the future.

However, the estimation of benefits is a potentially difficult process. Many times the benefits cannot be measured by simply evaluating saved costs. In such situations, it is helpful to determine the value of benefits in a private market situation, if possible. If the benefits have a comparable value in the private sector, that can be used as an estimate. However, a private sector comparison is not always available. Suppose that there is a proposal for Millbridge to convert a wooded area into a park with a baseball field. Many people will enjoy playing ball on the field. How much is that benefit worth? What would people be willing to pay for the benefit? Mikesell notes,

When the government product or service is a final product or when prices of marketed commodities change as a result of the project, a different approach is used. That approach is the estimation of *consumers' surplus*—the difference between the maximum price consumers would willingly pay for ... a commodity and the price that the market demands.... The underlying logic of consumer surplus is relatively simple.... Points along an individual's demand curve ... represent the value the person places on particular amounts of the product Consumer surplus [is] the difference between the [total] maximum price the individual would have paid and the price he or she actually pays.⁸ (emphasis in original)

⁸ Mikesell, p. 324.

As part of the cost-benefit analysis, it is necessary to estimate consumer surplus. An in-depth discussion of demand curves and estimation of consumer surplus is beyond the scope of this book. More complexity is added if the project either is lifesaving or may cost lives.

Estimating Project Costs

Projects have costs as well as benefits, and these costs must also be estimated as part of the cost-benefit analysis. In the case of the garbage truck, the primary cost relates to the acquisition of the truck. The truck has a market price, so this estimation is fairly straightforward. But how about the park and baseball field? Certainly, we can assign market-based prices to the cost of clearing the woods and preparing the field. However, in cost-benefit analysis it is also critical to consider opportunity costs. Opportunity cost refers to the fact that when a decision is made to do something, other alternatives are sacrificed. In the case of converting a wooded area for use as a park and baseball field, Millbridge and its residents will have to sacrifice other possible uses for the land, including preservation of the wooded area. The opportunity cost of the wooded area in its next best use to being a park should be estimated.

Suppose that several houses currently look out on woods and, after the park is made, will look out on a park with lots of people in it. The homeowners might view the ready accessibility of the park to be a benefit. It is possible, however, that since they chose to live near woods, they will be made unhappy by their loss. This is a cost to society and therefore is something that must be included in the analysis. This can be done in the same way as benefits are estimated. While some users of the park will have a consumer surplus, those who prefer the wooded area will have a negative consumer surplus if the project is carried out.

Discounting Cost and Benefit Flows

Often projects evaluated using CBA require flows of benefits and costs that occur over a period of years. The time value of money techniques discussed earlier in the chapter would have to be applied to these cash flows to find their present value.

Completing the Decision Analysis

Once all of the relevant costs and benefits of a project have been estimated and adjusted in a discounting process, they can be compared to each other in the form of a ratio. Generally, benefits are divided by costs. If the result is greater than 1, it means that the benefits exceed the costs, and the project is desirable. The greater the benefit to cost ratio, the more desirable the project is.

Other Techniques of Capital Budgeting

In addition to the techniques for evaluating *capital acquisitions* that have been discussed previously, there are two other widely known techniques, both of which have serious flaws. Although we do not recommend use of these techniques by themselves, the reader should be aware of their existence and limitations. These two methods are the *payback* approach and the *accounting rate of return (ARR)* approach.

The payback approach argues that the sooner we get back our money, the better the project will be. This is a

risk-averse method. Essentially, it focuses on recovery of the initial investment as soon as possible. Then any additional flows are viewed as being profits. The investor is safe at that point, having recovered all the money invested. However, consider the following three projects:

	Investment A (\$)	Investment B (\$)	Investment C (\$)
Start	(100,000)	(100,000)	(100,000)
Year 1	90,000	10,000	80,000
Year 2	10,000	90,000	10,000
Year 3	20,000	20,000	150,000
Year 4	0	0	150,000

The payback technique argues that A and B are equally good and are better than C. In both A and B, the \$100,000 initial investment is recovered by the end of the second year. In C, the investment is not recovered until sometime during the third year. The objection to the payback method is that it ignores everything that happens after the payback period. It also does not consider the TVM. We would argue that A is better than B because of the TVM. Further, C is better than A or B. For project B, getting \$90,000 in the second year instead of the first will result in a lower NPV than that of Project A. Further, the NPV of C is better than A or B because of the large returns in the third and fourth years.

Some organizations employ payback together with one of the TVM techniques discussed earlier. They argue that TVM techniques are good for evaluating profitability, accounting for the timing of cash flows. However, payback adds information about risk. Among differing projects with similar NPVs or IRRs, the one with the shortest payback period involves the least risk. Since the further we project into the future, the greater the uncertainties, employing payback as an additional tool for capital budgeting rather than the primary tool is a potentially useful approach.

The other capital budgeting method not yet discussed is the ARR approach. In this approach, the profits that are expected to be earned from a project are divided by the total investment, as follows:

$$\frac{\text{Profit}}{\text{Investment}} = \text{Return on Investment}$$

For example, suppose that we invest \$100,000 today in a project that will have revenues of \$50,000 and expenses of \$40,000 each year.⁹ The project therefore earns annual profits of \$10,000 per year for 5 years. The total profit is \$50,000 and the calculation of the accounting rate of return would then be as follows:

⁹ Assume that each year the expenses include a pro rata (proportional) share of the cost of the capital investment.

$$\frac{\$50,000}{\$100,000} \times 100\% = 50\%$$

This is clearly unrealistic for a number of reasons. First, it is a return for the entire project life. This is sometimes corrected by dividing the return by the number of years in the project's life, as follows:

$$\frac{50\%}{5} = 10\%$$

However, this still does not resolve the problems related to the failure to account for the TVM. The failure to account for the fact that the investment is made today and the profits are earned in future time periods will typically cause the ARR to be overstated.

These methods do not consider all cash flows, they do not account for the TVM, and they do not rank the projects in terms of their ability to make the organization better off financially. As such, they violate a number

of the conditions for a good capital investment analysis tool.

Summary

Assets with lifetimes of more than 1 year are often referred to as capital assets. The process of planning for their purchase is often referred to as capital budgeting. A capital budget is prepared as a separate document, which becomes part of the organization's master budget.

Capital assets are considered separately from the operating budget, because it is not appropriate to charge the entire cost of a resource that will last more than 1 year to the operating budget of the year it is acquired. Who could ever justify buying a new building if the entire cost of the building were included as an operating expense in the year it was acquired? Capital items also require special attention because (1) the initial cost is large, making a poor choice costly; (2) the items are generally kept a long time, so the organization often lives with any poor choices for a long time; (3) we can understand the financial impact only if we evaluate the entire lifetime of the assets; and (4) since we often pay for the asset early and receive payments as we use it later, the time value of money must be considered.

Consideration of the time value of money requires careful attention to the principles of compounding and discounting. Present values and future values must be determined where appropriate to allow managers to make informed decisions. Often it is necessary to employ TVM techniques such as net present cost, annualized cost, net present value, and internal rate of return when assessing potential capital investments.

Key Terms from This Chapter

accounting rate of return (ARR), 203
accumulated depreciation, 177
amortization, 177
annualized cost method, 193
annuity, 187
annuity in advance, 217
annuity in arrears, 188
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Questions for Discussion

- 5-1. Can capital budgets be consolidated into operating budgets to simplify the budget process?
- 5-2. Do capital budgets have any impact on operating budgets?
- 5-3. In theory, a capital asset must last at least 1 year and cost a substantial amount of money. True or false? Explain.
- 5-4. What are some reasons that capital asset acquisition decisions receive particular attention?
- 5-5. Wimpy, a character in the Popeye cartoons, offers to “gladly pay you Tuesday for a hamburger today.” Why might Burger King find this to be an unattractive offer?
- 5-6. Explain compounding and discounting.
- 5-7. What are the relationships between compounding and discounting and present and future values?
- 5-8. What is a potential problem with the net present cost method? How can this be overcome?
- 5-9. What are the limitations of the internal rate of return method?
- 5-10. What are the problems with the payback method?

Exercises (TVM)

5-11. How much will \$1,000 invested at 2 percent simple interest be worth in 10 years? What will it be worth if the interest rate is 3 percent?

5-12. If you put \$15,000 in the bank today to save for college, and leave it for 20 years, what quarterly rate of interest will you have to earn in order to be able to pay a \$50,000 tuition bill when you take the money out?

5-13. If you put \$500 in the bank today and leave it for 10 years, will you have more money if the bank pays you 4.25 percent per annum in simple interest or 3.65 percent per year and compounds the interest daily? Support your answer.

NOTE: For Exercises 5-14 through 5-20:

1. Solve using a spreadsheet program such as Excel. Indicate the spreadsheet formula showing numeric values rather than cell references. For example, for the value that \$100 today could grow to in 2 years, assuming 10 percent annual compounding, the spreadsheet solution formula would be = FV(10%, 2, 0, 100). Note that since there is no annuity payment (PMT) in this problem, it is necessary to show the blank between two commas or a zero after the number of periods. In addition, answer the questions using formulas with cell references.

2. Solve using a financial calculator. This is optional.

5-14. How much will \$20,000 invested today at 3 percent interest be worth in 5 years if it is compounded annually? Monthly?

5-15. If we receive \$5,000 eight years from now, how much is that equivalent to today, if we believe that we can earn 5 percent on other opportunities?

5-16. If you have \$8,500 today, and you could earn 3 percent interest per year, how many years would it be before you would accumulate \$10,000 (assume annual compounding)?

5-17. How much must you put into a 5 percent investment annually to have \$75,000 eight years from now? Assume all payments are made at the end of each period.

5-18. If you could put \$5,000 into a 6 percent investment at the end of each year, how much money could you take out at the end of 7 years?

5-19. Suppose your parents have just retired and have \$1,000,000 in a retirement account. For how many years can they withdraw \$5,000 at the beginning of each month for expenses, assuming that the account will continue to earn a 5% annual return until it's exhausted?

5-20. Now, suppose your parents have decided that they will depend on their retirement savings for 20 years. Everything else remains the same. How much money can they afford to withdraw at the beginning of each month?

5-21. Paula Morduch is considering purchasing a new van for Meals for the Homeless. She expects to buy the van for \$50,000 four years from today. Solve the following using a calculator or spreadsheet.

1. If she can invest money at 5 percent compounded quarterly, how much must she invest today?
2. Suppose that Morduch believes that Meals for the Homeless can put aside only \$37,500 today to buy the new van in 3 years. However, she thinks that she can invest the money at 7.20 percent

compounded monthly. Determine if she will have the \$50,000 she will need for the new van.

3. Assuming that Morduch can put aside \$37,000 today and needs to have \$50,000 available in 4 years, what interest rate must be earned? Use quarterly compounding.
4. Assume that Morduch believes that she can earn only 6 percent per year on the money that Meals for the Homeless invests. Assuming monthly compounding, how much must be put aside today to provide \$50,000 in 4 years?

Problems

5-22. Choose from the methods listed below to answer the following questions.

1. Net present value
2. Net present cost
3. Annualized cost
4. Break-even
5. Internal rate of return
6. Cost-benefit analysis

1. The Public Water Works Department (PWW) is trying to decide whether to replace the crumbling water pipes below Metro City's streets with plastic pipe that it believes will last 30 years or the more expensive concrete pipe that has a useful life of 100 years. PWW should use the _____ method to choose between the two alternatives.
2. The Independent Advisory Commission (IAC) is evaluating the economic viability of Metro's proposed bid for the 2024 Olympics. Proponents of the games argue that the Olympics will generate substantial economic benefits for the city. Opponents point to the high cash outlays associated with the bid and subsequent costs of hosting the games. IAC should use the _____ method to evaluate the financial implications of Metro's bid for the Olympics.
3. The _____ is the discount rate that sets the present value of the cash inflows from a project equal to the present value of the cash outflows from a project.
4. If you were asked to analyze the state's decision to invest \$100 million in a new auto plant, where state officials expect their investment to generate future tax revenues and other economic and social benefits, you would do a(n) _____.
5. The _____ method is used to evaluate decisions where there are no incremental cash inflows and all alternatives have the same useful lives.
6. The _____ method is used to evaluate investments that generate both cash inflows and cash outflows.

5-23. At any interest rate above 0 percent, the future value of an investment will always be

1. less than the original amount invested
2. greater than the original amount invested
3. equal to the original amount invested

5-24. A stream of 60 monthly payments of \$1,000 each is an example of a(n) _____.

5-25. If the net present value of the cash flows from an investment is greater than zero and you base your decision solely on financial considerations, you should _____ the investment. (Circle the correct answer.)

1. accept
2. reject
3. do nothing (not enough information) about

5-26. If compounding changes from quarterly to weekly for a \$100 investment earning 8 percent per

annum, the future value at the end of 5 years will (select from the answers below)

1. increase
2. decrease
3. stay the same
4. cannot tell from the information given

5-27. The internal rate of return is the discount rate that sets the _____ value of the _____ equal to the _____ value of the _____.

NOTE: For the following problems:

1. Solve using a spreadsheet program such as Excel.
2. Solve using a financial calculator (optional).

5-28. What is the internal rate of return for the stream of cash flows shown below?

Period	Cash Flow
0	\$ (10,000)
1	1,000
2	1,000
3	1,000
4	7,000
Total Cash Flow	\$ 0

5-29. The city museum will have a Picasso exhibit on loan for 3 years. As part of the conditions of the loan, a specialized alarm and security system must be installed. High Security Company will install a suitable system for a \$50,000 initial payment and \$2,500 per month in monitoring fees. Tight Security Company will install a suitable system for a \$75,000 initial payment and \$1,675 per month in monitoring fees. Both security systems would be used for 3 years. Assuming an annual discount rate of 9 percent with monthly compounding, which contract has the lowest net present cost?

5-30. The City Transit Authority (CTA) is trying to decide between railcars manufactured by French Corp and Japan Rail Car. The French Corp cars cost more to buy initially, but they are expected to last for 10 years. The Japan Rail Car cars are cheaper initially, but they will wear out in 6 years. The cash flows related to each of the choices are presented below. If the CTA's cost of capital is 8 percent, which type of car should the CTA buy? Support your answer.

Year	French Corp	Japan Rail Car
0	\$(275,000)	\$(195,000)
1	(10,000)	(15,000)
2	(10,000)	(15,000)
3	(10,000)	(15,000)
4	(10,000)	(15,000)
5	(10,000)	(15,000)
6	(10,000)	(15,000)
7	(10,000)	
8	(10,000)	
9	(10,000)	
10	(10,000)	
Total	\$(375,000)	\$(285,000)

5-31. Old Town needs to resurface a section of its roads this spring. The town council is considering using one of two technologies. The first involves putting down stone and gravel the first year and grading the road on an annual basis for the next 10 years. The second involves the application of a road surface called Sure-Pack. Sure-Pack requires maintenance only every 5 years. Based on experience, the

town counselors know the gravel road will last 10 years. The folks in Hiltown, the next town up Route 1, Sure-Packed their roads and expect to get 15 years from them before they will need to be resurfaced again. The cash flows for each alternative are shown in the table below. If Old Town's discount rate is 8 percent, which alternative should they choose? Use an annualized cost analysis to support your answer.

Year	Gravel	Sure-Pack
0	\$200,000	\$300,000
1	15,000	
2	15,000	
3	15,000	
4	15,000	
5	15,000	55,000
6	15,000	
7	15,000	
8	15,000	
9	15,000	
10	15,000	55,000
11		

5-32. The town of Millbridge has to make a decision on replacing its garbage truck. It has narrowed the choice down to two different models. Model A will initially cost \$80,000 and then will cost \$4,100 per year to operate for its 20-year life. Model B will initially cost \$100,000 and then will cost \$3,600 per year to operate for its 30-year life. Use the annualized cost approach to determine which is a better choice. Assume a discount rate of 6 percent per year.

5-33. Smith Good Deeds Society is considering a 4-year investment opportunity with the following cash flows:

Year	Cash In	Cash Out
0	0	650
1	140	25
2	140	25
3	140	25
4	340	25

If Smith uses an annual discount rate of 8 percent, should it pursue the investment? Show calculations to support your answer.

5-34. Duncombe Village Golf Course is considering the purchase of new equipment that will cost \$1,250,000 if purchased today and will generate the following cash disbursements and receipts. Should Duncombe pursue the investment if the cost of capital is 8 percent? Why?

Year	Cash Receipts	Cash Disbursements	Net Cash Flow
1	950,000	500,000	450,000
2	925,000	475,000	450,000
3	800,000	450,000	350,000
4	675,000	430,000	245,000

5-35. The town of Millbridge has just agreed to pay a pension to the town clerk. The pension will be \$40,000 per year for the next 20 years. Dwight Ives, the town manager, has decided that the town should put aside enough money today to pay for the entire pension. He has argued that the town will not receive the clerk's services in the future, so future taxpayers should not have to pay the pension. How much must be put aside, assuming the town earns 6 percent compounded annually? Does this funding approach make sense to you?

5-36. Suppose that you were to receive a \$30,000 gift upon graduation from your master's degree program, when you turn 31 years old. At the end of each working year for 34 years, you put an additional \$5,000 into an IRA.

1. Assuming you earn an annual compounded rate of 7.5 percent on the gift and the IRA investments, how much would be available when you retire at age 65?
2. If you hope to draw money out of that investment at the end of every month for 30 years following retirement, how much could you withdraw each month? Assume that during the years you are retired, the money earns an annual rate of 6 percent compounded monthly.
3. You realize that if you draw out that amount each month there will be nothing left for your two children. You decide that you want to leave \$250,000 to each of your children 30 years after you retire. How much would you have to invest at your retirement to fund your children's inheritance? Assume that you will earn 7.5 percent compounded annually on the money invested for your children.
4. If you set aside the money for your children, how much could you draw out each month during your retirement if you can earn 6 percent per annum compounded monthly on the portion that is not set aside for the children?

5-37. The Old School is trying to decide whether it should purchase or lease a new high-speed photocopier machine. It will cost the school \$14,000 to purchase the copier and \$750 each year to maintain the machine over the course of its 6-year useful life. At the end of the sixth year, Old School expects to be able to sell the copier for \$1,000. A dealer has offered to lease the school the same copier for a payment of \$750 at the beginning of the lease plus lease payments of \$3,450 per year for 4 years. Lease payments include all maintenance. The dealer was unable to offer a lease longer than 4 years. Lease payments would be made at the end of each year. If the Old School's discount rate is 8 percent, which alternative should it choose and why?

5-38. Rural Consolidated Fire Services (RCFS) is considering applying for a Federal Department of Energy (DOE) grant that would allow it to install solar panels on each of its four firehouses. The roofs on each of the firehouses are big enough to accommodate 30,000 square feet of panels. Panels cost \$8 per square foot. In addition, RCFS will have to pay \$8,000 per firehouse for batteries and other equipment costs and \$10,000 per firehouse for installation. RCFS expects the solar panels on the four buildings to generate a total of \$6,000 worth of electricity each month for the next 10 years. If RCFS puts panels on all four firehouses, the DOE will give RCFS \$500,000 toward the cost of buying and installing the solar-power system. Federal stimulus money will be received at the start of the project. If RCFS's discount rate is 6 percent, should RCFS install the panels based solely on financial considerations? Support your answer with the appropriate TVM calculations.

5-39. The Town Pool is considering investing \$3,200 today in a popcorn maker. The annual cash profits from the machine will be \$500 for each of the 10 years of its useful life. What is the IRR on the investment?

5-40. Urban Housing Agency (UHA) is considering contracts with private developers to provide low-income housing at various locations in the city. The startup costs to UHA for each location are \$115,000, all of which must be paid to the developers in cash at the beginning. The housing rents would

provide UHA net cash flows of \$3,000 per month for the first 12 months, \$4,000 per month for the following 12 months, and \$5,000 for the remaining 12 months of a 3-year contract. UHA only invests in projects that earn an annual rate of return of at least 12 percent. What rate of return would UHA earn on the contracts? Should UHA accept the contract? Why? Do not solve this problem using a financial calculator.

5-41. Refer to Problem 2-28 at the end of [Chapter 2](#). Assume that the capital acquisitions in that problem were made at the beginning of fiscal year 2016. It is now the end of fiscal year 2018. Prepare a schedule showing those capital assets, their cost, their useful life, the accumulated depreciation at the beginning of 2018, the depreciation expense charged for 2018 (assuming straight-line depreciation and no salvage value), the accumulated depreciation as of the end of the year, and the net book value (cost less accumulated depreciation) as of the end of 2018. Use a spreadsheet program such as Excel. As River Country may dispose of the items at different times, note that it is necessary to track each item separately.

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Appendix 5-A: Using a Financial Calculator for Time Value of Money Calculations

It is now possible to buy inexpensive handheld calculators to do TVM computations. However, not all calculators are programmed to do TVM calculations. Those that are will generally be labeled as financial calculators and will have keys labeled for the TVM functions as shown throughout Appendix 5-A. You should also be aware that not all financial calculators work the same way. Different calculators may require different keystrokes. It is important to review the instruction booklet.

Calculators are useful adjuncts to spreadsheet programs. They allow you to do quick calculations when you cannot get to a computer or just need an immediate answer. It should be noted, however, that there are apps that download electronic spreadsheets to smartphones and tablets, giving them all the benefits of calculators without the need for an extra device. This will reduce the use of calculators for TVM computations even further.

Calculators can be used to check some of the calculations in complex spreadsheet before using the results of the analysis. These calculators have the formulas built in and can rapidly produce accurate results. For example, given the following information, one could simply input the three known pieces of information and have the calculator compute the missing piece of information.

FV = ?

PV = 100

i = 6%

N = 2

Often calculators that can do TVM computations have a row of buttons that would appear something like this:



Sometimes the interest key is shown as an I/Y as above, or it might appear as r, %i, or i. Notice that interest rates are entered into the calculator as whole numbers. Financial calculators automatically divide by 100 to convert that whole number to a percentage. By contrast, you must enter .06 or 6% when using a computer spreadsheet program. For the time being, we will ignore the PMT button. We will come back to that shortly. Generally, the way to use the calculator is to enter the appropriate information using the keys and then press a compute button followed by the desired variable. On many calculators the compute button appears as COMP or CPT. Each brand of calculator tends to have a different compute button and often a slightly different approach to entering data, so the instructions for the calculator should be carefully reviewed.

For our simple example of \$100 invested for 2 years at 6 percent interest compounded annually, one would

first clear the TVM registers in the calculator. Then enter the following keystrokes into the calculator:

- 100, then press $\pm/\mp$
- press PV
- 6, then press I/Y
- 2, then press N
- then press CPT
- then press FV
- 112.36 would appear on the calculator display

Some calculators require the initial present value to be entered as a negative number, since \$100 is first paid out into the investment and then at the end \$112.36 is received from the investment. By pressing the $\pm/\mp$ key on the calculator, you convert the initial 100 that you entered to a negative number.

Another way to show the calculator approach would be to treat the information that is available and relevant to the problem as the raw data and the desired information as the result in a form such as the following:

Raw Data:	2	6	-100		
	N	I/Y	PV	PMT	FV
Result:					= 112.36

Note that the calculator simply calculates the result using the formulas shown in Equations 5.1 and 5.2. They do the arithmetic for the user. The hard part of working with TVM is determining the data that are relevant to the problem and the variable that one needs to calculate. Once any three of the variables (N , $\%i$, PV , FV) are known, the fourth can be calculated by using a calculator or computer.

Whenever there are both cash inflows and cash outflows in a TVM calculation, the inflows and outflows *must* have opposing signs. If you do not enter opposing signs, you will get an error message. For example, if you wanted to know how many years it would take for an investment of \$100 to grow to \$240 with an annual interest rate of 6 percent, you should consider the initial investment of \$100 as a negative number and \$240 as a positive number. This rule holds for both calculators and spreadsheets. To solve for the number of years the money would have to be invested, you would enter the following keystrokes:

- 100, then press $\pm/\mp$
- press PV
- 6, then press I/Y
- 240, then press FV
- then press CPT
- then press N
- 15.025 would appear on the calculator display

Calculators can also be used to do TVM calculations involving annuities. See the discussion of annuities in the chapter. Suppose that we expect to receive \$100 per year for the next 2 years. We could normally invest money at an interest rate of 10 percent compounded annually. What is the present value of those payments? Using

the calculator, we can solve the problem as follows:

Raw Data:	2	10		100	
	N	I/Y	PV	PMT	FV
Result:			= -173.55		

The result shown here indicates that receiving two annual payments of \$100 each for the next 2 years is worth \$173.55 today if the interest rate is 10 percent. The \$173.55 is shown as a negative number because you would have to pay that amount today to receive \$100 a year for 2 years.

Remember, it is important to clear your calculator memory before each new calculation. For example, with the Texas Instruments BAII Plus Professional calculator, you would press the second button and then CLR TVM. Check the calculator instruction manual for the proper way to clear the memory of your calculator. If you do not clear the calculator, you run the risk of getting incorrect answers.

How much would those two payments of \$100 each be worth at the end of the 2 years?

Raw Data:	2	10		100	
	N	I/Y	PV	PMT	FV
Result:					= 210

Note: These examples follow the approach on the Texas Instruments BAII Plus Professional calculator.

That calculator generates a negative FV when a positive number is entered for the PMT.

Payments of \$100 a year for 2 years at 10% would accumulate to \$210.

Observe that there is a great deal of flexibility. If we know the periodic payment, interest rate, and number of compounding periods, we can find the FV. However, if we know how much we need to have in the future and know how many times we can make a specific periodic payment, we can calculate the interest rate that must be earned. Or we could find out how long we would have to keep making payments to reach a certain future value goal. Given any three variables, we can find the fourth.

For example, suppose that we are going to invest \$100 a year for 5 years and we want it to be worth \$700 at the end of the fifth year; what interest rate must we earn? Using the calculator, we can solve the problem as follows:

Raw Data:	5			-100	700
	N	I/Y	PV	PMT	FV
Result:			16.9		

Notice that we used opposing signs for the cash inflows—the negative \$100 payments—and the cash outflow—the positive \$700 FV. If we did not, the calculator would not be able to find N and would show an error message.

Similarly, we can solve for the number of periods. Suppose we know that we can invest \$100 a year, we can earn a 16.9 percent annual rate of return, and we want to have \$700 at the end of our investment. We can find

the number of periods before we will accumulate the desired amount. Using the calculator, we can solve the problem as follows:

We can also solve for the payment. Suppose we need \$700 in 5 years and believe that we can earn 16.9 percent per year on our investment. We can find the amount we will need to save each year to reach that goal. Using the calculator, we can solve the problem as follows:

Raw Data:		16.9		-100	700
	N	IY	PV	PMT	FV
Result:	5				

Raw Data:	5	16.9			700
	N	IY	PV	PMT	FV
Result:				-100	

Appendix 5-B: Using Computer Spreadsheets for Time Value of Money Calculations—Examples

Computer spreadsheet programs such as Microsoft Excel can be used to solve TVM calculations. The chapter provided a detailed example for finding a future value (FV) using Excel. This appendix provides examples of the specific steps required to find present values (PV), annuity payments (PMT), rates (Rate), number of compounding periods (Nper), net present values (NPV), and internal rates of return (IRR), using Excel.

In each case, the basic approach is to enter the appropriate data into the cell where you want to see the results. Start by typing the equal sign followed by the function name and an open parenthesis; you will then see the function and all of the needed input variables directly below the cell. [Figure 5-B-1](#) shows what that would look like for a present value formula. The most commonly used TVM formulas are:

Figure 5-B-1 Entering a Formula

	A	B	C	D	E
1					
2		Calculation of Present Value			
3					
4	FV	\$15,000			
5	rate	7%			
6	nper	5			
7	pmt	0			
8	PV	???			
9					
10	PV	=PV(			
11					

= PV(rate, nper, pmt, [fv], [type])

= Rate(nper, pmt, pv, [fv], [type], [guess])

= Nper(rate, pmt, pv, [fv], [type])

= PMT(rate, nper, pv, [fv], [type])

= NPV(rate, value1, [value2], ...)

= IRR(values, [guess])

Present Value

Suppose that we can buy a capital asset that will result in our receiving \$15,000 five years from now and that we believe an appropriate discount rate for this specific piece of equipment is 7 percent. We need to decide the most that we would pay for that asset. What is the PV of that future receipt?

We can start the solution by recording the raw data in an Excel spreadsheet. See [Figure 5-B-2](#). Enter the cell references for each variable called for in the formula Excel shows for computing the PV. If you want the solution to appear as a positive number, enter a minus sign before the cell reference for the FV. Note that the present value formula is shown at the top of the screen to the right of fx. When you press the Enter key, Excel computes the PV to be \$10,694.79, as shown in [Figure 5-B-3](#). If we wished to show the formula with numeric values, it would be = PV(7%, 5, 0, -15000).

Figure 5-B-2 Present-Value Data Entered in Formula

	A	B	C	D	E	F
1						
2		Calculation of Present Value				
3						
4	FV	\$15,000				
5	rate	7%				
6	nper	5				
7	pmt	0				
8	PV	???				
9						
10	PV	=PV(B5,B6,B7,-B4)				
11		PV(rate,nper,pmt,[fv],[type])				

Figure 5-B-3 PV Computed

	A	B	C	D	E	F
1						
2		Calculation of Present Value				
3						
4	FV	\$ 15,000				
5	rate	7%				
6	nper	5				
7	pmt	0				
8	PV	???				
9						
10	PV	\$10,694.79				
11						

Rate

Suppose that we have \$10,000 today, could invest it for 6 years, and need to have \$20,000 at the end of that time. What rate would have to be earned? The data setup would be similar to the problem just solved, except that we are looking for the rate rather than the present value. We would enter **=Rate(** and Excel would show the full formula **Rate(nper, pmt, pv, fv, type, guess)**. We would enter the cell references or data values for the variables and hit the Enter key. Note that either the PV or the FV must be a negative number. The rate that must be earned for \$10,000 to grow to \$20,000 in 6 years is shown in [Figure 5-B-4](#). The formula for this with numeric values would be **=Rate(6, 0, -10000, 20000)**. We leave a blank between two commas for pmt, or show it as a zero, as there is no periodic repeating payment in this problem. We do not need to enter any values for type or guess.

Figure 5-B-4 Rate Solution

	A	B	C	D	E
1					
2		Calculation of Rate			
3					
4	FV	\$20,000			
5	PV	\$10,000			
6	nper	6			
7	pmt	0			
8	rate	???			
9					
10	rate	12%			
11					

Number of Periods

Suppose that we can earn only 9 percent per year. How many years would it be before our \$10,000 will grow to become \$20,000? After setting up the data, we would enter **=Nper(** and Excel would display **Nper(rate, pmt, pv, fv, type)**. Then enter the rate, FV, minus PV and hit the Enter key. The result is 8.04, or a little bit longer than 8 years. Notice that the inputs, formula, and result can also be seen in [Figure 5-B-5](#). The formula with numeric values would be **= Nper(9%, 0, -10000, 20000)**.

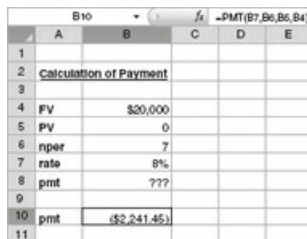
Figure 5-B-5 Number of Periods Calculation

	A	B	C	D	E
1					
2		Calculation of Nper			
3					
4	FV	\$20,000			
5	PV	\$10,000			
6	rate	9%			
7	pmt	0			
8	nper	???			
9					
10	nper	8.04			
11					

Periodic Payments (In Arrears)

Assume that you can invest money every year for 7 years at 8 percent. If you need \$20,000 at the end of 7 years, how much would you have to put aside each year? Assume you make the payments at the end of each year. After setting up the data, enter =PMT(and Excel will display the formula **PMT(rate, nper, pv, [fv], [type])**. Enter the appropriate cell references or data values for the formula, and hit the Enter key. We find that we would have to invest \$2,241.45 each year. We can see that result at the bottom of [Figure 5-B-6](#). The formula with numeric values would be =PMT(8%, 7, 0, 20000).

Figure 5-B-6 Periodic Payments in Arrears



The screenshot shows an Excel spreadsheet with the following data:

	A	B	C	D	E
1					
2		Calculation of Payment			
3					
4	FV	\$20,000			
5	PV	0			
6	nper	7			
7	rate	8%			
8	pmt	???			
9					
10	pmt	(\$2,241.45)			
11					

The formula bar at the top shows the formula =PMT(B7:B6,B6,B4) and the active cell is B10.

Periodic Payments (In Advance)

However, what if we could put aside money at the beginning of each year rather than the end? When payments come at the end of each period, as they do in an ordinary annuity or annuity in arrears, the value for “type” is 0. If we leave it blank, as we have so far, Excel assumes that it has a value of 0. For an *annuity in advance* we must indicate the type as being 1 in the Excel formula. [Figure 5-B-7](#) shows how this would appear. If the periodic payments are made at the start of the year, we would need to put aside only \$2,075.41 each year. The formula with numeric values would be = PMT(8%, 7, 0, 20000, 1).

Figure 5-B-7 Periodic Payments in Advance

The image shows a screenshot of an Excel spreadsheet. The formula bar at the top displays the formula =PMT(B7,B6,B5,B4,B8). The spreadsheet has columns A through E and rows 1 through 12. The data is as follows:

	A	B	C	D	E
1					
2		Calculation of Payment			
3					
4	FV	\$20,000			
5	PV	0			
6	nper	7			
7	rate	8%			
8	type	1			
9	pmt	???			
10					
11	pmt	(\$2,075.41)			
12					

Net Present Value

Suppose that we can invest \$1,000 today in a capital asset, and will receive \$500, \$700, and \$800, respectively, at the end of each of the 3 years of the asset's life. Our discount rate for the project is 6 percent. What is the net present value? After entering the rate and cash flow data, type = NPV(and Excel displays the formula NPV(rate, value 1, [value 2], ...). Note that the initial outlay is *not* one of the values. This outlay must be subtracted from the Excel NPV calculation. [Figure 5-B-8](#) shows the problem setup and cell references. The formula result is \$1,766.39. After subtracting the outlay of \$1,000, the NPV is \$766.39.

Figure 5-B-8 Net Present Value

C9 =		=NPV(B4:D7)				
	A	B	C	D	E	F
1						
2	Calculation of NPV					
3						
4	rate	6%				
5						
6	Period	0	1	2	3	
7	Cash Flow	\$ (1,000)	\$500	\$700	\$800	
8						
9	PV of Cash Flows		\$1,766.39			
10	Less: Initial investment		(1,000.00)			
11	NPV		\$ 766.39			
12						

Internal Rate of Return

What is the internal rate of return (IRR) of the cash flows described in the NPV section earlier? Type = **IRR**(and Excel will display the formula = **IRR(values, [guess])**. Provide Excel with the values and an initial guess, such as 15 percent (note that the guess can generally be left blank if preferred). Note that the initial outlay *is* one of the values. In this respect, the IRR function works differently than the NPV function. [Figure 5-B-9](#) shows the problem setup and cell references. The formula result shown at the bottom of the screen is 40.42%. This means that the IRR for the capital asset would be approximately 40.4 percent.

Figure 5-B-9 Internal Rate of Return

	A	B	C	D	E	F
1						
2						
3						
4						
5	Period		0	1	2	3
6	Cash Flow		\$(1,000)	\$500	\$700	\$800
7						
8	IRR=		40.42%			
9						

Conclusion

Each of the major spreadsheet programs handles the TVM process slightly differently. Within any program from one version to the next, such as from Excel 2007 to Excel 2010, minor changes in the process tend to occur. To some extent, the spreadsheet approaches are quirky. For example, not allowing the initial, time 0, outflow to be directly included in the NPV calculation seems odd. Nevertheless, spreadsheets can handle the more complicated numbers found in real-world situations with ease, and most organizations now rely almost exclusively on computer spreadsheets for their TVM calculations.

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Chapter 6 Long-Term Financing

Learning Objectives

The learning objectives of this chapter are to:

- introduce long-term financing and discuss the two main types of long-term financing: equity financing and debt financing;
- explain the nature of retained earnings and its role in long-term financing;
- explain stock issuance and discuss its advantages as a source of long-term financing for for-profit organizations;
- explain how governments can use taxation to generate long-term financing for capital acquisitions;
- discuss the role of contributions in long-term financing;
- define long-term debt;
- explain how mortgages and bonds work, and how debt payments and values can be computed;
- describe primary and secondary bond markets; and
- discuss the advantages and disadvantages of leasing as a source of long-term financing.

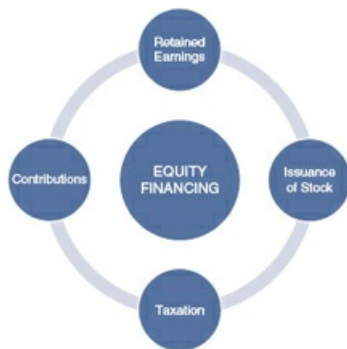
Many organizations find that they cannot afford to pay for capital assets using just the cash coming from current operating activities. It is common for the cost of such items, especially buildings or major pieces of equipment, to exceed available cash resources. The various alternatives available to the organization for funding such acquisitions are referred to as long-term financing. Long-term financing provides the resources to acquire long-term assets and is repaid over a period of years, if at all. The two key sources of long-term financing are equity financing and long-term debt.

Managers often undertake long-term financing to fund the acquisition of capital assets. However, it is important to keep the two things—capital budgeting and financing—separate. As we discussed in [Chapter 5](#), the discount rates that managers use to do TVM calculations are not interest rates. Discount rates include interest costs for borrowed money, but also include a return for undertaking risk and for the use of the organization's own funds. In general, managers should complete their analysis of capital asset investment opportunities using their chosen discount rates and then look into how they might finance those acquisitions. When making financing decisions, the rule is to choose the method of financing with the lowest cost. That might lead managers to issue bonds to build a new building rather than obtaining funds by mortgaging the building.

Equity Financing

Equity financing refers to money raised for the organization that never has to be repaid. Obviously this has great advantages over debt. When money is borrowed, it places the organization at risk. What if the organization has a bad year and can't meet its required interest payments or principal repayments? The organization's very existence could be threatened. If an organization can find ways to raise money for its long-term needs without borrowing, that risk can be avoided. The primary sources of equity financing are retained earnings, stock issuance, taxation, and contributions (see Figure 6-1).

Figure 6-1 Sources of Equity Financing



Retained Earnings

When an organization earns a surplus or profit, that profit can be retained within the organization or can be distributed to owners. Distributions made to owners of for-profit organizations are called dividends. Not-for-profit organizations do not have owners who are entitled to receive any of the profits that the organization earns.

When profits are retained within the organization, regardless of whether it is a for-profit or not-for-profit organization, those profits can be used to finance capital assets such as buildings and equipment. A great advantage of using retained earnings is that there is no required repayment so there is no risk in using long-term financing from this source.

Issuance of Stock

In the for-profit sector, one of the most common sources of long-term financing is equity. Essentially, to sell equity means a company sells part of itself. The investors who provide money to the company receive shares of stock in exchange for their investment. The stock represents an ownership interest in the organization. The stockholders have equity in the company.

For example, suppose that the Hospital for Ordinary Surgery (HOS) were a for-profit organization. The hospital wishes to construct a new building for \$100,000,000 but does not want to borrow the money. Borrowing money creates risk for the organization. Interest must be paid regularly, and eventually the amount borrowed must be repaid.

Alternatively, the hospital could enter the equity markets and sell stock. Suppose 10 million shares of stock had been issued earlier, and now the hospital decides to sell 10 million more shares at \$10.50 per share. This would generate \$105,000,000. Of that amount, the hospital would pay, say, \$5,000,000 to the various investment banking firms (often stock brokerage companies) that helped it find buyers for the stock. The remaining \$100 million would be used to purchase the new building. The new stockholders would now own half of the 20 million shares of outstanding stock and, therefore, half of the organization.

If HOS does well financially, it may decide to pay dividends, and the new owners would get their share of those dividends. However, if the hospital does poorly, it is not obligated to pay those dividends, the way it would have been obligated to pay interest. And the \$100 million does not have to be repaid to the investors. On some occasions, for-profit organizations do repay the amount owners have invested. However, that is relatively unusual. It is more common for the organization to keep that money and use it over time to provide additional goods and services, possibly at a profit. The stockholders then own that profit.

Usually, for-profit stockholder organizations take much of their profits and reinvest them in activities that they hope will be profitable. As more and more profits are earned and retained in the organization, the entity becomes more valuable. This should be reflected in a higher value of each share of stock. The stockholders can realize that increased value by selling their stock to other investors at a price higher than they paid to acquire it.

Taxation

Governments can raise long-term financing through taxation. If there is a desire to build a new courthouse, town hall, or school, the government can raise taxes enough to provide the entire desired financing in 1 year.

That money can then be used immediately to pay for the new building or other capital acquisitions.

Philosophically, there are concerns about intergenerational fairness when such an approach is undertaken. Is it fair to put the entire burden of the cost of a new courthouse on today's taxpayers, when in fact the courthouse will be used for many years? It might be more equitable to borrow the money for the courthouse and to repay it over the years that the citizens will benefit from the courthouse. The repayments can come from taxes each year the courthouse is used. Given the issue of fairness, and also the typical aversion of both citizens and politicians to tax increases, very large public capital projects are often financed by debt.

Contributions

Donations are another source of long-term financing for many not-for-profit organizations. Like the other equity financing approaches, a big advantage of donations is that they do not have to be repaid. If the organization can raise a large enough amount of charitable contributions, it can acquire the capital items it wants without having to incur debt. Many not-for-profit organizations solicit donations annually to support operating activities. Those donations are typically unrestricted and can be used for any reasonable purpose related to the organization's mission. So they could be used for routine operations or for capital acquisitions. In addition, when there is a specific financial need to purchase a particularly costly capital asset, the organization may also undertake a capital campaign to raise money specifically for that acquisition.

Capital Campaigns

Many not-for-profit organizations have fundraising drives referred to as capital campaigns, which are aimed at raising money for capital investments. Capital campaigns are often focused on raising money for a specific building or other long-term purpose.

When donors give money specifically under a capital campaign, their contributions are treated as restricted.¹ That means that the money must be held aside and invested in the capital items described during the fundraising drive. An organization generally does not repay any principal or incur any interest expense when it raises money through a capital campaign.

¹ Restrictions are further discussed in [Chapters 10](#) and [11](#).

Long-Term Debt

In contrast with equity financing, debt financing represents money the organization borrows that must be repaid in the future, often with interest. It is referred to as long-term debt if it will be paid back more than 1 year into the future. Accountants often divide both resources and obligations into short-term and long-term categories based on whether they relate to the coming year or a period of time beyond the coming year. For example, if the town of Millbridge were to borrow \$1,000,000 to be repaid in equal installments over the next 10 years, that would be considered long-term debt, because it would not all be repaid within 1 year. The \$100,000 portion to be repaid in the first year (i.e., one-tenth of the total loan) is referred to as the current portion of long-term debt. The primary sources of long-term debt, discussed below, are long-term notes, mortgages, bonds, and capital leases (see Figure 6-2).

Figure 6-2 Sources of Long-Term Debt Financing



Long-Term Notes

One form of long-term debt results when the organization borrows money and signs a note promising repayment. The note indicates the specific terms under which the money has been borrowed, such as the interest rate and timing of payments. Long-term notes are often unsecured loans. This means that the organization as a whole owes the money, but there is no one specific item that the organization pledges as collateral to ensure repayment. Thus, the lender is considered to be an unsecured creditor. If the organization has problems making repayments to its creditors, all the unsecured creditors share whatever resources are available to repay the organization's various obligations.

By contrast, a lender can ask for collateral. Collateral is a specific asset the lender can claim if the borrower fails to make principal repayments or interest payments when due. For example, if the organization has made an investment buying 10,000 shares of a company's stock, it may offer that stock as collateral. By providing the lender with specific valuable collateral, the loan is less risky. Therefore, the lender is more likely to be willing to make the loan and to charge a lower interest rate. In general, the greater the likelihood that a borrower will not be able to repay a loan, the higher the interest rate the borrower pays unless it puts up adequate collateral.

Mortgages

Mortgages are loans secured by a specific asset. The asset is generally real estate. That is, land and buildings are used as collateral for the loan. Often, the funds are being borrowed to purchase the collateral.

There are different possible types of payment arrangements for mortgages. Some do not require any repayment of principal for a number of years, but then a large “balloon” payment is required later. It is more common, however, for a mortgage to require equal payments at the end of each month throughout the term of the loan. The equal mortgage payments each include some interest expense and some principal repayment. However, the amount of interest versus principal in each payment differs from payment to payment. As time goes by, the amount of interest in each payment falls, and the amount of principal repayment rises, even though the total payment remains the same.

Why is that the case? Since each mortgage payment repays part of the loan, after the payment the organization owes the lender less money. Interest is rent on the money borrowed. As the amount of the loan outstanding declines, the required interest payment declines as well. Since the monthly mortgage payment is calculated as a constant annuity payment, the same each period, the repayment portion increases as the interest portion of the payment declines. As a result, early mortgage payments are mostly interest and just small repayments of the loan itself. By the tail end of the mortgage, each payment is mostly principal and only a small amount of interest.

For example, suppose that the town of Millbridge took out a \$500,000 mortgage to build a new structure at the town swimming pool. The terms of the loan were 12 percent interest, with equal annual payments of \$88,492.08 for 10 years. The first payment would include \$60,000 of interest ($\$500,000 \times 12\% = \$60,000$). The rest of the payment is used to pay back part of the loan. Since the total payment is \$88,492.08 and \$60,000 of that is interest, the difference, or \$28,492.08, is repayment of the original loan. That means that the next year the amount owed is \$28,492.08 less. The interest for the second year is calculated based on the \$471,507.92 that is still owed at the end of the first year. [Table 6-1](#) is a loan amortization table showing annual interest and loan repayments over the full term of the loan.

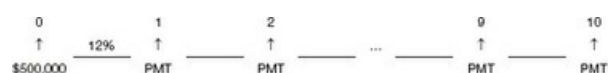
Principal Owed at Beginning of Year	Annual Payment	Interest at 12%	Repayment of Principal	Principal Owed at End of Year
(A)	(B)	(C = A × 12%)	(D = B - C)	(E = A - D)
\$500,000.00	\$88,492.08	\$60,000.00	\$28,492.08	\$471,507.92
471,507.92	88,492.08	56,580.95	31,911.13	439,596.79
439,596.79	88,492.08	52,751.61	35,740.47	403,856.32
403,856.32	88,492.08	48,462.76	40,029.32	363,826.99
363,826.99	88,492.08	43,659.24	44,832.84	318,994.15
318,994.15	88,492.08	38,279.30	50,212.78	268,781.37
268,781.37	88,492.08	32,253.76	56,238.32	212,543.05
212,543.05	88,492.08	25,505.17	62,986.92	149,556.13
149,556.13	88,492.08	17,946.74	70,545.35	79,010.79
79,010.79	88,492.08	9,481.29	79,010.79	0.00

Table 6-1

As we can see, the balance of the loan is zero at the end of the 10th year. In the early years, the loan balance is large and most of the payment is for interest. Near the end of the loan, the principal still owed has dropped substantially, so the interest portion of each payment is much less and the principal portion correspondingly larger.

This leaves one unanswered question: How was the \$88,492.08 annual mortgage payment calculated? The

payment is an annuity. We know the PV; that is the \$500,000 borrowed at the beginning. We know the number of compounding periods, 10, and the interest rate, 12 percent.



The Excel spreadsheet formula to find the PMT would be:

= PMT(rate, nper, pv, [fv], [type])

= PMT(12%, 10, 500000)

= \$(88,492.08)

Bonds

When organizations borrow large amounts of money, they often issue (i.e., sell) a bond. Bonds are agreements to borrow and repay money with specific stated, face, par, or maturity values. The stated, face, par, or maturity value is the amount that will be repaid at the end of the loan period, called the maturity date. Suppose that HOS wishes to borrow \$100 million for 20 years to add a new wing. That \$100 million is the total maturity value, and 20 years from now is the maturity date.

During the term of the bond, borrowers (i.e., sellers) pay lenders (i.e., buyers or investors) interest at an agreed-upon annual interest rate called a coupon rate. It is important to remember that interest rates are typically annual rates unless stated otherwise. Let's say a bond had an annual coupon rate of 6 percent, with interest paid twice each year. Semiannual interest payments are typical for bonds. Each interest payment would be calculated as the 6 percent annual rate divided by 2. The resulting 3 percent rate to be paid every 6 months would be multiplied by the maturity value of the bond to determine the interest to be paid. In this example, for a \$100 million bond, the borrower would pay 3 percent of the *par value* of the bond, or \$3,000,000, every 6 months.

Each individual investor in a bond lends a portion of the total amount to the organization in exchange for the organization's promise to repay the loan. That promise is evidenced by a formal document called a bond. For example, one might lend money to the organization in exchange for a \$5,000 bond. The organization promises to make regular interest payments to the bondholder and to repay the full \$5,000 *face value* at the maturity date. When bonds are initially issued, money is lent to the borrower in what is called the primary market. In primary-market transactions, borrowers issue the bonds and receive the proceeds of the bond issue directly or through a broker. In return, borrowers promise to make all interest payments and principal repayments when they are due throughout the life of the bond.

Bond obligations are generally transferable. After a bondholder lends money to an organization, the bondholder can wait until the maturity date to get the money back or sell the bond in what is called the secondary market. In secondary-market transactions, the owner of the bond sells it to a new investor and is

paid the market value of the bond at the time of that sale. The original issuer is not involved in secondary-market transactions. The issuer's only obligation is to continue to pay the required amounts of principal and interest to the new owners when they are due.

Why Are Bonds Used?

Organizations issue bonds rather than simply borrow money from a bank for three major reasons: to spread risk, to dis-intermediate, and to benefit from investors' tax incentive to buy tax-exempt bonds. First, if one lender were to lend a very large amount of money to one borrower, it would be taking a tremendous risk. No one bank would want to lend \$100 million to HOS. The hospital's failure to repay the loan could have a devastating impact on the bank. Lenders would prefer to lend smaller amounts to a larger number of borrowers. Second, banks lend other people's money. People put money in bank accounts, and the bank lends the money to borrowers. The bank acts as an intermediary between the individual and the borrower. If the borrower can eliminate the intermediary (dis-intermediate), it can save that cost. Third, the interest on some bonds is exempt from income taxes. This provides investors an incentive to buy such bonds, thereby making the debt easier and usually less costly.

Cutting the bank out of the lending process can result in a savings of several percent per year. For example, suppose that the bank pays people 4 percent interest on certificate of deposit savings accounts and lends that money to the town of Millbridge at 8 percent. The 4 percent difference between what the bank charges and what it pays covers all of the bank's costs and profits. If the town borrowed directly from the public by using bonds, it might only have to pay 6 percent. Millbridge will save 2 percent per year and the people will earn 6 percent, which is a higher rate of return on their savings than they get from the bank. The extra 2 percent rewards the person for taking the higher risk by lending to Millbridge, as opposed to putting the money in an insured bank account.

In that case, why not use bonds for all loans? Why would an organization ever borrow from a bank? The problem is that it is expensive to find individual investors who are willing to lend money to Millbridge. A large sales force is needed, and commissions must be paid. Lawyers are needed to protect the interests of the lender and borrowers. Accountants are needed to track the bond payments. Investment banking firms underwrite and coordinate this process.

Bond underwriters sometimes acquire the entire bond issue and then resell it to their customers. Other times the underwriters just agree to make their best effort to sell the bond, and the issuer bears the risk that the bonds do not sell. The price paid by the underwriter either is based on a negotiation with the issuer or is the result of a competitive bid. The underwriter will only offer to pay an amount below the price at which it thinks it can sell the bonds. The difference between the underwriter's buying and selling price is referred to as the spread. That spread has to be large enough to cover all of the underwriter's costs associated with the bond issuance, such as commissions, rent, and profit. Considering the spread as well as fees paid to accountants and lawyers, issuing a bond is costly. It often does not pay to issue a bond if only a relatively small amount of money is borrowed. Instead, taking out a loan from a bank may make more sense in such cases. However, if the borrower can save 2 percent a year for 20, 30, or perhaps 40 years on a large amount of money, this up-

front cost may be worthwhile. Would the savings from a lower interest rate offset the high initial costs related to issuing a bond? That is essentially an NPV problem that each potential borrower must solve.

Another factor that makes bonds advantageous is tax treatment. If a state or local government or not-for-profit organization pays interest to the bank on a conventional loan, that interest may be taxable. The bank may have to pay taxes on the profit it makes on the loan. There are federal laws, however, that allow public service organizations to issue tax-exempt bonds, in some instances.² A tax-exempt bond is a bond whose interest is not taxable by the federal and sometimes state and local governments. Such bonds are often referred to as municipal bonds, or muni bonds. Generally, interest income from a standard municipal bond is exempt from federal taxation, while it is exempt from state and local taxation only in the state or city in which the bond was issued.

² Interest paid by local and state governments may be taxable to the recipient. This is true regardless of whether the loan takes the form of a bond or other type of obligation. The taxability of the interest depends on the use of the borrowed money. For example, interest on arbitrage bonds issued by state and local governments is taxable. An arbitrage bond is one in which the money is borrowed to be invested at a higher rate. This prevents governments from borrowing at 6 percent on a tax-free bond to invest at 9 percent in a taxable corporate bond. The full listing of uses of borrowed money that are or are not taxable for state and local governments is beyond the scope of this book.

From a policy perspective, the government can use tax-exempt status of bonds to raise money for its own use or to help not-for-profit organizations obtain long-term financing for socially desirable projects, such as the construction of a new hospital building. The federal government helps these organizations get long-term financing by making interest on their bonds tax-free.

Suppose a person who lives in Millbridge buys an HOS bond. Assuming the hospital is located in the same state as Millbridge, the person would not pay federal or state income tax on the interest from the HOS bond. This makes the bond relatively more attractive than bonds that are taxable. Since the bond is attractive, investors generally are willing to accept a lower interest rate. That saves the bond issuer additional money.

Government-Issued Bonds

Governments borrow money for a variety of purposes, such as to cover deficits, acquire capital assets, or even cover temporary cash shortages within a year. Different levels of government have different borrowing approaches as well. Federal debt is used to finance the operations of the federal government. There is no specific matching of money borrowed with specific investment projects. If the federal government spends more than it receives, it increases the total amount of debt. The federal government issues both short-term debt (e.g., Treasury bills) and long-term debt (Treasury notes).

State and local bonds can best be divided into two categories: general obligation and revenue bonds. *General obligation bonds* are backed by the full faith and credit of the governmental body issuing them. This means that the interest payments and principal repayments are backed by the full taxing power of the government. These bonds can be considered guaranteed, although a government can become bankrupt and default on its debt. By

contrast, revenue bonds are backed by the revenues of a specific, limited source. For example, the government may issue revenue bonds to finance the construction of a housing project. The rental revenues from the project may be promised for the repayment of the debt. If the rental revenues turn out to be inadequate, then the bondholders may not be repaid. The full taxing power of the government is not pledged in support of the revenue bonds. Full faith and credit obligations generally have lower interest rates than revenue bonds because of the government guarantee of payment.

Tax-exempt borrowing has a great advantage. Since the lender usually does not have to pay federal, and often state, tax on the interest earned, such borrowing is substantially less expensive for the borrower. This has led to some controversial practices. For example, Industrial Development Bonds are issued at times by tax-exempt borrowers to borrow money to build facilities that are leased to private organizations. The lease payments pay the debt service. A number of laws have been enacted to control and limit the use of tax-exempt financing that has a primary purpose of benefiting private sector organizations.³

³. The 1986 Tax Reform Act placed the most severe restrictions to date.

Coupon and Zero Coupon Bonds

At one time, most bonds had interest coupons attached. Every 6 months the holder of the bond would clip off an interest coupon and exchange it for an interest payment in cash. At that time, bonds were generally unregistered. This means that the borrowing organization did not keep track of to whom it owed money. Whoever had the bond could clip the coupons and redeem them for interest. Whoever submitted the bond at the maturity date would be repaid the principal amount. These are called bearer bonds or unregistered bonds. Payments were made to whoever had the bond. Most bonds are now issued in electronic form as registered bonds. Bond ownership records are maintained by one of several central organizations acting as an agent for the borrower.

Some bonds do not pay interest until the maturity date. These are referred to as zero coupon bonds. Even though coupons themselves are outdated, the name zero coupon is meant to reflect that there are no interim interest payments. For example, suppose that you loaned money to the town of Millbridge in exchange for a 10-year, \$10,000 maturity, zero coupon bond with an interest rate of 6 percent and semiannual compounding. How much would you lend to Millbridge?



Excel spreadsheet formula: = PV(rate, nper, [pmt], [fv])

= PV(3%, 20, 0, 10000)

= \$(5,537)

You would give Millbridge \$5,537 today, and in 10 years the town would pay you \$10,000—the original loan plus interest. That would be the only payment made by Millbridge. Note that because of the semiannual compounding, there are 20 compound periods at 3 percent each.

Term Versus Serial Bonds

Another distinction is between term bonds and serial bonds. Bonds are typically issued in \$1,000 increments. Suppose a government wishes to raise \$100,000,000 for new construction. It will issue 100,000 bonds at \$1,000 each. The 100,000 bonds all together are referred to as a *bond issue*. For a 20-year term bond, the \$1,000 principal per bond is repaid at maturity at the end of 20 years for all 100,000 bonds. By contrast, a serial bond has a number of different maturity dates. For example, part of a 20-year serial bond issue might be repaid each year for the last 10 years of the bond's life.

When a government makes a large capital investment, it often uses a bond to finance the project, rather than raising taxes enough to cover the entire cost in the year of acquisition. If it uses a term bond, at the end of the term it will need to have available the full amount that was borrowed. One way to accomplish that is with a sinking fund. A sinking fund is a savings account in which money is put aside for a future use. That use might be to acquire a capital item or to repay the loan for a capital item that has already been acquired. Each year for the life of the term bond, the government can pay interest to the bondholders and put aside an amount to cover principal into the sinking fund. At the maturity of the bond, the bond principal is repaid from money in the sinking fund. Lenders sometimes require a sinking fund if they are concerned about the possibility that the borrower might default (fail to repay principal or pay interest). However, since the borrower may earn a lower rate on the sinking fund investment than the interest rate it pays on its outstanding bonds, the sinking fund approach may be more costly than simply repaying the debt.

Serial bonds are used more commonly by governments than term bonds on their own and, in some cases, may even be required by law. A serial bond requires repayments of principal at set points in time throughout the life of the loan, rather than all at one time. The serial bonds can be used to level the government's total annual payments for interest and principal. In the early years of the bond issue, the government will have large interest payments, because it owes the full amount that it has borrowed. In those years, only a relatively small portion of the principal will typically be repaid. That repayment will lower the interest due in the future years. It is common for the amount repaid periodically to grow as the annual interest cost declines. A 20-year serial bond would have its final repayment at the end of the 20th year. However, individual investors could buy a bond with an earlier specific maturity date within the series.

For example, a government borrowing \$100,000,000 would still issue 100,000 individual \$1,000 bonds as part of the bond issue. However, the bonds would not all have the same maturity dates, or even the same coupon rates. Typically, the bonds with a longer time until maturity will have a higher interest rate than those parts of the serial bond that have a shorter maturity. This is because investors lock up their money for a longer period of time. If interest rates rise in the interim, investors will not be able to benefit from that rise in rates until their bond investment matures. Also, earlier repayments lower the lender's risk related to potential default. As a result of these factors, serial bonds may have a lower overall borrowing cost than term loans.

Call Provisions

Many issuers of bonds are concerned by the long time frame involved. If a government issues a bond for 30

years when interest rates are high, it would be obligated to pay those high interest rates for the full term of the loan, even if subsequent changes in the economy result in falling interest rates. To deal with this, many bond issuers insert a condition in their bond agreements that allows them to repay the bond early. This is called a call provision. When a bond is called, it means that the borrower chooses to repay the bond early. Suppose that 10 years has gone by, and the borrowing rate for the government bond issuer has fallen from 8 percent to 4 percent. The government would typically borrow money at 4 percent and use it to call in and pay off the outstanding 8 percent bond.

Although this provides a clear benefit to the borrower, typically bonds that have call provisions have a higher initial interest rate than if there were no call provision. If market interest rates go up, lenders will not benefit from that rise because they have lent money for a long period at a fixed rate. But if market interest rates drop, the bond will be called and they will then only be able to reinvest their money at a lower rate. Therefore, to make up for this unbalanced situation, lenders demand a higher interest rate for a bond with a call provision than for one without such a provision.

Calculating Bond Payments and Values

Bonds have a specific stated interest rate, such as 10 percent. The organization promises to pay interest at that rate. Therefore, a 10 percent, \$5,000 bond with annual interest payments would pay \$500 of interest every year until the bond matures. At that point, the organization would make the last interest payment and repay the \$5,000 face value. Usually, interest payments on bonds are made semiannually. In that case, this bond would make a payment of \$250 every 6 months until the maturity date.

However, bonds are not always issued or sold at their maturity value. In fact, they are usually sold for a higher or lower price. This is because interest rates in the financial markets fluctuate on a daily basis. Although a 10 percent rate might be appropriate when an organization is planning to issue a bond, by the time all the legal and administrative details are taken care of, interest rates may have risen or dropped. For example, consider a 20-year, 10 percent bond. What if the bond is about to be issued, but interest rates rise in the general economy? No one will be willing to lend money to get 10 percent if they can get 12 percent elsewhere. The organization must offer to sell the bonds at a discount. (If interest rates have instead decreased, then the organization will be able to charge a premium for the bond.)

The actual amount to be paid for a bond is calculated using time value of money (TVM) calculations. A bond is a promise to make periodic interest payments and a repayment of principal. If we know the current interest rate in the marketplace, the number of compounding periods, and the future interest payments and principal repayments, we can find the PV of the bond—that is, we can find its market value. This calculation, however, is somewhat complex because we have to carefully account for the different payments.

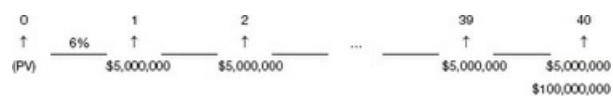
What would Millbridge receive today if it issued a \$100 million bond offering at a 10 percent stated interest rate with interest paid semiannually and the principal repaid in 20 years? Assume that interest rates in the general marketplace have risen to 12 percent. First, since the bond pays interest semiannually, there are two compounding periods per year. A 20-year bond would have 40 compounding periods. This number of periods

is used to compute the PV of both the interest payments and the principal repayments.

Second, note that the stated interest rate is used to determine the interest payments that will take place over time. A \$100 million bond at 10 percent would pay interest of \$10 million per year, or \$5 million every 6 months.

Next, we need to find the PV of an annuity of \$5 million each period for 40 periods at an interest rate of 6 percent per period, plus the PV of the single future repayment of \$100 million made 40 periods from now with an interest rate of 6 percent. Note that the interest rate used for the PV calculations is 6 percent. This is half of the 12 percent market rate. The rate is divided in half because the compounding periods are semiannual. The 12 percent rate is used because it is the current market rate and dictates the market value of the bond. That is, the value of the bond is determined by the current market rate rather than the stated rate. The stated interest rate is used only to determine the specific amount of the semiannual interest payments.

By taking the PV of the periodic interest payments plus the PV of the future principal repayment, we find the value of the bond today at current interest rate conditions. For the town of Millbridge bond mentioned previously, the future value, FV, is the \$100,000,000 repayment at maturity; the periodic interest payments, PMT, are the semiannual \$5,000,000 payments; the number of compounding periods is 40 six-month periods; and the interest rate is the 6 percent semiannual current market rate:



Present value of maturity principal repayment and the periodic interest payments:

Excel spreadsheet formula: = PV(rate, nper, [pmt], [fv])

= PV(6%, 40, 5000000, 100000000)

= \$(84,953,703)

Note that Excel and many financial calculators are able to compute bond values in one calculation.

Alternatively, one could find the PV of the interest payments and the PV of the principal repayment and combine them to get the same result. That amount, \$84,953,703, is what someone would be willing to pay for the bond. If they pay more, they would be earning less than 12 percent on the money they have invested; if they pay less than this amount, they would be earning more than 12 percent. Notice that the result shows as a negative number. This is because if someone were to buy the bond they would have to pay out \$84,953,703 to get it.

Note that this PV calculation says that investors, in total, will pay the town of Millbridge only about \$85 million to get the semiannual payments of \$5,000,000 and the lump sum repayment at maturity of \$100,000,000. Note that the full \$100 million will be repaid at maturity, even though the town will receive only \$85 million now. The bond will have to be issued at a discount because it only pays interest based on a 10 percent rate, whereas the marketplace is currently demanding 12 percent.

Is it fair that Millbridge must repay \$100 million even though it receives only about \$85 million? Yes! Every 6 months Millbridge will pay \$5 million in interest. However, 6 percent of the \$84,953,703 that Millbridge will receive for the bond is \$5,097,222. Given the market interest rate, a lender who loans Millbridge \$84,953,703 should receive an interest payment of \$5,097,222 every 6 months. Since Millbridge pays only \$5 million, it will have to owe the remaining interest to the lender. The extra \$97,222 every 6 months that is not paid currently will accumulate until the maturity date, and it will earn compound interest in the interim. The difference between the \$85 million Millbridge receives and the \$100 million it pays at maturity is this extra accumulated interest. Altogether, the investors earn exactly 12 percent on the money they have loaned to Millbridge.

Note that the difference in the interest rates in this example are extreme. Interest rates vary by one-100th of a percent. A 10 percent face value bond might be issued when interest rates are 10.03 percent or 10.17 percent. A jump from 10 percent to 12 percent is extreme. Thus, the value of a bond in the real world is not likely to vary nearly as much as in this example at the time of issue. Over time, however, after 5 or 10 years have passed, wider variations in interest rates are common. If the bond is sold by the original lender to a different investor, a new PV calculation is essential to determine a price for the bond that will yield the current market rate.⁴ Note that the borrowing organization owes interest and principal to whoever owns the bond. Generally, bond owners may sell the bond whenever they want.

⁴ The change in interest rates can be described in terms of a number of basis points. A basis point is a one-100th of a percent. For example, if the interest rate were to change from 10.03 percent to 10.17 percent, it has risen by .14 percent, or 14 basis points (i.e., $.14 \times 100$). The news media frequently quote interest rate changes by indicating the basis point change.

Calculating the Interest Rate for a Serial Bond—NIC and TIC

When bonds are issued, the issuer will want to know the interest rate that must be paid. But computation of this rate is complicated when a serial bond is issued with multiple principal repayment dates and different coupon rates. Two methods are widely used for computing the interest rate on a serial bond issue: net interest cost (NIC) and true interest cost (TIC).

The NIC gives an average of the yearly debt cost, calculated as a percentage of the principal amount not yet repaid. It can be computed as follows:

$$\text{NIC} = \frac{\text{Total Interest (less premium or plus discount)}}{\text{Bond Year Dollars}}$$

Suppose that we were to have a \$10,000, five-year serial bond issue today, with principal repayments of \$1,000 each year at the end of the first 2 years, \$2,000 at the end of the third year, and \$3,000 at the end of the fourth and fifth years. Assume the interest rates are 3 percent, 4 percent, 5 percent, 6 percent, and 7 percent on the five respective maturities, and assume that the bond issue is initially sold at a discount such that the borrower receives \$9,900. The interest payments for the 5 years, respectively, would be:

Par or Principal		Coupon Rate		Years		Interest
\$1,000	x	3%	x	1	=	\$ 30
1,000	x	4%	x	2	=	80
2,000	x	5%	x	3	=	300
3,000	x	6%	x	4	=	720
3,000	x	7%	x	5	=	1,050
Interest Payments						\$2,180
Plus Discount						100
Total Interest						\$2,280

Note that the initial discount is considered to be interest. This is because the issuer received only \$9,900 when the money was borrowed. However, a total of \$10,000 is repaid as the bonds mature. That difference of \$100 is additional interest on the \$9,900 that was borrowed.

The bond year dollars consist of the sum of the amount of money that was outstanding over the years. The first year, the issuer owed \$10,000. After the repayment at the end of the first year, the issuer owed only \$9,000 for the second year, and so on. The sum is found as follows:

\$10,000	x	1	=	\$10,000
9,000	x	1	=	9,000
8,000	x	1	=	8,000
6,000	x	1	=	6,000
3,000	x	1	=	3,000
Bond Year Dollars				\$36,000

Then the NIC is calculated as:

$$\text{NIC} = \frac{\$2,280}{\$36,000} = 6.333\%$$

The TIC approach is somewhat more commonly used because it considers not only the interest payments, but also the timing of the interest. It is more true to the principles of the time value of money and is therefore more accurate. TIC is solved by setting the amount of money received by the issuer equal to the present value of all the payments made by the issuer over the bond's life and solving for the interest rate, in a fashion similar to that used to find the IRR. In the case of the above bond, the bond issuer initially received \$9,900. In the first year, interest must be paid on all bonds in the series, and the principal is repaid on the part of the series with a maturity at the end of the first year. Each subsequent year, interest is paid on only the bonds that remain outstanding, and any principal maturing is repaid. The payments over the life of the bond series are:

Par or Principal		Coupon Rate		Interest Paid at the End of					Total
				Year 1	Year 2	Year 3	Year 4	Year 5	
\$1,000	x	3%	=	\$ 30					\$ 30
1,000	x	4%	=	40	40				80
2,000	x	5%	=	100	100	100			300
3,000	x	6%	=	180	180	180	180		720
3,000	x	7%	=	210	210	210	210	210	1,050
Interest Payments				\$ 560	\$ 530	\$ 400	\$ 390	\$ 210	\$ 2,180
Principal Repayments				1,000	1,000	2,000	3,000	3,000	10,000
Total Payment				\$1,560	\$1,530	\$2,400	\$3,390	\$3,210	\$12,180

Therefore, the TIC is the interest rate that makes:

$$\begin{aligned} \$9,900 = & (\text{PV of } \$1,560, N=1) + (\text{PV of } \$1,530, N=2) + (\text{PV of } \$2,490, N=3) \\ & + (\text{PV of } \$3,390, N=4) + (\text{PV of } \$3,210, N=5) \end{aligned}$$

Using a spreadsheet program such as Excel, this can be solved using the IRR function. In Excel, the solution formula would be:

$$= \text{IRR}(\text{values}, [\text{guess}])$$

$$= \text{IRR}(\{9900, -1560, -1530, -2490, -3390, -3210\}, 6.3\%)$$

$$= 6.347\%$$

Note that 6.3 percent was used in the formula as an initial guess of the interest rate, because it was the value found using the NIC approach. Although the NIC and TIC seem to give answers that are very close, this difference would be substantial for some bond offerings.

Capital Leases

Sometimes, rather than buying a capital asset and financing the purchase with direct borrowing from a bank or by issuing a bond, organizations lease capital assets. In the case of long-term, noncancellable contracts to lease buildings or equipment, the organization has made a long-term commitment to make payments in the future. This commitment is treated as a form of long-term financing, and the lease is referred to as a capital lease.

In many respects, a capital lease has the same effect as if we bought the asset and paid for it with monthly mortgage payments. A common difference between lease payments and mortgage payments is that often lease payments are made at the beginning of the month before we use the asset, while mortgage payments typically come at the end of each month after we have used the asset. In both cases, each payment contains a portion attributable to paying for the item and a portion that is interest for the outstanding cost of the item. With leases, however, we are paying for the right to use the asset rather than for the asset itself.

To determine the organization's obligation under a capital lease at any point in time, it is necessary to find the PV of the payments that will be made under the lease. There is a temptation simply to multiply the amount of each lease payment by the number of lease payments to calculate the total obligation. However, that approach is incorrect. When lease payments are made, part of each payment is to pay for interest. That interest accrues only with the passage of time. Therefore, at the present time, the appropriate measure of the lease obligation is only the PV of the payments.

Suppose that Meals for the Homeless agrees to lease a piece of equipment for \$1,000 per year for 10 years. Assume that this lease calls for payments at the end of each year of use. Also assume that there is an implicit interest rate of 12 percent built into the lease and we treat this as a long-term obligation. How much do we owe?



Excel spreadsheet formula: = PV(rate, nper, pmt)

$$= \text{PV}(12\%, 10, -1000)$$

$$= \$5,650$$

The present value of the obligation is \$5,650. Effectively, owing lease payments of \$1,000 a year for 10 years

at 12 percent is the same as if we owed a lump sum of \$5,650 today.

Leases often require payments to be made at the beginning of each time period instead of at the end. In the above example, suppose that the 10 payments of \$1,000 had to be made at the start of the year rather than at the end. The present value of the lease would not be the same, as each of the payments is occurring 1 year sooner. When equal payments are made at the end of each period, they are referred to as an *annuity in arrears* or an ordinary annuity. When equal payments are made at the beginning of each period they are referred to as an *annuity in advance*.

One way to find the present value of an annuity in advance is to treat it as if it were 1 year shorter than it is and then add one full payment to the result (since the present value of the first payment, which is made at the very beginning, is simply the amount of the payment). In this approach, the second payment, which occurs on the first day of the second year, is treated as if it occurred on the last day of the first year, and so on. So you would find the present value for a 9-year annuity in arrears and then add \$1,000 to the resulting value. This procedure is complex, and many find it confusing.

Some calculators allow the user to indicate whether they are solving an annuity in advance or in arrears. That significantly simplifies the calculation. Alternatively, annuities in advance can be solved using spreadsheet software programs. When solving using a spreadsheet, this is where the type value comes into play. Recall that in Excel, the formula used to solve for the present value is:

= PV(rate, nper, pmt, [fv], [type])

Type refers to whether payments are made at the beginning or end of the period. By ignoring it up until this point, we have implicitly indicated that a default value of 0 should be used. A value of 0 indicates that payments come at the end of the time period or periods. If the payments come at the beginning of the period or periods, then a value of 1 is used for type. The only choices for this element of the spreadsheet formula are 0 or 1. Indicating a value of 1 lets the spreadsheet program know that the payments come at the beginning of the period, and the program then makes automatic adjustments so that the result is computed correctly. For example, for the previous lease, if payments had been due at the beginning of each year, the present value, using Excel, would be calculated as follows:

= PV(rate, nper, pmt, [fv], [type])

= PV(12%, 10, -1000, 0, 1)

= \$6,328.25

A blank space separated by commas appears in the formula where the future value would be shown, since there is no future value in this problem. The gap, or a 0, is necessary so that the software program does not interpret the 1 that indicates the type of payment (advance or arrears) as being a future value. The value of 1 should be used for the type in an Excel spreadsheet for any time value of money computation where payments are made at the beginning of the time period or periods. Its use is not limited to leases or to annuities.

Advantages of Leasing

Leasing has a number of advantages. It is more flexible, can save money, can protect us from unexpected events, can provide a higher level of financing, and can have tax advantages. In the case of state and local governments, leases can also help overcome some legal limitations on the total amount of government debt.

Many managers like leasing because it provides flexibility. The term of the lease can be set for limited periods of time. If we expect to need a piece of equipment for only half of its useful life, we will not have to get involved with selling it as we would if we purchased the item. Although a leasing company deals with the purchase and resale of a particular type of equipment all the time, we probably do not. Therefore, the leasing company may be able to sell the used equipment for a better price than we could.

For example, suppose that we could buy a new car for \$25,000 and then sell it after 3 years for \$12,000. An auto leasing company might be able to sell the same car for \$15,000. The difference of \$3,000 can be used, at least partly, to reduce the monthly lease payments. As a result, if we intend to keep a car for only 2 or 3 years, it often makes more economic sense to lease it rather than buy it and then sell it.

Also, leasing protects us if we are afraid that the equipment may become obsolete. The lease can be designed so that we have the right to cancel it and replace the equipment with the newer model.

Leases also provide more flexibility in terms of financing. When we buy equipment or buildings, lenders usually require a down payment. This initial payment, typically 20 percent or more, protects the lender. If they have to foreclose on the capital asset because of our failure to make payments, they may not be able to sell it for the full initial purchase price. The down payment provides a margin of safety to protect the lender against losses. By contrast, leasing is similar to purchasing with 100 percent financing, since there is often no initial down payment. This is very helpful if we cannot raise the money for the down payment.

Another factor is related to the leasing company's market power. A large leasing company may be able to purchase equipment at larger discounts than are available to a single buyer and borrow money at a lower interest rate than a small organization. The leasing company may share some of those savings with the organization leasing the asset.

In certain circumstances, leases may also have tax advantages. This may seem to be a moot point for not-for-profit organizations. However, that is not always the case. Sometimes, it is possible that a for-profit organization can save taxes by purchasing certain items. It can then pass some of that tax savings on to the not-for-profit organization in the form of lower lease payments.

Finally, governments have frequently used leasing as an alternative to buying and owning capital assets. One reason for this is that a lease may enable the government to circumvent legal debt limits. For example, suppose that Millbridge wants to buy new buses to replace its aging mass transit fleet. However, Millbridge can issue long-term debt, such as a bond, only if it obtains voters' approval. Assume that the approval process would require a special election and would be both costly and time-consuming. Several leasing approaches would allow the town to acquire the buses even though the purchase might require tens or even hundreds of millions

of dollars of financing beyond the government's legal debt limit.

One approach is to lease the buses either from the manufacturer or from a leasing company. However, if the total amount to be financed is very large or the repayment time period is very long, the lease may not be attractive to either the manufacturer or the leasing company. They may consider the risk to be too great. The default by one government could create a huge loss for the leasing company. An advantage that bonds have is that they can spread risk over a large number of bondholders. A bond-like leasing approach is the use of certificates of participation (COPs). Each COP is similar to a bond. They can be sold to the public the way that bonds can, and the interest paid to holders of COPs may even be tax-exempt, the way that interest on bonds might be. COPs provide many of the benefits of bonds.

Technically, if the lease commits the governmental body to making annual repayments, it would constitute debt and cause Millbridge to exceed its legal debt limit. Governments often include a clause in COPs or other leases called a nonappropriation clause. This clause states that the lease can be canceled if it is not renewed annually by the legislature. Although this enables governments to get around debt limits, prudent managers must consider whether such actions are in fact appropriate. In some cases, it may clearly make sense. Few would want their local government to hold a special election for approval to finance the purchase of a \$2,000 computer system with a 3-year useful lifetime. On the other hand, using a lease rather than a bond issuance to finance a long-term \$400 million project, specifically to avoid having to seek voter approval, may be inappropriate.

Disadvantages of Leasing

Leasing does tend to be more expensive than purchasing assets. In contrast with the use of bonds to dis-intermediate, or remove an intermediary, leasing adds another intermediary—the leasing company. Therefore, there is one extra layer of profit making. This tends to drive the cost up. Leasing companies also charge a price for some of the advantages that leases offer.

For example, many leases allow us to turn in equipment and replace it if it becomes obsolete. Although the lease agreement may not list a specific charge for this right, it does have a price. Effectively, we are buying an insurance policy against the equipment becoming obsolete. If it does become obsolete, we will collect on the policy. As with any insurance, there is a premium. And the premium will be built into the monthly lease payments. It would be unwise to believe that we are actually “putting one over” on the leasing company by getting protection against obsolescence. The leasing company is aware of the risks it is taking and charges accordingly.

Similarly, by getting 100 percent financing, we are putting the leasing company in a riskier position since there is no down payment. The lessor will charge the lessee an extra amount to cover its losses from such risks and also earn a profit for having been willing to take that risk.

There are times when leasing makes good sense. However, we must always consider the basic concept that the leasing company is one extra profit maker added to the process of getting the capital asset to the ultimate user of that asset. Leasing will tend to be more expensive unless there is some explicit benefit from the lease that

could not otherwise be obtained. There is nothing wrong with leasing to avoid obsolescence, but we should be aware that we are paying for that peace of mind.

Summary

Assets with lifetimes of more than 1 year are often referred to as capital assets. Capital assets are often so costly that they cannot be paid for using just money generated from current operating activities. Instead, many organizations pay for the purchase of a building or major pieces of equipment by using long-term financing. Long-term financing refers to the various alternatives available to the organization to get the money needed to acquire capital assets. Long-term financing comes from either equity financing or debt financing. The common types of equity financing are retained earnings, stock issuance, taxes, and contributions. The common types of debt financing are notes, mortgages, bonds, and leasing.

Key Terms from This Chapter

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bond, 224
bond issue, 228
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call provision, 228
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true interest cost (TIC), 231
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zero coupon bonds, 227

Questions for Discussion

- 6-1. What are the various types of long-term debt?
- 6-2. What is collateral, and why is it used?
- 6-3. How do mortgages work?
- 6-4. How are general obligation bonds sold on the primary market?
- 6-5. Summarize the advantages and disadvantages of leasing.

Exercises (TVM)

6-6. Meals for the Homeless borrowed \$10,000 to buy kitchen equipment. It took out a mortgage from a bank, agreeing to repay the full amount plus interest at a 6 percent rate in 10 annual installments. How much will it pay the bank each year?

6-7. Assume that a 6 percent \$500,000 bond with semiannual interest payments and a remaining life of 10 years could be purchased today, when market interest rates are 4.5 percent. How much would you have to pay to buy the bond?

6-8. You could purchase a zero coupon bond that has a maturity value of \$25,000 and earns a current market rate of 3 percent. If the bond matures in 10 years and we assume semiannual compounding, what is the bond worth today?

Problems

Note: For all problems:

1. Solve using a spreadsheet program such as Excel.
2. Solve using a financial calculator. Optional.

6-9. If interest rates rise, the prices for outstanding bonds will (Choose one of the answers below.)

1. fall
2. rise
3. stay the same

6-10. Coupon bonds generally pay interest _____ and principal at the _____.

6-11. Initial offerings of bonds occur in a(n) _____ while resale of bonds occurs in a(n) _____.

6-12. Interest payments on bonds that make periodic interest payments are calculated by dividing the _____ by the number of _____ and multiplying by _____ of the bond.

6-13. The Town of Hill Valley is issuing a 30-year bond with a face value of \$50,000,000 and a stated annual interest rate of 4 percent. The town will make interest payments twice a year.

1. Calculate the semiannual interest payment.
2. Calculate how much Hill Valley will receive from the bond offering under the following conditions:
 1. Market interest rates remain unchanged at the time of the offering.
 2. Market interest rates increase to 4.2 percent at the time of the offering.

6-14. The State Pension System wants to sell a 20-year original maturity General Industries' bond that it purchased 10 years ago. The bond pays interest twice each year. The par value of the bond is \$100,000,000. The coupon rate is 8.6 percent. If the current market interest rate is 4.5 percent and there are exactly 10 years left until maturity, how much will the pension plan be paid for the bond? (Be sure to show all of your work, including the factors you used to determine the value of the bond.)

6-15. Mutt Rescue plans to lease some new equipment. The lease calls for payments of \$750 per year and is based on 10 annual payments and a 6 percent interest rate. As an accommodation to the not-for-profit organization, the bank has agreed to lease payments at the end of each year rather than the beginning, which is more common. What is the present value of the obligation? How much did the bank lose by allowing payments at the end of each year rather than at the beginning?

6-16. Metro City needs \$200,000,000 to build a light rail system. The city's financial advisors believe that it will be able to borrow the money by issuing a 30-year bond with an annual coupon rate of 4.8 percent that pays interest every 6 months. However, interest rates have been very volatile over the last year, ranging from 4.6 percent to 5.1 percent for borrowers with Metro's credit rating. As a result, Metro's town manager is concerned. If rates rise while the offering is in registration, Metro will not get the \$200 million it needs from the sale of its bonds. To make sure they will be able to raise enough money, Metro's financial advisors have recommended that Metro register a total of \$250 million worth

of bonds. In the event that rates rise above 4.8 percent, Metro will sell enough additional bonds to get the \$200 million it needs for the rail system.

1. If rates rise to 4.95 percent on the day the bonds are sold, how much would Metro receive from the sale of \$200 million worth of bonds?
2. What is the par value of the additional bonds that Metro must sell to raise the required \$200 million.

6-17. Fifteen years ago, The Food Pantry bought a new building for \$600,000. It borrowed \$500,000 on a 30-year mortgage with a 6 percent fixed rate and monthly payments. The current outstanding balance on the mortgage is \$355,000. Today, the organization can get a 15-year fixed-rate mortgage with an interest rate of 4.32 percent. The mortgage would require monthly payments in arrears. It will cost The Food Pantry \$20,000 to do the refinancing. Should the organization refinance the mortgage under those terms?

Hints: Since you know The Food Pantry could use the \$20,000 it will cost to refinance the mortgage to pay off some of the principal on its current mortgage, you have decided to use the interest rate on the existing mortgage as the discount rate for your analysis. Be sure to include the cost of refinancing in the amount you intend to borrow.

6-18. New University plans to issue a \$2,000,000 bond. The money is to buy equipment for its physics laboratories. The bond matures in 10 years and requires semiannual interest payments. The stated interest rate is 6 percent, but rates have fallen to 5.96 percent in the market. How much will the university receive when it issues the bond?

6-19. Assume an organization could issue a zero coupon bond at an annual interest rate of 4 percent with semiannual compounding for 20 years. If it receives \$2,264.45 for the bond, how much would it have to pay at the maturity date?

6-20. On January 1, 2016, Central City issued a 20-year serial bond to finance improvements to the water distribution system. A total of \$80,000,000 face value of bonds were issued with coupon and maturity rates as follows:

December 31, 2020	3.0%	\$ 5,000,000
December 31, 2025	3.5%	\$ 5,000,000
December 31, 2030	4.0%	\$10,000,000
December 31, 2031	4.1%	\$10,000,000
December 31, 2032	4.2%	\$10,000,000
December 31, 2033	4.3%	\$10,000,000
December 31, 2034	4.4%	\$15,000,000
December 31, 2035	4.5%	\$15,000,000

Central City received \$80,500,000 from the bond issue. Use a spreadsheet program to find the NIC and TIC interest rates for the bond issue. What would the values for NIC and TIC be if the interest rate were 4.2 percent for the bonds with a maturity before 2030 and 5 percent for the bonds with a maturity of 2030 or later? (Note: If you set up your spreadsheet with formulas, you should only have to change the interest rates to get the new NIC and TIC values.)

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Part III Implementation and Controlling Results

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Chapter 7 Managing Short-Term Resources and Obligations

Learning Objectives

The learning objectives of this chapter are to:

- define working capital and describe the various elements of working capital management;
- discuss cash management, including short-term cash investment, cash budgets, concentration banking, and maintaining security over cash;
- discuss marketable securities management, including investment objectives, suitable short-term investments, and unsuitable short-term investments;
- discuss liquidity management;
- discuss accounts receivable management, including data collection, credit policies, the billing process, aging of receivables, lockboxes, and electronic payment;
- discuss inventory management, including the distinction between periodic and perpetual inventory, economic order quantity, and just-in-time inventory techniques; and
- discuss management of short-term obligations, including accounts payable, payroll payable, short-term debt, and taxes payable.

In [Chapters 7](#) and [8](#), the focus shifts from planning to implementation and control of results. An important part of the implementation of plans is the careful use of short-term resources and obligations. This chapter considers techniques and approaches designed to maximize the benefit of short-term resources and minimize the cost of short-term obligations. By short-term, we are generally referring to a period of less than 1 year. Short-term resources, often called short-term assets, *current assets*, or near-term assets, are those resources that are cash or will be either converted to cash or used up within 1 year. Short-term obligations are those that will have to be paid in cash within 1 year.

If managers can efficiently control their short-term resources and obligations, they can maximize the resources available to be used to meet the organization's mission. For example, a manager could leave all of an organization's cash in a non-interest-earning checking account. Alternatively, the manager might keep most of the cash in an interest-earning savings account. The interest it earns can be used to provide more or better services to its constituency group. Or it can be used to provide financial reserves to improve the long-term survival prospects of the organization. Careful management of short-term resources and obligations can, in some cases, make the difference between ceasing operations and continuing to stay in existence.

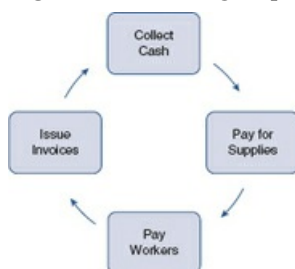
Working Capital Management

Every organization has assets and liabilities. Assets are any resources that the organization has that can help it provide goods and services. Liabilities are obligations that the organization owes to other organizations or to individuals. *Working capital* is defined as the organization's current assets less its current liabilities. As above, current means short-term or near-term. Generally, current assets are those that will be used up or will become cash within a year. *Current liabilities* are those obligations that will have to be paid within a year. *Net working capital* is a term often used interchangeably with working capital. Management of current assets and current liabilities to maximize results is called *working capital management*.

Working capital is essential to any organization. At times, it has been compared to “cash register money.” Each day when a store opens for business, some money must be in the cash register to make change for the first customer. Also, the store will have to pay its suppliers and employees with money from the cash register, even if it has not yet received payment for everything that it has sold. Moreover, every organization needs some cash to pay bills and employees. Every organization will owe some money to some of its suppliers and will likely have customers that owe money to it.

Working capital is based on a cycle of inflows and outflows (see [Figure 7-1](#)). Cash is initially used to buy supplies. For example, Meals for the Homeless might pay money to acquire food. Then meals are provided to homeless people. Assume that the city has agreed to pay Meals a fixed amount for each meal served to the homeless. Meals must tally how many meals were served and issue a bill to the city. It must then wait to collect from the city. Once the money has been received, the cycle starts over and the organization can use the money to buy more food and to provide more meals.

Figure 7-1 Working Capital Cycle



The cycle, however, may be delicately balanced. If Meals forgets to issue the bill for a week, its receipt of money from the city may be postponed. It is possible that Meals will have several days or even a week when it cannot provide any meals because it has no cash available to buy food.

In performing working capital management, the manager must ensure that the cash on hand is adequate to meet the organization's needs and also to minimize the cost of those resources. To do this, the manager must carefully monitor and control cash inflows and outflows. Cash not immediately needed should be invested, earning a return for the organization. Loans should be approved in advance to provide money when cash shortages are likely to arise.

The organization should not keep excess supplies (inventory). The money spent now to pay for inventory that is not needed until later could be better used by the organization for some other purpose. At a minimum, the money could be invested in the organization's savings account, earning interest.

Sometimes an organization charges for goods and services it provides, but it does not receive cash for those goods or services immediately. That is, the organization is providing the goods or services on credit, or on account. The organization records an account receivable when it provides goods or services but does not immediately receive payment. Accounts receivable are assets that represent the right to collect the money owed for the purchases that have been made on account. Just as a manager would not want to buy and pay for supplies too soon because it takes money out of the organization's bank account, the manager does not want to wait too long to collect money that is owed to the organization. The sooner the organization collects all its receivables, the sooner it will have that cash available for its use.

By the same token, short-term obligations, called current liabilities, also must be managed carefully. The organization desires to have sufficient cash to pay its obligations when they are due. However, if the organization pays its bills before they are due, it will lose the interest it could have earned if it had left the cash in its savings account for a little longer.

This chapter focuses on the management of all elements of working capital. The discussion begins with short-term resources. Then we turn our attention to short-term obligations.

Short-Term Resources

The most essential financial resource is cash. Cash is needed to pay obligations as they come due. Cash is generally defined as both currency on hand and also amounts that can be withdrawn from bank accounts.¹ A second type of short-term resource is *marketable securities*. These investments can be bought and sold in financial markets, such as stock and debt markets. Marketable securities provide managers with an outlet to invest idle resources while maintaining access to the resources when needed. In most organizations, receivables are also important. Receivables often are the largest working capital item. Inventories, which are goods available for sale or supplies that organizations have purchased to provide goods and services to clients but have not yet used, are not very sizable in many public service organizations. They are critical, however, in some public service organizations, such as hospitals and food pantries. They receive a great amount of attention, even in public service organizations, because managers have had difficulty in controlling them. Managing inventory requires accounting for the purchase and use of supplies, in addition to ensuring supplies are securely stored and don't spoil.

¹ For the sake of simplicity, we refer to commercial banks and credit unions collectively as "banks."

Cash

Organizations should keep some cash on hand or in their bank accounts for three principal reasons: transactions, safety, and investment. First, cash is needed for the normal daily transactions of any activity. For example, cash is needed to pay employees and suppliers. Second, although many activities can be anticipated, managers can never foresee everything that might happen. Experience has shown that it makes sense for organizations to have a safety cushion available for emergencies. A third reason for holding cash is to have it available if an attractive investment opportunity arises. Investments can contribute to an organization's profits; they might also present an opportunity to provide a new, valuable service to clients.

Given the three reasons to hold cash, one might think that the more cash an organization has, the better. This is not the case. Cash does not directly further the mission of the organization. Imagine if Meals for the Homeless (Meals) could use two ovens to make 2,000 meals a day. There is a large unmet demand for meals. However, it decides to buy only one oven and keep the rest of the money in the bank. On the one hand, the money in the bank provides a degree of safety. On the other hand, that safety may also reduce the level of service provided.

This is a complex problem. If an organization fails to have an adequate safety margin to respond to the emergencies that might occur, it may chance putting the organization out of business. However, if it is overly conservative, keeping too great a cash safety margin, it is failing to meet its mission. Managers must find an appropriate cash level that is reasonably safe but does not unduly restrict the organization's pursuit of its primary mission.

Clearly, managers must be active in the area of cash management. They cannot just accept the cash balance as

it is, whether it is very high, moderate, or extremely low. Managers must project when cash is likely to be received. (Recall the discussion of cash budgeting in [Chapter 2](#).) The cash may come from donations, charges to customers, taxes, or other sources. Regardless of the source, managers must anticipate when organizations will receive the cash. Similarly, managers must anticipate what cash will be required for payments and when they must be made. The cash excess or shortfall is calculated for each period of time.

For example, if it becomes apparent that there will be an unexpected cash shortfall, the organization has several options. It can try to speed up collections of money that is owed to it. It can try to hold off on payments that it has to make. Or it can arrange for a loan. Banks are more likely to lend to an organization that can anticipate temporary cash needs well in advance, especially if the organization can show when it expects to be able to repay the loan.

Many organizations arrange for credit in advance of a specific need for cash. For example, the Hospital for Ordinary Surgery (HOS) might arrange for a \$1 million *line of credit* at the bank where it does most of its routine financial transactions. The arrangement would typically include repayment terms and interest rates. Interest rates are often tied to some benchmark rate that may vary over time, such as the U.S. prime rate or the London Interbank Offered Rate (LIBOR). Thus, if HOS does not need to borrow any of its \$1 million credit line for 6 months and interest rates in general have gone up or down during that 6-month period, the interest rate on the amount HOS borrows will be based on current rates at the time the money is borrowed. Having a credit line allows the organization to hold lower cash reserves than it might otherwise need. Some lines of credit require all or most of the borrowed funds to be paid back within 12 months and not borrowed again for some specified time (often a month). This “clean up” requirement can vary based on the terms of the contract between the organization and the bank.

If an organization projects that it will have more cash than it needs, it can invest the surplus in short-term interest-earning investments, use it to repay loans, or use it to expand services.

Short-Term Cash Investment

Organizations should keep as little money as possible in non-interest-bearing accounts. In fact, even after checks are written, it is possible to earn interest on the money in the interim period until the check is cashed. The interim period is called the *float*. Many banks have arrangements that allow money to be automatically transferred into a checking account as checks are received for payment. Until then, the money can remain in an interest-bearing account.

Managers should make great efforts to ensure that cash is deposited into interest-bearing accounts as quickly as possible and withdrawn only when actually needed. All organizations should have specific policies that result in cash and checks being processed and deposited promptly.

Although better than noninterest accounts, interest-bearing accounts pay relatively low rates of interest. Managers of public service organizations often have alternatives that allow them to earn a higher rate of return. In a world of no free lunches, however, there is a trade-off when one obtains a higher rate of return.

The two most common trade-offs for higher rates of return are decreased liquidity and increased risk. Decreased liquidity means that the money is not immediately accessible. Money can be taken out of a checking account immediately with no penalty. By contrast, if money is put into a higher-yielding investment such as a *certificate of deposit (CD)*, there may be a penalty for early withdrawal. CDs generally tie up the organization's money for at least a month. However, they pay interest rates higher than savings accounts. Do you take the risk that you will not need the money for the longer period of time (and earn the higher interest rate while you wait), or do you keep the money in a checking account so you will have it if an emergency need arises? That is a trade-off decision that managers must make.

Although CDs may tie up money for a period of time, they are generally safe. Other investments hold promise of even higher rates of return but entail greater risks. For example, cash can be invested in marketable securities such as corporate stocks and bonds. Such investments are subject to market fluctuations. That means that their value might fall.

Another problem with sacrificing liquidity is that there are many unknown future events. Suppose an organization invests in a 5-year CD at the current market interest rate. The interest rate on the CD is fixed, but market interest rates may rise dramatically in the next year or two. Having money tied up for 5 years means that the organization will not be able to earn those higher rates. This is another reason that investors often demand a higher rate of return if their money is inaccessible for a longer period of time.

Cash Budgets

Cash budgeting was first introduced in [Chapter 2](#). A cash budget is developed with the operating and capital budgets to ensure that they are feasible. One reason departmental operating budgets are rejected is that the cash budget may show that the organization would simply run out of cash if it made all the requested payments.

For example, HOS may want to buy a new \$5,000,000 scanner that will last for 10 years. Assume that the scanner will be treated as an expense of \$500,000 a year for each of its 10 years. Even if HOS can charge patients \$1,500,000 a year in total for their use of the scanner and make a healthy profit of \$1,000,000 each year for 10 years, HOS must consider where the initial \$5,000,000 will come from. Unless HOS has that much cash on hand or is able to borrow the money to pay for the scanner, it will not be able to buy it.

Pushing this point one step further, even profitable organizations can run out of cash. Profits are based on *accrual accounting*. Revenues are recorded when they are earned, even if they have not yet been received in cash. It is possible for an organization's cash payments for expenses to precede its receipts from revenues to such an extent that it will run out of money. This is a problem for apparently healthy, growing organizations. Their growth, which is evidence of success, often requires cash investment to expand operations. That cash investment may come well before cash receipts that result from that investment. Careful planning is critical to avoid sudden, unexpected cash shortages.

Cash is of such importance that many organizations prepare a cash budget for each month of the coming year. It is not enough to budget total cash inflows and outflows for the year. Managers need to know on a more

current basis, usually month to month, how much cash will be received and paid.

As discussed in [Chapter 2](#), cash budgets typically start with the cash balance expected to be on hand at the beginning of the month. The expected cash receipts for the month are added to the beginning balance. The receipts may be itemized into major categories, such as donations, sales revenue, and investment income, or by source, such as Medicare patient revenue, Medicaid patient revenue, managed care patient revenue, and other patient revenue. The sum of the beginning cash balance and the expected receipts is the expected available cash for the month. Then, expected payments are subtracted to find the anticipated balance at the end of each month. Finally, any expected inflows or outflows from borrowing, repaying loan principal, or purchasing capital assets are added to or subtracted from the available cash figure. Surpluses can be invested and are subtracted from the ending balance. The final projected balance for each month becomes the beginning balance for the next month.

The most difficult part of cash budgeting is generally the result of complexities in estimating cash receipts. Although a manager may be able to predict fairly accurately when an organization will provide services, receipt of cash payment for those services can depend on a number of factors. HOS may find that different types of payers take different amounts of time to pay for services. For example, a health maintenance organization may pay a fixed amount per member per month, once a month at the beginning of the month, regardless of the amount of services provided to those members. By contrast, it might take Medicare several months to pay HOS. Similarly, sales taxes for sales made each month may be collected by a state or local government during the first week of the following month. Real estate taxes may be collected quarterly by the municipality. Permit fees might be paid once a year. The timing of when receipts are expected is critical to preparing an accurate cash budget. An accurate cash budget is critical to knowing whether sufficient funds will be available to make payments when they are due.

Combining receipt lags with variations in volume of services from month to month results in a complex cash flow. One cannot simply assume that there will be enough money on hand in any given month to meet the cash needs of that month. That is why cash planning is critical.

Concentration Banking

Although many public service organizations deal with more than one bank, they often maintain a significant presence at one or more banks, referred to as *concentration banks*. Arrangements can be made with a concentration bank to *sweep* or transfer money into and out of accounts automatically.

For example, suppose that a state government has many individual agencies that collect money. In many cases, the amount the agencies collect exceeds their current cash needs. License fee receipts, sales and income tax payments, and so on often far exceed the short-term cash needs of the agency that collects them. Often, the money will be deposited in separate accounts for each agency, and frequently in multiple accounts earmarked for different purposes within the same agency.

However, the state does not want the collections to sit in these bank accounts for extended periods of time. Agencies often need that cash to make disbursements for various other state purposes that do not directly

generate revenues. Therefore, they will arrange with the banks to automatically transfer balances from these feeder accounts to a master account at the concentration bank. There could be daily, weekly, or monthly transfers, depending on the expected balances in the accounts. A transfer could be for the entire balance in an account or just for the balance exceeding a certain amount.

The process can also be reversed with *zero-balance accounts*. In that case, an organization can write checks on an account that has a zero balance. When the checks are presented for payment, the bank keeps a tally of the total amount disbursed. That amount is then automatically transferred from one central account at the concentration bank into the zero-balance account.

Such a system of automatically transferring of funds back and forth allows the organization to have quick access to its cash resources for payment needs. It also allows it to maintain less cash in total than it would if it had cash balances in many different accounts. The excess cash can be invested in marketable securities to earn interest and may enable the organization to earn a higher yield on investments by purchasing securities in larger denominations.

Nevertheless, sometimes organizations have temporary cash needs in excess of available cash. Often arrangements will be made allowing the organization to overdraw its account. Such an overdraft is considered a line of credit and is generally treated as a loan. Interest is charged. In some cases, banks charge a fee for keeping the money available, even if the organization never borrows against the line of credit. Sometimes arrangements are made in advance that use the organization's accounts receivable or inventory as collateral to secure the overdraft. In other cases, the overdraft is an unsecured loan with no specific assets provided to protect the bank if the organization fails to repay it.

In exchange for credit arrangements, many organizations agree to keep compensating balances in the bank. That is, the organization may always keep a certain amount of money in the bank. It is sometimes curious to see an organization, such as HOS, borrow \$200,000 from the bank through a line of credit when it has \$500,000 sitting in its concentration checking account. However, HOS may have agreed to maintain a \$500,000 minimum balance at all times. If it draws checks that require it to go below the \$500,000, it will have to borrow money. On the other hand, the line of credit will typically substantially exceed the required compensating balance and provides a level of cash safety that the organization might not otherwise have.

Maintaining Security Over Cash

Of all the organization's assets, cash requires the greatest care to ensure that it is not misappropriated. Internal control systems to protect resources are discussed in [Chapter 8](#). Cash protection requires a careful set of checks and balances. The people who handle cash should be different from those who reconcile cash receipts. Controls should exist for both the organization's receipts and disbursements. All money received should actually enter the organization's records, and no money should be disbursed without proper authorization.

Disbursements should be made by check, if possible. Two independent signatures should be required for checks that are large. All checks should be numbered. Different people should authorize, write, and sign checks. Other principles, discussed in [Chapter 8](#), including bonding, reliable personnel, vacations, and

rotation of functions, should be employed if possible.

Marketable Securities

It was noted earlier that one option for cash investment is marketable securities, which are investments that have a ready market for purchase and sale. Unlike a piece of land or a building that might take months or longer to sell, marketable securities can be sold almost immediately and cash from the sale can be received within a few days at most.

There are two major categories of marketable securities: *equity* securities and nonequity instruments. Equity is an ownership interest. Shares of stock, which for-profit corporations issue in exchange for money, are equity securities. The people who buy the stock become owners of the corporation, though any one person usually owns just a tiny fraction of the company. The owners of the stock can sell it to other people, transferring their ownership interest in the company to the buyer. If the corporation does very well, the value of each share of stock may rise. Conversely, if the corporation does not do well, the value of the stock may fall. If the corporation goes out of business or declares bankruptcy, stockholders generally lose their entire investment.

Bonds and notes, meanwhile, are referred to as either debt instruments or nonequity instruments. The borrower sells the debt instrument to the lender—the lender is the buyer. The lender owns the debt instrument, but does not own any part of the organization borrowing the money. If an organization that has sold bonds does poorly, it is still obligated to repay the full amount it has borrowed. The market value of bonds may rise or fall, but the buyer of the bond is reasonably certain to be repaid the face value of the bond at maturity, in addition to periodic interest payments, if the borrower remains solvent.

There are two primary reasons that the market price of debt rises or falls. The first relates to changes in the ability of the borrower to eventually repay the debt. If the borrower has financial setbacks that make repayment questionable, the price of the debt will fall. The investors who bought the bond will not be able to sell it for as much as they paid to buy it. The second reason relates to changes in market interest rates. Suppose an organization issues a bond, borrowing money at 7 percent interest per year. If interest rates for equivalent debt rise to 8 percent in the marketplace, the bond paying 7 percent becomes less attractive, and its price in the market drops. Valuation of bonds is discussed in [Chapter 6](#).

Investing in either stocks or bonds is more risky than leaving cash in a bank account. In general, there is a risk/return trade-off. The riskier the investment, the higher its expected return must be to attract investors. Riskier investments must offer the potential for higher returns than less risky alternatives, or else no one would choose those riskier investments.

When investing available cash in either bonds or stocks, the manager must carefully consider whether the expected increase in return is adequate to pay for the extra risk that the organization is taking. The market value of either stocks or bonds can fall dramatically over short periods of time. We can categorize marketable investments as being either suitable for short-term investment of surplus cash or unsuitable, based on the likelihood that purchasers of investments will be able to recover the full amount of their investment plus the

expected return when the money is needed.

Note that marketable debt securities with maturities longer than 1 year and marketable equity securities may be held as long-term investments, despite their liquidity. The notes that accompany financial statements (discussed later in the book) can help distinguish marketable securities that are short-term investments from long-term investments.

Investing Objectives

Four principal factors must be taken into account when making investments:

- legality
- risk
- yield
- liquidity

First, one must ensure that the investment is legal. Many investments are legal for the general public but would not be legal for government entities and in some cases not-for-profit organizations. For example, state governments often pass laws restricting the types of investments these organizations can make. Usually this is done to help ensure the organizations do not make investments that are overly risky, as they are stewards of others' money.

Second, different types of investments have different levels of risk. Risk relates to both the safety of the principal amount of the investment and the uncertainty of the rate of return. How great is the chance that some or all of the investment might be lost or that the rate of return will differ from that expected? The investor must carefully consider the risks of the specific investments being considered.

Third, one must consider yield. The yield is the return that one expects to earn from the investment. Generally, there is a trade-off between risk and return. As noted earlier, investors should be willing to take greater risk only if they expect to earn a higher rate of return.

The fourth factor is liquidity. Liquidity relates to how quickly the investment can be liquidated—that is, converted to cash—when cash is needed or desired. There is usually a trade-off between yield and liquidity. Investors require a higher return to be willing to sacrifice quick access to their money. The factors of risk and liquidity are both considered in determining the yield the investor demands.

In determining what types of investments are suitable for organizations, these four factors should be considered.

Suitable Short-Term Investments

A number of suitable short-term investments are reasonable alternatives to keeping cash on hand in the form of currency or uncashed checks. Cash that is not immediately needed for operations is referred to as idle or surplus cash. Many options are liquid (the money can be retrieved very quickly when needed), safe, and earn interest. Therefore, it is wasteful not to invest idle cash. The two major types of suitable temporary holding

areas for idle cash are bank deposits and money market investments.

Suppose that Meals for the Homeless received a foundation grant to allow it to provide additional meals during the coming 6 months. The foundation gives Meals a check for the full amount of the grant. Clearly, the check should not be placed in a drawer until the cash is needed to buy food or pay workers. It might get lost or stolen. It certainly is not earning interest for the organization while it is in the drawer.

Initially, the check can be deposited into Meals's bank checking account. This prevents the check from being stolen or accidentally lost or destroyed. However, the checking account generally does not pay any interest. Bank deposits primarily fall into the categories of checking accounts, savings accounts, nonnegotiable CDs, and money market deposit accounts. Checking accounts may offer interest, but if so only at very low rates. Many checking accounts charge fees, especially if a very low balance is maintained. Some cash can be left in checking accounts to reduce or eliminate fees on the account.

Alternatively, Meals can transfer the money into a bank savings account. The account will pay a relatively low interest rate, but the money will be safe as long as the bank remains financially stable. In addition to the financial stability provided by the bank's own assets, deposit accounts are currently insured by the Federal Deposit Insurance Corporation (FDIC)² up to \$250,000 per depositor per bank, for each ownership category. For example, each member of a married couple could be covered for up to \$250,000 for an account in their own individual name, and up to another \$250,000 for money held in an account in their joint name. Bank savings accounts are generally safe and liquid but yield low rates of return.

[2.](#) Another federal agency, the National Credit Union Administration (NCUA), insures credit union deposits.

Banks also offer nonnegotiable CDs and money market accounts. Nonnegotiable CDs cannot be sold by the purchaser. They can only be redeemed with their issuer. The depositor puts money into the CD and then gets the money back with interest upon maturity. CDs are generally considered safe, and they pay higher rates of return than regular savings accounts, but they reduce the investor's liquidity. If the depositor needs the money and cashes in the CD before the maturity date, the depositor generally pays a penalty. The penalty is often great enough to reduce the interest rate earned to a lower level than the rate on regular savings accounts.

Money market accounts are deposit accounts that have fluctuating interest rates that rise and fall in line with interest rates in the *money market*. The money market is the market for short-term marketable securities—it is the market for short-term debt instruments. Money market bank accounts operate in a manner very similar to money market mutual funds, which are discussed below. However, they have the advantage of being covered by federal deposit insurance. Unlike checking and savings deposits, however, withdrawals from and checks written against money market accounts are subject to monthly limits. This is to ensure adequate deposits are available for the bank to invest in the money market; these investments generate the interest returns.

There are a number of money market investment options. They often pay a higher interest rate than a bank savings account. One such option is a *Treasury bill* (often called a *T-bill*). This debt security issued by the U.S. federal government has maturities ranging from 4 weeks to 1 year. All interest on a Treasury bill is discounted at the beginning of the investment, and denominations are stated in terms of the maturity value. For example,

a 1-year “\$10,000 Treasury bill” might be purchased for \$9,950. An investor buys the bill for \$9,950 when it is issued and receives \$10,000 at maturity. This results in a yield of slightly more than one half of 1 percent.³

3. The investor is earning \$50 of interest on an investment of \$9,950 for 1 year. This represents an interest rate yield of 0.5025 percent. Note that the investor does not invest the full \$10,000. That is the amount received at maturity including interest.

The yield on T-bills depends on current market conditions. Those conditions are influenced by factors such as the anticipated inflation rate and the relative attractiveness of other available investments. If the bill is held until it matures, the federal government guarantees to pay the maturity value. Treasury bills can be purchased directly from the federal government without a fee or through a commercial bank or stockbroker who charges a fee or commission.⁴

4. One option is to invest by mail or to go directly to a branch of the Federal Reserve Bank. Alternatively, investments can be made through the Treasury Direct system online at www.treasurydirect.gov.

Generally, longer-term bills will pay a higher rate than shorter-term bills. Suppose Meals believes it will need the cash to pay suppliers in 3 months. If a 3-month bill currently yields an interest rate of 0.3 percent and a 1-year bill yields 0.5 percent, should Meals for the Homeless buy a 1-year bill and then sell it after 3 months? That would allow it to earn at a 0.5 percent rate for the first 3 months of the investment, rather than the lower 0.3 percent rate. The problem with this approach is that it creates risk. Not only must Meals pay a commission on the sale of the bill after 3 months, but it must also worry about changes in interest rates over the next 3 months.

Suppose that interest rates rise sharply. Since individuals can purchase new bills that offer higher rates, the 1-year bill Meals holds becomes relatively less attractive. Its market value (the price it can be sold for) will fall. The entire benefit that Meals hoped to gain by earning the higher rate for 3 months may be more than offset by the fall in the market value of the bill. In most cases, therefore, it is sensible to try to match the maturity of the bill to when the cash is expected to be needed for the operations of the organization.

Conversely, if one does not expect to need the money for a year and also expects interest rates to rise in the interim, it is not unreasonable to buy a 3-month bill and keep reinvesting it at maturity, ideally at increasing rates. However, it is very difficult to predict what will happen in financial markets. That is why it is generally best to match the maturity of your investments to the timing of an organization’s need for funds.

Another alternative is a money market mutual fund. These investments tend to pay a rate that is competitive with Treasury bills and higher than the rate paid by a commercial bank on a money market deposit account. Generally, the investor gets one share in the mutual fund for each dollar invested, and the value of the shares remains stable at \$1. Interest is earned daily and is paid in the form of additional shares. Money market mutual funds often offer free check-writing privileges, and money can be deposited or withdrawn at any time, generally with no fee or commission. Although the investment has no guarantee, money market funds are generally considered to be reasonably safe investments, and they are very convenient to use.

The next type of money market instrument is a *negotiable certificate of deposit* issued by a U.S. bank. CDs require investors to commit their money for a period of time, such as 6 months or a year. Banks may pay a higher rate on a large CD than Treasury bills pay. A negotiable CD can be sold to someone else, just as a bond can be sold. However, sales commissions will be incurred, and the value of the CD at the time of sale will depend on what has happened to market interest rates and the credit-worthiness of the lender during the time since the investment was initially made.

Another type of money market instrument is *commercial paper*. Commercial paper is an unsecured promissory note issued by a corporation, and it is sold at a discount from face value. Typical maturities are one to nine months, and the interest rate is higher than a Treasury bill. Although commercial paper is generally issued only by the strongest of organizations, the buyer of the paper is essentially lending money to a corporation. There is a risk that the corporation will not repay the loan. As the name implies, with no collateral backing it, commercial paper may not be worth more than the paper it's written on.

Repurchase agreements, or *repos*, are another type of short-term investment. Under a repurchase agreement, a borrower sells highly liquid securities to an investor at a stated discount from face value and agrees to repurchase them at a higher price at a specified future date. The difference between the original sale price and the repurchase price is referred to as the *repo rate*. Repurchase agreements may have any duration—some mature in less than a day. Either party may end the agreement at any time. The purchaser in a repo agreement bears the risk that the seller may not be able to repurchase the security at the agreed-upon price or that the value of the security might fall below the amount that the purchaser paid when entering into the agreement.

Commercial paper, negotiable CDs, and repos would only be suitable for organizations that have substantial amounts of cash (perhaps more than \$1 million) available for short-term investment. These investments can be quite complicated and should only be used by organizations that employ competent advisors knowledgeable in their intricacies and potential risks.

[Table 7-1](#) summarizes the above discussion on suitable short-term investments. For each investment, the table notes whether it is a bank deposit or money market investment (i.e., marketable security), the associated risk, the yield investors generally expect, whether there are any liquidity constraints, and how investors realize a return on the investment. These, of course, are only general guidelines. In financial statements and accompanying notes, discussed in subsequent chapters, these investments may be referred to as “current investments,” “short-term investments,” “marketable securities,” or “cash equivalents.”

Investment	Type	Risk	Yield	Liquidity Constraints	How Investors Realize Returns
Checking Account	Deposit	None to very low*	None to very low	None	Periodic variable interest payments (in some cases)
Savings Account	Deposit	None to very low*	Very low	None	Periodic variable interest payments
Nonnegotiable Certificate of Deposit (CD)	Deposit	None to very low*	Low to moderate	1-12 month maturity; early-withdrawal penalty	Periodic fixed interest payments
Money-Market Account	Deposit	None to very low*	Low to moderate**	Limit on monthly transactions	Periodic variable interest payments
Treasury Bill (T-Bill)	Money-Market Investment	Very low	Low to moderate**	None	Sale of T-Bill on secondary market or receipt of face value at maturity (4-52 weeks)
Money-Market Mutual Fund	Money-Market Investment	Very low	Low to moderate**	None	Daily variable interest payments in the form of additional shares
Negotiable Certificate of Deposit (CD)	Money-Market Investment	Very low	Low to moderate**	None	Periodic fixed interest payments and/or sale of CD on secondary market
Commercial Paper	Money-Market Investment	Low to moderate	Moderate	Contractual	Sale of obligation on secondary market or receipt of face value at maturity (1-9 months)
Repurchase Agreement	Money-Market Investment	Moderate to high	Moderate to high**	Contractual	Resale of securities to borrower at higher market price

Table 7-1

*There is no risk if total deposits are less than \$250,000; the Federal Deposit Insurance Corporation (FDIC) and the National Credit Union Administration (NCUA) insure up to this level per depositor.

**Subject to market fluctuations.

Unsuitable Short-Term Investments

There has been growing concern about public service organizations making inappropriate investment choices. What created an environment in which this would be a concern?

Some have speculated that investment returns allow public officials to increase services and long-term postemployment benefits for public employees without having to ask taxpayers to directly finance them with taxes. In addition, there have been cases of public officials making investment decisions they don't fully understand or that favored the sellers of the investments over the buyers. A well-known example of the negative downside to unsuitable investments is the Orange County, California, bankruptcy. The financial problems in Orange County resulted partly from investing in derivatives.

Derivatives are securities whose value is derived from the value of something else. For example, we could establish a security whose value is the average value of the stock price of five large corporations. Derivatives can be designed to reduce risk by allowing an investor to have the average gain or loss from a large number of securities, without having the expense of investing in all of those securities. However, derivative securities often allow investors to enter into an investment without paying the full cost of that investment. This is called leverage. It offers the potential for much higher returns if the investment performs the way that the investor would like it to. For example, if the prices of the five securities rise, leverage works to the investor's advantage. However, if the investment does not perform as hoped, leverage also amplifies losses. In such cases, investors could lose more than their original investment in the derivative. Often, by investing in a broad portfolio of investments, rather than concentrating in just one investment, risk can be lowered. However, derivatives can also be used for speculation, in which case the risk may be great.

There are many other options for investing idle cash. If the cash will not be needed for operating activities in the coming year, some of these investments may be appropriate for some organizations. However, most

organizations would deem investments such as federal Treasury notes and bonds, corporate bonds, state and local government bonds, preferred stock, common stock, and derivatives to be unsuitable short-term investments. They are more suitable as long-term investments.

Treasury notes and bonds are federal government obligations that are similar to Treasury bills. However, their maturity period is longer: Treasury notes have maturities of greater than 1 year and not longer than 10 years, while Treasury bonds have maturities greater than 10 years. Also, interest is not discounted, as it is with a T-bill. Instead, the investor pays the face or maturity price to acquire the note or bond. A small part of that amount is often refunded immediately upon issuance of the bond to adjust for the exact market interest rate at the time of issuance. The government makes interest payments semiannually, and it repays the investor the face value at maturity. The obligation is fully backed by the federal government. However, the risk caused by fluctuations in interest rates becomes more severe the longer the time until maturity. It would generally be inappropriate to invest cash that might be needed in the coming year in notes or bonds that could have substantial fluctuations in value as a result of interest rate changes.

Bonds issued by corporations, state governments, and local governments have the combined risk of interest rate fluctuations plus the risk that bad news related to the issuer will cause substantial declines in the market value of the bond. Although some bonds may be suitable for long-term investment by some organizations, they are not a good place for investment of money that will be needed during the coming year. Further, governments and not-for-profit organizations would not generally invest in tax-exempt bonds. Such bonds tend to have lower yields (i.e., pay a lower interest rate) because interest earned on them is generally exempt from income taxes. Governments and not-for-profit organizations do not derive any benefit from the tax exemption on the interest payments they receive.

Stocks are even more risky. At least in the case of bonds, if the issuer is still financially stable at maturity, the principal amount of the investment will be repaid. With stock, there is risk that even if the company does well, the price of its stock may fall because of general stock market trends. If the company does not do well, the likelihood of financial loss is great.

In many cases, governments are prohibited by state law from investing in equity securities. It is common for states to have statutes indicating allowable investments for governments within the state. To further protect public assets, some states even require that financial institutions provide collateral to secure deposits made by governmental units.

States may also have laws regarding appropriate investments by not-for-profit organizations. Prior to making investments, managers should determine whether there are rules or laws in their state governing suitable investments. Regardless of whether it is prohibited by law, the volatility in prices of stocks and bonds makes them unsuitable for short-term investment.

However, it is necessary to distinguish between short-term and long-term investments. Money that will be needed for operating activities should only be invested in bank accounts or money market investments listed in the previous section. However, money that is available for long-term investment may be invested more

aggressively. For example, pension funds that will not be paid out for a number of years or a portion of a university's endowment funds could prudently be invested in a diversified portfolio of stocks and bonds. Historically, stocks have provided superior returns over the long term.

Liquidity Management

The above discussion of the management of cash and marketable securities falls under the heading of liquidity management. Optimizing the management of cash and marketable securities requires expertise. Organizations generally have a manager who is assigned the responsibility for liquidity management. This manager will forecast cash inflows and outflows and develop the organization's cash budget. It is important for the organization to be able to anticipate what its cash balances will be so that it can determine whether additional funds will need to be raised or if resources will be available that can be invested to earn a return.

If cash sits idle, the organization misses out on potential earnings. If cash is invested in resources that are too risky, it risks losing critical resources needed for the operation of the organization. Therefore, consideration of the risks of various investments is essential. Liquidity managers focus on the management of interest costs (on borrowed money) or returns (on invested money), matching investment risks with returns (not taking on an investment of cash that has more risk than the expected return can justify), and making decisions regarding how to raise money when needed (short-term loans, increased fundraising appeals, etc.).

Accounts Receivable

Although some organizations collect payment at the same time they provide goods or services, that is not always the case. Sometimes people owe money for goods and services provided to them now and pay at some time in the future. In that case, they are buying the service on account. The amounts they owe are called receivables by the organization that has provided the goods or services. Because organizations want to keep track of or account for how much is owed to them, the amounts owed are often called *accounts receivable*. More specific terms are sometimes used. Governments tax their constituency, so they have taxes receivable. Hospitals charge patients for services provided. Hospital receivables are often called patient accounts receivable. Not-for-profit organizations might also have grants receivable and pledges receivable.

Accounts receivable are collected as a result of a cycle of activities, as follows:

Given the potentially large size of receivables, managers must make an effort to carefully control them. One of the most important issues confronting the manager is how to collect receivables as quickly as possible. This is sometimes referred to as revenue cycle management. The sooner receivables are collected, the sooner the money can earn interest or be used to pay bills or expand services. Organizations are also concerned that some receivables will become bad debts, which are receivables that are never collected. Efforts to collect receivables promptly reduce the likelihood of this happening. Therefore, there should be an attempt to reduce the time required for each step in the accounts receivable cycle, shown in the preceding box.

To collect receivables as soon as possible, an organization must compile the information needed to issue an invoice or bill for goods or services provided. The faster it compiles this information and issues the invoice,

and the more accurate and complete the invoice, the faster payment can be expected.

An essential feature of accounts receivable management is the development of credit policies. Organizations must decide to whom services will be provided and who will be charged for the services. In the Meals for the Homeless example, we assume that meals are provided to the homeless and the organization charges a foundation and the city government. In hospitals, care is often provided to patients but billed to managed care or other insurance companies. To collect payment in a timely manner, there must be a system that is set up to bill the right parties and provide them with the information they need in order to verify and pay the bill. For example, a healthcare insurer may require that a hospital submit the patient's health insurance account number along with specific information about services provided to the patient. Medicare requires the patient's Medicare number and also specific diagnosis information. If a hospital fails to provide that information, it may experience significant delays in receipt of payment.

Management of accounts receivable does not stop when an organization issues an accurate, complete invoice. The organization needs to also monitor unpaid receivables. In some cases, it will need to contact those who owe money to find out why they have not paid the amount owed. An aging schedule, showing how long receivables have been outstanding, is a helpful device. In some cases, it may even be necessary to hire a collection agency to collect delinquent accounts. When receivables are collected, specific procedures should safeguard the cash until its ultimate deposit in the bank. These issues are discussed next.

Invoice issued in person or by mail → Invoice received by customer → Invoice paid by customer → Payment received → Payment deposited → Payment check clears bank

Early Data Collection

One aid in receivables management is early collection of data for the billing process. For example, HOS would probably discuss the method and plan for payment when the patient goes through the admission process. By finding out who is responsible for payment (e.g., the patient, an HMO, Medicare) as early as possible, the hospital increases the chances that it will gather the appropriate information and send the bill to the appropriate party. Some health insurers deny payment unless they are notified when treatment begins rather than after the fact. The organization must put systems in place to ensure that the chances of ultimate collection are maximized.

For many public service organizations, clients have limited resources. Although they might like to just provide their services for free, that may not be possible. The organization has limited resources as well. By identifying potential payment problems early, reasonable compromises can sometimes be reached. For example, HOS can work with uninsured patients to develop reasonable payment schedules that allow patients to pay what they can afford over an extended period.

Credit Policies

Credit policies relate to deciding to whom the organization will provide service without receiving immediate cash payment. Many organizations will provide services to some clients only if they pay at the time the service

is provided. This is often the case if an organization feels there is a high risk it would not be able to collect payment from the person at a later time. One of the more difficult management problems to deal with is whether to exclude someone from an organization's services.

By excluding individuals or organizations from buying goods or services on account, an organization takes a chance of losing the opportunity to provide some services. The manager must weigh the risk of nonpayment against the potential loss of business. For example, Steve Netzer, the chief operating officer of HOS, feels a need to give credit terms that are as good as the competition's. If HOS requires all outpatients to pay at the time service is provided while competing healthcare providers allow patients to receive services on account, HOS may lose profitable business.

If certain people are rich but are deadbeats with a reputation for not paying bills, there is not much controversy if an organization decides to charge cash on delivery of the services. However, if the organization's clients are poor and unlikely to be able to pay for service, should it provide them service for free or exclude them from service if they cannot pay? If the organization provides service for free and cannot recover the cost of the service from some other source, its long-term survival may be threatened.

Frequently public service organizations give away critical services for free to individuals who cannot pay. In some cases, healthcare organizations are required by law to provide care regardless of ability to pay. HOS will not turn away anyone who is likely to die without immediate care. Part of Netzer's management responsibilities is to find funding sources to pay for that care. However, HOS can refuse to provide elective cosmetic surgery, such as a face lift or nose job, to those who cannot pay.

A difficult problem involves determining where to draw the line. Emergency life-saving care is given. Cosmetic nose jobs are denied. But between these two extremes, what services are given without prepayment to those who are unlikely to make payments later? Some organizations will be more permissive than others for a variety of reasons. For example, one organization may have a better financial position than another and be able to better withstand the losses associated with providing services for free. For those that do limit services provided without payment, refusal to provide service should not be capricious, arbitrary, or discriminatory. Organizations should have explicit, reasoned policies for what services they will or will not provide to people who cannot pay. They should also have clear policies for how they determine ability to pay. And the policies should be applied even-handedly.

Ongoing Data Collection

In many organizations, collection of the full amount due requires a careful ongoing data collection process. If they charge for specific services provided, there is the risk that some charges will be overlooked. The number of units of each type of service provided must be accumulated on an ongoing basis.

The Billing Process

The activities concentrated around issuing bills are critical. They must be done quickly but also correctly. Something as minor as a missing zip code in the billing address could lead to a payment delay of several

months or more. When someone in the billing department has gathered all necessary information and reviewed the information for both completeness and accuracy, a bill should be promptly issued.

Modern technology should be considered in the process. The Internal Revenue Service now encourages that tax returns be filed electronically because it reduces the cost of processing taxes receivable and speeds the collection process. Many large healthcare payers (including Medicare and Medicaid) will pay healthcare providers much sooner if they submit their bills electronically rather than on paper. Such approaches should be explored and, if cost-effective, adopted.

Even speeding up collections by 2 or 3 days can have a significant impact. For any one bill, it does not seem to matter if there are a few delays. However, when all bills are considered, the impact of prompt billing is significant. For example, suppose that HOS issues \$300 million in patient billings on account each year. Also assume that HOS owes money to a bank and pays an annual interest rate of 9 percent on that loan. Earlier receipt of cash means repaying part of the outstanding loan and reducing interest payments. If electronic processing of bills directly to payers means that each bill is collected, on average, just 3 days sooner than it otherwise would be, the interest savings for the hospital would be over \$222,000 a year! ($\$300 \text{ million} \times 9\% = \$27 \text{ million of interest per year, divided by 365 days} = \$74,000 \text{ of interest per day, or } \$222,000 \text{ for 3 days.}$)

In addition to faster collection, electronic billing may prove to be less expensive to process than paper billing. Paperwork requires labor, and labor may be more expensive than computer systems. Electronic billing also allows for quicker communication of problems. If a bill is sent electronically and is rejected electronically, the manager knows that there is a problem right away. The sooner an organization knows that a customer has a problem with an invoice, the greater the likelihood that the organization can still gather any data needed to correct the invoice, and the more likely it is that it will ultimately be paid.

Electronic invoicing is only one way managers can affect collections. Another way they can improve the speed of collections is to issue bills more frequently. Rather than mailing out bills monthly, they can invoice weekly or daily. Another approach is to computerize the collection of data for inclusion in bills. When managers turn their attention to specifically speeding up the billing process, it is not inconceivable that they might speed their average collections by an entire month. In an organization with \$300 million of revenue, a 1-month improvement in collections could save several million dollars per year.

Aging of Receivables

Once bills have been issued, the organization must monitor receivables and follow up on unpaid bills. A useful tool for this process is an accounts receivable *aging schedule*, which shows how long it has been between the current date and the date when uncollected bills were issued. For example, at the end of December, a summary aging schedule for the town of Millbridge might appear as the example in [Table 7-2](#).

Township of Millbridge Receivables Aging Schedule as of December 31, 2017					
Payer	1-30 Days	31-60 Days	61-90 Days	> 90 Days	Total
<i>By Total Dollars</i>					
Taxes receivable	\$ 8,052,342	\$ 995,028	\$702,556	\$ 93,050	\$ 9,842,976
State grants	3,250,000	475,000	56,000	22,000	3,803,000
Federal grants	961,232	223,637	27,333	2,222	1,114,424
Foundation grants	583,474	380,640	4,500	2,760	960,374
Total	<u>\$12,747,048</u>	<u>\$2,083,305</u>	<u>\$790,389</u>	<u>\$120,032</u>	<u>\$15,740,774</u>
<i>By Percent</i>					
Taxes receivable	81.8%	10.1%	7.1%	0.9%	100.0%
State grants	85.5%	12.5%	1.5%	0.6%	100.0%
Federal grants	77.3%	20.1%	2.5%	0.2%	100.0%
Foundation grants	59.5%	39.7%	0.5%	0.3%	100.0%
Total	<u>81.0%</u>	<u>13.2%</u>	<u>5.0%</u>	<u>0.8%</u>	<u>100.0%</u>

Table 7-2

In [Table 7-2](#), 81 percent of the town's receivables have been outstanding for less than 1 month. Less than 1 percent of its receivables are outstanding for more than 90 days. In the period shortly after invoices are issued, foundations are the slowest to pay, with only 60 percent collected in the first month. In the longer period, taxpayers lag with 7 percent in the 61–90-day period and 1 percent still outstanding after 90 days. Millbridge would want to compare its collection rates with other towns' to see if it is doing comparatively well or poorly.

The aging schedule is a valuable tool because problem areas can be quickly identified. For example, suppose that the state slowed payment of its grants. Dwight Ives, town manager of Millbridge, might immediately detect a decrease in cash receipts. The aging schedule, however, would help him identify exactly why that occurred. He could then contact the state to find out if the slowed payment was the result of some inaction on the part of the town. If the town had failed to file a required form, it could be done immediately. If it turns out that the state had decided to slow down its payments to all towns, then Ives will need to plan on how the town will make up for the delay in cash receipts. Unless it has a surplus of cash on hand, it will need to sell some investments to generate cash, speed up collections from others, delay payments, or plan on a short-term bank loan.

Efforts to collect payment should begin as soon as the invoice is issued. If anything goes beyond the current column (i.e., 1–30 days), there should be a formal procedure, such as the issuance of a reminder statement. If an account exceeds 60 days, there should be procedures such as mailing another statement, often colored pink to get greater attention. The > 90-day category in an aging schedule is a particular concern, even though it may be a small part of the total. Amounts in that category probably reflect problems encountered in processing the bills or else an inability or unwillingness to pay. All organizations should have specific follow-up procedures for accounts that fall into this category. These procedures should include not only monthly statements, but also late charges and telephone calls to determine why payment has not been made. The longer a payment goes unpaid, the less likely it will ever be paid.

In some cases, it is necessary to use a collection agency if other efforts have failed and it is believed that the receivable is from someone or some organization that has the financial resources to pay. This is a costly approach, since collection agencies retain as much as half of all amounts that they are successful in collecting.

Lockboxes

Some organizations have payments sent directly to a *lockbox* rather than to the organization itself. Lockboxes

are usually post-office boxes that are emptied by the bank rather than the organization. The bank opens the envelopes with the payments and deposits them directly to the organization's account.

One advantage of this approach is that the bank will empty the box and deposit the money at least once a day. This gets the money into interest-bearing accounts faster than if it had to go through the organization. This is especially useful in cases in which organizations allow checks to sit around in the business office for days or weeks before they are deposited.

Second, use of a lockbox tends to substantially decrease the risk that receipts will be lost or stolen. Not-for-profit organizations, particularly those with limited resources for office staff, are often at risk for theft of receipts. Lockboxes are a fairly simple way to safeguard some of the organization's most at-risk resources.

Electronic Payment

More and more organizations are now starting to both make payments and collect receivables via electronic payment. Most utilities now encourage their clients to allow the utility to directly draw payment for the bill on the due date from the client's bank account by electronic transfer into the utility's bank account. Medicare payments to healthcare providers are made by electronic transfer, and the federal government is attempting to move all of its payments to such an approach. In 2011, New York City began offering property owners a 2 percent discount on water bills for those customers who allowed the city to draw the money electronically from a bank account.

Clearly, if an organization can draw money directly from its customer's bank accounts, it can increase the speed of collections and reduce the amount of bad debts. The entire process of collections can be streamlined, often resulting in lower costs to run the office functions of the organization.

Inventory

Inventory represents the major supply items that an organization buys and uses to make its product or services. For example, Meals for the Homeless might purchase cans of food to use when inadequate donations of fresh food are received on a given day; HOS would purchase various pharmaceuticals to give to patients as needed; the town of Millbridge would buy a mountain of salt to use on roads when it snows. Since many organizations spend substantial amounts to acquire inventory, careful management of that resource is essential.

Inventory management can save money for the organization. A general rule of thumb is that inventory levels should be kept as low as possible. The lower the level of inventory, the less an organization must pay out to suppliers, and the greater the amount of money it can keep in interest-bearing savings accounts or investments. At the same time, many organizations have uncertainties that require inventory both for current use and as a safety measure.

For example, Meals will keep canned goods in case fresh food donations are low, as noted previously. HOS will keep an extra supply of items that might be needed for emergency situations, even if they arise infrequently; in the case of a hospital, having inventory on hand can be, literally, a question of life or death.

Millbridge never knows exactly when it will snow; if it runs out of salt, icy roads can lead to serious traffic accidents and injuries.

However, such critical reasons to maintain safety supplies can lead to lax management and excessive stockpiling of a wide variety of items. Management must develop systems to ensure availability of inventory when needed while keeping overall levels as low as possible.

When possible, inventory storage should be centralized. If an organization creates separate locations for inventory, convenience rises but so do costs. The more geographically separated the storage sites are, the greater the amount of each inventory item the organization is likely to have.

The ordering process should also be as centralized as possible. The more decentralized the ordering process, the more time employees spend ordering the same item. Ordering decentralization is also likely to lead to payment of a higher price per unit since the organization is less likely to take advantage of volume discounts.

Periodic Versus Perpetual Inventory

When organizations purchase inventory, they must have some way of tracking the amount of inventory that they have used and the amount still on hand. The simplest approach is called *periodic inventory*. In that approach, from time to time, usually once a year, the organization will count each inventory item to see how much is on hand. Presumably all amounts purchased that are not still on hand have been used to provide goods and services. A contrasting approach is called *perpetual inventory*. A perpetual inventory is one in which the organization keeps a record of each use of each type of item. The organization maintains a running balance so that it always knows how much of each item it has on hand.

With a periodic inventory system, it is hard to know when to reorder since a manager never knows exactly how much is on hand. Many organizations simply order more of an item when they appear to be running low. Since no one wants to run out of anything, there is a tendency to order sooner than actually necessary. With a perpetual inventory system, the organization always knows how much it has on hand so it is easier to decide when it is necessary to order more of any given item.

However, perpetual inventory systems are often expensive since they can be very time-consuming. Employees must record each use of inventory. Historically, perpetual systems have been used primarily for high-cost, or controlled, items. Most states have laws requiring that hospitals use perpetual inventories for narcotics. Automated systems have reduced the cost of using perpetual systems. For example, supermarkets use scanners at checkout counters to keep perpetual inventory. This allows them better ability to restock each item as the amount on hand runs low. Computers and bar codes have become so pervasive that many public service organizations can gain the advantages of perpetual inventory without incurring substantial data costs.

Periodic systems are also flawed in a control sense. When an organization counts inventory once a year, it knows how much is no longer on hand. However, it does not know if it was used to provide services, was stolen or broken, or became obsolete and was thrown away. Perpetual systems keep track as each item is removed from inventory, and so with those systems organizations tend to have lower losses from theft and

more efficient use of inventory in general.

Economic Order Quantity

In addition to the cost of paying for inventory when, or shortly after, it is acquired, there are also a variety of other costs related to inventory. An organization must have physical space to store it, it may need to pay to insure it, and there are costs related to placing an order and having it shipped. A method called the *economic order quantity (EOQ)* considers all of these factors in calculating the inventory level at which additional inventory should be ordered.

The EOQ approach uses mathematics to consider the relative costs of ordering large amounts of inventory infrequently versus ordering small amounts more frequently. The method yields a result that indicates not only the stock level that should be on hand when additional inventory is ordered, but also how much inventory to order at a time.

The more inventory ordered at one time, the sooner an organization pays for inventory and the greater the costs for things such as inventory storage. These are called *carrying* or *holding costs* of inventory. Conversely, if the organization keeps relatively little inventory on hand to keep carrying costs low, it will have to order inventory more often. That drives *ordering costs* up. EOQ balances these two factors to find the optimal amount to order. The EOQ approach is discussed further in Appendix 7-A at the end of this chapter.

Just-in-Time Inventory

One aggressive approach to inventory management is called *just-in-time (JIT) inventory*. This method argues that carrying costs should be driven to an absolute minimum. According to Henke and Spoede,

In the ideal, the just-in-time (JIT) operating philosophy calls for raw materials and partially processed goods to be delivered precisely at the times—and to the locations—they are needed ... at exactly the time required to meet customer orders. JIT philosophy seeks to minimize those costs associated with handling and storing inventory that add no value to the product, and to thereby reduce the cost per unit of finished product.⁵

⁵ Emerson O. Henke and Charlene W. Spoede. *Cost Accounting: Managerial Use of Accounting Data*. Boston, Mass.: PWS-KENT, 1991, pp. 78–79.

Many would argue that it is unrealistic to believe that many public service organizations will ever be able to count on JIT inventory. What if HOS is about to perform an operation and a critical supply item is not delivered just when it is needed? Given the life-and-death issues faced by some organizations, a pure JIT approach may not be feasible. However, it could represent a philosophy to be adopted to the extent possible and reasonable. Philosophically, the goals of JIT are to reduce warehousing, handling, obsolescence, and interest costs to a minimum.

The application of JIT really centers on how close one can come to the ideal. There invariably will be

problems with implementing a JIT system. For any organization, work flow will not necessarily proceed in an orderly manner. There will be peaks and valleys in demand. Some days more people will come to the soup kitchens run by Meals for the Homeless than on other days. An attempt at perfect JIT inventory risks leaving some people unfed to avoid ending the day with some excess food still on hand. If the town of Millbridge hopes to get its road salt just as the snow starts to fall, it may find that there are shortages and no salt available.

Therefore, public service organizations will probably always need to maintain at least some safety levels of key supply items. However, not all inventory items are critical. It is likely that a careful review of all inventory and supply purchases would indicate that a large percentage of items are not critically time essential.

Movement toward a JIT approach is not costless. The purchase price of inventory units may rise because the organization may lose its quantity discounts. The cost of rush orders may rise if there are more stockouts under the system. An effort should be made to determine the total costs related to inventory without a JIT system and the costs under such a system.

In trying to decide if JIT would be helpful to an organization, Henke and Spoede indicate that

JIT works best in repetitive industries and is not appropriate in a fixed continuous process environment or in plants that produce relatively small quantities of fairly unique products.... Job-shop plants, even though they need help controlling inventory and quality, generally cannot benefit from JIT.⁶

⁶ Ibid., p. 86.

A job-shop plant is one in which each unit produced is fairly unique. Typically, a job-shop type of organization must have greater protective inventory of every type because of uncertain demand. That protective inventory offsets the benefits of JIT. HOS is very much like a job shop. By contrast, Meals for the Homeless represents more of a repetitive industry. Thus, management must evaluate the nature of their operations and assess whether there is potential benefit from moving to JIT in their specific case.

How does JIT relate to EOQ? The EOQ approach evaluates the trade-off between ordering and carrying costs. JIT argues for reduction of inventory carrying costs. EOQ would indicate that such reduction would increase order costs. JIT contends that by working more closely with suppliers, ordering costs can be controlled. Essentially, then, JIT points out that whereas EOQ accepts the ordering and carrying costs as they are, managers can go further and work to reduce the cost of carrying and ordering inventory.

Short-Term Obligations

Working capital management calls on managers to control costs related to both short-term resources and short-term obligations. To this point, this chapter has focused on short-term resources. We now turn our attention to management of short-term obligations, or current liabilities. Careful management of such obligations can save many organizations a substantial amount of money.

Some examples of types of short-term obligations that need management attention are *accounts payable*, *payroll payable*, *notes payable*, and *taxes payable*. Accounts payable represent amounts that the organization owes to its suppliers. It is the flip side of accounts receivable. One single transaction will create an account receivable on the records of the organization selling goods or services and an account payable on the records of the organization buying those goods or services. A payroll payable is an amount owed to employees. Notes payable represent an obligation to repay money that has been borrowed. Taxes payable represent not only income, sales, or real estate taxes, which many public service organizations are exempt from, but also payroll taxes that many tax-exempt organizations must pay.

To control the use of organizational resources, managers often delay payment of short-term obligations. This keeps resources in the organization available to earn interest or provide services. Managers also want to avoid unnecessary short-term borrowing, which would cause the organization to have to make interest payments that would not otherwise be necessary.

Accounts Payable

When an organization purchases items without making an immediate cash payment for the full amount due, an account payable arises. Accounts payable are often called *trade credit*. In most cases, there is no interest charge for trade credit, assuming that payment is made when due. For example, Meals for the Homeless might order and receive a shipment of canned goods. Shortly afterward, it receives an invoice from the supplier. The invoice will generally have a due date.

Some suppliers charge interest for payments received after the due date. Others do not. A common practice in many industries is to offer a discount for prompt payment. On an invoice, under a heading called *terms*, there may be an indication such as 2/10 N/30. This would be read as “two 10, net 30.” A discount of two 10, net 30 indicates that if payment is received within 10 days of the invoice date, the payer can take a 2 percent discount off the amount of the bill. If payment is not made within 10 days, then the bill is due 30 days from the invoice date, in full.

Although 2 percent is a very common discount for prompt payment, sometimes a 3 percent discount is offered (3/10 N/30), and sometimes only a 1 percent discount is offered (1/10, N/30). Some companies state their terms in relation to the end of the month. Terms of 2/10 EOM (two 10, end of month) would mean that the buyer can take a 2 percent discount for payments received by the company no later than 10 days after the end of the month in which the invoice is issued.

One confusing element of discounts is that the amount to be paid is called “net” if an organization is paying the full amount. Usually net refers to a number after a subtraction has been made. The reason for this is that many times organizations negotiate a discount from the full price at the time an order is placed. For example, suppose that the regular wholesale price for rice is \$2.50 per 50-pound sack. However, Meals successfully negotiated a 20 percent discount off the official, or “list,” price. Perhaps this is a volume discount. Alternatively, it may be a discount that the rice company offers to meet a competitor’s price. From the seller’s viewpoint, \$2.50 is the gross price, \$2.00 is the net price, and \$1.96 is the net price after a discount for prompt payment (the \$2.00 negotiated price less the 2 percent discount = \$1.96). Thus, 2/10 N/30 means that the buyer can pay \$1.96 per sack if the payment is made within 10 days. Otherwise, the net price of \$2.00 per sack is due in 30 days.

An important trade credit issue involves whether an organization should take discounts if offered. When a credit discount is offered, it usually pays to take the discount. Although a 2 percent discount might seem small, the organization earns that discount by paying perhaps 20 days sooner than it would otherwise pay the amount due. So the true interest rate is not 2 percent per year but rather 2 percent per 20 days. This generally works out to be a high annual rate. Appendix 7-B at the end of this chapter provides information on how to calculate the impact of credit discounts.

Payroll Payable

Payroll obligations are generally paid soon after they are incurred. Each payroll period, an organization must pay its employees. At first glance, there does not seem to be much opportunity for management control in this area. However, that perception is incorrect. Two main issues must be considered: the policy regarding the length of the payroll period and the delay between the end of the period and payment of payroll obligations.

Each organization must decide on the length of the payroll period. Employees could be paid daily, weekly, biweekly, monthly, or based on some other time period. Suppose that the town of Millbridge has historically followed a policy of paying its employees weekly. However, its managers have heard that other towns in the area have transitioned to a monthly payroll period. Why might the other towns have done this?

For one thing, they will have to write only about one quarter as many checks. This will save a substantial amount of time and effort in the payroll department. More important, it pushes off payment of employee earnings. The first week’s earnings each month will now be paid 3 weeks later than otherwise. The second week’s earnings will be paid 2 weeks later, and the third week’s earnings will be paid 1 week later. For an entire year, the interest earned as a result of the deferred payments can be substantial.

A second issue related to the management of payroll relates to the length of the delay from the end of the payroll period until payment. For example, if the payroll period ends each Friday, should payroll be paid that day, or on Monday, or perhaps as late as the next Thursday? To some extent, a delay may be needed to determine the earnings of employees. The longer the delay in payment, the longer the organization retains the money in its interest-bearing account.

With respect to both the frequency of payment and the delay before payment, the potential for savings must be balanced against the relationship the organization has with its staff. Will the change cause financial hardships for the employees? Will the employees feel that they are being treated unfairly? If so, they will often find ways to get back at the organization. Poor morale can turn out to be more costly than the benefits that the organization may have accrued in the form of extra interest.

Short-Term Debt

Public service organizations often have short-term needs for cash. Millbridge may have a temporary cash shortage prior to the due date of real estate taxes. Meals may need cash while it waits to receive money the city owes it for meals it has already provided. The interest on a loan is equal to the amount of the loan multiplied by the annual interest rate multiplied by the fraction of the year that the loan is outstanding, as shown in Equation 7-1:

$$\text{Interest} = \text{Loan Amount} \times \text{Interest Rate per Year} \times \text{Fraction of Year} \quad (7-1)$$

Typically, organizations obtain short-term debt by borrowing money from banks using *unsecured notes*. In some cases, money can be borrowed from financing and factoring companies, using inventory or accounts receivable as collateral. An alternative way to obtain short-term debt is through the use of commercial paper.

When a loan is made, the lender sometimes requires some security to guarantee repayment. This is done by providing specific resources that the lender can take if the loan is not repaid. The specific resources offered are called collateral. If the lender does not require any collateral for the loan, it is said to be unsecured. If the borrower fails to repay an unsecured loan, the lender joins with all other creditors in making a general claim on the remaining resources of the organization. This is riskier than having collateral; unsecured loans, therefore, often have higher interest rates to offset the lender's higher risk.

Unsecured loans are generally referred to as notes because a specific document, called a note, gives the details of the loan arrangement, including the agreed-upon interest rate and information about when interest and principal payments will be made. The outstanding balance owed on the note is called the note payable.

For organizations that have limited financial resources, banks may be unwilling to make loans. Another approach for obtaining short-term financing is to borrow money from an organization that specializes in financing and factoring receivables. A factoring arrangement is one in which an organization sells its receivables. The buyer is called a factor. The right to collect those receivables then belongs to the factor. There is a risk that some of the receivables will never be collected. Therefore, the factor pays less than face value. In most cases, if receivables are factored, the organization receives less than it would have received, but it gets the cash sooner.

Alternatively, a financing arrangement would be one in which money is borrowed with the receivables being used as collateral in case the organization cannot repay the loan. Often, accounts receivable are used as collateral to back up credit lines. This lowers the cost to the organization, because the interest rate charged is less if there is collateral. Further, since the amount of the credit line available may be a percentage of accounts receivable, it allows the organization to have a sense of the amount that is available for it to borrow at any

point in time.

Taxes Payable

Taxes payable seem to be an odd obligation for tax-exempt organizations. Many public service organizations qualify for federal, state, and/or local tax-exempt status. However, the tax exemptions generally apply only to mission-related income earned by organizations, sales made by the organization, and the property on which it operates (i.e., tax-exempt organizations are generally exempt from income, sales, and real estate taxes). Tax-exempt organizations are not exempt from other taxes such as payroll taxes, which include taxes on the organization that will be used to provide unemployment benefits, worker's compensation, Social Security retirement benefits, and Medicare health insurance. Employers also withhold various taxes that are owed by their employees to various government bodies. Such amounts are owed by the organization to the government from the time they are withheld from employees' paychecks until they are paid to the government.

Federal Insurance Contributions Act (FICA) is a tax that is charged to both employees and the employer to provide Social Security benefits. The employer withholds the employees' portion from their wages along with income taxes and other employee tax obligations. Until these taxes are forwarded to the government, they represent a short-term obligation. As with other short-term obligations, these should not be paid before they are due. However, since there are often penalties in addition to interest for late payment, managers must have a system in place to ensure that taxes are paid on time. In addition to Social Security taxes, many organizations are liable for a variety of state taxes, such as those related to unemployment insurance and disability insurance.

Summary

One element of the implementation of plans is careful control of short-term resources and obligations. This chapter considers techniques and approaches designed to maximize the benefit of short-term resources and minimize the cost of short-term obligations.

The process of controlling short-term resources and obligations is referred to as working capital management. In performing working capital management, the manager must ensure that adequate cash is on hand to meet the organization's needs and also to minimize the cost of having that cash. To do this, the manager must carefully monitor and control cash inflows and outflows. Cash not immediately needed should be invested, earning a return for the organization. The organization should use a cash budget and should employ lockboxes and concentration banking when appropriate.

Excess cash should be invested. A variety of marketable securities may be appropriate for an organization. Such securities can provide a higher yield for the organization while still providing reasonable liquidity and safety of principal.

Efforts must be made to collect accounts receivable as soon as possible. This reduces the rate of bad debts and also allows the collected receivables to start earning interest sooner. Often problems with receivables management stem from inadequate data systems. Data are required to allow invoices to be issued promptly, and then more data are required to track outstanding receivables balances.

Excess supplies (inventory) should not be kept by the organization. The money spent now to pay for inventory that is not needed until later could be better used by the organization for some other purpose. At a minimum, the money could be invested in the organization's savings account, earning interest. The economic order quantity and just-in-time techniques can provide managers with assistance in minimizing the cost of inventory.

Short-term obligations must also be managed carefully. The organization desires to have sufficient cash to pay its obligations when they are due. However, if the organization pays its bills before they are due, it will lose the interest it could have earned if it had left the cash in its savings account for a little longer rather than paying the obligation. Managers should take advantage of opportunities to delay payments, if the delay does not have any negative implications for the organization.

Key Terms from This Chapter

accounts payable, 259
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aging schedule, 255
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certificate of deposit (CD), 243
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working capital, 240

working capital management, 240

zero-balance accounts, 244

Questions for Discussion

- 7-1. Define working capital, net working capital, and working capital management.
- 7-2. Working capital has been compared with “cash register money.” Explain.
- 7-3. What is the role of the manager in working capital management?
- 7-4. Why does an organization keep cash?
- 7-5. Should cash on hand and in bank accounts be maximized or minimized?
- 7-6. Can a profitable organization run out of money?
- 7-7. For what time periods should cash budgeting be done?
- 7-8. What are marketable securities? What are the two main types of marketable securities?
- 7-9. What is meant by a risk/return trade-off?
- 7-10. Why is the development of credit policies critical to the organization?
- 7-11. What are the potential benefits of electronic invoicing?
- 7-12. What is the purpose of an accounts receivable aging schedule? How should it be used?
- 7-13. What is a lockbox system?
- 7-14. What are the advantages of careful inventory management?
- 7-15. What is the difference between periodic and perpetual inventory?
- 7-16. Can just-in-time inventory work in public service organizations? Why or why not?
- 7-17. What is the general focus of management of short-term obligations?
- 7-18. What does “2/10 N/30” mean? Under what conditions should an organization take advantage of “2/10”?
- 7-19. What are the various types of short-term debt that are available?
- 7-20. Accounts receivable represent⁷

⁷ Questions 7-20 through 7-22 were written by Dwight V. Denison.

1. amounts owed by the organization to outsiders
 2. amounts owed to the organization by outsiders
 3. an operating expense
 4. a possible line item on an operating budget
- 7-21. Short-term debt refers to
1. money that the organization has just borrowed
 2. money that must be repaid at some time in the next 12 months
 3. money that has to be repaid at some time after the next 12 months
 4. a form of debt that *only* requires the repayment of interest during the coming year
- 7-22. An accounts receivable aging schedule shows the _____ and _____ of an organization’s accounts receivable that have been outstanding for less than 30 days, 31–60 days, 61–90 days, and so on.
- 7-23. Working capital management focuses on making sure that an organization has sufficient resources to operate
1. in accordance with its mission
 2. over the next year

3. efficiently
 4. over the expected life of the organization
- 7-24. Bills that have been sent out by an organization but not yet collected are referred to as _____.
- 7-25. Amounts that an organization owes to its suppliers, but has not yet paid, are referred to as
1. accounts receivable
 2. bad debts
 3. accounts payable
 4. accrued expenses
- 7-26. An inventory management system that relies primarily on physical counts of inventory is said to be using the
1. perpetual method
 2. periodic method
 3. warehouse-control method
- 7-27. Name two tools (techniques) that can be used by an organization to manage its accounts receivable.
- 7-28. Accounts payable are amounts owed by an organization that have not yet been paid. Name two specific types of accounts payable.

Problems

7-29. Millbridge Hospital buys its supplies in bulk and has recently switched vendors. The first purchase Millbridge made was for 500 boxes of gauze at \$3.46 a box. The purchase had payment terms of 2/15 N/30. Millbridge earns 4 percent on its idle cash. Should it take the discount or not? Justify your answer by showing calculations. (Refer to Appendix 7-B to solve this problem.)

7-30. Meals for the Homeless usually experiences seasonality in its cash balances. In December, contributions from donors increase its cash balances, and then these balances are used throughout the following year. By the fall, Meals for the Homeless has a tight cash flow. It has a line of credit with its bank, which allows it to draw up to \$500,000 at 7 percent interest per year. During 2017, Meals for the Homeless draws down \$135,000 on October 1 and repays it at the start of business on January 3, 2018—exactly 94 days later. How much should it pay back on January 3, and how much of that is interest?

7-31. Meals for the Homeless has many sources of income, but they pay Meals very differently. Specifically, Meals has contracts with the city, county, and state to provide food services. In addition, Meals has contracted with a private foundation to augment its foods with more healthful options. The city owes Meals \$400,000, half of which is current, one quarter is more than 30 days but less than 61 days old, 15 percent is between 61 and 90 days old, and the remainder is more than 91 days old. The county owes Meals \$900,000, only one third of which is current, another one third is more than 30 days but less than 61 days old, and the remainder is more than 90 days old. The state owes Meals \$1.5 million; 40 percent is current, 30 percent is between 30 and 60 days old, 20 percent is between 61 and 90 days old, and the remainder is more than 91 days old. The foundation owes Meals \$150,000, of which half is current and the other half is more than 30 days but less than 61 days old. Prepare an accounts receivable aging schedule for Meals by total dollars and by percent.

7-32. Millbridge Hospital receives earned income from several sources: Medicare, Medicaid, private insurance, and self-pay customers. The federal government owes the hospital \$7 million; 60 percent is current, 30 percent is between 31 and 60 days old, and the remaining 10 percent is between 61 and 90 days old. The state owes the hospital \$5 million for Medicaid, 40 percent of which is current, 30 percent is between 31 and 60 days old, 20 percent is between 61 and 90 days old, and the remainder is more than 91 days old. Private insurance owes the hospital \$4 million, half of which is current, 25 percent is between 31 and 60 days old, and the remaining 25 percent is more than 91 days old. Self-pay customers owe \$1 million, 30 percent is current, 40 percent is 31 to 60 days old, 10 percent is 61 to 90 days old, and the remainder is more than 91 days old. Prepare an accounts receivable aging schedule by total dollars and by percent.

7-33. Millbridge Hospital buys 10,000 boxes of latex gloves every year. Each box costs the hospital \$7. The cost to place an order for the gloves—which covers the employee staff time, shipping costs, and the hospital's receiving center for inventorying, for example—is estimated at \$50 per order. Carrying costs (for storing the boxes, verifying the inventory periodically, etc.) are estimated at 50 cents per box per year. Millbridge uses a 6 percent interest-cost assumption in its calculations. How many boxes should be ordered at a time? How many orders per year should there be? What are the total ordering and carrying

costs at the EOQ? Contrast these costs at the EOQ to the total costs if all boxes were simply ordered at the start of the year. (Refer to Appendix 7-A to solve this problem.)

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Case Study: The Case of the Missing Check

The Millbridge Recreation Department has come under intense scrutiny. First there were concerns because revenues for the year fell short of predictions. Then town residents started complaining to the mayor that the town had cashed their checks for use of the town pool several months after they were written, and in some cases checks were never cashed.

One irate resident, George Loudly, had complained about a payment he contended that he made for the town pool. The Recreation Department manager, Tenn Uswim, had insisted that payment had never been received and suggested that perhaps the check was lost in the mail. Loudly had countered that he dropped the check off in person. The disagreement had reached an impasse, and the resident had filed formal notice with the town that he intended to take the floor at the public forum session during the July town meeting. In response the mayor requested that the recreation manager attend the meeting.

Loudly provided his side of the situation at the July meeting. Then several friends that he brought to the meeting spoke, indicating that their checks had been cashed but not until several months after they sent them to the town. The recreation manager was given an opportunity to respond. Uswim indicated that his policy was to gather checks and have someone run them over to the bank for deposit from time to time. He argued that the money wasn't needed until the pool opened several months after payments were collected, so he didn't see a need to rush checks to the bank. After all, once deposited, he just kept the money in a non-interest-bearing account.

The residents countered that not only was the town losing the opportunity to earn a return by investing the pool money, but worse, it stood to lose money if payments were misplaced. The recreation manager argued that payment checks could not possibly be lost, because he kept them all safely on top of his desk, usually under a paperweight. He contended that those who claimed their checks weren't cashed obviously never made their payments.

That remark was perhaps not well considered. Loudly felt that the recreation manager was accusing him of lying about having paid his pool fee. Uswim's contention all along was that if Loudly really had paid his fee, he should produce a cancelled check as proof. Loudly contended that he paid in person and the check was just not cashed because of government incompetence. Immediately after Uswim's remark, Loudly insisted on being allowed to immediately search the recreation department office for his check.

The mayor didn't want to give in, but he had known Loudly a long time and respected his honesty. Uswim didn't object, so the meeting moved downstairs to the Rec office. The town sheriff was asked to conduct a thorough search. Within 10 minutes, he had found five checks on the floor under desks and behind file cabinets. The dates on the checks ranged from 1 week to 2 years old. One of the checks was George Loudly's payment.

At this point several residents shouted out that they had paid in cash, and how did they know if their cash was deposited or was also lost. The mayor was at a loss for words. He quickly agreed to hire an outside consultant to evaluate the town's cash management practices. You have just accepted that engagement.

Assignment: Why should the town hold on to cash? In what form should it hold the cash? What practices and procedures would you suggest that the town consider to improve its management of short-term resources in general and cash in particular?

Appendix 7-A: Economic Order Quantity

As noted in the chapter, in addition to having to pay for inventory when, or shortly after, it is acquired, there are other costs related to inventory. We must have physical space to store it, we may need to pay to insure it, and there are costs related to placing an order and having it shipped. A method called the economic order quantity (EOQ) considers all of these factors in calculating the inventory level at which additional inventory should be ordered.

The more inventory ordered at one time, the sooner we pay for inventory and the greater the costs for things such as inventory storage. These are called carrying or holding costs. However, if we keep relatively little inventory on hand, to keep carrying costs low, we will have to order inventory more often. That drives ordering costs up. EOQ balances these two factors to find the optimal amount to order.

There are two categories of carrying costs: capital costs and out-of-pocket costs. The capital cost is the cost related to having paid for inventory, as opposed to using those resources for alternative uses. At a minimum, this is the forgone interest that could have been earned on the money paid for inventory. Out-of-pocket costs are other costs related to holding inventory, including rent on space where inventory is kept, insurance and taxes on the value of inventory, the cost of annual inventory counts, the losses due to obsolescence and date-related expirations, and the costs of damage, loss, and theft.

Ordering costs include the cost of having an employee spend time placing orders, the shipping and handling charges for the orders, and the cost of correcting errors when orders are placed. The more orders, the more errors.

There is an offsetting dynamic in inventory management. The more orders per year, the less inventory that needs to be on hand at any given time, and therefore the lower the carrying cost. However, the more orders per year, the greater the amount the organization spends on placing orders, shipping and handling costs, and error correction. The total costs of inventory are the sum of the amount paid for inventory, plus the carrying costs, plus the ordering costs:

Total Inventory Cost = Purchase Cost + Carrying Cost + Ordering Cost

The goal of inventory management is to minimize this total without reducing the quality of services the organization provides.

We will use TC to stand for the total inventory cost, P to stand for the purchase cost per unit, CC for the total carrying cost, and OC for the total ordering cost. N will stand for the total number of units of inventory ordered for the year. Therefore,

$$TC = (P \times N) + CC + OC \quad (7-A-1)$$

We will let C stand for the annual cost to carry one unit of inventory. The annual total carrying cost, CC, is then equal to the carrying cost per unit, C, multiplied by the average number of units on hand. Assume that Q is the number of units of inventory ordered each time an order is placed. On average at any given time we will

have $Q \div 2$ units on hand. If we start with Q units and use them until there are 0 units left, on average we will have half of Q units on hand. Carrying costs are determined using the average number of units of inventory on hand. The carrying costs will therefore be as follows:

$$CC = C \times \frac{Q}{2} = \frac{CQ}{2} \quad (7-A-2)$$

That is, the carrying costs per year (CC) will be equal to the carrying costs of one unit (C), multiplied by the average number of units on hand at any given time ($Q/2$).⁸

8. This becomes somewhat more complex if a safety stock is kept on hand at all times. In such a case the CC is equal to C multiplied by the sum of $Q \div 2$ plus the safety stock. However, this is not needed for the EOQ calculation. Safety stocks will not affect the economic order quantity, since they are projected to be constantly on hand regardless of the frequency or size of orders.

A formula can also be developed for ordering costs. We will let O stand for the cost of making one order. The total ordering cost, OC, is the cost of making an order, O, times the number of orders per year. Recall that the total number of units needed for the year is N and Q is the number of units in each order. Then N/Q is the number of orders placed per year. The ordering costs are as follows:

$$OC = O \times \frac{N}{Q} = \frac{ON}{Q} \quad (7-A-3)$$

That is, the total cost of placing all orders for the year (OC) is the cost of making one order (O) multiplied by the number of orders per year (N/Q). For instance, suppose that Meals for the Homeless buys 2,000 sacks of rice each year ($N = 2,000$). If it orders 200 sacks at a time ($Q = 200$), it would have to make 10 orders per year ($N/Q = 2,000/200 = 10$).

We now can calculate the purchase cost of the inventory, the carrying costs, and the ordering cost. Suppose that Meals pays \$2 per sack for rice. Each time it places an order, it takes a paid clerk about \$8.075 worth of time to process the order. The delivery cost is \$1 per order. This \$9.075 is the only ordering cost. Meals could earn 8 percent interest on its money. Therefore, the capital part of the carrying cost is \$.16 per sack per year ($8\% \times \$2 \text{ price} = \$.16$). Other carrying costs are determined to be \$2.84 per sack per year. Therefore, the total carrying costs are \$3 per sack per year. What is the total cost of inventory, assuming that there are 10 orders per year?

$$TC = (P \times N) + CC + OC \quad (7-A-4)$$

The first part of the equation to be calculated is the purchase cost of the inventory:

$$P \times N = \$2 \times 2,000 = \$4,000$$

Next, we need to find the carrying cost:

$$CC = C \times \frac{Q}{2} = \frac{CQ}{2} \quad (7-A-5)$$

$$CC = \frac{\$3 \times 200}{2} = \$300$$

Finally, we need the ordering cost:

$$OC = O \times \frac{N}{Q} = \frac{ON}{Q} \quad (7-A-6)$$

$$OC = \frac{\$9.075 \times 2,000}{200} = \$90.75$$

So the total costs are as follows:

$$TC = (P \times N) + CC + OC \quad (7-A-7)$$

$$TC = \$4,000 + \$300 + \$90.75 = \$4,390.75$$

However, it was arbitrarily decided that there would be 10 orders of 200 sacks each. The EOQ model is designed to determine the optimal number to order at one time. The formula to determine the optimal number to order at one time is as follows:

$$Q^* = \sqrt{\frac{2ON}{C}} \quad (7-A-8)$$

where Q^* is the optimal amount to order each time.

$$Q^* = \sqrt{\frac{2 \times \$9.075 \times 2,000}{\$3}} = 110$$

This result differs from the 200 sacks per order that we used earlier. If we use this result, how will it affect total costs? The purchase cost will still be \$4,000. However, the carrying costs and ordering costs will change:

$$CC = C \times \frac{Q}{2} = \frac{CQ}{2} \quad CC = \frac{\$3 \times 110}{2} = \$165 \quad (7-A-9)$$

Finally, we need the ordering cost:

$$OC = O \times \frac{N}{Q} = \frac{ON}{Q} \quad OC = \frac{\$9.075 \times 2,000}{110} = \$165 \quad (7-A-10)$$

So the total costs are as follows:

$$TC = (P \times N) + CC + OC \quad TC = \$4,000 + \$165 + \$165 = \$4,330 \quad (7-A-11)$$

The new total cost of \$4,330 represents a cost decrease of \$60.75. Relative to the total cost, this may not seem to be a great savings. However, if you put aside the purchase cost of the inventory, the carrying and ordering costs have fallen from \$390.75 to \$330. This is more than a 15 percent savings. Across all inventory items for an organization, this could amount to a substantial dollar amount of savings.

It is not coincidental that the ordering cost equals the carrying cost. The total cost is minimized at the point where these two costs are exactly the same!

It is important that EOQ calculations include only relevant costs. Carrying and ordering costs that are relevant are those that vary as a result of our EOQ decision. That is, if ordering more or less frequently will affect a cost, it is relevant and should be included in the calculation. For example, ordering less frequently will likely increase capital costs related to interest. It would also likely affect shipping and handling, so these are relevant costs that belong in the calculation. By contrast, the cost of the purchasing department manager will probably not change with the number of orders. Therefore, none of that manager's salary should be included in the ordering costs.

The basic EOQ model, as presented here, involves making a number of assumptions that are often not true. For example, it involves assuming that any number of units can be purchased. In some cases, an item might only be sold in certain quantities, such as hundreds or dozens. Another assumption is that the price per unit does not change if we order differing numbers of units with each order. It is possible that we might get a quantity discount for large orders. Such a discount could offset some of the higher carrying cost related to large orders.

Another assumption is that we will use up our last unit of an item just when the next shipment arrives. A delay in processing, however, could cause inventory to arrive late, and we might run out of certain items. To

avoid negative consequences of such *stockout costs*, we might want to keep a safety stock on hand. How large should that safety stock be? That will depend on how long it takes to get more inventory if we start to run out. It also depends on how serious the consequences of running out are. Is it life or death, or merely an inconvenience?

One of the greatest difficulties in employing EOQ is determining the carrying and ordering costs. In most cases, however, at least the major components of such costs—for example, the amount of labor needed to place an order—can be calculated. The purpose of this discussion of EOQ is to familiarize the reader with the basic concept of inventory management. Many more sophisticated issues, such as those noted here, are addressed in more advanced books on managerial accounting and on operations management.

Inventory models are a part of any efficient management operation that invests dollars in inventory. Public, health, and not-for-profit organizations have often considered their inventories to be of nominal value. However, the costs of ordering and carrying inventory are sometimes surprisingly high, and use of a tool such as EOQ should at least be examined for potential savings.

Key Term from This Appendix

stockout costs, 269

Appendix 7-B: Credit Terms

An important trade credit issue involves whether an organization should take discounts if offered. When a credit discount is offered, it usually pays to take the discount. A formula can be used to determine the annual interest rate implicit in trade credit discounts:

$$\text{Implicit interest rate} = \frac{\text{Discount}}{\text{Discounted price}} \times \frac{365 \text{ days}}{\text{days sooner}} \times 100\% \quad (7-B-1)$$

For example, suppose that HOS purchased \$5,000 of pharmaceuticals with payment terms of 2/10 N/30. A 2 percent discount on a \$5,000 purchase would be \$100. This means that if the discount is taken, only \$4,900 would have to be paid. By taking the discount, the hospital must make payment by the 10th day rather than the 30th day. This means that payment is made 20 days sooner than would otherwise be the case:

$$\begin{aligned} \text{Implicit interest rate} &= \frac{\$100}{\$4,900} \times \frac{365 \text{ days}}{20 \text{ days}} \times 100\% \\ &= 37.2\% \end{aligned}$$

Although the stated discount rate of 2 percent seems to be rather small, gaining a 2 percent discount off the net price, in exchange for paying just 20 days sooner, represents a high annual rate of return. Suppose that the organization has \$4,900 of cash available to pay the bill on the 10th day. For it to make sense not to pay the bill promptly and take the discount, we would have to invest the money for the next 20 days in an investment that would earn at least \$100 over that period. Any investment that could give us that return would be earning profits or interest at a rate of at least 37.2 percent per year.

That is, $\$4,900 \times 37.2 \text{ percent per year} \times (20 \text{ days}/365 \text{ days}) = \$100$. That means if we started with \$4,900 and earned interest at 37.2 percent per year for a period of 20 days, we would earn \$100 in interest. Together with the \$4,900 we start with we would have \$5,000. If we have projects available to invest in for 20 days that would pay at an annual rate that is even more than 37.2 percent, it would make sense to invest in the projects rather than take the discount. We would earn more than \$100 interest for the 20 days and have more than \$5,000 at the end of 20 days. We could pay \$5,000 and still have something left. But if we can only earn at an annual rate of return less than 37.2 percent for those 20 days, then \$4,900 plus interest would be less than the \$5,000 needed to pay the full amount due. So we would be better off just taking the discount and paying the \$4,900. Since most organizations do not have available investments that are assured of earning such a high rate, it pays to take the discount and pay promptly.

Suppose that we do not have the \$4,900 in cash to make the payment on the 10th day. However, a bank is willing to lend us \$4,900 at an annual interest rate of 10 percent. Ten percent of \$4,900 is \$490 per year. Dividing this by 365 days in a year comes to \$1.34 per day. We need to borrow the money for only 20 days. Twenty times \$1.34 is \$26.84. That is the amount of interest we would have to pay the bank for the 20-day loan of \$4,900. To save \$100, we would have to pay the bank about \$27. This is clearly a good deal. So even if you have to borrow money to take the discount, you should, as long as you can borrow at an interest rate of less than 37.2 percent per year.

This assumes, of course, that the invoice will be paid on time if the discount is not taken. Suppose, however, that Meals for the Homeless often pays its bills late. Sometimes it pays after 2 months, or even 3 months.

Would it make sense to take the discount and pay in 10 days or to wait and pay the bill after 90 days? Paying after 10 days is 80 days earlier than the normal 90 days before making our payment:

$$\text{Implicit interest rate} = \frac{\text{Discount}}{\text{Discounted price}} \quad (7-B-1) = \frac{\$100}{\$4,900} \times \frac{365 \text{ days}}{80 \text{ days}} \times 100\% \quad (7-B-2) \text{ Implicit interest rate} = \frac{\$100}{\$4,900} \times \frac{365 \text{ days}}{80 \text{ days}} \times 100\%$$

If Meals can earn more than 9.3 percent on its investments, it should wait to pay the bill. If Meals does not have enough money to pay the bill and a bank would charge more than 9.3 percent, then it is better off waiting, assuming its suppliers are willing to wait to receive payment and do not charge interest for late payments. Otherwise, Meals should pay promptly and take the discount.

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Chapter 8 Accountability and Control

Learning Objectives

The learning objectives of this chapter are to:

- define management control systems;
- discuss various measures of performance, including the Balanced Scorecard and triple bottom line performance;
- discuss various approaches for controlling quality;
- explain the role of variance analysis and a variety of techniques for analyzing variances;
- discuss the role of ethics in financial management;
- discuss safeguarding an organization's resources;
- explain the elements of a control system, including the audit trail, reliable personnel, separation of functions, proper authorization, adequate documentation, proper procedures, physical safeguards, bonding, performance audits, and cost-effectiveness analysis;
- discuss the Sarbanes-Oxley Act and its impact on the management of public service organizations; and
- discuss the organization's Form 990.

Planning is an essential element of financial management. Planning is discussed in [Chapters 2–6](#). A good plan is critical if an organization is to do as well as it can. However, to achieve the best possible result, the plan needs to be carried out. To ensure that this happens, departments and individuals must be held accountable for actions and results.

Managers develop control systems to help keep their organizations to their plans, protect resources, motivate employees, evaluate performance, alert management to variations, and take corrective action. Such systems provide the foundation for accountability. Taylor defines *internal control* as

all actions taken to make an organization run effectively and accomplish its goals, and can be as easy as a supervisory checkoff or as extensive as an automated system used by an agency to track construction of a major project. Controls even include management's attitude, operating style and integrity, and ethical values. It is how managers communicate with the people they supervise, how they check on staff, how they ensure that their employees do not do the things management does not want them to do. Internal control equals management control and is no longer considered the sole realm of an organization's auditor or accountant.¹

1. Deirdre A. Taylor. "What Is Internal Control?" in *State and Local Government Program Control and Audit: Handbook for Managers and Auditors*. David R. Hancox and Martin Ives, eds. Austin, Tex.: Sheshunoff Information Services, 1997, pp. 1–2.

Management control is based on the assignment of responsibility for the achievement of our plans and is one of the important elements of financial management. However, the organization must not only assign responsibility. It must actually provide motivation for its employees to strive to accomplish the organization's goals.

We must also know how we intend to measure results. This can be done to some extent using simple measures of inputs and outputs. Inputs are the resources used by the organization to produce its goods or services. Outputs are the goods or services provided. Recently, however, there has been a shift toward trying to better assess the accomplishments of the organization. Various approaches to performance measurement are discussed in this chapter.

After measures of performance have been discussed, techniques for variance analysis are considered. Variances arise if the actual performance differs, or varies, from expectations. Developing an understanding of why variances have occurred can help an organization avoid undesirable variances in the future.

The chapter concludes with discussions of ethics and safeguarding resources. To achieve planned results, it is vital for personnel to be as ethical and error-free as possible. People are fallible. Being aware of this, organizations must try to develop checks and balances to ensure that the risk of losses due to either intent or inefficiency is minimized.

Management Control Systems

The centerpiece of an organization's attempts to accomplish its plans is its *management control system (MCS)*. An MCS is a set of policies and procedures designed to keep operations going according to plan. Such systems also detect variations from plans and provide managers with information needed to take corrective actions when necessary. Management control systems should

- provide clear definition of the organization's goals;
- communicate those goals to all employees, along with the action plan to attain those goals;
- report back to managers and other employees on the results the organization has achieved; and
- provide motivation so that managers and other employees have an incentive to achieve the goals of the organization.

Management control systems have often been compared to thermostats. We might set a thermostat for 70 degrees. Our plan is for the temperature to be 70 degrees. It is predetermined, as a budget would be. However, a thermostat does more than just establish the desired temperature. It also monitors the existing temperature in the room. Similarly, an MCS assesses the actual outcomes for the organization. If the temperature in the room varies from the desired 70 degrees, the thermostat activates the furnace to send heat if it gets too cold or turns off the furnace if it gets too hot. Similarly, the MCS must set in motion actions that are needed if it determines that there are variations from the plan.

Further, MCSs attempt to establish an environment in which it is likely that the organization will come as close to its plans as possible. This means that MCSs are proactive as well as reactive. They are reactive to the extent that they monitor whether something is going wrong. If so, an action is taken to correct the perceived problem. However, they are also proactive in that they put in place a set of incentives and controls that help the organization avoid having bad outcomes in the first place.

One proactive aspect of management control is that it should provide managers with a clear way to identify and capitalize on opportunities. Plans cannot possibly anticipate everything that might occur. Organizations need to be flexible enough to respond to unexpected opportunities. However, there must be control. The organization must walk a fine line between allowing everyone to do whatever they want without authorization, using opportunity as an excuse, and failing to take advantage of truly significant opportunities.

The focus of management control systems is on *responsibility accounting*. Responsibility accounting is the assignment of the responsibility for keeping to the plan and carrying out the elements of the management control system. Such responsibility is generally assigned to managers of cost centers, who take either the "carrot" or the "stick" approach. Some MCSs employ rewards for managers and staff who meet or exceed budgets (the carrot). Others take the approach of doling out punishments if targets are not achieved (the stick). In either case, responsibility accounting should not be primarily focused on assigning blame. The intent is not to have a ready scapegoat when things go wrong.

Rather, the philosophy is that individuals should have a clear understanding of their responsibilities. Given

that knowledge, they are likely to act within their ability and the circumstances that surround them in a manner to achieve the best possible outcomes for the organization. Responsibility accounting is oriented toward clearly communicating expectations ahead of time and then tracking results to generate feedback after the fact. The most important reason for the feedback is to improve future outcomes. Thus, the MCS collects retrospective data to allow actions that will enable the organization to avoid repeating its past mistakes.

This is a difficult process. There is a temptation to focus on blame. The MCS has the potential to create severe problems if people are held accountable for things that they either could not control or were unaware they were responsible to control. The common result is low morale and a downward spiral in results, rather than the desired high level of achievement. People carry out all of an organization's activities. Financial management must be ever aware of the role of people, the incentives that are given to employees (both positive and negative), and the resulting levels of motivation. People, not plans or budgets, make things happen in organizations. If we are not mindful of what people are likely to do and why, we are not likely to achieve our desired results.

Measures of Performance

The planning process provides goals for the organization. But how will it know if it has achieved its goals? Each organization must decide how to measure its performance. In recent years, there has been growing emphasis on performance measurement. Healthcare providers have decided that measuring only the number of patients treated is not adequate. Instead, they also want measures of healthcare quality and the improvement in their patients' health. Governments and not-for-profit organizations have also sought better indicators for performance measurement. Herzlinger and Nitterhouse note that outcomes can be measured in terms of private benefits to the organization, public benefits to society, effectiveness, efficiency, quality, and quantity.²

2. Regina Herzlinger and Denise Nitterhouse. *Financial Accounting and Managerial Control for Nonprofit Organizations*. Cincinnati, Ohio: South-Western, 1994, p. 360.

Organizations compare their planned outcomes with their actual outcomes to see how well they are doing. The organization must guard its viability. This requires taking an internal perspective on whether it is achieving the benefits for the organization that are expected—these are private benefits. At the same time, many public, health, and not-for-profit organizations are also interested in the benefits that they generate for society. If doing public good is a part of the organization's mission, then it is appropriate to compare the expected and actual amounts of public good provided. Often, however, measuring the amount of public good provided is extremely difficult. Proxies are frequently used.

For example, the Hospital for Ordinary Surgery (HOS) cannot easily assess how much its efforts have improved the overall health of its community. Nevertheless, the hospital may choose to measure the number of free health screenings provided or the number of poor patients treated for free to assess (and publicize) the public service being provided. If the organization falls short of its planned goals, it would want to investigate and determine why that had happened.

Organizations also strive to be both effective and efficient. Effectiveness relates to whether the organization is accomplishing its desired outcomes. If Meals for the Homeless had hoped to substantially eliminate hunger among the homeless of the city and did in fact accomplish that goal, it could consider itself to be effective. It is working well toward its mission by doing what it set out to do. Effectiveness, however, contrasts with efficiency. Efficiency relates to whether the organization uses the minimum needed resources to accomplish its outcomes. Although most organizations strive to be both efficient and effective, an organization can be efficient but not effective or effective but not efficient.

For example, Meals for the Homeless might believe that if it operates carefully, meals should cost \$3 each, on average. If it eliminates hunger and provides meals for \$3 per meal, then it is operating both efficiently and effectively. If it provides meals at a cost of \$4 per meal, it may have been effective in meeting its objective of eliminating hunger but might not have operated in an efficient manner. Resources may have been needlessly used. Conversely, if it keeps costs at \$3 per meal but provides food to only one third of the hungry homeless,

it has met the measure of efficiency but has not been as effective as hoped. If the organization falls short in terms of either efficiency or effectiveness targets, it will want to determine by how much and why. That information (or feedback) can be used to help it accomplish its goals both efficiently and effectively in the future.

In addition, organizations will generally have goals in terms of both quality and quantity. Since eliminating hunger is a hard objective to accurately measure, Meals for the Homeless may choose to set a goal, such as 10,000 meals served. Such quantity outcome measures are often easier to measure than true effectiveness. We may not know for sure that we have eliminated hunger, but we know that we provided 10,000 meals, and we infer that this has at least eliminated a fair amount of hunger.

But what do the meals consist of? Is there sufficient protein? Are the meals always a thin vegetable soup, or is there an adequate portion of high-protein items? Organizations will often devise methods to measure not only the quantity of services provided but the quality as well.

Herzlinger and Nitterhouse also note that there are a number of different approaches for assessing actual outcomes: measuring inputs, measuring process, measuring output, and measuring effects.³

3. Ibid., pp. 360–361.

Most organizations measure the cost of resources used (inputs). This is relatively easy to do but provides only limited information about the activities of the organization. Inputs used tell how much money was spent but not much about what was accomplished. Input usage does not really indicate whether the organization was efficient or effective. Despite this limitation, many organizations do focus a great deal on whether the amount spent was less than or equal to the budgeted amount. This is probably based on a concern about viability. If the organization spends more than budgeted, it may be threatening its viability. If total spending is not controlled and the organization must cease operations, then neither efficiency nor effectiveness will be of much relevance.

An alternative approach to measuring outcomes would be to assess process. For example, HOS could attempt to see how well it has done by measuring how often patient care plans were prepared for its patients and how often there was adherence to those plans. Such measurement does not really tell if patients were made as healthy as possible. However, if the organization has processes that it believes should lead to high-quality care, then measurement of whether there was adherence to those processes is helpful. Certainly, the level of adherence to the process tells more about effectiveness than the amount of dollars spent on staff does. HOS may have a goal of getting patients healthy. To do that, it will have to spend a certain amount of money. However, just looking at how much was spent (inputs) does not tell if HOS accomplished its goal. Measuring process is somewhat more likely to tell if the organization is doing what it intended.

Many organizations skip over process measures and focus more on direct proxies for output. For example, HOS might measure the number of surgeries performed, Meals for the Homeless might measure the number of meals provided, and the Police Department of the town of Millbridge might measure the number of arrests. Output measures are helpful but inadequate to really tell what the organization has accomplished.

We could measure effects—that is, the impact of what we have done. Schools could assess not only what they pay teachers (input cost), or what process the teachers used (special reading programs), or the number of children taught (output), but also the resulting literacy of the student population. Literacy, after all, might be what we are really trying to achieve. Unfortunately, measuring effects is difficult, and many organizations do not have the ability to make such measurements. Trying to establish causation for the effects is even more difficult. The Governmental Accounting Standards Board (GASB) has conducted a great deal of research in this area. Starting in 1989, it published a series of research reports titled *Service Efforts and Accomplishments Reporting: Its Time Has Come*. The specific subjects of the studies were elementary and secondary education, water and wastewater treatment, mass transit, sanitation collection and disposal, fire department programs, public health, police department programs, and road maintenance.⁴

4. These reports can be ordered directly from GASB on the Web: www.gasb.org.

In the healthcare sector, the growth of managed care has made the need for performance measurement extremely clear. When health maintenance organization (HMO) members find they cannot get a necessary treatment, they realize that the HMO's monthly premium is not enough information. Report cards have become commonplace in healthcare, conveying to the public a mix of quality measures (e.g., Are all children in the plan inoculated against major diseases?) and satisfaction measures.

The Balanced Scorecard

During the 1990s, Kaplan and Norton developed an approach called the *Balanced Scorecard*, which brings many of these measurement issues together in one systematic approach.⁵ The notion of the Balanced Scorecard is that financial measures are just one part of a larger set of measures that are needed to assess organizational performance and control its operations. A Balanced Scorecard is

5. Robert Kaplan and David Norton. *Translating Strategy Into Action: The Balanced Scorecard*. Boston, Mass.: Harvard Business School Press, 1996.

a carefully selected set of measures derived from an organization's strategy. The measures selected for the Scorecard represent a tool for leaders to use in communicating to employers and external stakeholders the outcomes and performance drivers by which the organization will achieve its mission and strategic objectives.⁶

6. Paul R. Niven. *Balanced Scorecard Step-by-Step for Government and Nonprofit Agencies*, 2nd ed., Hoboken, N.J.: John Wiley & Sons, 2008, p. 13.

Balanced Scorecard Elements

In the Balanced Scorecard approach, the organization develops a set of *key performance indicators (KPIs)* that management can use to monitor how well the organization is achieving its goals with respect to four critical

perspectives:

- financial perspective
- customer perspective
- internal business perspective
- learning and growth perspective

By focusing on how well an organization's strategy is working in these four areas, the Balanced Scorecard can assess how well the organization is achieving its goals and objectives.

For example, from a financial perspective, one goal of the Hospital for Ordinary Surgery would be to have financial success as measured by adequate profit. One objective to help HOS attain that profit might be adequate private donations to supplement patient revenues. Such a measure might serve as a proxy for community support for HOS. The KPI that HOS might use to determine if it is achieving the desired support level is the total dollar amount of pledges received. Hospitals traditionally focus on patient revenues on a monthly basis but tend to examine contribution results less frequently. A monthly Balanced Scorecard report would bring donation shortfalls to the attention of top management.

At the same time, a Balanced Scorecard would go beyond financial measures of success and report on things from customer, internal business, and learning and growth perspectives as well. Organizations must determine the things that are important to the customers. HOS's customers will likely consider quality of care to be one of the most important factors. The hospital will develop a KPI such as a measure of patient satisfaction with quality of care received. Although this may not translate into organizational success or failure in the short term, if patients are not satisfied they will tell their friends and it will hurt the organization's patient volume over the long term. Therefore, a Balanced Scorecard can shift the focus from short-term measures toward the requirements for the long-term success of the organization.

The internal business perspective focuses on issues such as whether HOS is adequately innovative and delivers services efficiently and effectively. The learning and growth perspective considers factors such as whether HOS is attracting and retaining competent employees and using continuing education to maintain their expertise.

Balanced Scorecards and Public Service Organizations

The Balanced Scorecard system was developed for corporate America. Does it make sense in the government, health, and not-for-profit sectors? Yes. If anything, it applies even more directly to these types of organizations because their mission is not singularly focused on profits. The inherent nature of public service organizations is that their primary purpose for existence is not to make profits. Therefore, financial measures of performance are inherently limited in their ability to evaluate how well the organization is doing. A Balanced Scorecard allows a public service organization to develop a strategy to achieve its mission knowing that there will be feedback that will capture performance along a number of dimensions, using KPIs that can be tailored to the nature of the organization and its goals, including nonfinancial goals.

In addition to a heightened focus on mission, public service organizations may also place more importance on the customer perspective than some for-profit organizations do. For some public service organizations, their reason for existence is squarely centered on the customer, and it makes sense for the Balanced Scorecard to also have that focus. Nevertheless, the financial element should never be ignored in a Balanced Scorecard. If the finances are not adequate, the organization may cease to exist, and we can't lose sight of that fact.

Balanced Scorecard Benefits

By developing a Balanced Scorecard, managers are forced to consider a broad view of the critical factors for success, define KPIs to measure performance, and collect data that can track how the organization is doing in all of these areas. As such, it results in a stronger strategic planning process and an organization that quickly reacts to issues that may impact success before it is too late to take corrective actions. One of the problems with traditional financial measures of performance is that they often focus too heavily on the past. They report how profitable the organization was last year, not how profitable it will be next year. Balanced Scorecards contain an array of information that provide managers with the ability to look not only backward, but ahead as well.

Implementing Balanced Scorecards

Conceptually, the process of developing a Balanced Scorecard does not appear to be difficult. But in complex organizations, the detailed efforts needed to create a valuable system that communicates strategies and develops sensible KPIs is not a simple task. Even with a system that can improve management, that doesn't mean measurement will be an easy task.

Triple Bottom Line Performance

Another approach for measuring performance also got its start in the 1990s. This approach is called *triple bottom line accounting*. Triple bottom line argues that organizations should be concerned about and measure not only their financial performance, but also their environmental and social performance. The concept, developed by John Elkington, argues that organizations have many stakeholders (individuals who are impacted in any way by the actions of the organization) and those stakeholders should all be represented in the performance process.

From a social or people point of view, triple bottom line calls for organizations to consider the interdependencies between the organization and both individuals and society as a whole. Triple bottom line would measure the impacts of the organization's actions on its employees, clients, and others. Essentially such a measurement would consider not only benefits provided to society by the organization, but exploitation or endangerment to stakeholders as a result of the organization's actions. The triple bottom line approach would measure the ills caused by the organization, such as pollution, and also the positives, such as providing health and education services to the poor.

Triple bottom line also focuses on sustainable environmental practices. This means that an objective would be to avoid environmental harm. Further, this would require management of energy use and of waste creation,

toxicity, and disposal. Sustainable environmental practices require the organization to consider the impact of its actions throughout the life cycle of its products and services, from their initial manufacture or provision through their ultimate disposal by the client they were made for or provided to. The organization would measure things such as the extent to which it bears part of the costs of the final disposal of the products that it has created. The organization would also measure the extent to which it replenishes the resources it consumes. An example is forestry company planting trees.

The third element of triple bottom line is financial return. However, this should not be viewed as being limited to the profits of the organization. Just as the social and environmental impacts of an organization should be viewed beyond the immediate limits of the organization, so should its profits. In other words, triple bottom line is not traditional profitability plus a focus on social and environmental impacts. All three elements, including profitability, must examine the totality of the lasting impacts of the organization's actions. Such impacts may also create profits (or losses) beyond the organization.

Controlling Quality

In addition to the Balanced Scorecard approach, an essential element of control is a system to control the quality of services provided. Providing quality services is obviously essential for healthcare organizations. However, it is something that all public service organizations strive to attain. Historically, the traditional approach to achieving a quality result was to inspect finished products for defects and then fix instances of poor quality. However, in the last several decades better approaches have been developed.

Cost of Quality Report

We can think of the costs related to providing a quality product or service as consisting of four parts:

- prevention
- appraisal
- internal failure
- external failure

We spend money to prevent failures from occurring. We spend money on appraisal, examining the finished product or service to see if failures have occurred. If the appraisal finds a defect, the costs of correcting it are considered to be internal failure costs. If the defect is not detected by the appraisal process, and is discovered later by the customer, the costs of correcting it are external failure costs.

For example, suppose that a patient comes into the surgical suite at HOS. First, the surgical staff will scrub their hands and put on sterile gloves. Those are prevention costs. HOS pays the staff while they scrub their hands, so it does cost money. HOS pays for the gloves. But the goal is to prevent infection. The surgical staff also will take time during the surgery to be careful not to leave any surgical instruments behind in the patient, adding additional prevention cost. At the end of the surgery, the staff counts all of the scalpels, forceps, sponges, and other items that might have been accidentally left behind in the patient. This cost of the staff time is an appraisal cost. The staff is now checking to make sure there were no quality deficiencies. What if they are short one scalpel? They will bring in a portable X-ray machine, take an X-ray, and find the missing scalpel and remove it. That would be an internal failure cost (pun intended). But what if they do an inadequate job of prevention and appraisal? They don't spend the time to be careful about leaving implements behind and don't count carefully to see if they did. The next day the patient complains about severe back pain, so staff X-ray the patient, see from the X-ray that a scalpel was left in the patient, and need to schedule a new operation to remove the scalpel. HOS also has the costs related to a lawsuit and the negative impact on the hospital's reputation. All of that is external failure cost, because the patient became aware of the failure before HOS could identify and correct it.

A report can be prepared that shows the costs related to prevention, appraisal, internal failure, and external failure. Management can consider the total cost from those four sections of the report to be the total costs related to the level of quality provided. Managers can then consider how they can improve the focus on prevention and appraisal to reduce the costs related to failures. Even if they spend more on prevention and

appraisal, HOS can lower the overall costs by lowering the cost of correcting failures. At the same time, HOS can improve the quality of care provided. A cost of quality report, therefore, can be valuable for all types of public service organizations.

Total Quality Management

As organizations have focused more on quality, they have sought tools that can help them in this area. Several decades ago, Edward Deming introduced America to the Japanese philosophy of Total Quality Management (TQM). The basic approach of TQM is to do things right the first time. That may cost more up front, but saves a lot of money in terms of correcting mistakes.

America has been considered the land of “ready-fire-aim.” We are quick to act, although sometimes it might make more sense to consider things more carefully before acting. In terms of TQM, we want to make our product or service so quickly that we sometimes don’t take the care necessary to ensure that we do a first-class job. Philosophically, TQM argues that if we spent more time ensuring the product were a good one to begin with, we would save so much money that is spent fixing our mistakes that we could have a better quality result at a lower overall cost. Whether that is always the case is an issue of some debate. However, there is no question that a focus on quality at an early stage in the process can be beneficial.

Six Sigma

More recently, the focus in quality control has been on the Six Sigma method. The method relies heavily on measurement of quality failures, because once we know how many failures we have, we can work actively to reduce that number to a lower level. Six Sigma is an approach that strives to reduce the number of defects to fewer than 3.4 defects per million. This method focuses primarily on defining any process, analyzing the process, and then improving the process so that it is less subject to error.

Quality Control Charts

In order to measure defects or quality failures, a quality control chart can be a helpful tool. On the horizontal axis time is recorded. On the vertical axis either the number of defects or the percentage of the time that a defect occurs is recorded. The organization will establish a maximum defect goal for a particular process. The goal is indicated as a horizontal line. The actual values for defects are then plotted over time. Managers can quickly tell if the process being measured is out of control (defects are above the goal that was set) and needs attention, or if the process is under control (actual values below the goal line).

Consider [Exhibit 8-1](#). We can see that the goal is no more than three defects or quality failures per week. At the beginning of the year, this process was always at that level or below. However, since January 28 the number of problems has been steadily rising. Not only was the goal for maximum number of defects exceeded in the weeks of February 18 and 25, but the trend is particularly disturbing. A quick glance at this control chart would inform a manager of a need to investigate this process and get its quality back under control.

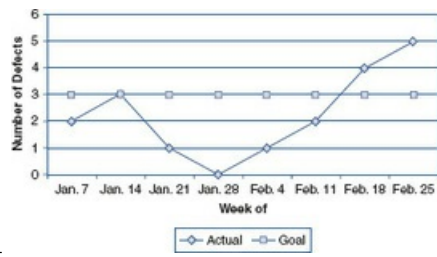


Exhibit 8-1

Variance Analysis

No matter how careful the planning process has been, actual results often differ from expectations. The difference between the actual results and the planned results represents a *variance*—that is, the amount by which the results vary from the budget. A variance may be the result of less than optimal implementation of the plan, or it may be due to factors beyond the control of the organization. A major element of the control process in any organization relates to analysis of why variances have occurred. If it turns out that a variance is unfavorable and is the result of something that could be controlled better, a *variance analysis* provides the starting point for taking actions to improve future results.

Variances are calculated for three principal reasons. One reason is to aid in preparing the budget for the coming year. By understanding why results were not as expected, the budget process can be improved and be more accurate in future planning. The second reason is to aid in controlling results throughout the current year. By understanding why variances are occurring, actions can be taken to avoid additional unfavorable variances over the coming months. The third reason for variance analysis is to evaluate the performance of units or departments and their managers. By identifying the controllable and noncontrollable elements of variances, one can improve control over the controllable elements, take appropriate actions in response to changes in noncontrollable elements, and better evaluate performance with respect to controllable elements.

Although variance reports are used to evaluate performance, it should be stressed that the main reason for investigating why variances have occurred is not to assign blame; crying over spilt milk is not the primary goal. Rather, the focus is to determine where and how remedial actions can be taken to avoid spilling any more milk in the future.

Variance analysis can help managers locate the cause of inefficiencies and help organizations avoid waste. In addition, variance analysis can also help managers explain why variances have arisen in the occasions when they are due to neither inefficiency nor other controllable events.

Control charts, such as the one in [Exhibit 8-1](#), can be developed to track variances as compared to the budget over time and help managers quickly identify when variances indicate that some process is out of control.

Understanding Why Variances Happened

Organizations should generally provide each manager with a monthly variance report indicating budgeted expectations, actual results, and the variance for each item in the budget. In order for variance reports to be a valuable managerial tool, managers must be able to determine and understand the causes of the variances. This requires investigating why each substantial variance occurred.

Generally, small variances are assumed to be the result of uncontrollable, random events. A manager would not spend much time investigating a \$10 variance. Only variances that are large either in dollar amount or as a percentage of the budgeted amount are investigated. Determination of whether an amount is large enough to warrant investigation requires both skill and judgment, and no easy rules of thumb exist. Many organizations

will use institutional history as a guide to determine what size variances should be investigated.

Variance investigation requires the knowledge, judgment, and experience of the manager. Only the person who has supervised a department has enough actual knowledge of that department to effectively determine why it spent more or less than expected. As a result, finance officers often generate variance reports, but each unit or department manager is required to prepare an analysis of why variances occurred in their department. Without such analysis, the reports are not as useful as they might be.

If variances arose as a result of inefficiency (e.g., unduly long lunch breaks), then the process of providing cost-effective services is out of control. By discovering this inefficiency, actions can be taken to eliminate it and to bring the process back under control. In this case, future costs will be lower because of the investigation of the variance.

Although some inefficiencies can be controlled by proper staff supervision, in many cases variances are caused by factors outside of the control of managers. For example, increases in the number of homeless people may cause Meals for the Homeless to provide more meals. This will likely cause its total costs to rise. The cost increase was not the result of inefficiency but rather resulted from the greater-than-expected demand for meals. If the organization decides to provide additional meals because it will help accomplish the organization's mission, it must use care in evaluating the financial impact of that decision. Blaming a manager for increased spending that results from policy decisions outside of his or her control can only result in poor morale and deteriorating future performance.

Nevertheless, even if the cause of a variance is something outside the control of the manager, the variance should be investigated and its cause determined. The impact of such variances on total costs should not be ignored. If the increase in the number of homeless people is likely to persist, then Meals for the Homeless will continue to go over budget. Eventually this may cause the organization to run out of money. This could threaten its continued existence. Decisions will have to be made. Should the organization continue to provide meals to everyone who asks? Should the organization undertake an emergency fundraising campaign? Can the organization offset the increased food cost by cutting back on some other program? Whether variances are controllable or not, they set into motion a number of actions and decisions that are necessary in order for the organization to achieve its best possible overall result and ensure its continued existence.

Volume increases are not always problematic. Although Meals for the Homeless may have a problem when it unexpectedly serves more meals, many organizations would actually benefit from a volume increase. Suppose, for example, that HOS makes a profit on each surgical procedure. If the number of procedures increases, the resources consumed will likely also increase. It will spend more than the amount that has been budgeted. However, if the additional patients are generating more revenue, then the organization as a whole may benefit from the extra volume. Since some costs are fixed, volume increases that proportionately raise revenues are likely to increase overall profits. Clearly, spending more than the budgeted amount does not always result in a bad outcome for the organization.

Variance Analysis Mechanics

Variance analysis is generally done on a monthly basis. At the end of each month, a report is prepared comparing actual results with the budget. Usually, it takes the financial managers of the organization about 1 to 3 weeks to prepare the report for each department.

The Total Variance

The simplest variance analysis approach is to compare the total costs that the entire organization has incurred with the budgeted costs for the entire organization. For example, suppose that HOS had a total budget of \$8,800,000 for September. The actual costs for the month were \$9,200,000; HOS spent \$400,000 more than it had budgeted. The difference between the amount budgeted and the amount spent is the hospital-wide *total variance*. This variance will be referred to as an *unfavorable variance*, because the organization spent more than had been budgeted. Accountants use the term *favorable variance* to indicate spending less than expected. The terms *favorable* or *unfavorable* do not carry a connotation of good or bad in the context of variance analysis. There will be times that spending more than budgeted (an unfavorable variance) will actually be good for the organization. If greater volume of profitable customers has caused an organization to spend more money, an unfavorable variance could be the result of a good event for the organization, because the extra revenues generated will exceed the extra costs. However, when we look at the costs on their own, we will still call the extra spending an unfavorable variance.

Assuming that HOS begins its year on July 1, the variance could appear in the following format:

This Month			Year-to-Date		
Actual	Budget	Variance	Actual	Budget	Variance
\$9,200,000	\$8,800,000	\$400,000 U	\$25,476,000	\$25,150,000	\$326,000 U

Although most organizations provide year-to-date information, for ease of presentation, the remainder of examples in this chapter will focus on just current month information.

The “U” following the variance refers to the fact that the variance is unfavorable. If the variance were favorable, it would be followed by an “F.” An alternative presentation to using U and F would be to use a negative sign for an unfavorable variance and a positive sign for a favorable variance. Sometimes parentheses are used to indicate a negative number. Any systematic approach can be used to indicate favorable versus unfavorable variances. Some organizations show unfavorable variances as negative numbers and favorable as positive, and other organizations do just the reverse. The manager should be cautious to determine whether spending has been more or less than the expected amount.

The objective in doing variance analysis is to determine why the variances arose. Nothing can be done to control costs until the manager knows where the unit or department is deviating from the plan and why. Why has HOS had a \$400,000 unfavorable variance for the month of September? Given just this one total variance for the entire organization, the chief executive officer (CEO) has no idea what caused the variance. The CEO does not even know which managers to ask about the variance, since all that is known is a total for the entire organization.

One solution to this problem would be to have organization-wide line-item totals. That is, the total amount budgeted for salaries for the entire organization could be compared with actual total salary costs. The total

amount budgeted for supplies could be compared with the actual total amount spent on supplies. The problem with this solution is that there would still be no way to determine what caused the variances. All departments have salaries. A number of departments use supplies. Who should be asked about the variances?

To use budgets for control, it must be possible to assign responsibility for variances to individual managers. Those managers can investigate the causes of the variances and attempt to eliminate them in the future. This leads to the necessity for determining variances by unit or department rather than for the entire organization in total.

Department Variances

The overall HOS variance of \$400,000 for the month is really an aggregation of variances from a number of departments. Let us focus on the results for just one department in the hospital, the Department of Radiology Services:

The Hospital for Ordinary Surgery Department of Radiology Services September Expense Variance Report		
Actual	Budget	Variance
\$800,000	\$600,000	\$200,000 U

Apparently, half of the variance for HOS occurred in the Department of Radiology Services. This provides more information than we had before. Clearly, the director of Radiology must try to find out why this \$200,000 variance occurred in the department. It is large in both dollar and percent terms. Unfortunately, this still does not give the Radiology director much to go on. The director simply knows that \$200,000 was spent in this department in excess of the amount budgeted.

Line-Item Variances

Is the \$200,000 Department of Radiology Services variance the result of unexpectedly high costs for technician salaries? Does it relate to usage of supplies? There is no way to know based on a total variance for a unit or department. More detailed information is needed. In order to have any real chance to control costs, there must be variance information for individual line items within a unit or department. The Radiology director must know how much of the department total went to salaries and how much to supplies. For example, consider the following:

The Hospital for Ordinary Surgery Department of Radiology Services September Expense Variance Report			
	Actual	Budget	Variance
Salary	\$400,000	\$395,000	\$ 5,000 U
Supplies	400,000	205,000	195,000 U
Total	<u>\$800,000</u>	<u>\$600,000</u>	<u>\$200,000 U</u>

Now we are starting to get somewhere. By subdividing the total \$400,000 hospital-wide variance by department, we were able to find a department—Radiology—that has a substantial variance. By further subdividing the variance by line item, we have found that there is a very substantial supplies variance and a much more modest salary variance. The Department of Radiology Services manager could now proceed to investigate supplies and try to determine what has caused such a significant variance from the budget.

Even this, however, is a substantial simplification. For example, a real variance report would show the variance for salaries for each class of employees. Essentially, each line in a unit's budget should become a line in the variance report; spending on nurses, technicians, aides, education, publications, office supplies, laundry, and so on would each be examined. As the level of detail becomes greater, it becomes easier to determine which variances are large enough to warrant investigation, and it becomes easier to determine the factors causing the overall variance. Variance reports with detailed line-item results for each unit and department are often available in public service organizations today. This approach of evaluating each line item for each department is one of the most common approaches for the investigation of variances.

One potential cause of the \$195,000 supply variance in the Department of Radiology Services mentioned previously is that the manager just did not do a very good job in controlling the use of supplies. Technicians failed to place X-ray film that was not used back in the stockroom, and housekeeping threw the film away. Or perhaps the technicians made a lot of mistakes and often had to take three or four images rather than just one or two. Another possibility is that there were many more patients than anticipated. Of course, if the film is being wasted, we are much more concerned than if we had an increased number of paying patients.

Another possible cause is that the price of X-ray film rose dramatically. X-ray film contains a lot of silver, and if the price of silver rises, the cost of X-ray film rises as well.

The main weaknesses of this traditional type of analysis are that it fails to take into account changes in the volume of services provided, and it does not provide as much direction as possible for the investigation of the causes of variances. Are variances due to prices paid for resources or to the amount of resources used per unit of output? A more sophisticated approach, called flexible budget variance analysis, can overcome these limitations.

Flexible Budget Variance Analysis

Flexible budget variance analysis requires a little more work than the variance analysis approach described previously but can provide managers with substantially more information. Flexible budgets, as discussed earlier in this book, provide budgets for different levels of activity. An organization not only approves a budget that assumes one specific activity level but might also prepare flexible budgets for different volume levels. The flexible budgets show the expected impacts of volume changes. They recognize the fact that some costs are fixed and some are variable. Thus, a 10 percent volume change would be unlikely to change costs by 10 percent. Flexible budget variance analysis incorporates this concept by recognizing that at least part of the total variance for any line item is often the result of changes in the level of activity.

The public sector has been slow to adopt this approach. This may reflect a historical lack of emphasis on cost control. As cost control becomes more important to the financial well-being of these organizations, increasing adoption of the technique is likely. Organizations such as hospitals, under intense financial scrutiny, largely adopted this technique in the last decade of the 20th century.

The key concept of flexible budgeting is that the amount of resources consumed will vary with the level of

workload actually attained. In other words, the more service an organization provides, the greater its costs will be. It is critical to evaluate whether variances are occurring because we are spending more money to provide the expected level of services or to provide a greater amount of service. The implications of these two alternatives are substantially different.

Suppose that the following was the variance report for Meals for the Homeless:

Meals for the Homeless Kitchen Department March Expense Variance Report			
	Actual	Budget	Variance
Food	\$100,000	\$100,000	\$0

It looks like Meals came in right on budget. It is probable that the manager would be feeling pretty good about this line item for March. Suppose, however, that the budget of \$100,000 for food was based on an assumption of 33,000 meals served, but there were actually only 20,000 meals. One would expect that the lower volume of meals prepared should have allowed for reduction in food usage and a cost savings as compared with the budget. None of that is apparent from the March variance report.

The flexible budget is a restatement of the budget based on the volume actually attained. Basically, the flexible budget shows what a line item *should* have cost, given the output level that actually occurred. If some costs are variable (see [Chapter 4](#) for a discussion of fixed and variable costs), then increasing volumes should be accompanied by an increase in costs, and decreasing levels of output should be accompanied by a decrease in costs.

In [Chapter 3](#), we note that flexible budgets can be prepared during the planning stage. A flexible budget can give an indication of expected results at a variety of possible volume levels. For variance reporting, however, the flexible budget is prepared after the fact, when the exact volume achieved can be determined.

Using the flexible budget technique, the variance for any line item can be subdivided to provide the manager with additional information about the cause of the variance. Each line-item variance can be divided into three pieces: a volume variance, a price variance, and a quantity variance.

The Volume Variance

The *volume variance* is defined as the portion of the variance in any line item that is caused simply by the fact that the output level differed from the budgeted expectation. For example, if the budget calls for the town of Millbridge to educate 2,000 pupils in its school system but actually 2,200 students enrolled, then it is expected that it would be necessary to hire more teachers and buy more books. The increased cost of the resources needed for an extra 200 students constitutes a volume variance. Such variances are often outside of the control of the manager. The school superintendent would not likely be considered to be doing a bad job if the quality of the school system attracts more families with school-age children to move into the town.

The Price, or Rate, Variance

The *price, or rate, variance* is the portion of the total variance for any line item that is caused by spending more per unit of some input resource than had been anticipated. For example, if the average wage rate for kitchen

workers at Meals for the Homeless is more per hour than had been expected, a rate variance would result. When the variance is used to measure labor resources, it is generally called a rate variance because the average hourly rate has varied from expectations. When considering the price of supplies, such as the cost of food, it is called a price variance because it is the purchase price that has varied. The terms *price* and *rate* are often used interchangeably in practice.

The price, or rate, variance may or may not be under the control of the manager. Suppose the Purchasing Department at HOS tells the Department of Radiology Services director how much X-ray film is likely to cost per sheet of film. That price is built into the budget. If Purchasing then signs a contract for film at a higher price, the manager of Purchasing should be held accountable to explain the difference.

Note, however, that the extra cost for film will show up on the variance report of the Department of Radiology Services. Supply costs are generally assigned to the department consuming those supplies. The director of Radiology is therefore expected to explain the supply variance. If we can separate the line-item variance into several parts so that we know the part of the variance caused by changes in the price of film as opposed to changes in the amount of film used, we can make better decisions about who should be investigating and determining the cause of the variance.

The Quantity, or Use, Variance

The third general type of variance under the flexible budgeting approach is the *quantity*, or *use*, *variance*. This is the portion of the overall variance for a particular line item that results from using more of a resource than was expected for a given output level. For example, suppose that Millbridge spends more than expected on textbooks for the students in its schools. This could occur because there are more students (a volume variance) or because we paid more per textbook (a price variance). However, it could also occur because we used more textbooks per student than we had planned. Several teachers may have added supplementary books during the year that had not been in the original budget. This higher use per student represents a quantity variance.

This variance is often referred to as a use variance because it focuses on how much of the resource has been used. In industry, this variance is often called an *efficiency variance*. This is because a favorable variance would imply that each unit of output was produced using less input. Most industries can carefully measure the quality of the products they produce. If they can maintain quality at a desired level and make their products using less input, they are functioning with a higher level of efficiency.

For most public, health, and not-for-profit organizations, measuring quality is more difficult. If the schools in Millbridge use fewer textbooks per student, are they operating more efficiently than expected, or are they providing a lower-quality education? It is advisable to use the terms *quantity* or *use variance* rather than *efficiency variance* unless we know that reduced consumption of resources per unit actually is related to changes in efficiency rather than changes in quality.

Calculating the Volume, Price, and Quantity Variances

Suppose that the Millbridge School District expected to spend \$32,000 on textbooks for the fall semester, but

actually spent \$37,800. When the school board questioned the school superintendent about the \$5,800 unfavorable variance (\$37,800 actual spending less the \$32,000 budget), she pointed out that there were more students enrolled, so of course they had to increase spending on textbooks. Is that explanation sufficient?

The school district had expected to have 320 students enrolled, but the actual enrollment was 360 students. It would seem that the superintendent had the explanation correct. However, further examination shows that while the school district had expected to use an average of four books per student at a cost of \$25 each, it actually acquired five books per student, with an average cost of \$21 each. We can calculate the volume, quantity, and price portions of the total variance to better understand what caused the \$5,800 unfavorable variance.

The Original Budget was based on 320 students, each consuming four books at a price of \$25 per book.

	A	B	C	D	E	F	G	H	I
1		Original Budget:							
2									
3		Budgeted Volume		Budgeted Quantity		Budgeted Price			
4		320	x	4	x	\$25	=	\$32,000	

However, consider just the change caused by the number of students enrolled. We can calculate a Flexible Budget (often called a Flex Budget) that uses budgeted information for everything except volume.

	A	B	C	D	E	F	G	H	I
7		Flex Budget:							
8									
9		Actual Volume		Budgeted Quantity		Budgeted Price			
10		360	x	4	x	\$25	=	\$36,000	

If we compare the difference between the Original Budget and the Flex Budget, we can find the Volume Variance. That is the portion of the total \$5,800 unfavorable variance that was in fact due to the number of students enrolled.

	A	B	C	D	E	F	G	H	I
13		Original Budget Versus Flex Budget:							
14									
15		Budgeted Volume	x	Budgeted Quantity	x	Budgeted Price			
16		Actual Volume	x	Budgeted Quantity	x	Budgeted Price			
17									
18		or							
19		320	x	4	x	\$25	=	\$32,000	
20		360	x	4	x	\$25	=	36,000	
21						Volume Variance	=	\$4,000 U	
22									

Note that the only difference between the Original Budget and the Flex Budget is the Budgeted Volume versus the Actual Volume (shown in bold). Both the Original Budget and Flex Budget are calculated using the budgeted quantity and budgeted price information. The superintendent was correct in saying that the higher-than-expected number of enrolled students caused an unfavorable variance. However, that explains only \$4,000 of the total \$5,800 unfavorable variance. What else is going on?

The school district expected to buy four books per student. Actually, it purchased five books per student. This gives rise to a Quantity Variance, because the school district used more books per student than it had planned in the budget. The school district can create a *Volume and Quantity Adjusted (VQA) Budget* that indicates what it would have expected to pay for books if it had known both the actual number of students and the actual number of books per student:

	A	B	C	D	E	F	G	H	I
24		VQA Budget:							
25		Actual Volume		Actual Quantity		Budgeted Price			
26		360	×	5	×	\$25	=	\$45,000	
27									

This budget is similar to the Flex Budget in that it is a mix of budgeted and actual information. The Flex Budget looks at the actual number of students (volume), but uses the budgeted quantity of books per student and the budgeted price per book. The VQA Budget used the actual number of students, the actual number of books per student, and the budgeted price per book. If we compare these two calculations, we can find the Quantity Variance.

	A	B	C	D	E	F	G	H	I
30		Flex Budget Versus VQA Budget:							
31									
32		Actual Volume	×	Budgeted Quantity	×	Budgeted Price			
33	–	Actual Volume	×	Actual Quantity	×	Budgeted Price			
34									
35	or								
36		360	×	4	×	\$25	=	\$36,000	
37	–	360	×	5	×	\$25	=	45,000	
38						Quantity Variance	=	\$9,000 U	

The only element that differs between the Flex Budget and the VQA Budget is the Budgeted Quantity versus the Actual Quantity (shown in bold). Notice that the combined total of the Volume Variance and the Quantity Variance is \$13,000 unfavorable. However, the total variance was only \$5,800 unfavorable. Something else must be going on.

The school paid only \$21 per book, which is \$4 per book less than the expected price of \$25. The actual amount paid for books was:

	A	B	C	D	E	F	G	H	I
41		Actual:							
42									
43		Actual Volume		Actual Quantity		Actual Price			
44		360	×	5	×	\$21	=	\$37,800	

We can compare the VQA Budget to the Actual amount spent to determine the Price Variance. This variance is caused by paying a different amount per book than expected.

	A	B	C	D	E	F	G	H	I
48		VQA Budget Versus Actual:							
49									
50		Actual Volume	×	Actual Quantity	×	Budgeted Price			
51	–	Actual Volume	×	Actual Quantity	×	Actual Price			
52									
53	or								
54		360	×	5	×	\$25	=	\$45,000	
55	–	360	×	5	×	\$21	=	37,800	
56						Price Variance	=	\$7,200 F	

The only difference between the VQA Budget and the Actual amount spent is caused by the price. The former uses the budgeted price that was paid for each book purchased, on average, while the latter is based on the actual price per book (shown in bold).

The combined total for the Volume, Quantity, and Price Variances is \$5,800 unfavorable (\$4,000 U + \$9,000 U – \$7,200 F = \$5,800 U). The Total Variance is unfavorable, despite a savings of \$7,200 realized because the school district was able to purchase books at a lower-than-expected price. The savings was partially offset by the increased number of students, but part of the reason for the unfavorable total variance is the increased number of books purchased per student. Why did the school district buy more books per student than budgeted?

It is possible that no one was tracking the number of books that teachers were ordering. Meanwhile, the purchasing office did a terrific job negotiating lower prices for books. If that is what happened, the school district needs to acknowledge the fine job done by purchasing but also needs to improve controls to prevent teachers from ordering books without regard to the budget. Alternatively, it is possible that teachers decided to replace one large, expensive book with several smaller, less expensive books. If so, the school district needs to consider that the extra cost of buying more books (the \$9,000 unfavorable Quantity Variance) was greater than the savings from buying less expensive books (the \$7,200 favorable Price Variance). It must investigate to see if the switch in books resulted in an improved outcome that justified the net \$1,800 increase in cost beyond the \$4,000 increase caused by the additional students.

The key is that by subdividing a variance into component parts, we get a better sense of what happened. Managers can then investigate the specific Volume, Quantity, and Price Variances and decide what management action, if any, is needed to better control operations and keep to the approved budget.

It should be noted that there are conventions about the way that variances are computed. One could come up with alternative approaches that shift variables from budget to actual in a different order than shown earlier or that use only one actual value and keep the budgeted value for the rest of the variables for all of the variance computations. The problem with such alternative approaches is that they often result in volume, quantity, and price variances that don't sum to the total variance. For consistency and in order to ensure that the parts equal the whole, the approach used here is the common convention for computing variances.

The above approach goes step by step to show the development of the different types of variances. In practice, to compute them we would first gather the six data input elements (i.e., the budgeted and actual volume, quantity, and price) and enter them into a spreadsheet in a format such as:

	A	B	C
1		Actual	Budget
2	Number of Students (Volume)	360	320
3	Books per Student (Quantity)	5	4
4	Cost per Book (Price)	\$21	\$25
5			
6	Total	\$37,800	\$32,000

Note that the three variables in column B are multiplied to find the actual total cost and the three variables in column C are multiplied to find the budgeted total cost. That is, the value in Cell B6 is found by the formula $=B2*B3*B4$ and the value in Cell C6 is found by the formula $=C2*C3*C4$.

We can then insert two additional columns between B and C (moving the budget values to column E) to show the values that would be used to determine the Flex Budget and the VQA Budget:

	A	B	C	D	E
1			VQA	Flex	
2		Actual	Budget	Budget	Budget
3	Number of Students (Volume)	360	360	360	320
4	Books per Student (Quantity)	5	5	4	4
5	Cost per Book (Price)	\$21	\$25	\$25	\$25
6					
7	Total	\$37,800	\$45,000	\$36,000	\$32,000

Note that the totals for Cells C7 and D7 are found in the same way as we found the total for Cell B7. Once we have that basic information the variances can be computed as follows:

	A	B	C	D	E
1			VQA	Flex	
2		Actual	Budget	Budget	Budget
3	Number of Students (Volume)	360	360	360	320
4	Books per Student (Quantity)	5	5	4	4
5	Cost per Book (Price)	\$21	\$25	\$25	\$25
6					
7	Total	\$37,800	\$45,000	\$36,000	\$32,000
8					
9					
10	Variance Due to Volume	(\$4,000) U			
11	Variance Due to Quantity	(9,000) U			
12	Variance Due to Price	7,200 F			
13	Total Variance	(\$5,800) U			

The Volume Variance in Cell B10 is found by subtracting the Flex Budget from the Original Budget. The formula for Cell B10 is =E7–D7. The Volume Variance is shown here as a negative number. Up until now, we have used a U to indicate an unfavorable variance and an F to indicate a favorable variance. Most organizations use negative and positive numbers rather than showing a U or F. Either way is fine, as long as the practice is consistent throughout the organization.

The Quantity Variance is found by subtracting the VQA Budget from the Flex Budget. The formula for Cell B11 is =D7–C7. The Price Variance is found by subtracting the Actual result from the VQA Budget. The formula for Cell B12 is =C7–B7. And the Total Variance is found simply by summing the Volume, Quantity, and Price Variances. We can check our work by making sure the sum of Cells B10 + B11 + B12 adds to the same value as the Original Budget in E7 less the actual result in B7.

Logical operators can be used to automatically determine and indicate whether a variance is favorable or unfavorable. For example, the formula for Cell C10 is =IF((E7–D7)<0, U, F). That should be read as, “If the value of Cell E7 minus the value of Cell D7 is less than 0, then C10 should be U; otherwise it should be F.”

Determination of the Causes of Variances

The volume, price, and quantity variances provide greater direction for the manager. They help to focus the area of investigation. If a line-item variance is caused primarily by the price variance, the manager can explore why prices differed from expectations. If the variance is primarily attributable to volume, the manager can try to determine what caused the change in volume. However, the analysis cannot tell the manager the ultimate cause of the variance. Managers still have to determine *why* these variances have occurred.

For instance, variance analysis will not tell why more students have enrolled in Millbridge’s schools, why more books have been used, or why it paid less per book. But rather than simply knowing that the cost of books is over budget, the school district knows where to focus investigation. If it used more books per student, was it done to enhance education or because the school misplaced 100 expensive textbooks over the summer and had to replace them? Were books stolen, or did changes in world history dictate that it buy newer editions, even though the old books were not worn out?

If the organization does not care about the answers to these questions, the variance process can be done primarily by financial managers. However, if the organization wants to use its resources efficiently, it must get answers to questions such as these. Getting these answers requires the experience and judgment of the managers who supervise each area of the organization’s activities.

Common internal causes of variances include shifts in quality of service provided, changes in technology used, changes in efficiency, changes in organization policy, or simply budgets based on unrealistic expectations. External causes of variances commonly include price changes for supplies, volume changes, and unexpected shifts in the availability of staff.

Aggregation Problems

In doing variance analysis, the more we aggregate information, the greater the chance that we will misinterpret what has happened. An entire organization may spend nearly the same amount for a given month as it expected. In total, there is nearly no variance. However, that does not mean that there are no problems that need to be investigated.

Some departments might have large favorable variances, and other departments might have large unfavorable variances. Even if these offset each other, the organization would need to investigate these large variances to see why they are occurring. So managers cannot rely solely on variances measured for the entire organization; they need variance information department by department.

Even further, it is possible that the total variance for one department might be small. However, there might be one line item within the department that has a large favorable variance and another that has a large unfavorable variance. For example, salaries may be extremely over budget and supplies extremely under budget. It is not enough to look at the overall spending of the department. Managers must examine the actual and budgeted results line by line.

However, managers cannot rely on information from the total variance for a given line item, either. Recall that each line-item variance may be subdivided into its volume, price, and quantity subcomponents. For example, for one line item in one department, it is possible that there might be a favorable volume variance and an unfavorable quantity variance. These variances might offset each other. When managers look at the total variance for the line item, it is small and does not appear to be of consequence. However, when they employ flexible budget variance analysis and consider the price, quantity, and volume variances that make up the total variance for the line item, they find that there are problems to be investigated.

This could potentially call attention to a serious problem. For instance, suppose that in one department of HOS, the number of patients is falling but staffing has not been reduced. The salary line item will not show any variance in total. As the volume of work is falling, the volume variance is favorable. But if HOS does not reduce staffing, it will be consuming more staff time per patient. So there will be an unfavorable quantity variance. If these two variances offset, which is likely, the manager may fail to see the departmental problem. The department is using too much staff time per patient without being aware of it.

Thus, it is essential to calculate price, quantity, and volume variances for every line item of every department. That way organizations will have a much better chance of detecting problems at an early stage.

Exception Reporting

For large organizations with numerous departments, we cannot expect either the CEO or the chief financial officer (CFO) to have time to review all variances each month. To cope with this problem, organizations use *exception reports* to list only those variances that are deemed to warrant a manager's attention. Thus, organizations would calculate all variances, but the CEO might just review a report with a brief listing of the most significant ones. Since variance reports are often prepared on a computer, this process is relatively simple.

The CEO, for example, might review all variances that are greater than \$10,000 or more than 20 percent over or under budget. The CFO in turn might review a listing of all variances that are more than \$5,000 or 10 percent. The exact cutoffs used can be determined by individual managers. If an organization's director believes in tight, centralized control, the cutoffs will be relatively low. Other managers who prefer to allow the organization to be run on a decentralized basis will want to review only variances that are extremely large.

Although high-level managers will receive only summary exception reports, all variances should be reviewed monthly. Each department head should be examining a listing of all variances for his or her department. If the department is particularly large and a number of managers report to the department director, then the director might look at only an exception report. However, the managers who report to that director would each closely review all variances for their area of the department.

Fixed and Variable Costs

A key element of flexible budget variance analysis is the concept that the flexible budget may differ from the original budget because of a change in volume. However, this assumes that the line item being evaluated represents a variable cost. If costs are fixed, the amount of resources consumed would not change as a result of a change in activity.

In the case of fixed costs, the original and flexible budgets would be the same, and the volume variance would be zero. Furthermore, in the case of some fixed costs such as rent, it may not be helpful to separate the variance into price and quantity components. Therefore, it may be necessary to evaluate the total variance for the line item without the aid of subdivision into components for some fixed-cost line items.

Investigation and Control of Variances

One of the more perplexing aspects of variance analysis is deciding when a variance is large enough to warrant investigation. Should a manager investigate a \$100 variance? How about \$500? \$1,000? How big a variance is too big to tolerate without investigation?

Random, uncontrollable events will cause actual results to vary over and under the budget from month to month. It would be unusual for spending to come out to be exactly the budgeted amount. Therefore, small variances are often ignored because organizations shouldn't waste managers' valuable time investigating minor random variances. They do, however, want to investigate any variances that would indicate that spending is out of control.

But how much is small? Unfortunately, there is no general agreement on an answer to this question. Managers must use their skill, judgment, and experience to determine how large a variance represents a potentially important problem that we would need to investigate and that might possibly require corrective action.

Sometimes control charts are used to determine if a variance is so large that it must be investigated. [Exhibit 8-2](#) provides an example of a variance analysis control chart. In the chart, the monthly budgeted value for labor costs has been plotted for an entire year. A range above and below the budget has also been plotted. That range can be a set dollar amount above or below the budget, or it might be a percentage above or below the budget, or perhaps a statistical measure, such as 2 standard deviations above or below the budget. In this case, the control limits have been plotted 20 percent above and below the budget. In each organization, managers must decide what amount or percentage is so great that if it is exceeded there is a great enough potential that things are getting out of control and that investigation of the variance is needed.

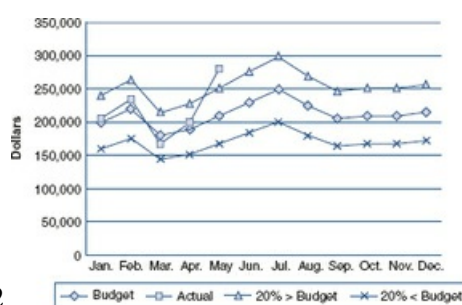


Exhibit 8-2

As each month goes by, the actual value is plotted onto the control chart. Here we see that everything proceeded fine for January through April. Each month the actual result differed from the budget, but the actual result was within the upper and lower control limits. However, in the most recent month, May, we see that spending appears significantly over budget. The actual result was higher than the upper control limit. Managers would have to investigate and see if there are reasonable explanations for the higher spending or if managerial action is needed to get spending back under control. Control charts can be a valuable managerial tool in the area of variance analysis.

Revenue Variances

Up until this point, this chapter has focused on expense variances. Virtually every manager who has budgetary responsibility will need to be able to examine his or her expense variances and determine their causes. Managers may also be called on to determine why actual revenues differed from budgeted amounts.

Just as with expense variances, it helps little to know the overall variance between the total revenue budgeted for the organization and the actual total revenue. At a minimum, we would want to divide revenues into the various different types of products and services provided. Thus, HOS might want to divide its revenues into those that come from inpatient care and those that come from outpatient treatments. The hospital might want even more detail. For example, it might want to examine revenues for gall bladder surgery, hernia surgery, and heart surgery separately.

The town of Millbridge might be interested in assessing *revenue variances* related to receipts from the local

town real estate taxes separately from variances in the amount of state aid received. Note that revenues and expenses do not necessarily align. For example, we could consider expenses for Millbridge based on salaries and supplies. The revenues, however, are divided by source: real estate taxes versus state aid.

Just as flexible budget variance analysis is useful for examining expense variances, it can be helpful for revenue variances. Suppose that the total revenue HOS received for gall bladder surgery differed from expectations. Why might this have happened? There could be several reasons.

Perhaps there were more gall bladder surgeries than expected, resulting in a volume variance. The hospital would have more revenue from gall bladders than expected because it had more paying patients. The original budget would be the budgeted price per surgery multiplied by the budgeted number of surgeries. By contrast, the flexible budget would be the budgeted price per surgery multiplied by the actual number of surgeries.

Alternatively, the organization may have changed the price it charges for each gall bladder surgery. If the average price for gall bladder surgery is higher or lower than budgeted, that will change the total amount of revenue received for that type of surgery.

There is no quantity variance because there is no comparable concept. The quantity expense variance implies a change in the amount of resource consumed per unit of output. There is no comparable concept on the revenue side. However, it is possible to have a *mix* or *case-mix variance*. Suppose that rather than evaluating the revenue variance for gall bladders, HOS was interested in looking at the variance related to all surgeries. One possible explanation for a revenue variance would be the mix of patients. There might have been more of the expensive procedures and less of the inexpensive procedures than expected. Thus the total revenue variance for any line item might be divided into the portion resulting from the volume of patients, the portion resulting from the mix of patients, and the portion resulting from the prices charged.

When organizations spend more than expected, that is referred to as an unfavorable variance. This makes sense given that, other things being equal, one thinks of spending more than is budgeted as being unfavorable. The reverse holds true with revenue variances. A higher actual revenue than expected is called a favorable variance because, other things being equal, one thinks of higher revenues than are budgeted as being favorable. As noted earlier, however, great care is needed in interpreting whether favorable or unfavorable variances are really good or bad for the organization.

Example

Suppose that the Hospital for Ordinary Surgery (HOS) had revenue of \$339,000 for January, which was below the expected revenue of \$350,000. Preliminary investigation has perplexed HOS's managers as the actual number of surgeries performed was 130, compared to a budgeted level of 125. Even more disturbing was that revenue fell although the average revenue per patient had increased for gall bladder surgery, the hospital's most common procedure. Flexible budget analysis can provide additional information about the \$11,000 unfavorable revenue variance.

Suppose that HOS performs only two types of surgery: gall bladder and hernia repair. It was expected that 80 percent of the surgeries would be gall bladder and 20 percent would be hernia repair. Assume that HOS's expected average revenue for gall bladder cases to be \$3,000. There were actually 90 gall bladder patients, and the actual revenue per case averaged \$3,100. For hernias, the expected revenue was \$2,000 per case, but the actual average revenue was \$1,500, and there were 40 cases. This information can be used to calculate volume, mix, and price variances.

The Original Budget consists of the combined budgeted cost of gall bladder and hernia patients. That could be calculated as follows:

	A	B	C	D	E	F	G	H
1	Original Budget:							
2								
3		Budgeted Volume		Budgeted Mix		Budgeted Price		
4	Gall Bladders:	125	×	80%	×	\$3,000	=	\$300,000
5	Hernias:	125	×	20%	×	\$2,000	=	50,000
6								\$350,000
7								

The Flexible Budget is calculated based on the Actual Volume and the Budgeted Mix and Price, as follows:

	A	B	C	D	E	F	G	H
8	Flex Budget:							
9								
10		Actual Volume		Budgeted Mix		Budgeted Price		
11	Gall Bladders:	130	×	80%	×	\$3,000	=	\$312,000
12	Hernias:	130	×	20%	×	\$2,000	=	62,000
13								\$364,000
14								

Note that the only difference between the Original Budget and the Flex Budget is the use of the Actual Volume (shown in bold) instead of the Budgeted Volume.

The Volume Variance can be calculated by comparing the Original and Flex Budgets as follows:

	J	K	L	M	N	O
1	Volume Variance					
2						
3		Original Budget		\$350,000		
4		- Flex Budget		364,000		
5		Volume Variance		\$14,000	F	

The increase in volume is responsible for a favorable Volume Variance of \$14,000. Note that for revenues, an increase in volume results in a favorable variance. That is, we originally expected \$350,000 of revenue. With the higher volume, the Flex Budget is a higher amount: \$364,000. Higher revenues than budget result in favorable variances.

Next, HOS can create a Volume and Mix Adjusted (VMA) Budget that indicates what the hospital would have expected revenue to be, if it had known both the actual number of patients and the actual mix of patients.

	A	B	C	D	E	F	G	H
16	VMA Budget:							
17								
18		Actual Volume		Actual Mix		Budgeted Price		
19	Gall Bladders:	130	×	(90÷130)	×	\$3,000	=	\$270,000
20	Hernias:	130	×	(40÷130)	×	\$2,000	=	80,000
21								\$350,000
22								

The only difference between the Flex Budget and the VMA Budget is caused by the use of the Actual Mix (shown in bold). In calculating the VMA Budget, the Actual Volume, Actual Mix, and Budgeted Price information is used. The Actual Mix consists of the specific volume for each product or service divided by the total volume. Comparing the Flex Budget to the VMA Budget provides a measure of the variance due to the change in patient mix.

	J	K	L	M	N	O
7			Mix Variance			
8						
9			Flex Budget		\$364,000	
10			- VMA Budget		<u>350,000</u>	
11			Mix Variance		<u>\$14,000</u>	U

The mix has shifted in a way that lowers revenue. Lower revenue results in an unfavorable variance. There are now 90 gall bladder patients out of a total of 130 patients. That is 69 percent ($90 \div 130 \times 100\% = 69\%$), which is lower than the expected 80 percent. This means that there is a greater-than-expected proportion of patients that are the lower-revenue hernia patients rather than the higher-revenue gall bladder patients.

The last variance to be calculated is the price variance, which compares the VMA Budget to the Actual results. The Actual revenues are:

	A	B	C	D	E	F	G	H
24	Actual Revenue:							
25								
26		Actual Volume		Actual Mix		Actual Price		
27	Gall Bladders:	130	x	(90÷130)	x	\$3,100	=	\$279,000
28	Hernias:	130	x	(40÷130)	x	\$1,500	=	<u>60,000</u>
29								<u>\$339,000</u>
30								

Comparing the VMA Budget to the actual result:

	J	K	L	M	N	O
13			<u>Price Variance</u>			
14						
15			VMA Budget		\$350,000	
16			- Actual		<u>339,000</u>	
17			Price Variance		<u><u>\$11,000</u></u>	U

Even though the average revenue per gall bladder case rose, and most cases were gall bladder procedures, the sharp decrease in hernia repair revenue per patient resulted in an unfavorable \$11,000 Price Variance. In fact, the shift toward a greater proportion of hernia patients, combined with the lower-than-expected revenue per hernia patient, more than offset the favorable \$14,000 Volume Variance. The \$14,000 F Volume Variance less the \$14,000 U Mix Variance less the \$11,000 U Price Variance results in a total \$11,000 U Revenue Variance. The hospital is unwise to base its revenue expectations simply on overall volume of patients or the price of its most common procedure.

Performance Measures

This discussion largely centers on the evaluation of input variances. We have been attempting to assess, for example, why more money than expected was spent on labor. Variance analysis can also be used to focus the manager's attention on variations in accomplishments. (Recall the discussion of performance measurement earlier in this chapter.)

Perhaps a city government water agency has budgeted a certain allowable level of contaminants in the drinking water. The agency would certainly want to compare the actual levels to the budgeted levels and investigate any significant variations. Similarly, if a school system has budgeted certain levels of performance on standardized tests, part of the routine variance analysis undertaken by the school system should be examination of how much the results differed from expectations and why.

Ethics

Having a public service mission does not guarantee that all behavior within an organization will be ethical. In late 1997, congressional hearings disclosed widespread abuses at the Internal Revenue Service (IRS). The IRS was accused of unethical behavior by many taxpayers. Several years earlier, top management at United Way was accused of improper spending. Overcharging for services, charging for services that have not been provided, paying bribes or improper referral fees, and similar practices are not new. Certainly, these activities have occurred in some organizations. And, realistically, it is likely that they will continue to occur. However, we must be careful to avoid thinking that such activities are acceptable. “Everyone does it” is just as incorrect a generalization as “no one cheats.” Both represent extreme and unrealistic positions.

A survey of most managers in public, health, and not-for-profit organizations would likely show that they strongly support ethical behavior. Yet, due to limited resources, managers of such organizations often come under severe financial pressures. These pressures can lead financial managers to make improper decisions in an effort to help their organizations. Further, there have been instances in which people let the opportunity for personal financial gain cause them to engage in unethical activities, including fraud and embezzlement.

Ethical behavior may be clear-cut in the abstract, but in practice it often becomes hard to draw the line between the clearly acceptable and the clearly unacceptable. Things that are within the letter of the law may not be in the spirit of the law. Things that may be correct in principle may not be legal. This section discusses some of the ethical behavior expectations various financial management organizations have for managers. These expectations are based on a code of ethics designed to help managers deal with some difficult realities that confront them.

A Code of Ethics

Various organizations promulgate codes of ethics for their members. One such organization is the Government Finance Officers Association (GFOA). Another is the Institute for Management Accountants (IMA).⁷ The GFOA “is a professional organization of public officials united to enhance and promote the professional management of governmental financial resources by identifying, developing and advancing fiscal strategies, policies and practices for the public benefit.”⁸ The IMA’s membership consists primarily of management accountants. Its members work in the area of financial management within organizations, including both the private and public sectors. Many readers of this text will become managers in areas aside from financial management. Nevertheless, it is beneficial to get a perspective on ethics from several of the financial management professional associations.

7. Formerly called the National Accountants Association (NAA).

8. Government Finance Officers Association (GFOA), Code of Professional Ethics: www.gfoa.org/about-gfoa/code-professional-ethics.

We first discuss the basic framework of the IMA’s code. It can provide useful guidance as one is faced by

ethical dilemmas in carrying out management activities. One should not expect a code of ethics to provide specific answers to all ethical issues questions that arise. However, it can provide a foundation of principles upon which to make decisions. The IMA code has four primary elements: competence, confidentiality, integrity, and objectivity.⁹ Although the IMA code is discussed here, it is done so only to provide an example. Other associations may have a code that applies more directly to the types of problems and dilemmas faced in different areas.

9. National Association of Accountants, *Statements on Management Accounting*, New York, N.Y.: June 1, 1983.

Competence

The IMA code indicates an expectation that people must be competent in their job; it is unethical to be incompetent. At first, this seems to be very strange indeed. How can it be unethical behavior to not be very good at what you do? After all, you are today what you were when you were hired. The employer knew what it was getting.

However, things change. The IMA code really addresses the need for professionals to maintain their competency over time. To some extent, this means managers must find ways to ensure that their skills are not eroding. It also means that as the field changes a professional has an obligation to keep up to date. An individual's knowledge and skills should be constantly developing and improving.

A second part of competence relates to compliance. Ethical behavior requires managers to comply with all laws, regulations, and industry standards. Illegal is unethical. This appears to be one of the easier standards to understand. Unfortunately, ethical dilemmas arise because choices are not always as clear-cut as one might hope: What should one do if one does not agree with a law? What if one feels that the law is foolish or morally wrong? The guidance of the IMA code is that rather than break the law, a professional should employ expert help to find a legal way to achieve the ends he or she believes are morally justified.

The IMA code also calls upon its members to generate reports that are understandable and comprehensive. They should be based on appropriate analysis using dependable information. Many existing nonfinancial managers in public service organizations, if they knew about this clause, would immediately say that there is not an ethical financial manager in their organization. That reaction, although part in jest, contains enough seriousness to warrant some thought. Many reports in public service organizations are not easily understandable, not comprehensive, or not based on reasoned analysis. Yet those goals are important enough to the overall success of the organization that the accountants' own code considers it unethical to not at least make an effort to achieve them.

Confidentiality

A second major section of the IMA code relates to the issue of confidentiality. Information that is confidential must be protected. It is unethical to disclose confidential information unless properly authorized by the organization or legally required to do so. Access to confidential information can sometimes be abused to

create personal financial gains. The code specifically prohibits use, or even the appearance of use, of confidential information to make an illegal or unethical gain either for oneself or for others.

Integrity

Integrity is a major focus of the code. Ethical behavior bans conflicts of interest, inappropriate influence, bribes, working against the organization, failure to disclose personal skill inadequacies, and failure to disclose important information. Whether conflicts of interest are real or just perceived, they should be avoided. When they do arise, they should be disclosed and actions taken to resolve the conflict.

Inappropriate influence relates to the fact that one should not do anything to keep another person from acting in an ethical manner. A common example of this is an attempt to suppress a subordinate from disclosing something that might show the manager or organization in an unfavorable light.

Bribes and other payments for influence are clearly attempts to gain undue influence. Accepting any gift, whether monetary or just a favor, should be avoided if it might influence, or even appear to influence, one's actions.

Working against the organization should be a problem we do not have to worry about, if we have developed an adequate MCS, as discussed earlier in this chapter. We should try to motivate everyone to work in the interests of the organization. In reality, however, many organizations fail to consider adequately the concerns of their employees. As a result, employees at times feel a desire to get back at the organization for a real or perceived injury that the organization has done to them.

Well, revenge may be sweet, but when carried out against one's employer, it is also considered unethical. Any activities that hinder the organization from attaining its legal and ethical goals are unethical. Conversely, people must guard against the organization influencing them to do things that are not ethical. If an action is inappropriate, it is not unethical to hinder the organization in its attempt to carry out that action. Many federal statutes now protect whistle-blowers.

Ethical behavior requires a person to disclose his or her limitations. Although many believe that professionals should be expert in all technical aspects of a subject, that is clearly an unrealistic expectation. A simple way to make this point is simply to ask skeptical supervisors whether they would want their primary care physician to perform neurosurgery on them. This quickly helps to differentiate the role of the well-trained skilled professional from that of the highly technical specialist. Very few can be specialists in all areas, and it is inappropriate to hold oneself out to be expert in areas that are beyond one's expertise.

The final issue related to integrity involves being the bearer of bad news. Despite the tendency to kill the messenger, the IMA code requires managers to communicate complete, accurate information and honest judgments and opinions, whether they report favorable outcomes or not.

Objectivity

Information should be communicated in a way that is fair, objective, and relevant. Unfortunately, one person

may see fairness in a different way than another person. Therefore, intent is critical. It is inappropriate to present material in a way that is technically accurate but might give the user an incorrect impression. Further, managers should make every attempt to provide the information that is relevant to the decision at hand.

The GFOA Code

The IMA code provides just one perspective on the ethical issues faced by managers. The GFOA code has considerable overlap with the IMA code and introduces its own elements as well.

The first two sections of the GFOA code provide an indication of the public service focus of GFOA members. The first section notes that “government finance officers shall demonstrate and be dedicated to the highest ideals of honor and integrity in all public and personal relationships, to merit the respect, trust and confidence of governing officials, other public officials, employees, and of the public.”¹⁰ The second section focuses on the responsibility government finance officers have in their role as public officials.

10. GFOA, Code of Professional Ethics.

Although those sections differ substantially from the IMA code, there is also substantial similarity. The GFOA code discusses the need for professional development (see “Competence” section of the IMA code), integrity (see “Integrity” section of the IMA code), and avoiding conflict of interest (see “Integrity” section of the IMA code). Other codes of ethics may add other elements relevant to the primary group to whom the code is directed.

Gray Areas

Formal codes of ethics, such as the IMA and GFOA codes, can be a useful foundation for developing a pattern of ethical behavior. Unfortunately, managers are frequently caught in gray areas. A code cannot anticipate all possible occurrences. Just because something is not explicitly forbidden does not make it ethical. One’s own judgment and common sense must be used. However, the principles encompassed by formal codes of ethical behavior can provide managers with at least some guidance when they realize that common sense alone may not provide a clear answer to an ethical issue.

Safeguarding Resources

MCSs, performance measurement, and ethical behavior are three important elements of accountability and control. They are critical elements of internal control. Organizations need to implement systems that will encourage and motivate their employees to achieve their goals. They should find appropriate ways to measure the organization's performance. They should also hire ethical people and create a culture that rewards ethical behavior and clearly condemns unethical behavior. Unfortunately, even if all of these approaches are adopted, there may still be some employees who will try to achieve personal gains at the expense of the organization. To protect the resources of the organization, additional elements of an internal control system are needed.

As the definition provided early in the chapter indicates, internal control is a broad topic relating to successful implementation of management's plans. Internal control includes actions to ensure efficiency and effectiveness of operations, compliance with all relevant laws, and reliable reporting of financial results.¹¹ As part of the broad goal of achieving efficiency and effectiveness, internal control works to ensure that assets are safeguarded. This is accomplished through having an appropriate control environment, risk assessment, control activities, communication, and monitoring.¹²

11. Taylor, pp. 1–17.

12. Ibid.

Internal control systems include a set of *accounting controls* and a set of *administrative controls*. Accounting controls are often referred to as preventive, or before-the-fact, controls. Although a primary purpose of accounting controls is to prevent employee misuse of assets (such as embezzlement and fraud), they also attempt to prevent suboptimal use of resources where no wrongful intent is involved. Administrative controls tend to be after-the-fact. They are often referred to as feedback systems. After a loss is incurred, administrative controls help the organization take corrective actions to avoid additional losses in the future. This is done by making adjustments based on observed problems in the past.

For example, a system of budgeted or “standard” costs for each type of patient at HOS would be an accounting control. Having a projection of what it should cost to treat each type of patient provides employees with a target to work toward. This before-the-fact information tends to prevent unlimited spending. By contrast, variance reports compare actual results with expectations, and they are administrative controls.

Accounting and administrative controls are coordinated to minimize avoidable losses. According to the American Institute of Certified Public Accountants (AICPA), control should include four key areas:

1. There should be a system of management authorization, and key activities should not be able to occur without such authorization.
2. Once authorization occurs, financial transactions should be recorded in a manner to allow for preparation of financial statements and to allow for adequate accountability for assets.
3. Access to assets should be limited to those having the authorization of management.

4. Existing assets are compared with assets listed in the organization's records from time to time, and differences are reconciled.¹³

13. Auditing Standards Executive Committee, American Institute of Certified Public Accountants. *Statement on Auditing Standards No. 1—Codification of Auditing Standards and Procedures*. New York, N.Y.: AICPA, 1973, p. 20.

Elements of a Control System

There are a number of elements of an internal control system. One of the most important of these is an audit trail. Horngren and Foster discuss the importance of having reliable personnel with clear responsibilities; separation of functions; proper authorization; adequate documentation; proper procedures; physical safeguards; bonding, vacations, and rotation of duties; performance audits; and cost-effectiveness analysis.¹⁴ Each of these elements is discussed subsequently.

14. Charles T Horngren and George Foster. *Cost Accounting: A Managerial Emphasis*, 6th ed. Upper Saddle River, N.J.: Prentice Hall, 1987, pp. 919–922.

Audit Trail

The first element in accounting control is to establish a clear *audit trail*. An audit trail refers to the ability to trace each transaction in an accounting system back to its source. For example, suppose that the town of Millbridge spent \$5,000,000 on public works for the year. That might seem to be an inordinately large amount. Perhaps the budget for public works was only \$4,000,000. There must be some way to track backward to see why so much money was spent—25 percent more than budgeted. The \$5,000,000 total public works spending should be supported by documents that allow one to trace the spending back to its various components.

For example, within the accounting records of the town, we might find that Millbridge spent \$1,000,000 on snow removal, \$2,000,000 on garbage collection, and \$2,000,000 on road repair. Suppose that the snow removal and garbage collection costs were exactly what we might expect. However, the road repair was double the budget. An audit trail should allow a manager to trace back to see what the \$2,000,000 was spent on. The manager might look at a detailed listing of the various major road repair expenditures. These might consist of \$100,000 for normal pothole repair, \$900,000 for scheduled repaving projects, and \$1,000,000 for emergency bridge repair. It turns out that a bridge unexpectedly collapsed. Since the bridge was the only way to connect two major areas of the town, an emergency ordinance was passed authorizing immediate repair, even though the cost was not in the original capital budget.

By having a clear audit trail, we are able to trace back to why expenditures exceeded originally authorized amounts. The existence of the audit trail serves as a preventive device. If an unscrupulous employee knew that we did not have good audit trails, he or she might feel safer in misappropriating money. That employee might assume that we would never be able to backtrack and find where the money went. When people recognize that all spending is carefully documented and that an audit trail will allow the organization to retrace the steps

in the accounting process back to the source of unusual expenditures, they may be inhibited from inappropriate spending.

The audit trail requires documentation of how financial transactions flow from the initial entry of the transaction to the ultimate summary report. In order for an audit trail to be effective as a tool for control, the trail must be regularly used to identify and examine discrepancies or unusual spending patterns. If employees knew that a trail was kept but investigations never took place utilizing that information, it would not have as strong a preventive influence as if it were used regularly.

Although audit trails are very helpful, they are not adequate by themselves. Clever individuals might still be able to find ways to misappropriate resources. Careless individuals might still make errors that waste resources. Therefore, an internal control system requires additional elements, as discussed in the remaining sections of this chapter.

Reliable Personnel

All people, even those who are both well intentioned and careful, make mistakes. Internal control systems install checks and balances to try to catch and correct such mistakes. Some of these approaches are discussed next. In the end, however, we must rely on fallible people to carry out the elements of the system. The organization must start its internal control system by having a group of employees who are both capable and trustworthy. In addition, employees must be capably supervised.

Separation of Functions

One of the most common elements of an internal control system is separation of functions. For example, the individual at Meals for the Homeless who approves bills for payment should not be the same person who writes checks. And the person who writes checks should not be the same person who signs the checks. In small organizations, it is difficult to accomplish appropriate separation of duties. However, even if there are too few employees to attain total separation, some degree of control is possible. For example, the treasurer from the board of trustees can be the person who signs the checks.

The benefit of such separation is that each person may catch a problem that is missed by another. If a bill is not correct, the person approving payment should catch it. If not, the person writing the check for payment may find the problem. Even if neither of them finds the problem, the person signing the check may raise a question about the payment, which leads to discovery of the problem. This system of separation is also an especially powerful tool for reducing the potential of embezzlement.

If the same person authorizes payments, writes checks, and signs them, that person has the ability to steal money with a minimum likelihood of detection. By separating functions, such activity becomes more likely to be discovered and therefore less likely to occur.

Another example of separation is keeping operations separate from accounting. For example, HOS has a central supply department that stores all of the supply items for the hospital. This department should not be the one responsible for making periodic checks of the amount of supplies on hand (called “taking an

inventory”). The members of the department have access to these supply items, and there is the potential of theft. If the same people count the supplies, they can falsify records to hide the theft. If they know that independent individuals from elsewhere in the organization will count the supplies, they know there is a possibility of the theft being discovered.

Note, however, that discovery is not a primary goal of the internal control system; prevention is. By letting people know that theft is likely to be discovered, it is discouraged and less likely to occur.

However, any control system can be defeated. Separation of functions will not protect resources if several people collude to steal from the organization. If the person approving payment, the person writing checks, and the person signing checks all agree to steal money and share it, it will be hard for the control system to prevent such actions. That is why having reliable employees is one of the most important elements of a control system.

Proper Authorization

Another control element is to require all spending to be supported by proper authorization. A system of authorization for spending helps the organization set spending policies and then adhere to them. For example, a policy decision might be that all air travel is done in coach. But the organization may have thousands of employees. What is to stop one of them from buying and using a first-class air ticket and charging the organization for the higher first-class airfare?

Organizations accomplish this by establishing formal authorization mechanisms. Expenditures will be reimbursed only if they have received the proper authorization. This can be stifling if every person has to go through an elaborate process to get authorization to spend any amount on any item. Therefore, some items can qualify for *general authorization*. General authorization is a standing approval of certain spending. Items under a certain dollar limit or for certain purposes may fall under that general authorization. For example, air travel at the coach airfare rate for valid business reasons may fall under general authorization. General authorization may contain limits and prohibitions.

Items that cannot be acquired using general authorization require *specific authorization*. Specific authorization would require an employee to get written permission to override the general authorization policies.

Proper authorization is required for many things in addition to spending. For example, some employees can sign contracts committing the organization to provide specific services. Some employees can represent the organization with respect to legal matters. The ultimate source of authority rests with the board of trustees or directors. The board provides letters of delegation to senior managers, providing them with the authority to undertake a variety of functions on behalf of the organization. These senior managers can, in turn, delegate authority to specific individuals who report to them. In the case of governments, the bounds of authority are often clearly set by law and regulation, in addition to management delegation.

Adequate Documentation

The audit trail discussed earlier requires an ability to provide detailed documentation of what was spent and why it was spent. Documents, however, do not have to be on paper. The computer age is pushing us more and

more toward electronic record-keeping.

For example, at one time, organizations maintained files with all canceled checks. If a discrepancy arose regarding whether a payment had been made, the organization could find the canceled check in its files and use the check to prove that payment had been made. More and more often, payments are made by electronic transfer rather than by check. In many organizations, for example, very few payroll checks are issued. Instead, payments to employees are deposited directly into the employees' bank accounts.

In light of such dramatic changes, it is essential that organizations carefully think out what documentation will be available to them to allow them to trace back, explain, and prove that transactions have occurred. It is also important to recognize that loss of electronic data (such as the loss or erasure of a computer's hard drive) can be as devastating as a fire that destroys all of an organization's paper records.

Proper Procedures

Internal control systems rely heavily on standard operating procedures, often in the form of a procedures manual. Doing things "by the book" may seem rigid to some employees, but if we follow clearly documented procedures, we are likely to reduce the number of errors. We will spend less time correcting those errors. Less time spent doing various activities will mean that money is saved.

By the same token, the "book" should be current and relevant. Internal control procedures should be reviewed and updated regularly. New approaches for increasing efficiency and protecting resources should be adopted.

Physical Safeguards

Common sense dictates the need for physical safeguards. Cash and blank checks should obviously be kept locked when not in use. Backup copies of computer records should be maintained in a separate location. Controls should be put in place to protect valuable inventory.

Bonding, Vacations, and Rotation of Duties

If people are in positions where it would be possible for them to steal significant amounts from the organization, it is appropriate to bond them. *Bonding* means that the organization purchases insurance to protect itself against theft by employees. Often organizations, on the grounds of having carefully hired reliable personnel, fail to bond key employees. Although this does not usually lead to financial loss, in rare cases it does. Organizations must consider bonding, much as they would consider fire insurance. You do not expect your building to burn down—you may even have a sprinkler system, but just in case of an unexpected catastrophe, you also purchase fire insurance.

Bonding is a good administrative control. Administrative controls work best when combined with accounting controls. What preventive accounting controls go hand in hand with the bonding of employees? One approach is mandated vacations and rotation of staff. Many types of defalcation require constant supervision by the embezzler. If money is being stolen from the accounts receivable cash stream, checks received later are often used to cover the cash that has been taken.

By requiring vacations, we move another employee into each role periodically. That provides an opportunity for discrepancies to be uncovered. Similarly, a formal rotation system establishes that no employee will be doing exactly the same job year after year. If it is well known that all employees must take vacations and that rotation in duties will occur from time to time with little advance notice, these controls can serve not only to discover problems but to prevent them as well.

Performance Audits

It is important to have an independent check of the organization's activities. The employees of an organization should review and evaluate their internal control systems regularly. We need to attempt to continuously improve. Such improvement can occur in the reliability of controls as well as in reduction of the cost of internal controls. In addition, however, internal auditors should conduct *performance audits*, and outside auditors should review the control system as well.

Performance audits, sometimes called operational audits, include two subcategories: *economy and efficiency audits* and *program audits*. Economy and efficiency audits are reviews that determine if the organization is acquiring, protecting, and using its resources efficiently. Essentially, they check for waste. Program audits check for effectiveness. They determine whether the organization's programs are accomplishing their objectives.

Larger organizations have internal audit departments. These departments work year-round on reviewing the financial and operating systems of the organization. They seek out weaknesses in controls that might allow for theft of resources. They also try to improve systems to reduce the chances that errors will occur in the recording or reporting of financial information. At the same time, internal auditors focus their performance audits on trying to find ways that the organization can better achieve its mission. This will at times require them to evaluate the role and functioning of each unit or department of the organization.

Outside independent auditors also serve a crucial role. Independent auditors have the benefit of experience from reviewing control systems in many different organizations. As a result, these external auditors can often offer suggestions for improvement. From an outsider's perspective, they are also more likely to see flaws in the system that most insiders might not notice.

Independent auditors also perform checks to ensure that the organization reports its financial results in accordance with a set of Generally Accepted Accounting Principles (GAAP). This function and GAAP are discussed further in [Chapter 10](#).

Cost-Effectiveness Analysis

Internal control systems can be simple or elaborate. The more careful we are to ensure that the organization's systems catch all potential problems, the more it costs. Systems should be cost-effective. The organization should not spend more on the systems than they are worth. For example, one would not spend \$1,000 to prevent someone from possibly stealing \$10.

We should also be aware that no matter how careful we are with our control systems, fraud, embezzlements,

and some inefficiencies can still take place. Horngren and Foster sum up this issue well:

No framework for internal control is perfect in the sense that it can prevent some shrewd individual from “beating the system” either by outright embezzlement or by producing inaccurate records. The task is not total prevention of fraud, nor is it implementation of operating perfection; rather the task is designing a cost-effective tool that will help achieve efficient operations and reduce temptation.¹⁵

15. Ibid., p. 922.

The Sarbanes-Oxley Act

A number of scandals from 1998 through 2002 led to a close reexamination of corporate governance and internal control. Perhaps the most notable was the Enron bankruptcy in 2001. However, the AHERF healthcare system bankruptcy in 1998, the city of San Diego’s municipal bond fraud case from 2002 to 2003, and problems at The United Way indicate that the not-for-profit and health sectors are not exempt from governance problems. In 2002, the Public Company Accounting Reform and Investor Protection Act, commonly referred to as the Sarbanes-Oxley Act (SOX), was passed. One primary focus of the act is to create more oversight over the public accounting firms that audit organizations. However, the law also creates a greater level of responsibility for managers and board members.

Although most of SOX directly applies only to publicly traded for-profit organizations, there are two elements that apply directly to all organizations, including not-for-profit organizations. These concern whistle-blower protection and general documentation.

SOX requires all organizations, including non-profits, to establish a means to collect, retain, and resolve claims regarding accounting, internal accounting controls, and auditing matters. The system must allow such concerns to be submitted anonymously. SOX provides significant protections to whistle-blowers, and severe penalties to those who retaliate against them.¹⁶

16. Peggy M. Jackson and Toni E. Fogarty. *Sarbanes-Oxley for Nonprofits: A Guide to Building Competitive Advantage*. Hoboken, NJ: John Wiley & Sons, 2005, p. 76.

In addition to these whistle-blower provisions, there are also severe sanctions (including up to 10 years in prison) for inadequate internal documentation. Managers must consider a number of factors in setting up a documentation policy, including the following:

- What documents and records should be preserved and why?
- Are the documents paper-only or are electronic files included? Which ones?
- What about e-mail and instant messaging?
- What are the expectations about the way in which documents are stored or archived and the ability to retrieve documents?

- How long are you supposed to keep these documents?
- Is there a protocol for disposing of documents once their storage time has elapsed?
- How can you make sure that everyone in the nonprofit—staff and volunteers—understands and adheres to these requirements?¹⁷

17. Ibid., p. 79.

The answers to these questions will depend on the specific situation of the organization. The managers and board members must work together to make a policy for both whistle-blowing and documentation that is in compliance with the law and is reasonable given the specific situation of the organization. There is great pressure on not-for-profit organizations to comply with many other provisions of SOX as well. Regulators, insurers, banks, the bond market, and the public are all interested in responsible use of resources by public service organizations. Therefore, they are likely to convince not-for-profit organizations to undertake the extra effort that SOX requires.

In addition to the SOX requirements with respect to whistle-blowers and documentation, SOX will typically affect not-for-profit organizations in several principal areas. Jackson and Fogarty note that as a result of SOX, not-for-profit organizations will have to have practices that include

- a more effective board whose members understand and adhere to their fiduciary obligations and recognize their responsibility in governing the nonprofit;
- higher levels of management and staff accountability;
- effective protocols to ensure that the nonprofit remains in compliance with SOX and nonprofit “industry standards” and addresses future standards;
- better competitive positioning by making known that the nonprofit adheres to the SOX platinum standard in its operating practices;
- greater credibility and ability to recruit high-quality board members and to attract the favorable attention of major donors, foundations, and other funding sources.¹⁸

18. Ibid., p. 3.

There are some specific measures that not-for-profits should undertake as a starting point for implementing SOX provisions. First, the Board of Trustees’ audit committee will have an enhanced role. Next, key executives of the organization will be required to certify the organization’s financial statements. Third, there will be limits on the types of consulting that an organization’s auditor can provide to it. Finally, there will be a higher level of manager accountability.

The Board of Trustees’ audit committee will have an enhanced role so that it becomes easier to determine if top management is acting inappropriately. The audit committee will retain and supervise the outside auditors so that there is a decreased chance of top management exerting influence over the auditor. Key executives, such as the CEO and CFO, will be excluded from the committee, to reduce their influence over its work and also so that whistle-blowers will be less inhibited from approaching the committee to report problems. To

avoid conflicts of interest, audit committee members will not be allowed to be paid consultants, and audit committees will be required to have some members with financial expertise. In the SOX environment, not only are the rules of the Board's audit committee tightened, but the expectations about the role of the Board have increased as well. Not-for-profits will have to transition from having Board members who are on the Board solely for their money or their relation to the organization's mission to having Board members who prepare for meetings in advance, focus on the finances of the organization, and bring a questioning attitude to Board meetings.

The CEO and CFO of organizations that comply with SOX will have to certify that they have reviewed the annual financial report, that it does not contain any untrue statement of a material fact, and that the statements fairly present the financial condition of the organization. Furthermore, the CEO and CFO will have to certify that internal control systems are in place to ensure awareness of material misinformation and that any known deficiencies in control, or any known frauds involving key personnel, have been disclosed to both the outside auditors and the audit committee. As a result of this greater reliance on internal control systems, all organizations, including not-for-profits, are making an effort to upgrade their internal control systems. Managers need to know that they really can rely on their control systems to catch any problems as they arise.

For many not-for-profit organizations, the outside auditor has also served as the primary financial consultant. To try to ensure more independence on the part of the auditor, SOX explicitly lists a number of different types of consulting activities that may not be provided by the accounting firm that is conducting the annual audit of the organization's financial statements. These prohibited areas include bookkeeping, information systems design, appraisal services, actuarial services, internal audit outsourcing, human resources, investment advising, and legal or expert service unrelated to the audit.

Finally, the impact of SOX is to create a higher level of accountability in general for the managers of an organization. Regulations issued in 2003 by the Securities and Exchange Commission, under SOX, require senior managers to certify that they are aware of the internal processes that the organization uses to collect the financial information that is used to prepare the financial statements issued to the public and of any concerns, issues, or problems that might hamper accurate reporting.

The Form 990

The IRS requires not-for-profit organizations to file an annual information return called the Form 990. The Pension Protection Act of 2006 allows tax-exempt not-for-profit organizations, whose gross receipts (i.e., total revenue before expenses) are normally \$50,000 or less, to file a simplified Form 990-N (e-Postcard) or 990 EZ. Tax-exempt not-for-profits whose gross receipts are normally greater than \$50,000 must file the full Form 990. The consequence for failing to comply with the requirement is a loss of tax-exempt status, though organizations that lose this exemption for failing to file a return may reapply for it. Once filed with the IRS, the organization's 990 is a public document and is generally available to the public online from either GuideStar at www.guidestar.org or the National Center for Charitable Statistics at www.nccs.urban.org. The 990 for any organization must also be provided by the organization to anyone who requests a copy.

What information is contained in the 990? The form includes information on finances, exempt activities, and governance. The requirements for the form are extensive, asking for information concerning, but not limited to, the organization's mission, program service accomplishments, lobbying and political campaign activities, conflict of interest policy, volunteers, donations, grants, compensation of officers, directors, trustees, key employees, highest compensated employees, and independent contractors.

Throughout the 21st century, there has been a growing emphasis on accountability and control. Starting with the 2008 Form 990, substantial revisions were made to data required to complete the 990 in order to enhance the information contained in the reports, providing greater transparency for members of the public scrutinizing the operations of an organization, and a greater ability for the government to ensure compliance with all relevant laws and regulations. The Form 990 now requires not-for-profits to report on their governance practices, policies and procedures aimed at preventing fraud and theft, document retention policies, and how executive salaries are set.

Consequences of Ethical Violations

The consequences of ethical violations can be severe, particularly when they also are violations of the law. At a minimum, those who violate a professional association's formal code of ethics can expect to lose membership in that organization. This can be rather consequential, particularly in government administration, where membership in job-related professional associations is often expected of public managers. When a potential violation falls in the above-mentioned gray area, or no formal code of ethics exists, even perceived impropriety can jeopardize one's current and future employment. This is especially true in smaller not-for-profit sectors in which organizations work closely with one another.

As indicated in the section on SOX, penalties can be severe when laws designed to ensure ethical behavior or proper internal control are violated. Depending on the gravity of a violation and the laws and regulations governing it (both federal and state), penalties may apply to a person individually or to his or her organization, or both. For the individual, penalties range from relatively small fines (in the hundreds of dollars) to very large fines (thousands of dollars per violation) and possible imprisonment. For the organization, penalties range from fines to loss of tax-exempt status or even loss of incorporation. Those in the public, health, and not-for-profit sectors should become familiar with all federal and state laws and regulations that apply to their line of work. Furthermore, they should carefully consider the impact that their unethical behavior may have on others.

Summary

If an organization is to succeed, it must achieve its plans to the extent possible. Management control systems are used by organizations to motivate their employees to try to achieve those plans. Under management control systems, departments and individual employees are held accountable for their actions and results.

Managers must also know how organizations intend to measure results. They can focus on just the revenues and expenses budgeted and the actual revenues and expenses. Or the organization can be more sophisticated and try to assess things such as its efficiency and effectiveness in measuring its overall performance.

Variances arise if actual performance differs, or varies, from expectations. Developing an understanding of why variances have occurred can help the organization avoid undesirable variances in the future.

To keep the organization functioning optimally, it must also focus on issues related to ethics and the safeguarding of its resources. To achieve planned results, it is vital for personnel to be as ethical and error-free as possible. The elements of a control system are designed to minimize the resource losses that the organization suffers either by intent or by accident.

Key Terms from This Chapter

accounting controls, 302
administrative controls, 302
audit trail, 303
Balanced Scorecard, 276
bonding of employees, 306
case-mix variance, 295
economy and efficiency audits, 306
efficiency variance, 287
exception report, 293
favorable variance, 283
flexible budget variance analysis, 285
general authorization, 305
internal control, 272
key performance indicators (KPIs), 277
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mix variance, 295
performance audits, 306
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use variance, 287
variance, 281
variance analysis, 281
volume variance, 286

Questions for Discussion

- 8-1. What is a management control system? What is it compared to in the chapter?
- 8-2. To what extent is the role of responsibility accounting to assign the blame for poor past performance?
- 8-3. Do managers tend to motivate their staff by using a “carrot” or a “stick” approach?
- 8-4. Discuss the four main elements of the Institute of Management Accountants code of ethics.
- 8-5. What is an internal control system?
- 8-6. What are accounting and administrative controls?
- 8-7. Describe the elements of an internal control system.
- 8-8. What are some of the principal impacts that the Sarbanes-Oxley Act is likely to have on not-for-profit organizations that decide to follow the provision of the law?
- 8-9. Which of the following is *not* a component of an internal control system:¹⁹
19. This question was written by Dwight Denison.
1. adequate documentation
 2. audit trail
 3. separation of duties
 4. none of the above are components of internal control
 5. a, b, and c are all components of an internal control system
- 8-10. Why are variances calculated?
- 8-11. How can outcomes be measured?
- 8-12. Distinguish between efficiency and effectiveness.
- 8-13. Why is it that variances are not analyzed by the finance department of the organization?
- 8-14. If we know that a variance is the result of an uncontrollable price increase for a supply item that we must have, do we need to investigate and make a report regarding the variance? Why or why not?
- 8-15. Do volume increases that lead to spending increases cause financial problems for organizations?
- 8-16. What is the essential issue on which flexible budget variance analysis is based?
- 8-17. What are the primary variance categories under flexible budget variance analysis? Discuss each.
- 8-18. What are some common causes of variances?
- 8-19. What is the aggregation problem in variance reporting?
- 8-20. What is meant by exception reporting?
- 8-21. Will all line items have a volume variance?
- 8-22. Should all variances be investigated?
- 8-23. Answer the following questions about variance analysis.
1. Variances are differences between _____ and _____ revenues or expenses.
 2. The three factors involved in variance analysis are _____, _____ and _____.

Problems

8-24. Burnham Elementary School spent \$100,000 on textbooks for the fall 2016 semester. It had expected to have a total enrollment of 450 students who would each have needed four books at a cost of \$65 each. What is the textbook expense variance? Is it favorable or unfavorable? Why?

8-25. We-Rescue-Dogs Kennel had a labor cost budget of \$100,000 for the year. It expected its staff costs related to grooming, feeding, walking, and so on to vary in direct proportion with the number of dogs, based on an hourly rate of \$20 for staff and a need for 10 hours of staff time per dog (before the dogs were adopted). In its budget for the year, it planned on rescuing 500 dogs. It turned out that it rescued 640 dogs for the year. The staff average cost turned out to be just \$16 per hour. Staff were paid for a total of 6,000 hours. What is the total labor variance? Was it favorable or unfavorable? Why? Did the number of dogs rescued result in a favorable or unfavorable volume variance? (You do not have to calculate the flexible variance.)

Did the number of hours of labor actually consumed for each dog cause a favorable or unfavorable variance? (You do not have to calculate the flexible variance.)

8-26. Justice Township tries to keep tight control over the costs of the municipal court system. Since the town is small, its courts operate only a few days a week, and they get by largely with part-time workers. Last month it was expected that court stenographers would cost \$25,000, but they actually cost \$30,000, which is 20 percent more than the budgeted amount. The municipal judge has argued that the bench heard many more cases than expected, and this caused the increase. The director of the town's budget office feels that a 20 percent variance is unreasonable. As an analyst for the budget office, you have been asked to explain the variance. Your investigation shows that it was expected that there would be 125 trials, stenographers would be paid \$20 per hour, and each trial would take an average of 10 hours. Actually, there were 150 trials, lasting 8 hours each, on average, and stenographers earned \$25 per hour. Calculate the volume, quantity, and rate variances, and provide some possible explanations for each.

8-27. The fire department expected to spend \$100,000 in April. Actually, it spent \$108,680. The department thought it would pay each member of its team of firefighters \$25 per hour. However, it paid them each \$26 per hour on average. The department expected that the team of firefighters would work a total of 4,000 hours and fight 100 fires. Of course, many hours the firefighters are on duty in the station house between fires. Those hours are considered to be worked and the firefighters are paid for those hours. The actual results were 4,180 hours worked by the team of firefighters and 110 fires fought by the department. What was the total variance? What were the rate (or price), quantity, and volume variances? Which variances were favorable and which were unfavorable?

8-28. Donate Your Vehicle (DYV) is a charity that receives donations of old cars and converts them into cash to be used for various charitable purposes. DYV budgeted receipt of 300 cars but actually received one third more than expected. It sold the cars for \$2,700 each, which was 10 percent below the budgeted price. What was the total revenue variance? Was it favorable or unfavorable? What are the two types of subvariances that caused the total variance?

8-29. Assume that you are the nursing administrator for a medical group that expects a severe outbreak

of flu this winter. You hire additional staff to treat patients and administer shots. Your special project budget was for 1,000 hours of part-time nurses' services at \$40 per hour, for a total cost of \$40,000. It was expected that these nurses would treat 2,000 patients. After the flu season was over, it turned out that the total spent on part-time nurses was \$50,000. The nurses worked 1,200 hours and 2,600 patients were treated. Calculate the variances. Was the overall result favorable or unfavorable?

8-30. Using the information from Problem 8-29, assume that the nursing administrator expected 400 patients for flu shots and 1,600 for flu treatment. The medical group typically charges \$50 for a flu shot and \$80 for treating a flu patient. Actually, the group had 1,200 patients who received flu shots and 1,400 who had the flu and received treatment. On average, it was able to collect \$55 per flu shot and \$70 per flu patient. Compute the volume, mix, and price revenue variances. How did things turn out for the group considering just revenues? How did they turn out from a profit perspective?

8-31. Dr. Eger is a physician who operates on two different types of patients. He has been pressing the Hospital for Ordinary Surgery (HOS) for more operating-room time. HOS is busy and would have to turn away other surgeons if it complies. Eger claims that he has become so efficient lately that HOS cannot afford to refuse him. As evidence of his improved efficiency, he points out that in August he operated on 18 patients. The total cost of treating the patients was \$129,100. In September also he operated on 18 patients. The total cost of treating the patients was only \$127,000. According to Dr. Eger, he has generated a total savings of \$2,100.

Your investigation determines that in August he treated 7 type X patients with an average cost of \$4,300 and 11 type Y patients with an average cost of \$9,000. In September, he treated 8 type X patients and 10 type Y patients. Costs in September for his patients were \$5,000 for type X and \$8,700 for type Y. Although the August cost for type X patients had risen, Eger points out that costs for the higher-volume, higher-cost type Y patients had fallen.

Develop a case-mix variance and a cost variance so we can better understand the impact on HOS of the changes in Dr. Eger's practice from August to September. What other information would be of interest in this particular case?

8-32. Rob West is the director of Eyeglasses for the Poor (EP). EP receives donations of eyeglasses and recycles them for use by the nearsighted needy around the world. Sometimes the eyeglass frames are expensive designer frames that can be sold to raise operating funds for the organization. Rob is concerned that EP's resources are not adequately safeguarded. This problem is compounded by the fact that there are relatively few employees, so separation of duties is difficult. He does know that if anything goes wrong (e.g., waste of resources, embezzlement), he will be held responsible. Therefore, he has called you in as an expert consultant in the area of accountability and control. He has asked you to recommend specific procedures and policies for enhancing the internal controls for the organization. Write a one-page memo identifying policies and procedures that she should consider adopting.

8-33. Pam Crawford is the vice president of the HMO of Millbridge. The organization bills and collects premiums from employers for their employees who are enrolled as members of the HMO. In turn, it receives bills from hospitals and physicians for care they have given to its members. Pam is in charge of optimizing the use of resources and safeguarding the resources of the HMO. She knows that if anything goes wrong (e.g., waste of resources, embezzlement), she will be held responsible. Therefore,

she has called you in as an expert consultant in the area of accountability and control. Pam has asked you to recommend specific procedures and policies for enhancing the internal controls for the organization. Write a one-page memo to Pam Crawford identifying policies and procedures that she should consider adopting at the HMO of Millbridge.

Part IV Reporting Results

Chapter 9 Taking Stock of Where You Are: The Balance Sheet

Learning Objectives

The learning objectives of this chapter are to:

- introduce and define financial accounting and the statement of financial position, or balance sheet;
- provide a framework for financial accounting, based on the fundamental equation of accounting;
- introduce the concept of Generally Accepted Accounting Principles (GAAP);
- discuss the entity, monetary denominator, objective evidence, conservatism, going concern, and materiality GAAP;
- explain and discuss the accrual basis of accounting;
- discuss various asset categories, including cash, marketable securities, accounts receivable, inventory, prepaid expenses, fixed assets, and sinking funds;
- discuss various liability categories, including accounts and wages payable, and long-term debt;
- discuss net assets including the subcategories of unrestricted, temporarily restricted, and permanently restricted net assets; and
- discuss the process of recording financial information and generating a balance sheet.

We now turn our attention to the process of recording events, summarizing them, and reporting results. The process of recording financial information is done on an ongoing basis throughout the year. Periodically—monthly, quarterly, or annually—events are summarized. At least annually, the summarized events are then organized into a reporting form that helps managers and outsiders understand the current financial status of the organization and how well it has done from a financial standpoint.

This reporting process can be thought of as the concluding phase of a planning, implementing, controlling, and reporting cycle. The financial management aspects of planning, implementing, and controlling activities are often referred to as managerial accounting. Any information generated is primarily for the use of managers in their efforts to optimize the results of the organization. Thus, the focus of the book so far is primarily internal. Our efforts have been to develop tools and techniques that aid in managing the organization.

There is also an external side of financial management. Financial reports are prepared by organizations. These reports help managers understand the current financial situation of the organization and the financial results of its operations. However, they provide information not only for the use of management of the organization but for outsiders as well. Banks, donors, landlords, vendors, legislators, regulators, unions, bond raters, and others are interested in the performance of public service organizations. Preparation of financial reports that will be examined by individuals external to the organization is referred to as financial accounting.

For example, a union may want to understand the finances of an organization to determine whether the organization can afford to give its members a raise. A donor may want to examine the finances of a charity to determine whether it puts donated resources to good use. A supplier may want to decide whether it is safe to sell to the organization without immediate payment. A bank may want to examine the finances of an organization before it makes a loan to determine if the organization will be able to repay the loan.

To provide these outside users with information that they can understand and that is somewhat comparable among organizations, a set of accounting conventions is employed. These conventions are called *Generally Accepted Accounting Principles (GAAP)*. GAAP are developed by the Financial Accounting Standards Board (FASB) and the Governmental Accounting Standards Board (GASB). A number of these accounting conventions are discussed throughout the remaining chapters of this book.

The FASB (pronounced *faz-B*) establishes the GAAP (pronounced *gap*) that govern the financial reporting of most types of organizations, including healthcare and not-for-profit organizations. The GASB (pronounced *gaz-B*) establishes the rules followed by state and local government bodies. As a result of the need to comply with rules imposed by FASB or GASB, financial accounting is more rigid in many respects than managerial accounting.¹

¹ FASB and GASB are private sector organizations that promulgate accounting standards. For corporations that are subject to Securities and Exchange Commission (SEC) jurisdiction, the SEC has the final word if their rules disagree with FASB accounting standards. For state and local governments, state and local laws dictate the extent to which the governments must follow GASB standards.

Managerial accounting is primarily prospective in nature. It is the process of preparing plans and then implementing and controlling activities to achieve good results in the coming time periods. By contrast, financial accounting is historical. At the end of an accounting period, it looks back to see just how stable the organization is and how well it has actually done.

At least once each year, organizations prepare a set of financial statements that summarize their financial position and the financial results

of the organization's activities. The *statement of financial position*, commonly referred to as the *balance sheet*, is the first of the financial statements, and it is the topic of this chapter.

A balance sheet reports the financial position of the organization at a moment in time—often the end of the fiscal year. [Chapter 10](#) looks at activity and cash flow statements. Activity statements assess whether the organization has had more or less revenues than expenses or expenditures for the year. Since many organizations use some form of accrual accounting, the operating results reported in the activity statement may differ from the organization's cash flow. Cash flow statements focus on the organization's sources and uses of cash.

Together, [Chapters 9](#) and [10](#) provide the essential elements of financial accounting. However, there are a variety of special accounting rules for different types of public service organizations. [Chapter 11](#) discusses special financial accounting concerns of not-for-profit and healthcare organizations. [Chapters 12](#) and [13](#) consider special financial accounting concerns for governmental organizations.

The Framework for Financial Accounting

[Exhibit 9-1](#) presents a hypothetical balance sheet for Meals for the Homeless. For any specific *entity*, this financial document provides a highly summarized view of its financial position at any one particular point in time. An entity is a person, organization, or distinct suborganization. The balance sheet has often been compared to a still photograph. For a specific moment in time, this financial statement provides a great deal of information about the organization. All organizations, whether for-profit or not-for-profit, private or public, use the balance sheet.

Meals for the Homeless Statement of Financial Position As of December 31, 2017			
Assets		Liabilities and Net Assets	
Current Assets		Liabilities	
Cash	\$ 1,000	Current Liabilities	
Marketable securities	3,000	Wages payable	\$ 2,000
Accounts receivable, net of estimated uncollectibles of \$8,000	55,000	Accounts payable	3,000
Inventory	2,000	Notes payable	5,000
Prepaid expenses	1,000	Current portion of mortgage payable	5,000
Total Current Assets	\$ 62,000	Total Current Liabilities	\$ 15,000
Long-Term Assets		Long-Term Liabilities	
Fixed assets		Mortgage payable	\$ 11,000
Property	\$ 40,000	Total Long-Term Liabilities	\$ 11,000
Equipment, net	35,000	Total Liabilities	\$ 26,000
Investments	8,000	Net Assets	119,000
Total Long-Term Assets	\$ 83,000		
Total Assets	\$145,000	Total Liabilities and Net Assets	\$145,000

Can the organization begin a rapid new expansion of services? Must it severely restrict its services to survive? These and other questions are often asked about an organization. The balance sheet can help address such questions. The balance sheet provides an overview of the financial position of the organization. How much cash does the organization have? What other resources does it have? Does it owe a lot of money to other organizations? Will that money have to be repaid in the near future? The balance sheet is derived from information contained in the *fundamental equation of accounting*.

The Fundamental Equation of Accounting

The framework for financial accounting was developed hundreds of years ago. It is based on an equation, as follows:

$$\text{Assets} = \text{Liabilities} + \text{Owners' Equity}$$

Assets are anything the organization owns of value. *Liabilities* are obligations owed to outsiders. *Owners' equity* represents the share of the organization's assets owned by its owners. By definition, the preceding equation is always in balance. Therefore, once we determine the organization's assets and liabilities, the owners' equity is a residual amount needed to balance the equation. If we know the resources we have (assets) and how much we owe (liabilities), then the amount that would be left over if we used some of our assets to pay off all that we owe is called the owners' equity.²

² Because owners' equity is a residual number once assets and liabilities have been determined, owners' equity will be a good representation only if assets and liabilities have been accurately measured.

This is similar to the equity a person has in his or her house. If you buy a house for \$250,000 and pay for it with \$50,000 of your own money and \$200,000 borrowed from a bank, the asset (the house) is worth \$250,000, the liability to repay the bank (mortgage payable) is \$200,000, and your equity in the house is \$50,000. People typically use the term *net worth* to refer to their own personal financial net value after subtracting all of their debts from their assets. For individuals, the fundamental equation would appear as follows:

$$\text{Assets} = \text{Liabilities} + \text{Net Worth}$$

or

$$\text{Assets} - \text{Liabilities} = \text{Net Worth}$$

In a for-profit corporation, owners' equity is called stockholders' equity. In not-for-profit and governmental organizations, owners' equity is referred to as net assets or *net position*, respectively, because that it is the result when we subtract (or "net out") liabilities from assets. This term highlights the fact that not-for-profit organizations and governments do not have owners in the same way that for-profit organizations do. We can think of the organization itself or society as the owner of the net assets or net position of such organizations. When considering just one part of their overall finances, not-for-profit organizations and governments sometimes refer to this amount as the *fund balance*. The fundamental equation for these organizations would appear as follows:

$$\text{Assets} = \text{Liabilities} + \text{Net Assets (or Net Position)}$$

or

$$\text{Assets} = \text{Liabilities} + \text{Fund Balance}$$

The left-hand side of the fundamental equation lists the organization's valuable resources, or assets. The organization owns those resources. The right-hand side of the fundamental equation represents the sources of or claims against those resources. Outside creditors claim amounts of money that are owed to them. Legally, the first use of the organization's assets is to repay creditors' claims. Anything left after outsiders are paid is owned by the organization and its owners. The entire right side of the equation is sometimes referred to as its equities. *Equity* is a word that refers to ownership or source of assets. Both creditors and owners claim ownership or are a source of the assets of the organization.

The fundamental equation of accounting must always remain in balance. When people talk about balancing the books of the organization, they are referring to the fact that this equation must be kept in balance as specific financial events are recorded. If the equation is not in balance after a transaction is recorded, then an error must have occurred in the recording process.

By the same token, the balance sheet, which provides a representation of this equation at a specific point in time, must remain in balance. Generally, assets are shown on the left side of the balance sheet, and equities, or liabilities plus net assets, are shown on the right, as in [Exhibit 9-1](#). The totals on both sides must be the same,

or in balance. Sometimes assets are shown on the top half of the page and liabilities and net assets are shown on the bottom, as in [Exhibit 9-2](#).

Meals for the Homeless Statement of Financial Position As of December 31, 2017	
Assets	
Current Assets	
Cash	\$ 1,000
Marketable securities	3,000
Accounts receivable, net of estimated uncollectibles of \$8,000	55,000
Inventory	2,000
Prepaid expenses	1,000
Total Current Assets	<u>\$ 62,000</u>
Long-Term Assets	
Fixed assets	
Property	\$ 40,000
Equipment, net	35,000
Investments	8,000
Total Long-Term Assets	<u>\$ 83,000</u>
Total Assets	<u>\$145,000</u>
Liabilities and Net Assets	
Liabilities	
Current Liabilities	
Wages payable	\$ 2,000
Accounts payable	3,000
Notes payable	5,000
Current portion of mortgage payable	5,000
Total Current Liabilities	<u>\$ 15,000</u>
Long-Term Liabilities	
Mortgage payable	<u>\$ 11,000</u>
Total Long-Term Liabilities	<u>\$ 11,000</u>
Total Liabilities	<u>\$ 26,000</u>
Net Assets	119,000
Total Liabilities and Net Assets	<u>\$145,000</u>

Our three managers, Steve Netzer, Leanna Schwartz, and Dwight Ives, from the hypothetical example introduced in [Chapter 1](#), would each be interested in the detailed elements of the balance sheet. At the end of the year, they will want to know if their plans and the implementation of those plans have left their organizations in a financially acceptable position. As managers, they want a solid understanding of the resources available to them as well as their obligations to outsiders and any restrictions that may exist on their use of the remaining net assets. The information in the financial statements has a critical impact on the actions managers must take for the following year. It also affects many decisions made by outsiders regarding whether to lend money, sell supplies, or make donations to the organization. We now look more closely at what makes up the assets, liabilities, and net assets of the organization.

Assets

We can define an asset as being anything the entity owns of value. Another view is that assets are anything the organization owns as a result of past transactions and events that will better enable it to meet its mission (see [Box 9-1](#)). This would include all items that will provide some future benefit or enable the entity to provide services to its clients. The list of assets on the balance sheet reflects the valuable resources owned by the organization.

Some assets are easily identifiable. A respirator owned by the Hospital for Ordinary Surgery (HOS) is a valuable resource that qualifies as an asset. The respirator allows the hospital to treat patients and generate revenues. We would clearly want to include the respirator when we tally up the assets and report them on the balance sheet.

The artwork on the wall in the executive director's office at Meals for the Homeless is also an asset, even though one might view its contribution toward achieving the organizational mission as being much more indirect. To conduct business, and deal with suppliers and possible donors, the executive director must have a presentable office. The painting on the wall contributes to that proper appearance, and it too will appear on the balance sheet as an asset.

Some assets do not have a physical form or substance. If a taxpayer in Millbridge owes the town real estate taxes, those taxes are classified as an asset referred to as a receivable. The general group of assets called receivables refers to amounts of money that other people or organizations owe to the entity, generally because of goods or services that the entity has provided to them. HOS has patient receivables. Because the entity must keep track of or keep account of how much money each patient owes, we often refer to the amounts owed in this manner as accounts receivable. Receivables were discussed in [Chapter 7](#).

In the case of the hospital, these accounts receivable or patient receivables represent amounts the hospital expects to collect in exchange for patient care that has been provided. The town of Millbridge would refer to taxes that are owed to it as taxes receivable. The taxes represent charges the town makes for providing a wide range of services, such as police, fire, transportation, sewers, and so on. Meals for the Homeless may have fulfilled the conditions specified by a foundation for a grant and as a result may have grants receivable. In each case, the receivables represent the money the organization is entitled to collect from someone else. Such receivables are valuable assets that would generally be listed on the balance sheet.

Some assets may be even less tangible than receivables. Meals for the Homeless may pay for an insurance policy to provide fire protection for its building and equipment. The insurance policy does not have physical substance, and if there is never a fire, the policy will expire without any payment to Meals by the insurance company. But the protection that the policy provides is valuable. The policy is referred to as an intangible asset. Accountants often refer to assets as being either *tangible* or *intangible*. Both types may appear on the balance sheet.

However, some intangible assets do not show up on the balance sheet. Examples are things such as the entity's good reputation for always paying its bills promptly or the high morale of the entity's employees. Many would argue that these are valuable resources and are assets despite their intangible nature. However, assets are only recorded if they are acquired through a specific exchange transaction, which is generally not the case for morale or reputation.

Sometimes these types of intangibles will show up on the balance sheet if they have been acquired as part of a specific exchange transaction. For example, hospital mergers have become quite common. Suppose that the amount one hospital pays to acquire another hospital exceeds the value of the assets that can be assigned a specific value less the liabilities of the organization. In that case, the excess amount paid is presumed to be the present value (see [Chapter 5](#)) of the remaining assets of the organization. This would include various intangibles such as a good reputation, the ability to provide quality services, the skills of the entity's employees, and so on. These intangibles are grouped together and called *goodwill*. Goodwill that has been purchased can be shown on the balance sheet based on the price paid.

We assume that one organization that buys another organization is not stupid. If it pays more than the value of the specific measurable assets, the excess, or goodwill acquired, must be worth the difference. Otherwise, the organization could simply start from scratch rather than buying another organization. Why would a hospital pay \$400 million to buy another hospital if it could buy land and build and equip a hospital for \$200 million? Therefore, to the extent that the purchase price cannot be assigned to other specific assets, it is assigned to goodwill.³

[3.](#) Intangible assets have long created measurement problems. Although accountants have tried to establish rules for when to recognize intangibles such as goodwill on the balance sheet and at what values, debates about appropriate treatment often occur, and the area is murky at best.

Managers should be aware that their own organization's assets may be more valuable than their balance sheet reflects. There may be intangibles that we know have some value but that were not acquired in an exchange transaction. Without a specific exchange transaction, those intangibles will not appear on the balance sheet. Managers should keep such potential "hidden values" in mind.

BOX 9-1

Note that the definition for assets includes “that will better enable it to meet its mission.” It does not say “that are consistent with the mission.” What if the Americans Against Lung Cancer Society owned shares of stock in a tobacco company? If the shares can be sold for cash, which can be used by the organization to carry out its mission-related activities, then the stock is an asset, even though owning that particular asset might seem to be contrary to the mission of the organization.

Liabilities

As organizations work to create goods and provide services, they often incur obligations to other entities. HOS must hire workers and buy clinical supplies. If it buys the supplies and has not paid for them, it will owe money to the vendor who sold those supplies to the hospital. If its employees work for the organization and have not been paid, the hospital will owe wages to those individuals. These obligations are referred to as liabilities and will appear on the balance sheet.

The outsiders to whom the organization owes money are called creditors. Creditors are entitled to claim a portion of the entity’s assets to repay the amounts owed to them. In general, there is no specific one-to-one matching of which asset will be used to pay any specific obligation; all of the assets form a pool of resources available to pay all of the organization’s liabilities.

Organizations typically have liabilities that will require payments to suppliers, employees, financial institutions, bondholders, and the government (taxes). Many of these obligations are discussed in [Chapter 7](#). When an organization buys supplies without immediately paying for them, the amount owed is referred to as a payable. In a fashion that parallels accounts receivable, it is important to keep track of how much money an entity owes to each supplier. In trying to keep track of or account of those liabilities, a list of accounts payable is created. These accounts payable are shown on the balance sheet along with amounts owed to employees (wages or salaries payable), amounts owed to the government (taxes payable), and so on.

In some cases, an outsider will lend money to the entity only if there is a pledge of a specific asset that will be given if the obligation is not paid. The asset specified is referred to as collateral. For example, if Meals for the Homeless were to buy a new delivery truck, it might need to borrow money to pay for the truck. The truck might be used as collateral for the loan. Although it is Meals’s intention to use money to repay the loan, if it falls behind in the payments, the lender can claim (foreclose on) that specific asset, the truck, and sell it to recover the money that had been loaned to Meals. Similarly, the town of Millbridge can foreclose on property in the town if the owner fails to pay real estate taxes due on that specific property.

Owners’ Equity

Generally, a healthy organization will have more assets than liabilities. The difference between the entity’s assets and liabilities is referred to as owners’ equity, net assets, net position, or fund balance, depending on the type of entity. This is the amount of valuable resources that an organization would have left over if it paid all of its current obligations.

In for-profit organizations, the owners own all of the assets and are obligated to pay all of the liabilities of the organization. For organizations formed as sole proprietorships or partnerships, the owners have unlimited liability. If liabilities exceed assets, the owners are responsible for paying the difference. One of the main reasons that the corporate form of ownership is used is because it may establish limited liability. The owners of a corporation are generally obligated to repay liabilities only to the extent that the corporation has assets. If any assets are left after all liabilities have been paid, they belong to the owners. If there are not enough assets to pay all liabilities, some creditors will not get paid.⁴ In the case of a corporation, the residual is referred to as stockholders' equity. The equity is sometimes referred to as the net worth or book value of the organization.

⁴ Who gets paid? This depends on prior agreements and legal issues regarding the priority ranking of different creditors. In some cases, creditors have a legal claim on specific assets that have been used as collateral for specific liabilities.

Equity, stockholders' equity, partners' equity, owners' equity, net worth, net assets, net position, and fund balance are all different terms to represent this same concept. However, in not-for-profit organizations, no one owns the organization, although they are often set up as corporations.

Since there are no owners of not-for-profits, there are no "residual claimants" of the organization's owners' equity. The net assets of the not-for-profit organization belong to the public. Therefore, we tend to stay away from terms that imply ownership, such as *owners' equity*. Instead, the term *net assets* is used. The same is true for governments, though the terminology differs.

Governments and some not-for-profit organizations subdivide their resources into separate groupings called funds. One fund would keep track of routine or general operations of the organization. Another fund might accumulate resources to repay long-term obligations. Yet another fund might be used to track resources being accumulated for a special project or purpose. When the liabilities in each individual fund are subtracted from that fund's assets, the remaining amount, or owners' equity for that fund, is simply called the fund balance. When reporting for the entity as a whole, however, state and local governments and not-for-profit organizations use the term *net position* or *net assets*, respectively.

Note that the various names for owners' equity are not changes in substance, but just semantics. In all cases, owners' equity, net assets, net position, or fund balance represent the residual amount when liabilities are subtracted from assets.

Generally Accepted Accounting Principles

In many instances, outsiders want financial information about the organization. They may be unwilling to sell, lend, or donate money to the organization unless they know its finances. In some cases, state regulations call for submission of financial information. Financial information should be relevant, reliable, comparable, and consistent. Relevant information is information that can assist in making decisions. Reliable information is information that can be verified as being accurate. Comparable information allows for meaningful comparisons to be made. Consistent information allows for determining changes and trends over time.

Certified Public Accountants (CPAs) are hired to audit the financial statements of an organization. Audited financial statements follow rules that are designed to improve the likelihood that the information is relevant, reliable, comparable, and consistent. Sometimes this is voluntary on the part of the organization. However, many audits take place because of government laws or regulations that require them. Many lenders will not lend money without receiving audited financial statements. Many state governments require them from organizations that receive payments from the state. Even if there is no requirement that an organization have an audit, it is prudent for the board of trustees to require an audit. Having an outsider review the financial records each year lessens the risk of fraud or embezzlement. It also reduces the likelihood that there are undetected accidental errors in the financial records. This in turn reduces the chance of a crisis resulting from sudden discovery of substantial shortfalls in assets or revenues as compared with management's beliefs and expectations.

CPAs' audits examine financial statements and the underlying financial records on which they are based. Drawing from their examinations, CPAs issue letters giving their opinions as to whether the financial statements are free of *material* (substantial) misstatements and whether they conform to GAAP. Although GAAP are called "principles," they might be more accurately described as a set of rules and conventions. They are established by the FASB and the GASB to help create some degree of uniformity. This helps people from outside the organization better understand the information contained in the financial statements. It makes the statements from one organization somewhat comparable with the statements from another since they both follow the same set of rules.

One might think that financial statements would be straightforward in any event. Why would we need a set of common rules for something that would logically just follow the standard rules of arithmetic? Actually, recording financial information and reporting financial information are more complicated than one might assume. For instance, suppose that HOS has owned a piece of land for the 120 years since the hospital was founded. In the late 1800s, that land was bought by the hospital for \$5,000. If we adjusted the cost for the impact of general inflation over all those years, perhaps the land would now be worth \$50,000 or \$100,000. However, the land is in the center of the city, and some think it is worth \$50 million. Others disagree, however. Some feel that the hospital could not receive more than \$45 million for the land, while others believe it could sell it for \$52 million.

When we prepare a balance sheet, what is the value that we should show for the land? We could show any one

of the values mentioned. The key, therefore, is to come to some general agreement about the approach to be taken. Different reasonable people might disagree over what approach is best. However, we can all agree to follow one uniform approach.

We consider here a few of the more prominent rules that are part of GAAP. One should bear in mind, however, that this represents a complex field: CPAs take extensive coursework in accounting and finance, take a rigorous state licensing examination, and in most states must also have experience in the field before they can receive their CPA license and designation.

The Entity Concept

As we consider the accounting equation and the balance sheet, we must determine whose assets, liabilities, and owners' equity we are interested in. Are we mostly focused on the financial concerns of Leanna Schwartz? Or are we interested in Meals for the Homeless? Or are we interested in just one particular soup kitchen that is run by Meals for the Homeless? To deal with this question, we must define the entity that is of interest to us.

The entity concept requires us to define the person, organization, or part of an organization for which we intend to report financial results. All financial measurements must then use the perspective of that entity. Meals for the Homeless is an entity. We can keep track of the financial resources of that entity. Leanna Schwartz, the executive director of Meals for the Homeless, is also an entity. GAAP requires us to avoid commingling or confusing the financial resources of Schwartz with those of Meals for the Homeless. They are separate and distinct from each other, even though Meals pays a salary to Schwartz.

Consider the following: Suppose that Schwartz works for the month of January and is owed a salary of \$6,000 for the month. The legal right to collect that salary is an asset from her perspective. She will call that expected salary "wages receivable" and show it as an asset on her personal balance sheet. In considering her own financial status, she owns something valuable: the right to collect her \$6,000 salary. However, when we consider Meals for the Homeless to be the entity, we get a different result. Meals has an obligation to make a payment to Schwartz. Rather than having an asset, from its perspective a liability exists and will appear on the entity's balance sheet. It will keep track of the liability by calling it "wages payable" of \$6,000.

Leanna Schwartz and Meals for the Homeless are not the only two possible entities. Meals for the Homeless may have a program specifically for individuals living in shelters that do not have kitchens. At times, various foundations, individuals, and city agencies may be interested in knowing the financial status of just that program. In that case, the program can be viewed as the entity, and all accounting information can be gathered and reported as it relates to just that smaller entity within the larger Meals for the Homeless organization.

Many not-for-profit organizations and all governments use a system called fund accounting for internal accounting purposes, as noted earlier in this chapter. In that system, a number of separate funds are created. Each fund is a separate entity within the larger organization-wide entity. Fund accounting is discussed further

in [Chapters 11](#) and [12](#).

Monetary Denominator

Once we have identified the entity of interest, we can prepare a budget for the entity, track money the entity receives or spends, and prepare reports showing how well the entity has done from a financial perspective. There is a restriction, however, on the way in which we keep track of the entity's events. All events that have a financial element must have a monetary figure attached to them. This is referred to as the *monetary denominator principle*. Even if no cash is involved, we describe an event in terms of amounts of currency. For example, suppose that a philanthropist donates a new kitchen oven to Meals for the Homeless. We will assign a value in the local currency to the oven. For example, in the United States we would assign a dollar value to the oven; in France we would assign a euro value to it.

The reason this convention exists is related to communication. Accounting information is used by individuals within the organization to communicate with each other and is also used by the organization to provide information to a wide variety of users outside of the organization. Without the monetary denominator, such communication would be cumbersome to the point of being noninformative.

Suppose that you were trying to tell someone what assets the organization has. You could try to list each desk, chair, building, book, lamp, and everything else the entity owned. You would of course also describe each item, giving its age, size, condition, and so on. The resulting list of items would likely be hundreds or perhaps thousands of pages long.

The benefit of the monetary denominator is that it allows us to summarize information. Rather than listing each building, we can state that we have buildings that cost \$500,000 in total. However, the monetary denominator creates its own problems. Currency values are not necessarily stable over time due to inflation. Stating items in terms of their dollar value allows for substantial aggregation and summarized reporting of values. However, determining the appropriate value to report is not always easy. What is the value of the piece of land that HOS sits on? The land has been owned for 120 years. Over that time, there may have been two prior hospital buildings that were each built and torn down and replaced by a newer one. The land cannot be sold without also selling the hospital. Trying to place a value on the land creates a difficult problem.

Objective Evidence and the Cost Convention

The monetary denominator leads to the next two rules related to the use of the *objective evidence* and *cost convention principles*. These are sometimes referred to as the objectivity or reliability principle and the cost principle. GAAP requires that, whenever possible, values be based on objective rather than subjective evidence. For example, the current value of the land owned by HOS has been estimated (previously) to be \$50 million, \$45 million, or \$52 million. Those three numbers represent the subjective valuation of three different individuals. The only way to be sure of what the land is worth would be to sell it.

Since the current value of that land is subjective, do we have any objective or reliable evidence that we can use to assign a value to the land? Reliable evidence should be both verifiable and able to be confirmed by an

independent party. The land cost \$5,000. It is likely that no one believes that cost of the land is a good measure of its current value. However, it is also likely that different people could all agree that \$5,000 was in fact the amount spent to acquire the land. The cost convention holds that unless there is some other rule that governs the valuation of an asset, we will show it on the balance sheet at its cost.

Thus the asset that is worth around \$45 million or \$50 million will be reported as just \$5,000 on the balance sheet. Assets make up the left side of the fundamental equation; the residual net assets on the right side of this equation are similarly affected by this treatment. We need to know the GAAP conventions to understand the implications of the financial statements and whether the numbers on them are a reasonable representation of the organization's finances.

Notice that this is a result of the monetary convention. We could just describe the piece of land, giving its size and location. However, the monetary convention says that it is too cumbersome to describe individually every asset. So we must report a monetary value. Using a subjective valuation would make it very difficult to interpret the balance sheet. How would we know if the value used was optimistic, neutral, or pessimistic? Subjective approaches also provide management with an undue ability to manipulate the reported information. Thus, the GAAP of using objective evidence pushes us to adopt the cost convention. This results in reporting an objective dollar amount that everyone can agree on.

Many would also agree that this does not provide very useful information. It can be very misleading to see land on a balance sheet shown at its cost rather than its current value. Accounting systems are not perfect. The lack of relevancy of cost information is something that accountants need to address. One of the prices paid for some degree of uniformity and comparability is a reduction in the relevance of the information provided.

It is important for users of financial statements to understand that assets on balance sheets are not necessarily shown at their current value. In particular, inventory and land are shown at their cost. Buildings and equipment are shown at their cost reduced by an allowance for accumulated depreciation. Depreciation represents the portion of capital assets charged as expenses as the assets are used over time. Depreciation is discussed in [Chapter 10](#). Even if a building rises in value over the period it is owned by the organization, it will be reported on the balance sheet at a net value, which is its cost less all of the depreciation that has been recorded while it has been owned by the organization.

One exception to the cost convention relates to investments in marketable securities. Marketable securities are stocks and bonds that can readily be sold in stock or bond markets. Many online sources and newspapers report the closing price of such securities at the end of each business day. This provides a source of objective evidence. Given the ability to assign a current value to these securities based on objective evidence, they generally do not follow the cost convention.

The cost convention has significant managerial implications. For example, when one buys fire insurance, using the balance sheet as a guide for the dollar amount of insurance on the building and equipment may substantially understate the needed insurance to replace those facilities. Buildings are often worth more than the value on the balance sheet.

Conservatism

Another controversial GAAP relates to the *conservatism principle*. This principle requires financial statements to give adequate consideration to the risks faced by the organization. Effectively, this argues for anticipating losses but not gains. According to this philosophy, there is a preference for receiving a good surprise rather than a bad one. It is better to make people aware of poor outcomes that may occur than it is to make them aware of good outcomes that may not occur.

For example, frequently organizations are not able to collect 100 percent of their accounts receivable. Some are never paid and become bad debts. At the time the organization provides goods and services, it records accounts receivable (assuming that it is not paid in cash on the spot).⁵ If the full amount of all accounts receivable appeared on the balance sheet at the end of the year, it would mislead the reader of that statement. It would overstate the value of the accounts receivable asset since the full amount will probably not all be collected. Therefore, it is necessary to reduce the receivables balance by an estimate of the amount that will not be collected. Accountants would prefer to avoid the use of estimates because they are often not based on objective evidence. However, there are situations in which a good estimate is better than no estimate.

[5.](#) This assumes that the organization uses the accrual basis of accounting discussed in [Chapter 2](#).

For a long time, the result of the conservatism principle was that if the organization owned shares of stock, it would report the stock investment on its balance sheet at the lower of its cost or market value. If the stock went down in value, perhaps from a \$100 purchase price to a \$50 current value, we would report it at its lowered value. However, if it went up in value, perhaps from a \$100 purchase price to a \$200 current value, we would just report it at its \$100 cost.

Some believe that the rationale for the principle of conservatism stems from the 1929 stock market crash. Accountants may be trying to prevent an overexuberant interpretation of the information provided; some contend that a key cause of the stock market crash of 1929 was an unduly optimistic picture painted by financial statements of the era.

Others argue that conservatism is just a way to protect CPAs from malpractice lawsuits. If a company's stock does very poorly, accountants are often sued by people who bought shares of that stock. Suppose the balance sheet of an organization shows a piece of land with a value of \$50 million. What if the land is subsequently sold for \$10 million? The company's stock price may plunge, and the CPA may be sued for allowing the organization to report misleading information. By contrast, if the land is reported on the balance sheet at \$5,000 and is later sold for \$10 million, it is unlikely that any stockholder will sue the accountant if the stock price soars.

Is it really worse to present overly optimistic misleading information than overly pessimistic misleading information? That question cannot be answered definitively here. The principle of conservatism is still used. However, in the case of marketable securities, the principle of lower of cost or market has been abandoned. Marketable securities are generally reported at their fair market value as of the date of the statement of

financial position (balance sheet).

The Going Concern Concept

Financial statements are prepared under the assumption that the entity will continue in existence. For example, when Meals for the Homeless prepares its financial statements, including the balance sheet, there is a presumption that the organization is going to continue in business for the foreseeable future. This is referred to as the *going concern principle*.

Why is this important? Suppose that an organization has severe financial difficulties and must declare bankruptcy and cease business. Many of its assets will likely be sold for a substantial discount at a bankruptcy auction. Its balance sheet values may overstate the amount to be obtained in such an auction. Many suppliers would not sell to an organization that may not be able to continue in business because there is a higher risk of not being able to collect payment for the supplies delivered. Lenders are less likely to be willing to lend money to an organization that is likely to go out of business.

Therefore, if the results of an audit indicate that there is a serious risk that the organization will not be able to continue in business, the CPA must disclose that fact.

The Principle of Materiality

A material error or misstatement is one that is considered to be significant. Many people believe that financial statements are totally accurate. That is generally not the case. Financial statements report a summary of many individual transactions. Most organizations will have thousands, tens of thousands, or even millions of individual financial events that must each be recorded, summarized, and reported in aggregate. It is likely that clerical errors will occur in this process. To ensure that absolutely no errors occur would be extremely expensive, if it is even possible.

CPAs must indicate in their audit report whether, in their opinion, the financial statements are free of material misstatements. For example, if HOS really has net assets of \$150,238,197 but erroneously reported \$150,238,917, the auditor would not consider the error to be material. Looking closely at the two numbers, it appears there has been a transposition error: The three last digits were reported as 917 instead of 197, resulting in an overstatement of net assets in the amount of \$720. However, that is a very small amount when compared with the total of about \$150 million.

How big does an error have to be to be material? That is a difficult question, one that requires experience and knowledge of the specific situation. An error of \$10,000 might be material for a small organization but not material for a large one. As a general rule of thumb, accountants focus on whether an error is so large that it would likely affect decisions made by users of the financial statement.

For example, if banks found out that net assets were \$720 less than had been reported, would they reconsider making a loan to the hospital? If a supplier found out, would it refuse to sell supplies to the hospital? If the errors are too small to affect the decisions of any users of the financial statement, they are not material.

The Accrual Concept

GAAP requires organizations to report their financial position and results of operations on an accrual basis of accounting (discussed in [Chapter 2](#)). This means that revenues are recorded in the year that the organization provides goods or services and is legally entitled to receive payment. The revenues are recorded even if payment has not yet been collected by the end of that year. Expenses are recorded in the year that assets have been consumed in the process of providing goods and services. This contrasts sharply with the cash basis of accounting, which would record revenue when cash is received and expense when cash is paid.

The rationale for using accrual accounting is that it provides a better measure of how well the organization has done for the year. Suppose that HOS provides a lot of service in the last month of its year. Suppose further that most of its expenses are for supplies and labor. It buys and pays for its supplies before they are used. It pays for most of its labor in the month the employees work. However, the various government and insurance payers delay payment to the hospital for a month or two.

On a cash basis, it might appear that the hospital had a bad year. It would have had expenses for the last month of the year but no revenues. In reality, it did not have a bad year. It will just be collecting the revenues for the last month of the year shortly after the year ends.

Consider another example: Suppose that Middle City provides a subsidy to Meals for the Homeless with monthly payments in advance. On the first day of each month, the city provides a payment to Meals for that month. However, Meals pays its employees on the first day of the following month. It pays its suppliers in the month following purchase. Thus, it would receive city payments for the entire year. However, for the last month of the year, it would not yet have paid its suppliers or employees. On a cash basis, it might appear that a significant surplus had been earned. In reality, one must consider the various resources that have already been consumed but not paid for by the end of the year.

Note that if one used a cash basis, there would be no receivables or payables on the balance sheet of the organization. Since revenues are not recorded until there has been a receipt of cash, the transaction is not recorded at the time the service is provided. The same holds true for the payment of liabilities. No financial event is recorded until the payment is made. In the case of Meals for the Homeless, an outsider might misinterpret the financial position of the organization because he or she would be unaware of all the payments to employees and suppliers that have not yet been made.

To avoid giving misleading information, any financial statements prepared in accordance with GAAP use accrual accounting. That approach gives a much better matching of revenues and expenses (resources earned and used) for the time period covered by the financial statements, often 1 year.

However, it is important to know how much cash the organization has received and used, where the cash came from, and where it went. Without monitoring the flow of cash, the organization can put itself at financial risk. Some organizations have sold off critical assets to raise cash because of losses from ongoing operations. The overall change in cash may not be significant. However, the implications of such actions are.

It is vital to be able to quickly determine whether the organization has a healthy positive flow of cash from its routine operations. If not, then both external and internal users of the financial statements will have cause for concern. [Chapter 10](#) discusses the cash flow statement that provides that information.

International Financial Reporting Standards

The International Accounting Standards Board (IASB) is the rule-making body that generates International Financial Reporting Standards (IFRS). Until relatively recently, accounting standards varied greatly from country to country. As the world has become a global marketplace, however, there has been a growing need for international consistency in financial reporting. This affects not only global for-profit corporations, but all healthcare and not-for-profit organizations with branches around the world. Moreover, recent developments may extend IFRS to all nongovernmental organizations in the United States.

In 2002, the European Union adopted IFRS as its reporting standard and many countries soon followed. There are now over 120 countries that either allow or require IFRS for reporting. Initially, convergence between U.S. GAAP and IFRS was expected. Many aspects of IFRS are not drastically different from GAAP. Issues such as relevance, reliability, and comparability of information are important under both systems. Both systems require the accrual basis of accounting and require balance sheets, income statements, cash flow statements, and notes. However, there are substantial differences. IFRS allow property, plant, and equipment to be revalued to their fair value rather than requiring reporting based on historical cost less depreciation. IFRS does not allow the LIFO inventory method, which is allowed under GAAP (see [Chapter 10](#) for a discussion of LIFO). There are many other technical differences as well.

The trend toward convergence sputtered in 2014, when the FASB and the IASB approached lease accounting differently. Therefore, while it no longer appears full convergence between GAAP and IFRS will occur, at least in the near future, the initial attempt at convergence did result in many changes to GAAP to make them conform with IFRS.

Fiscal Years

A balance sheet can be prepared to show the organization's financial position at any point in time. Many organizations prepare balance sheets routinely at the end of each month or quarter year. Virtually every organization prepares a balance sheet at the end of its fiscal year.

Although individuals usually focus on the calendar year, entities can choose any 12-month period for their financial or fiscal year. Although many public, not-for-profit, and health organizations use a calendar year, a large number do not. An organization that chooses to end its year on June 30 of each year would be said to have a June 30 fiscal year-end. Any time during the period from July 1, 2017, through June 30, 2018, would be said to be part of fiscal year 2018.

The fiscal year-end is chosen to make things easier and less expensive. Often organizations choose the slowest time of the year. For example, hospitals may be busier in the winter, when there are a lot of weather-related illnesses, and slower in the summer. Employees of the hospital will have more time to count inventory items, summarize financial results, and prepare year-end reports when there are fewer patients, fewer bills to be issued, less inventory to count, and so on. So hospitals often end their year on June 30, as do many school districts. Governments also typically have a July 1 to June 30 fiscal year.

At the end of the fiscal year, many things have to be taken care of by both internal accountants who work for the organization and the external auditor. As noted earlier, many organizations are required to have an annual review of their accounting records by an outside, independent CPA. When this audit takes place, the management of the organization gets tied up answering many time-consuming questions. Often year-end tax returns must be prepared, even by not-for-profit organizations. Other year-end reports, such as Medicare cost reports, are also filed shortly after the fiscal year ends. Therefore, if you can find a time when the accounting functions within the organization are at a slow point, it makes for a good fiscal year-end.

Balance Sheet Elements

We now turn our attention to the components that make up a balance sheet. The basic elements of a balance sheet are shown in [Exhibit 9-1](#), which uses the hypothetical Meals for the Homeless as an example.

The first asset subgroup is current assets, and the first liability subgroup is current liabilities. The terms *short term*, *near term*, and *current* are used interchangeably by accountants and usually refer to a period of time less than or equal to 1 year. Current assets are those assets that are cash or cash equivalents, or will either become cash or be used up within a year. Cash equivalents are very short-term investments that are readily converted to cash, such as money market deposits or treasury bills. Current liabilities are obligations that must be paid within a year.

Why are current assets and liabilities separated and highlighted by being shown first? These items get prominent attention by being at the top of the balance sheet. This helps the reader quickly determine if the entity likely has enough resources that will become cash in the near future to pay off obligations due in the near future. This becomes a critical diagnostic test of the financial health and stability of the organization.

Current assets include not only cash but also securities, receivables, inventories, and several other items. The primary requirement for classification as a current asset is management's expectation or intention to convert the asset to cash or use it up within a year. Thus, an investment in Microsoft stock would be a current asset only if we expect to sell it in the coming year. Otherwise the stock would be treated as a long-term asset.

Long-term (greater than a year) assets are divided into several sections. *Fixed assets* represent the entity's property, plant, and equipment. Investments are primarily stocks and bonds purchased with the intent to hold on to them as a long-term investment. Intangibles, when included on the balance sheet, are generally shown as a long-term asset category.

In addition to current liabilities, the firm also typically has obligations that are due more than a year from the balance sheet date. Such liabilities are called long-term liabilities.

The last section on the balance sheet is the owners' equity. This is reported below liabilities on the balance sheet. As discussed earlier, owners' equity, net assets, fund balance, or stockholders' equity represents the residual amount after liabilities have been subtracted from assets.

Assets: A Closer Look

We now turn our attention to issues regarding the specific components that appear on most balance sheets. Note, however, that this is not a comprehensive listing of all possible asset categories.

Cash

Assets are shown on the balance sheet in the order of liquidity, with the most *liquid assets* listed first. Liquidity refers to how close an asset is to being cash. The more quickly an asset can become cash available for spending, the more liquid the asset is. Liquid assets are readily available to pay the organization's obligations. Cash is considered to be the most liquid asset, assuming that it is available for current use. Cash means not only cash on hand, but also checking and savings accounts. Cash is always the first item listed under current assets. And current assets are listed before long-term assets because they are more liquid than long-term assets.

In some cases, the organization has cash in a bank account, but it is being held for some long-term use. For example, we might be legally obligated to put cash aside for repayment of a bond liability when it reaches its maturity. That cash will be shown as a long-term asset because it is not currently available for use.

In [Exhibit 9-1](#), we see that Meals for the Homeless ended the year with \$1,000 of cash.

Marketable Securities

The next most liquid class of assets is marketable securities. These represent equity securities and nonequity instruments that are actively traded in stock and bond markets. Marketable securities are liquid because they can be bought and sold on any business day with settlement of the sale made in cash within a few days.⁶

⁶ Current regulations call for settlement (completion of the exchange) of sales of most stocks and bonds on the second business day after the transactions. Sales of treasury securities can often have same-day settlement.

Stock is referred to as an equity security because when you buy stock you are buying an ownership, or equity, interest in the company. Debts, such as bonds and notes, are nonequity instruments; they do not infer ownership. If the market value of bonds drops, this has no effect on the holder if the bond is held until maturity when it is repaid.

The current rules for government and not-for-profit organizations require them to report all securities that have readily determinable fair values at their fair value on the balance sheet.⁷ These fair values are often based on trading that takes place in an active marketplace, such as a stock exchange, where similar assets are traded. The process of updating the value of assets to their current fair or market value is a process called *mark-to-market*.

⁷ Investor-owned organizations, such as for-profit hospitals, must report investments in debt securities that the organization intends to hold until maturity based on the cost of the security rather than its fair value.

GAAP creates a hierarchy of fair values that must be used when asset values are reported in audited financial statements. Level 1 fair values are based on the most reliable information, such as direct observation of the prices at which trades of the identical stock or bond took place. So a stock or bond price on the day a balance sheet is prepared would be the Level 1 fair value. Level 2 would include assets whose fair value is based on similar, but not identical financial instruments (e.g., bonds issued by one organization may be considered to be similar to bonds that were traded that had the same maturity, bond rating, and other characteristics, but were issued by another organization). Level 2 data are not as reliable as Level 1. For example, other organizations' bonds may be similar to the one you hold, but no two bonds issued by different companies or governments could be considered exactly the same. The value of the bond you hold may not be exactly the same as the one used to obtain the fair value estimate. Level 3 in the hierarchy is reserved for assets whose fair value is based on indirect measurements that involve a significantly greater amount of assumption and estimates. This is considered to be the least reliable information in the hierarchy.

Despite the potential weaknesses of assigning fair values using less than totally reliable information, under normal conditions mark-to-market generally results in a better reporting of an asset at its true current value than does historical cost. However, if market values differ from the true underlying value of the asset, the valuations can be distorted. Such distortions might occur if there is great uncertainty about the underlying asset value or if current market conditions have created an irrational swing toward overexuberance or overpessimism, as might occur during financial crises. Mark-to-market conventions can also provide unstable estimates of value when markets are highly volatile as they were during the 2008–2011 period when daily price changes of up to 5 percent were not uncommon. Some argued that mark-to-market accounting contributed to the 2008 economic crisis, because banks were required to reduce the value of their asset holdings (in this case, mortgage-backed securities) as housing prices fell and delinquencies and defaults increased. In 2009, the FASB eased mark-to-market rules in periods when markets are unsteady or inactive, thus allowing for the valuation to be based on a price that would be received in an *orderly market* rather than a forced liquidation.

In [Exhibit 9-1](#), we see that Meals has \$3,000 of marketable securities.

Accounts Receivable

As noted previously, accounts receivable come in a number of varieties. Generally, if we provide goods and services, we use the term *accounts receivable*. Governments have taxes receivable. United Way has pledges receivable. Research organizations have grants receivable. There are an unlimited number of different account names or titles.

Not all accounts receivable are ultimately collected, as noted previously in the discussion of conservatism. The principal risk of allowing people to make purchases on credit, or on account, is that some will never pay the amount they owe you. This creates a significant problem in an accrual accounting system. If we were using cash accounting, we would not record a transaction until the cash was received. At that time, we could record the increase in cash. On an accrual system, we record the increase in accounts receivable at the time the service is provided.

However, this raises the possibility of overstating the receivables asset if not all receivables are ultimately collected. To adjust for this, an estimate is made of the amount of year-end receivables that will not be collected. This adjustment is generally based on historical patterns. One approach to making the estimate is to take a percentage of all sales for the year that are not paid for in cash. This would be based on the percentage of all sales that, based on history, are typically never collected by the organization. Another approach is to take a percentage of outstanding receivables at year-end.

The accounts receivable aging report, discussed in [Chapter 7](#), is particularly valuable for helping managers make an estimate of the amount of receivables that will never be collected. For example, an organization's experience may have shown that 90 percent of all receivables more than 120 days old are never collected, 75 percent of those between 90 and 120 days, 30 percent of those between 60 and 90 days, and 4 percent of all receivables less than 60 days old. These percentages can be multiplied by the balances in each of those age categories to determine how much of the outstanding receivables at year-end are likely to become bad debts.

For Meals for the Homeless, total year-end accounts receivable are \$63,000. Of that amount, Meals believes that \$8,000 may not be collectible, leaving a net amount expected to be collected of \$55,000. The net amount and the estimated uncollectible amount are shown in [Exhibit 9-1](#).

Inventory

The next asset group, in the order of decreasing liquidity, is inventory. This represents supplies that have been acquired to be used in the process of making goods or providing services for sale. For instance, HOS must buy bags of saline solution, pharmaceuticals, and other supplies that will be used for treating patients. Following the cost principle of accounting, inventory is shown on the balance sheet at its cost. There are a number of different approaches to determining the cost of inventory (discussed in [Chapter 10](#)). [Exhibit 9-1](#) indicates that Meals for the Homeless had \$2,000 of inventory at the end of the year.

Prepaid Expenses

Prepaid expenses are assets that represent prepayments. For example, suppose that we paid \$100 for a 1-year fire insurance policy on the last day of the year. The cash is gone, but the fire insurance will protect us for all of next year. We have not reduced our assets; we have merely exchanged one asset (i.e., cash) for another asset (i.e., fire insurance).

How would that latter asset appear on the balance sheet? It would be listed as a prepaid expense. The title emphasizes the fact that we do not expect this asset to generate cash. We expect it to be consumed over time and become an expense. However, since we paid for it in advance, it is currently an asset.

Short-term prepayments that will be consumed within 1 year are called prepaid expenses. Longer-term prepayments are referred to as *deferred charges* and appear in the long-term asset section of the balance sheet. For example, if the organization paid for a 3-year insurance policy, one-third of the cost would appear on the balance sheet as a prepaid expense and two-thirds would appear as a deferred charge. Meals for the Homeless ended 2017 with \$1,000 of prepaid assets.

Fixed Assets

The most prominent of the long-term asset categories for many organizations is fixed assets. This category includes the property (land), plant (buildings), and equipment (including furniture) owned by the organization.

Land is recorded at its cost. Land never gets used up. Therefore, there is no reason to reduce its value on the balance sheet. It may rise or fall in value. However, due to the subjectivity involved in estimating a current value, accountants rely on the objectivity and cost principles and, as a result, record land on the balance sheet at its cost. From [Exhibit 9-1](#), we see that Meals for the Homeless owns land that it paid \$40,000 to acquire. We cannot estimate its current market value from the balance sheet.

Plant and equipment are originally recorded at cost when acquired. As time passes, they get used up. They physically decline, requiring more maintenance and eventually replacement. The accrual process requires us to charge an expense in the period that an asset is used to help generate revenue. If a machine is used for 5 years to generate revenues for the organization, then its cost should be assigned to those 5 years. This is done through the depreciation process.

Suppose that Meals bought a delivery van for \$32,000 the previous year. It believes that it can use the van for 5 years and then sell it for \$2,000. The \$2,000 is called the salvage value. Since Meals will recover that part of the original cost, it is using up only \$30,000 worth of equipment over that time period. This \$30,000 can be allocated at a rate of \$6,000 per year for each year. The process of allocating a portion of the cost of an asset to each year for a period of years is referred to as taking depreciation. Each year there is a depreciation expense of \$6,000, and the net value of the equipment is decreased by that amount.⁸ Intangible assets, such as patents, are generally amortized rather than depreciated. The impact is the same whether we refer to the process as amortization or depreciation. Depreciation expense is part of the activity statement (discussed in [Chapter 10](#)).

[8.](#) This approach to depreciation is sufficient to assign a part of the cost of the asset to each year that it provides useful service to the organization. However, it is unlikely to provide a good approximation of depreciation from an economic perspective. This issue is discussed further in [Chapter 10](#).

How are plant and equipment shown on the balance sheet? We did not buy the van this year, but we still own it, so it must appear on the balance sheet. However, it is no longer new. We are therefore not allowed to show its full cost, because it has been partly used up. Instead, we report its *net book value*. The net book value is the original cost of the asset less the total amount of depreciation that has been taken for all the years that we have owned it. For example, after Meals owns the van for 2 years, the accumulated depreciation will be \$12,000. Suppose that Meals also owns kitchen equipment (e.g., ovens, refrigerators) that cost \$21,000. This equipment is expected to last 10 years and have a \$1,000 salvage value. We have owned and used the equipment for 3 years by the end of 2017. The annual depreciation on the kitchen equipment is \$2,000. The accumulated depreciation after 3 years is \$6,000:

Kitchen Equipment Cost	\$21,000
Less Salvage Value	- 1,000
Depreciable Base	\$20,000
Divided by 10-Year Useful Life	÷ 10
Depreciation per Year	\$ 2,000
Times Number of Years Owned	× 3
Accumulated Depreciation	\$ 6,000

For Meals as a whole, the net book value, or equipment net of depreciation, or simply the net value of the equipment is as follows:

Van and Kitchen Equipment at Cost \$32,000 + \$21,000 =	\$ 53,000
Accumulated Depreciation \$12,000 + \$6,000 =	18,000
Equipment, Net of Depreciation	<u>\$ 35,000</u>

Sometimes land is included in the total. If we are referring to land, buildings, and equipment, the net value of \$35,000 would be combined with the land cost of \$40,000 and the \$75,000 total would be called Property, Plant, and Equipment, Net, or Net Fixed Assets.

The equipment's net value is shown on the balance sheet, as we see in [Exhibit 9-1](#). However, the cost and the accumulated depreciation must also be disclosed. If we do not show that detail on the balance sheet, it must be disclosed in a set of notes that accompany the financial statement. In this case, Meals shows its property and the net value of its equipment. The cost of the equipment and the accumulated depreciation would therefore have to be disclosed in a note.

Why show all three values? They help us understand the size of an organization and how old its facilities are. Compare Meals for the Homeless in City A one year after buying its only van with Feed the Hungry in City B. Which is bigger? Which will have to replace its vans sooner?

	Meals for Homeless City A	Feed the Hungry City B
Equipment, Net	\$35,000	\$30,000

According to this information, they certainly seem to be similarly sized organizations. Meals is perhaps a bit larger. However, consider the following more detailed information provided in the notes that accompany the balance sheet:

	Meals for Homeless City A	Feed the Hungry City B
Equipment at Cost	\$ 53,000	\$128,000
Accumulated Depreciation	(18,000)	(98,000)
Equipment, Net	<u>\$ 35,000</u>	<u>\$ 30,000</u>

It turns out that Feed the Hungry really has much more equipment than Meals. It is probably a larger organization. It would appear that its equipment is also much older, since there is so much accumulated depreciation, and will need substantial replacement in the near future. Thus, we learn a lot more by looking at the details than we do by looking at just the net value.

Sinking Fund

A sinking fund is an account in which money is put aside for some future use. The most common purposes of sinking funds are to accumulate money to be available to repay a bond or to purchase building and equipment

replacements in the future. Every year, some organizations put into a sinking fund an amount of money equal to the depreciation for the year. That provides a way to accumulate money to replace old facilities. However, in most cases, there are no rules requiring that such savings take place. Meals for the Homeless does not have a sinking fund, although it does have \$8,000 of investments (see [Exhibit 9-1](#)). Some organizations use investments as a less formal form of sinking fund. The investments can be sold to raise cash that can be used to replace buildings and equipment, or for emergencies or service expansions.

Recording Asset Transactions

For assets to appear on the balance sheet, the financial events that create them must be recorded. Once the events have been recorded, they can be summarized and reported in the financial statements. For assets to be recorded, (1) they must be owned by the entity, (2) they must have a monetary value, and (3) the monetary value must be objectively measurable.

When Meals for the Homeless buys a van, it owns the van, the van has monetary value, and we can measure that value based on what Meals paid. It becomes an asset at the time of purchase. When New York University (NYU) hires a famous professor, it enhances the overall reputation of the university. NYU owns its reputation. The reputation might result in more tuition and contribution revenue to the school, so it has a monetary value. However, the increase in monetary value resulting from hiring the professor cannot be objectively measured. Thus, an asset cannot be recorded because the professor was hired.

Liabilities: A Closer Look

Liabilities are divided on the balance sheet into current (or near-term or short-term) liabilities and long-term liabilities. *Current liabilities* appear on the balance sheet before long-term liabilities. Just as assets are shown in liquidity order, so are liabilities. The sooner the liability is expected to be paid, the higher it appears on the balance sheet. This is done because the organization needs to know how much cash it will need and when it will need it to meet its obligations. Long-term liabilities are those that will not have to be paid until at least 1 year into the future.

Note that there are many possible types of liabilities. This introduction is not meant to be an all-inclusive listing of the different types of liabilities.

Accounts Payable and Wages Payable

Accounts payable are the flip side of accounts receivable. They represent amounts that the organization owes its suppliers. Most payables have due dates of 1 month or less. Similarly, amounts owed to employees for wages are generally paid in the very near term. Therefore, both accounts payable and wages payable generally appear quite high on the list of current liabilities.

From [Exhibit 9-1](#), we see that at the end of the year Meals for the Homeless had \$2,000 of wages payable and also \$3,000 of accounts payable. Meals also had a short-term note payable of \$5,000 and another \$5,000 that represents the current portion of a long-term mortgage. That \$5,000 current portion of the long-term mortgage is discussed later.

Long-Term Debt

There are several forms of long-term debt: capital leases, unsecured long-term loans, mortgages, and bonds.

Leases

There are two major categories of *leases*: *operating leases* and capital leases. A capital lease is one in which the organization is effectively buying an asset but paying for it with monthly lease payments. Capital leases are long-term and noncancellable. An operating lease is any lease that is not a capital lease. Short-term leases (less than 1 year), or cancellable leases, are treated as operating leases.

When an asset is leased, if the lease is noncancellable and is for a long period of time, or if the lease allows the organization an option to buy the asset at a very low price, accountants feel that the real intent was to have all the benefits of ownership. In that case, the liability under the lease should appear on the balance sheet as a long-term liability. The asset should also appear on the balance sheet as a long-term asset. The lease is referred to as a capital lease, and accountants would say that the lease has been capitalized.⁹

⁹ The exact rules for when a lease must be considered a capital lease are technical and are not discussed here. They contain definitions of how long an asset can be leased without being capitalized and how one defines a

low optional purchase price.

In the case of a capital lease, the organization may ultimately intend to own the asset. But until title transfers, the monthly lease payments are for the right to use the asset rather than for the asset itself. So rather than showing the asset itself on the balance sheet, we show the lease as an asset. For example, a capital lease on a building would not be called a building on the balance sheet. It would be referred to as a *leasehold asset*.

Suppose that Meals for the Homeless did not buy a van but instead signed a 5-year noncancellable lease for the van. Since it intended to keep the van for 5 years anyway, GAAP requires that we show a long-term *leasehold liability* and long-term leasehold asset on the balance sheet.

An operating lease is one that can be canceled or one that does not otherwise meet the conditions for a capital lease. For example, the lease signed on an apartment is generally an operating lease. Operating leases do not appear on the balance sheet as either a liability or an asset.

[Exhibit 9-1](#) reveals that Meals for the Homeless does not have any capital leases. We do not know from the balance sheet whether it has operating leases.

Secured and Unsecured Long-Term Loans

A mortgage payable is a long-term loan secured by a specific piece of collateral, usually real estate. An unsecured long-term loan is simply a loan for which no specific collateral is provided. Unsecured loans are riskier than loans with collateral; therefore, they tend to require a higher interest rate. However, they require less processing (appraisal of property and so on) and may be preferable for periods that are more than a year yet still relatively short-range, such as 2 to 5 years.

Mortgages are often for longer periods, such as 10 or 30 years. For most mortgages, the amount paid each month is the same, similar to a monthly rent payment on an apartment. However, part of the payment is used to pay interest on the outstanding loan. The rest of the payment is used to pay back part of the loan. That means that the next month the amount owed is less. Therefore, the interest will be less in the subsequent period. Each month a greater portion of the monthly payment is used to pay off the loan. As a result, early in a mortgage the interest portion of each payment is larger, and later in the mortgage the interest portion of each payment is lower. This is discussed in [Chapter 6](#).

As a review, consider the following example. Suppose that Meals for the Homeless, to buy a delivery van, borrowed money in the form of a mortgage on the van. The loan was for \$25,000 with interest at 8 percent and payments of \$6,261.41 at the end of each year.

	Beginning Loan Balance	Total Payment	Interest Portion	Repayment Portion	Ending Loan Balance
Year 1	\$25,000	\$6,261	\$2,000	\$4,261	\$20,739
Year 2	20,739	6,261	1,659	4,602	16,136
Year 3	16,136	6,261	1,291	4,971	11,166
Year 4	11,166	6,261	893	5,368	5,798
Year 5	5,798	6,261	464	5,798	0

At the beginning, the balance of the mortgage is \$25,000. At the end of Year 1, just prior to the payment,

there is still an outstanding balance of \$25,000. We have owed \$25,000 for the full year. Interest on this amount at 8 percent is \$2,000. Therefore, of the \$6,261 payment, \$2,000 pays the interest for the year, and \$4,261 goes toward reducing the balance owed. Since the amount still owed is lower in the second year, the interest is lower. Note that the payment is constant each year, the interest falls each year, and the loan repayment rises.

Although the van costs \$32,000, Meals used a down payment of \$7,000 of its own money and borrowed just \$25,000. It is generally the case that lenders will not give a 100 percent mortgage. If the borrower fails to make all necessary payments, the lender has the right to foreclose on the asset and sell it. As a used asset, it is unlikely to have as much value as when originally purchased. Thus, the down payment serves as protection for the lender.

Although a mortgage is a long-term loan, each year a portion of the principal is repaid. Since that amount is repaid within 1 year, it must be shown as a current liability. As a result, balance sheets report the portion of the mortgage that will be repaid within 1 year as a current liability and the portion that will be repaid more than 1 year in the future as a long-term liability. Meals for the Homeless bought its van at the beginning of the previous year and has owned it for 2 full years. In [Exhibit 9-1](#), the \$16,136 that Meals for the Homeless still owes on the mortgage for the van is shown as \$5,000 under current liabilities and \$11,000 under long-term liabilities. Meals has chosen to show numbers on its financial statements rounded off to the nearest thousand dollars. Meals really will repay \$4,971 of the loan in the coming year. That has been rounded off to the \$5,000 shown under current liabilities.

Bonds Payable

Bonds payable are loan obligations in which the money generally comes from a large number of lenders, such as individuals. The bonds often can be traded in a manner similar to stocks. Bonds often promise to pay annual or semiannual interest payments plus a lump sum, called the face value, at the maturity point. On the balance sheet, the value shown is the present value of the future cash flows. Recall that in [Chapter 6](#), the value of a bond is determined by taking the present value of the principal payment to be made at maturity plus the present value of the interest payments to be made. That same total present value is reported on the balance sheet. It does not matter if the bond was issued at its face value or at a premium or discount; the present value of the future cash payments is the amount shown on the balance sheet.

Suppose that a bond with a face value of \$1,000 has semiannual interest payments of \$35 for 30 years and is issued for \$900. Although the organization is obligated to pay \$1,000 at maturity and will make 60 payments of \$35 each over the intervening years, the bond would be shown on the balance sheet at its present value. At the date of issue that would have been \$900, since the value of the bond at the time of issue was determined by taking a present value using the current market interest rate for that security.

It seems inadequate to show a liability of just \$900 if the organization will have to pay \$1,000 at maturity. However, the difference between those numbers represents additional interest. The reason the bond is issued at a discount from its face value is that the semiannual interest payments represent a lower interest rate than is

called for by current market conditions. Thus the \$100 difference actually represents additional interest to bring the bond's payments up to the market interest rate. Interest is a payment for the use of the money over time. Until we use the money over time, the interest is not due or owed and does not appear as a liability on the balance sheet. So the present value represents the liability for the bond at the balance sheet date.

Recording Liabilities

As noted previously, to prepare a balance sheet in accordance with GAAP, one must first record all financial events. Liabilities may be recorded if (1) they are legally owed, (2) they will have to be paid, and (3) the amount to be paid can be objectively measured. When an organization purchases supplies from a vendor without making payment immediately, a liability is recorded because the organization owes the vendor money, will have to pay the vendor, and knows how much it owes.

Net Assets or Fund Balance: A Closer Look

Owners' equity, net assets, net position, or fund balance consists of amounts that have been contributed to the organization and profits or surpluses that have been earned and retained in the organization over time. It represents the ownership of all of the organization's valuable resources or assets that are not needed to pay its liabilities. Generally, lenders are unwilling to provide an organization with loans that equal all assets. They require some owners' equity as a cushion to protect them. If you go bankrupt and sell off all your assets at a loss, they want there to be sufficient assets to repay the amount you owe them.

In [Exhibit 9-1](#), net assets are shown as one summary amount. Current rules require that net assets of not-for-profit organizations be subdivided into unrestricted, temporarily restricted, and permanently restricted portions. The first of the three sections, *unrestricted net assets*, are net assets whose use has not been restricted by donors. The second part of net assets are *temporarily restricted* amounts. These represent donated amounts that have restrictions as to when or how they are to be used. The third section is *permanently restricted net assets*. These are amounts that arise when a donation is made that must be maintained in perpetuity. Donations to a permanent endowment would fall into this category. Often income earned on the endowment becomes unrestricted and can be spent by the organization. The three components of net assets are discussed further in [Chapter 11](#).

For-profit organizations have an owners' equity section, which is generally called stockholders' equity and consists of two sections: contributed capital and retained earnings. Contributed capital (sometimes referred to as "paid-in capital") represents the amounts that individuals have paid directly to the firm in exchange for shares of ownership such as common or preferred stock. Retained earnings represent the portion of the profits that the firm has earned over the years that has not been distributed to the owners in the form of dividends. Retained earnings, like all items on the equity side of the balance sheet, represent a source of assets but are not assets themselves.

Recording Financial Information

The goal of financial accounting is to report financial information that is useful to external users. To prepare such reports, a system is needed to record financial events as they occur. One of the main jobs of the internal accounting systems in any organization, therefore, is to record all events that have a financial impact on the organization. Once the events have been recorded, they can periodically be summarized, and the organization's financial position and the results of operations can be reported. This section looks at the recording process. The next section of this chapter considers how the recorded data are used to develop financial reports and, in particular, the balance sheet.

A financial event is one that affects the fundamental equation of accounting. Recall, for example, that for a not-for-profit organization the equation is as follows:

$$\text{Assets} = \text{Liabilities} + \text{Net Assets}$$

How would financial transactions affect this equation? By causing changes in assets, liabilities, and net assets. The changes in net assets are generally caused by revenues, which increase net assets, or by expenses, which decrease net assets. Revenues, expenses, and other possible causes of changes in the owners' equity or net assets are discussed in [Chapter 10](#). This discussion focuses just on changes in assets and liabilities.

Using Computers to Record Financial Transactions

The process of recording financial information can be quite tedious and subject to many errors. To improve the efficiency and accuracy of the recording process, most organizations use specialized accounting computer software programs. There are many basic, relatively inexpensive, off-the-shelf programs that can be useful for smaller organizations. For example, Intuit's QuickBooks and Sage's Peachtree can meet the basic accounting needs of most organizations and have specialized modules to handle the distinctive requirements of not-for-profit organizations. Larger organizations often use more specialized programs that have been created to meet specific industry requirements or even have customized software programmed for their own organization. In this text, however, we focus on understanding the conceptual issues, rather than software applications. The solid foundation for recording financial information provided in this and the next chapter is critical for having an understanding of the process, whether it is carried out manually or using one of the many available accounting software programs.

The General Journal and Journal Entries

The central recording device used by accountants is the *general journal*. A journal is simply a chronological listing of every financial event that affects the organization. The general journal is similar to a diary in that events are listed in the order they occur and as concurrently as possible.

When an event occurs and is entered into the journal, the process is referred to as making a *journal entry*. The general journal is considered to be the book of original entry. This is because no event has been recorded by

the organization until it is entered in the general journal.

Each type of asset, liability, revenue, or expense is referred to as an account. We have already discussed accounts receivable and accounts payable. Anything that the organization needs to track or keep account of is referred to as an account. Organizations have a cash account, a buildings account, and so forth.

It is impossible for an event to affect only one account and leave the equation in balance. For example, suppose that not-for-profit HOS buys a piece of equipment for \$2,000. What would happen to the equation if we recorded an increase in the equipment account?

ASSETS	=	LIABILITIES	+	NET ASSETS
Equipment				
+\$2,000	=	No change on right side		

The left side of the equation has increased by \$2,000, but the right side is unchanged. The equation is no longer balanced. To describe an entire event, it is necessary to record a change to at least two elements in the fundamental equation. In this example, the hospital has purchased a piece of equipment. Assume that HOS has not yet paid for the equipment but expects to pay within 30 days. The organization's liabilities have changed.

ASSETS	=	LIABILITIES	+	NET ASSETS
Equipment		Accounts Payable		
+\$2,000	=	+\$2,000		

The equation is now in balance. The system for recording financial events, more commonly called transactions, is referred to as *double-entry accounting*. The term *double-entry* does not mean that the transaction is recorded twice. It means that both parts of the transaction are recorded, allowing the fundamental equation to remain in balance.

That does not mean that there must be a change on each side of the equation. For example, suppose that HOS buys inventory for \$500 and pays cash for it. The equation would change as follows:

ASSETS	=	LIABILITIES	+	NET ASSETS
Cash Inventory				
-\$500 +\$500	=	No change on right side		

Clearly, a transaction has occurred, and it has affected two items in the fundamental equation. There was no change on the right side of the equation, but the equation is still balanced because one account on the left side of the equation has increased and another account on the left side has decreased. A journal entry is not limited to changes in just two accounts, either. For example, suppose that HOS paid only \$300 when it received the inventory and it owed \$200 on account. The transaction would be recorded as follows:

ASSETS	=	LIABILITIES	+	NET ASSETS
Cash Inventory		Accounts Payable		
-\$300 +\$500	=	+\$200		

Note that in total there has been a \$200 increase on both the left side and right side of the equation. The equation is in balance after the transaction. Double-entry bookkeeping requires at least two items to change when a transaction is recorded. However, it does not limit the number of accounts that can change as part of

one transaction.

Debits and Credits

The words *debit* and *credit* are commonly used in the process of recording financial information. In the development of accounting, records were originally kept to keep track of loan transactions. If money was owed to a person, he or she was considered to be a creditor, and if a person owed money, he or she was considered to be a debtor. Based on the Latin roots for those words, *credit* for creditor and *debit* for debtor became central to the process of recording information.

Today these terms are part of the technical process of bookkeeping. Although they are a useful bookkeeping device, they are primarily a mechanical aid in the process of recording transactions. The bookkeeping use of debits and credits is discussed in Appendix 9-A at the end of this chapter.

Recording Transactions

To get a better understanding of the process of recording financial information, we now consider a series of transactions for HOS for the year 2018. In real life, a hospital would have hundreds of thousands or even millions of transactions. We will consider only a few highly summarized transactions. This will provide a better understanding of the process of recording information and allow us to discuss how information is summarized and reported. The example will also be used as a vehicle to review some GAAP.

[Exhibit 9-3](#) presents the balance sheet for HOS as of December 31, 2017. The information on the balance sheet at the end of one year is also the information for the beginning of the next year. Therefore, our fundamental equation of accounting on January 1, 2018, is as follows:

January	February	March	April
\$220,000	\$200,000	\$240,000	\$230,000

Hospital for Ordinary Surgery Balance Sheet As of December 31, 2017	
Assets	
Current Assets	
Cash	\$ 52,000
Accounts receivable	18,000
Inventory	5,000
Total Current Assets	\$ 75,000
Fixed assets	
Plant and equipment, net	\$240,000
Total Assets	\$315,000
Liabilities and Net Assets	
Liabilities	
Current Liabilities	
Accounts payable	\$ 7,000
Wages payable	30,000
Total Current Liabilities	\$ 37,000
Long-Term Liabilities	
Mortgage payable	140,000
Total Liabilities	\$177,000
Net Assets	
Unrestricted	\$113,000
Temporarily restricted	15,000
Permanently restricted	10,000
Total Net Assets	\$138,000
Total Liabilities and Net Assets	\$315,000

Note that these amounts are taken from [Exhibit 9-3](#). As transactions occur during the year, they change the

fundamental equation. As each financial event is recorded, we will keep track of its effect on this equation, and we will record the journal entry. After a journal entry is recorded, journalizing an event into the financial history of the organization, this equation must still be in balance, or some error has been made. At this point, we will consider only transactions that affect the balance sheet. This example is continued at the end of [Chapter 10](#), including transactions that affect other financial statements. Consider the following events for HOS during 2018:

1. January 1. HOS purchased a fire insurance policy for \$100. A check was mailed to pay for the policy.

The first thing that must be done in recording a journal entry is to determine what has transpired. In this first event, the organization has mailed a check for \$100. The movement of cash is a definite indication that a financial event has taken place. The balance in our cash account (an asset) has gone down. The organization now owns an insurance policy, which will provide protection. That represents a valuable asset, called prepaid insurance (P/I). The effect of this transaction on the equation would be as follows:

ASSETS		=	LIABILITIES	+	NET ASSETS
Cash	Prepaid Insurance				
-\$100	+\$100	=			No change on right side

Overall, there has been a \$100 decrease and a \$100 increase, but the total balance on either side of the equation has not changed. However, if we were to prepare a balance sheet at this time, there would be changes. The balance sheet would show less cash and more prepaid insurance.

2. January 23. HOS mails a check to its supplier for \$2,000 of the \$7,000 it owed at the end of 2017. (Refer to [Exhibit 9-3](#) for the accounts payable liability at the end of the previous year.)

Cash has again decreased. This time there is a corresponding decrease in the liability accounts payable (A/P).

ASSETS		=	LIABILITIES	+	NET ASSETS
Cash	Accounts Payable				
-\$2,000		=	-\$2,000		

3. February 9. HOS places an order with a medical supply company to buy a special-order X-ray machine. It will cost \$50,000, and it will take more than a year to be delivered. HOS signs a contract to buy the machine.

This event does not give rise to a journal entry. From a financial viewpoint, no transaction has occurred. Even though there is a binding contract, HOS has not received anything yet and has not paid anything yet. There has been no exchange, so there is no financial transaction. HOS does not own the machine yet, and it does not have an obligation to pay for it until it does.

However, if the contract is for an amount of money that is considered to be material, then a GAAP referred to as “full disclosure” requires disclosure of this commitment in the notes that accompany the financial statements. The balance sheet itself, however, does not show an asset or liability related to this contract, and the accounting equation is not affected.

4. May 23. HOS purchases inventory on account for \$3,000. When this inventory is used to provide patient care, the hospital will be able to charge \$6,000 for it. The inventory has been received, but HOS has not paid for it.

This transaction will affect inventory and accounts payable. HOS has received an asset and owes money for it. The interesting question, however, is whether the inventory is recorded at its cost of \$3,000 or resale value of \$6,000. Following the cost and conservatism principles of GAAP, the inventory is recorded at its cost. We cannot anticipate the gain on a sale that has not yet taken place.

ASSETS		=	LIABILITIES		+	NET ASSETS
Inventory		=	Accounts Payable			
+\$3,000		=	+\$3,000			

5. June 9. Payments are received from insurance companies for patient care provided in 2017. \$12,000 of cash is received.

Cash increases as a result of this transaction, and another asset, accounts receivable (A/R), declines.

ASSETS		=	LIABILITIES		+	NET ASSETS
Cash	Accounts Receivable	=				
+\$12,000	-\$12,000	=				No change on right side

The General Ledger and Ledger Entries

From time to time, organizations need to summarize their financial transactions and prepare reports of their financial position and the results of their operations. Although only a few transactions have been discussed previously, most organizations have a huge number of transactions annually. The *general ledger* is a device used to accumulate and summarize the information provided by these transactions.

For example, NYU has more than 20,000 employees. That means that each year close to a million weekly payroll checks are issued. It has more than 40,000 students. That means that a substantial number of tuition payments are received. The university makes rental payments on many buildings each month. Its bookstore buys textbooks for thousands of courses. It buys pens, computers, and computer LCD projectors. Clearly, the university has well over a million transactions each year. That means more than a million journal entries. Each organization must have a method to summarize the huge amount of data that has been recorded in those journal entries so that it can provide useful information.

Given that financial statements are only a few pages long, we need a way to make the leap from the individual journal entries to the financial statements. This is done by using a device called a general ledger. A ledger is a collection of individual accounts. As noted earlier, anything we want to keep track of separately, or keep account of, is referred to as an account. Every account that might be affected by a journal entry is individually accounted for in a ledger.

For example, every organization wants to know how much cash it has, so it establishes a cash account. The same is true for accounts receivable, inventory, accounts payable, wages payable, and so on. As each journal entry is recorded, the corresponding ledger accounts are updated or *posted* for the impact of the journal entry. For example, recall that in transaction 1 for HOS, the journal entry is as follows:

ASSETS		=	LIABILITIES	+	NET ASSETS
Cash	Prepaid Insurance				
-\$100	+\$100	=	No change on right side		

The posting process consists of going to the ledger account for cash and entering a decrease of \$100 and going to the ledger account for prepaid insurance and showing an increase of \$100.

Working together, the general journal and general ledger are powerful tools. The general journal provides a complete chronological history of all events that have affected the organization. The general ledger lets us look at any account at any point in time and determine the balance in that account. At one time, all entries into the ledger were done manually in a book that had a separate page for each ledger account. Many organizations have computerized their accounting systems and no longer have a ledger book per se. Computer programs will automatically update the balance in each ledger account that is affected by a journal entry.

Each ledger account that appears on the balance sheet starts the accounting period with a balance. The balance is simply the balance from the end of the previous period. The journal entries from the current period are used to modify the ledger accounts. Then the balance in each ledger account at the end of an accounting period is simply a sum of the beginning balance plus the impact of all the transactions that have been recorded during the period.

Generating a Balance Sheet

The process of generating a balance sheet is not difficult once all transactions have been journalized (recorded in the form of journal entries) and entered into the ledger accounts. Essentially, one simply needs to take the ending balance in each balance sheet ledger account (as opposed to revenue and expense ledger accounts, which will appear on the activity or operating statement) and place it on the balance sheet.

[Exhibit 9-4](#) presents a transactions worksheet. This worksheet summarizes the five transactions for HOS discussed previously. For each transaction, the worksheet shows the impact of the transaction on the fundamental equation of accounting. It also represents a general journal and general ledger for HOS. The rows represent journal entries. The columns represent ledger accounts.

Exhibit 9-4

	ASSETS					LIABILITIES AND NET ASSETS					
	Cash	Accounts Receivable	Inventory	Prepaid Insurance	Plant & Equipment	Accounts Payable	Wages Payable	Mortgage Payable	Unrestricted	Temporarily Restricted	Permanently Restricted
Beginning Balance	\$52,000	\$18,000	\$5,000	\$ 0	\$240,000	\$7,000	\$30,000	\$140,000	\$113,000	\$15,000	\$10,000
Transaction 1	(100)			100							
Transaction 2	(2,000)					(2,000)					
Transaction 3											
Transaction 4			3,000			3,000					
Transaction 5	12,000	(12,000)									
Ending Balance	\$61,900	\$ 6,000	\$8,000	\$100	\$240,000	\$8,000	\$30,000	\$140,000	\$113,000	\$15,000	\$10,000

The first row in [Exhibit 9-4](#) gives the starting balances, taken from [Exhibit 9-3](#). The transaction rows (journal entries) are taken from the analysis of HOS's transactions done previously. The last row provides the ending balance. That row forms the basis for the balance sheet at the end of the period. Each ending account balance from the last row is directly transferred to [Exhibit 9-5](#) to create the balance sheet at the end of the year. For example, the \$61,900 from the first column, the cash ledger account, on [Exhibit 9-4](#) is the cash amount

shown on the balance sheet, [Exhibit 9-5](#).

Hospital for Ordinary Surgery Balance Sheet As of December 31, 2018	
Assets	
Current Assets	
Cash	\$ 61,900
Accounts receivable	6,000
Inventory	8,000
Prepaid insurance	100
Total Current Assets	\$ 76,000
Fixed assets	
Plant and equipment, net	\$240,000
Total Assets	\$316,000
Liabilities and Net Assets	
Liabilities	
Current Liabilities	
Accounts payable	\$ 8,000
Wages payable	30,000
Total Current Liabilities	\$ 38,000
Long-Term Liabilities	
Mortgage payable	140,000
Total Liabilities	\$ 178,000
Net Assets	
Unrestricted	\$113,000
Temporarily restricted	15,000
Permanently restricted	10,000
Total Net Assets	\$138,000
Total Liabilities and Net Assets	\$316,000

In this example, net assets did not change. The changes to net assets are the result of transactions that affect the operating or activity statement (often referred to as the income statement, discussed in [Chapter 10](#)). In [Chapter 10](#), the HOS example is expanded with additional transactions that impact both the operating or activity statement and on the balance sheet.

Subsidiary Journals and Ledgers

Many organizations have a set of subsidiary journals and ledgers in addition to the general journal and general ledger. These are used to provide more specific detailed information. For example, suppose HOS provided care to three different patients and sent an invoice to each of them. In each case, the event recorded in the general journal would be an increase in patient receivables and in patient revenues. The general ledger account for patient receivables and patient revenues would increase. The patient receivables on the balance sheet would reflect the sum of the journal entries for all three patients.

The organization needs detailed information on each patient as well. Needing to know how much money is owed to it by each of its patients, the organization will maintain a subsidiary accounts receivable journal and set of ledgers. Whereas the main ledger has separate accounts for cash, patient receivables, inventory, buildings, and so on, the subsidiary receivables journal and ledger will have separate accounts for Patient A, Patient B, Patient C, and so on. Subsidiary ledgers and journals are helpful for internal management of the organization. Financial statements, however, can be derived from the general ledger without the subsidiary ledgers.

Summary

Financial reports are prepared by organizations annually, or more frequently. These financial reports help managers understand the current financial situation of the organization and the financial results of its operations. They provide information not only for management of the organization, but for outsiders as well. Preparation of financial reports that will be examined by individuals external to the organization is referred to as financial accounting. Financial accounting employs a process of recording financial transactions, summarizing all of the information contained in the transactions, and reporting the information in a set of financial statements.

The statement of financial position, commonly referred to as the balance sheet, is the first of the financial statements, and it is the topic of this chapter. A balance sheet reports the financial position of the organization at a moment in time—often the end of the fiscal year. For any specific entity, this financial document provides a highly summarized view of its financial position at any one point in time.

Financial statements are derived from information contained in and changes to the fundamental equation of accounting. That equation states that the assets of the entity equal the liabilities plus the net worth of the entity. All of financial accounting is built around that fundamental equation. In addition, many organizations follow a set of rules or conventions that are referred to as Generally Accepted Accounting Principles (GAAP). These GAAP—such as the entity, monetary denominator, objective evidence, conservatism, going concern, and materiality principles—help to provide structure that makes the financial statements of different organizations understandable and comparable.

Balance sheets provide the reader with information about a variety of different types of assets and liabilities of the entity. Some of the asset categories discussed in this chapter are cash, marketable securities, accounts receivable, inventory, prepaid expenses, and fixed assets. A variety of liability categories are also discussed, including both short-term payables and long-term debt. The residual value of the entity when liabilities are subtracted from assets represents the ownership or equity value of the entity. This may be called net worth, owners' equity, net assets, fund balance, or a variety of other names that convey the equity concept, as appropriate for the specific type of entity.

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cost convention
principle, 325
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Questions for Discussion

- 9-1. What are assets, liabilities, and owners' equity?
- 9-2. What are other names for owners' equity?
- 9-3. What is the connection between the balance sheet and the fundamental equation of accounting?
- 9-4. Are there any difficulties in measuring assets?
- 9-5. What are GAAP and how do they relate to CPAs?
- 9-6. What is the point of the entity concept?
- 9-7. Explain the monetary denominator concept.
- 9-8. What are the problems with the objective evidence and cost conventions?
- 9-9. What major change has occurred regarding the GAAP of conservatism?
- 9-10. Why is it important for the CPA to evaluate the organization based on the going concern GAAP?
- 9-11. Do CPAs allow errors to exist in audited financial statements?
- 9-12. Do GAAP have a preference between cash and accrual bases of accounting? Explain.
- 9-13. What is the primary requirement for classification of an asset as a current asset?
- 9-14. Why are cash and cash equivalents listed first on a balance sheet?
- 9-15. What is the difference in the way that bonds are reported by for-profit and not-for-profit organizations?
- 9-16. Distinguish between the Titanic and a sinking fund.
- 9-17. Why must financial disclosure include the cost, accumulated depreciation, and net value of fixed assets?
- 9-18. What requirements must be met to record an asset?
- 9-19. When can liabilities be recorded?
- 9-20. What is a journal?
- 9-21. What is meant by double-entry accounting?
- 9-22. What are debits and credits?

Problems

9-23. For each of the transactions below, record whether it would result in an increase or decrease in assets and/or liabilities. An organization:

1. Purchases supplies with cash.
2. Purchases supplies on account.
3. Takes out a loan.
4. Repays loan principal.
5. Receives payment on a pledge.
6. Makes a payment on an amount it owes.
7. Prepays for insurance.
8. Pays employee wages that have been earned.

9-24. Shanna Engel started up a new nonprofit organization in 2017 named Concern for Animal Shelter and Habitats (CASH). The organization places homeless animals in permanent homes.

Transactions during the first month of operations were as follows:

1. Borrowed \$50,000 from a local bank. No interest is due on the loan during the first month, and the principal does not have to be paid back for 2 years.
2. Signed a contract with a local carpenter to build a fence to enclose the backyard. The carpenter charges \$250 per hour and expects the fence to take 10 hours to complete. He expects to begin work next month.
3. Bought 50 bags of dog food and 25 bags of cat food. Dog food costs \$20 per bag, while cat food costs \$30 per bag. The pet food was bought on credit (i.e., CASH has not yet paid for the supplies).
4. Bought a sign to hang in front of its building. The sign cost \$5,000 and CASH paid for it when it was received.
5. Purchased and received an office computer, server, printer, and copier. The total cost of the equipment was \$10,000, half of which was paid and the other half was still owed.

Show the impact of these transactions on the fundamental equation of accounting (Optional: Show journal entries using debits and credits. See Appendix 9-A.)

9-25. Because CASH is a new organization, the opening balances for all accounts were \$0. Record the transactions from Problem 9-24 in a worksheet similar to [Exhibit 9-4](#).

9-26. Use the ending balances from Problem 9-25 to prepare a balance sheet for CASH for 2017.

9-27. The Hospital for Ending Long-term Problems (HELP) had the following financial events during the year:

1. Collected \$250,000 in cash that it had billed to the federal government under Medicare. The money had been earned in the prior fiscal year and was recorded as revenue then.
2. Paid back \$100,000 it borrowed at the end of last year on a line of credit. The bank did not charge interest.
3. Bought \$25,000 in supplies to treat patients. HELP paid the supplier for all the supplies with

cash.

4. Belongs to the state hospital association, and its membership is current (meaning it is paid up through the end of the year). HELP receives an invoice for \$75,000 for next year's fees but has not paid it yet.
5. Replaced many of the patient examination tables. They cost \$50,000, and HELP put \$10,000 down in cash. The rest is still owed.
6. Paid \$65,000 it owed employees from last year. Employees had earned this last fiscal year, and it was recorded as an expense then.

Show the impact of these transactions on the fundamental equation of accounting (Optional: Show journal entries using debits and credits. See Appendix 9-A.)

9-28. HELP started the year with the following account balances (shown in alphabetical order):

Accounts Receivable	\$300,000
Cash	135,000
Accounts Payable	0
Equipment	70,000
Line of Credit	100,000
Permanently Restricted Net Assets	167,000
Supplies	7,000
Temporarily Restricted Net Assets	50,000
Unrestricted Net Assets	125,000
Wages Payable	70,000

Record these opening balances and the transactions from Problem 9-27 in a worksheet similar to [Exhibit 9-4](#).

9-29. Use the ending balances from Problem 9-28 to prepare a balance sheet.

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Appendix 9-A: The Recording Process: Debits and Credits

The words *debit* and *credit* are commonly used in the process of recording financial information. A debit (abbreviated Dr.¹⁰) represents an increase in an asset or expense. A credit (abbreviated Cr.) represents an increase in a liability or revenue.

¹⁰ This odd abbreviation is based on the Latin root of the word *debit*. Modern accounting is based on accounting systems developed in Italy more than 500 years ago. Therefore, it is not surprising to find a Latin influence on the language of accounting.

To understand the accounting use of debits and credits, we need to make a minor arithmetical transformation in the fundamental accounting equation. The way we have presented the equation represents a stock:

$$\text{ASSETS (A)} = \text{LIABILITIES (L)} + \text{NET ASSETS (NA)}$$

By a stock, we mean that the equation tells how much we have of something. The equation indicates the total amount of assets, liabilities, and net assets at a specific point in time. However, to record transactions, we are really focusing more on the flow of resources. That is, we are focusing on what is happening as time passes. Thus, we are interested in the changes in our assets, liabilities, and net assets. We can use the Greek letter Δ (delta) to represent “the change in” some amount.

Thus, the equation now reads:

$$\Delta \text{ ASSETS (A)} = \Delta \text{ LIABILITIES (L)} + \Delta \text{ NET ASSETS (NA)}$$

That is, the change in assets equals the change in liabilities plus the change in net assets. More simply,

$$\Delta A = \Delta L + \Delta NA$$

The two most prominent things that change net assets are revenues, or support, and expenses. When the organization provides goods or services, it earns revenues, or if it receives donations, it has support. Revenue and support increase net assets. We show revenue or support as R. When the organization uses resources to generate revenues, it incurs an expense. Expenses reduce net assets. We show expenses as E. (Revenues and expenses are discussed further in [Chapter 10](#).) We could think of changes to the fundamental equation as being as follows:

$$\Delta A = \Delta L + R - E$$

That is, the change in assets is equal to the change in liabilities plus revenues less expenses for the period. We can somewhat simplify the equation by adding expenses, E, to both sides in order to eliminate the need for the negative sign in front of expenses. The resulting equation is

$$\Delta A + E = \Delta L + R$$

A debit is an increase in anything on the left side of this equation. A credit is an increase in anything on the

right side of this equation. Conversely, a credit is a decrease in anything on the left side of the equation. A debit is a decrease in anything on the right side of the equation. When an accountant records a journal entry, items that are debited are shown slightly to the left, and credits are shown slightly to the right. This is a convention. For example, when the Hospital for Ordinary Surgery (HOS) purchases a piece of equipment, the journal entry would appear as follows:

	DR.	CR.
Equipment	\$2,000	
Accounts Payable		\$2,000
Explanation: To record the purchase of equipment.		

Notice that an explanation is placed directly below the journal entry so that if there is a need to refer back to it, the user will be able to understand the transaction that occurred. An accountant looking at the journal immediately knows that HOS now has more equipment, because an asset (on the left) has been debited, and an increase in accounts payable, because the liability (on the right) has been credited.

Based on the definition of debits and credits in the previous paragraph, it turns out that it is impossible to keep the fundamental equation in balance, unless the total of the debits in a journal entry are equal to the total of the credits.

For example, when HOS bought inventory and paid in cash, there was an increase in inventory (debit inventory \$500) and a decrease in cash (credit cash \$500). The total debits and credits were both \$500:

	DR.	CR.
Inventory	\$500	
Cash		\$500
Explanation: To record purchase of inventory. Paid in full.		

When HOS bought inventory and paid only part in cash, there was an increase in inventory (debit inventory \$500), a decrease in cash (credit cash \$300), and an increase in accounts payable (credit accounts payable \$200).

	DR.	CR.
Inventory	\$500	
Cash		\$300
Accounts Payable		200
Explanation: To record purchase of inventory. Part paid and part on account.		

In each transaction, the total of the debits equals the total of the credits. If the debits equal the credits for a transaction, does that ensure that the transaction has been recorded correctly? No. However, if they are not equal, it does mean that an error has been made.

Debits and credits do not have an intuitive basis. The general use of debits and credits in the English language can be quite misleading. Debits are generally viewed as being bad. Credits are generally viewed as being good. This largely comes from the fact that increases in expenses are debits, and increases in revenues are credits. However, the terms cannot be thought of as good and bad when used in accounting. For example, when an asset such as cash decreases, it is recorded as a credit.

Your intuition based on the use of the word in the English language probably is that cash should increase with a credit. After all, when the bank makes an error and has to make a correction in your favor, it credits your

account. When you overdraw your bank account and the bank makes a service charge against your account, it debits your account. It would seem to the average person that a credit increases cash and a debit reduces it. Just the reverse is true. How can this be?

It is a result of the entity principle of accounting. Each entity must record all events from its own perspective. When the bank issues a credit memo to your bank account, it is not referring to your having a credit. It is a credit from the bank's perspective. And its managers do not think it is good at all. It issues a credit because it owes you money. Your account is a liability to them. Since liabilities are on the right side of the bank's equation, they increase with a credit. Frankly, when the bank issues a credit memo, it is not particularly concerned with the world from your perspective.

If you were to record that bank credit memo on your own personal set of financial records, you would debit cash to show the increase in the item on the left side of your financial records viewed from your perspective. This can be quite confusing. The next time someone says you are a credit to the organization, you will not know if you have just been complimented ("you're just like extra revenue") or insulted ("this person is like a drain on our assets"). One of the misuses of the terms may be seen in an advice column that had the headline, "Make old age an asset, not a debit." Of course, that makes no sense at all, since an increase in an asset is a debit.

There is no doubt that debits and credits are difficult at first. One cannot even think of one as an increase and the other as a decrease. Both are used at times for increases and at other times for decreases. We find both debits and credits on the left and both on the right. In fact, watching an accountant and a nonfinancial manager discussing bookkeeping at times can be reminiscent of the classic Abbott and Costello "Who's on First" routine. If the use of debits and credits is ever confusing, simply ask the accountant which accounts are increasing and which are decreasing.

The 2018 journal entries for HOS, used in the example in the chapter, would have the following bookkeeping form:

1. January 1. HOS purchased a fire insurance policy for \$100. A check was mailed to pay for the policy.

DATE		DR.	CR.
1/1/18	Prepaid Insurance	\$100	
	Cash		\$100

Explanation: To record payment of purchases on account.

2. January 23. HOS mails a check to its supplier for \$2,000 of the \$7,000 it owed at the end of 2017.

DATE		DR.	CR.
1/23/18	Accounts Payable	\$2,000	
	Cash		\$2,000

Explanation: To record payment of purchases on account.

3. February 9. HOS places an order with a medical supply company to buy a special-order X-ray machine. It will cost \$50,000, and it will take over a year to be delivered. HOS signs a contract to buy the machine.

No journal entry.

4. May 23. HOS purchases inventory on account for \$3,000. When this inventory is used to provide patient care, the hospital will be able to charge \$6,000 for it. The inventory has been received, but HOS has not paid for it.

DATE		DR.	CR.
5/23/18	Inventory	\$3,000	
	Accounts Payable		\$3,000

Explanation: To record purchases on account.

5. June 9. Payments are received from insurance companies for patient care provided in 2017. \$12,000 of cash is received.

DATE		DR.	CR.
6/9/18	Cash	\$12,000	
	Accounts Receivable		\$12,000

Explanation: Receipt of payment from customers.

Appendix 9-B: Using Dollar Signs and Underlines in Accounting

For newcomers to accounting, the use of dollar signs and underlines can seem to be quite inconsistent. Dollar signs appear on some numbers, but not on others. Sometimes a number has a single underline, sometimes a double underline, and sometimes no underline. Is there any rhyme or reason to when dollar signs and underlines are used?

Yes, there are conventions regarding the use of dollar signs and underlines. Once you understand the approach taken by the convention, it becomes much easier to interpret information contained in financial reports, especially more complicated financial statements.

A dollar sign is used for the first number in any column of numbers that represent dollars and it is used for any total or subtotal. A dollar sign is generally not used for any other numbers in a column. Numbers below the first number in a column are assumed to be dollars if the first number in the column is in dollars. This allows us to avoid putting a dollar sign on every number, which can distract us from looking at the numbers themselves.

For example, consider the Statement of Financial Position in [Exhibit 9-B-1](#). In the Current Assets section of this statement, notice that Cash is shown as \$1,000 with a dollar sign. But the next four numbers in the column do not have dollar signs. It is assumed that these are in dollars because the number at the top of the column is in dollars. We would gain no additional information if we had put a dollar sign on each number, but it would actually become a bit harder to read the numbers in the column.

Meals for the Homeless Statement of Financial Position As of December 31, 2017			
Assets		Liabilities and Net Assets	
Current Assets		Liabilities	
Cash	\$ 1,000	Current Liabilities	
Marketable securities	3,000	Wages payable	\$ 2,000
Accounts receivable, net of estimated uncollectibles of \$8,000	55,000	Accounts payable	3,000
Inventory	2,000	Notes payable	5,000
Prepaid expenses	1,000	Current portion of mortgage payable	5,000
Total Current Assets	<u>\$ 62,000</u>	Total Current Liabilities	<u>\$ 15,000</u>
Long-Term Assets		Long-Term Liabilities	
Fixed assets		Mortgage payable	\$ 11,000
Property	\$ 40,000	Total Long-Term Liabilities	\$ 11,000
Equipment, net	35,000	Total Liabilities	\$ 26,000
Investments	8,000	Net Assets	110,000
Total Long-Term Assets	<u>\$ 83,000</u>		
Total Assets	<u>\$145,000</u>	Total Liabilities and Net Assets	<u>\$145,000</u>

Total Current Assets is a subtotal. It sums all of the numbers above it. Yet it is not the final total for the column. That total is at the very bottom of the column. Whenever we have a subtotal or a total, we also put a dollar sign on it. That helps to alert us to the fact that we are not seeing just one more number in a column of numbers that are being added together. The \$62,000 is not one of the current assets listed. It is the total of the current assets.

This brings us to underlines, sometimes referred to as underscores or underscore lines. One use of a single underline is to indicate that all the numbers above the line are being summed. Notice that there is a single line just above the \$62,000 of Total Current Assets in [Exhibit 9-B-1](#). That tells us that all five of the numbers

above it are being added to get the Total Current Assets.

Note that Total Current Assets also has a single underline below it. This brings us to the second use of a single underscore. Generally, if we see a column of numbers, all of the numbers are added together. However, an underscore separates sections of a column. If there is an underscore below a subtotal, that subtotal is not combined with the numbers directly beneath it. For example, the line below the Total Current Assets separates it from the Property, Equipment, and Investments that appear in the same column below it. If we did not have this underline below the \$62,000 subtotal, we might think that the Total Long-Term Assets should include the \$62,000 as one of its components. That would be incorrect. Current assets are not long-term assets. The underline below the \$62,000 subtotal keeps us from making that mistake when we sum the long-term assets.

In summary, we now see we have a dollar sign in front of the Cash amount because it is the first number in the column. That dollar sign indicates that Cash and the subsequent numbers in the column are dollars. There are no dollar signs on any of the other current assets. We insert an underscore above Total Current Assets to show that we are adding up the numbers above the line, and we insert a line below Total Current Assets to make clear that this subtotal should not be added to the numbers immediately below it. The Total Current Assets gets a dollar sign because it represents a subtotal.

Continuing in the asset column, we next see there is a dollar sign on the \$40,000 in Property assets. When we start a new set of numbers after a subtotal or total, we once again use a dollar sign as if this were the first number in a column of numbers. There is a line above the \$83,000 of Total Long-Term Assets to indicate the numbers above are being added, and a single line below to indicate that this is a subtotal and should not be added to the number or numbers immediately below it. The treatment of Total Long-Term Assets exactly parallels the treatment of Total Current Assets.

Once all subtotals have been computed, the various subtotals are added together to arrive at the total. All the underlines we have in place will make this easier to accomplish. Simply looking at the column, the lines above and below the \$62,000 in Total Current Assets and above and below the \$83,000 in Total Long-Term Assets make those two subtotals stand out. We add those together and arrive at the Total Assets of \$145,000. This is a final total. In order to make it clear that this number is a final total, we give it a dollar sign and put a double underline beneath it.

Sometimes a number of different computations are all done on the same spreadsheet page. So, even though Total Assets is our final total for this financial statement, there might be other numbers in the same column below it that are being used for another financial report. Once we see the double underline we know that we have to keep the two computations separate. A number with a double underline is a final total. We will not directly add it to any numbers that might appear below it. If you are performing a computation for any purpose, and have subtotals along the way, they would be formatted with a single underline. When you arrive at your final answer, the use of a double underline communicates the fact that this is the final answer.

Sometimes the lines can look a bit odd. For example, look at the right-hand side of [Exhibit 9-B-1](#). There is

only one Long-Term Liability item. So we see \$11,000 Mortgage payable with a dollar sign because it is the first number in the column (following the Total Current Liabilities subtotal). We also see that immediately below Mortgage payable there is a subtotal for Total Long-Term Liabilities. So we are taking a subtotal of just one number. The Total Long-Term Liabilities have an underscore line above and below the \$11,000. This does look a bit odd, but that is because there is only one long-term liability.

If we continue down the Liabilities and Net Assets column in [Exhibit 9-B-1](#), we see something else that is interesting. We did not put an underline beneath the \$26,000 in Total Liabilities. Total Liabilities is a subtotal of subtotals. That is, we added the Total Current Liabilities to the Total Long-Term Liabilities to arrive at Total Liabilities. Our first instinct is to underline this total. However, the purpose of such a line below the \$26,000 would be to keep it from being combined with the numbers immediately below it. But Total Liabilities is being added to Net Assets to get the Total Liabilities and Net Assets. Recall we underlined Total Current Assets so that the \$62,000 would not be added in with the Long-Term Assets. But in this case we do in fact want the Total Liabilities to be added to the Net Assets, so we don't use an underline to separate those numbers.

Also, even though Net Assets is an important number, we do not put a dollar sign in front of 119,000. This is not the first number in the column. Unlike Property (which requires a dollar sign because it was the first number in a new set of numbers to be combined), Net Assets is not the first number—Total Liabilities is the first number, and Net Assets is simply the next number in the column. When we add the Total Liabilities together with Net Assets we arrive at the total, which receives both a dollar sign and a double underline.

It turns out that dollar signs and underlines are not random at all. When they are properly used, they communicate important information to the reader. They remove ambiguities about which numbers are subtotals, which are totals, and which numbers are being combined with other numbers to arrive at either a subtotal or a total.

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Chapter 10 Reporting The Results of Operations: The Activity and Cash Flow Statements

Learning Objectives

The learning objectives of this chapter are to:

- explain the purpose of the activity statement and statement of cash flows;
- discuss the rules for recording revenue and expense transactions;
- discuss specific aspects of reporting information on activity statements, including reporting by nature versus source or organizational unit, and administrative and general expenses;
- discuss bad debt expense, depreciation expense, and inventory used expense;
- discuss the cash flow statement, providing a derivation of the statement and an example;
- address the issue of interrelationships among the financial statements;
- explain the importance of the notes to the financial statements; and
- provide an example of recording financial transactions, summarizing the transactions, and reporting the summarized information in a set of financial statements.

All organizations can benefit from examining the progress made toward achieving their goals as well as determining the areas in which they are falling short. The purpose of financial statements is to help the user of the statements to assess how well an organization is doing.

The objective of the balance sheet is to report the financial position of the organization at one specific point in time. It has been compared to a still photograph. In [Chapter 9](#), we focused our attention on the financial position of an organization at a point in time, usually at the end of the last day of the fiscal year. The balance sheet provides information about the organization only on a specific day.

By contrast, the *activity statement* and *cash flow statement* are designed to show the results of the organization's activities over a period of time. They have been compared to movies, as opposed to still pictures. Rather than focus on a specific point in time, they attempt to summarize what occurred during a particular accounting period, such as a year.

The activity statement—often referred to by other names, including the income statement, operating statement, profit and loss (P&L) statement,¹ earnings report, statement of revenues and expenses, and statement of revenues and expenditures—compares an entity's revenues and other support with its expenses for a period of time, such as a fiscal year.

¹. Logically, one ought to say "profit or loss statement" or "P or L," since the statement will show either a profit (surplus) or a loss (deficit). However, "P&L" is the expression commonly used.

The cash flow statement looks at where an organization obtained its cash and where it spent cash during that period of time. The focus is not only on how much cash came and went, but also on the sources and uses of cash.

Balance sheets, activity statements, and cash flow statements can all be prepared for a month, quarter, year, or some other period of time. Statements prepared for periods less than a year are usually referred to as *interim statements*.

This chapter begins with a focus on the activity statement. It starts with a discussion of recording financial events that will appear on the statement and then moves on to a detailed discussion of other issues related to the statement. Next, the statement of cash flows is introduced. This is a somewhat complex statement, and the chapter provides a derivation of the statement as well as an example that discusses the components of the statement. Finally, an overall example shows which transactions are recorded, summarized, and then used to prepare an activity statement, statement of cash flows, and balance sheet.

The Activity Statement

Activity statements track the amount and sources of resource inflows and outflows for the organization.

Inflows are generated by activities such as sales of goods and services, grants and gifts, taxes and user fees, and investment income. Inflows are classed by nature (e.g., gift, grant, sales revenue), source (e.g., government, foundation, taxpayers, patients), and sometimes organizational unit (e.g., radiology, lab, pharmacy, operating room). Outflows are the results of using resources in the process of generating inflows. Outflows are classed by nature, often called object of expense (e.g., salary, supplies, rent), function or program (e.g., provide housing, meals, medical care), or organizational unit.

Revenues and support represent the inflows that an organization has received or is entitled to receive.

Revenues are generally the result of an exchange for goods or services that the organization has provided.

Support represents other money that the organization has received or is entitled to receive in the form of gifts, grants, and other contributions. Taxes and user fees represent common types of government revenues. Various types of government revenues are discussed further in Appendix 10-A. Revenues and support result in an inflow of assets to the organization and an increase in owners' equity or net assets.

Expenses are outflows of assets. They represent decreases in owners' equity or net assets resulting from the consumption of assets. Expenses are costs incurred to help generate revenues and support or to carry out the operating activities of the organization in other ways. Expenses represent recognition of the use of resources in the operation of the organization. For example, the labor of a nurse providing care to a patient is consumed in that process and becomes an expense.

In terms of the fundamental equation of accounting,

Assets = Liabilities + Net Assets

Revenues and support represent events that increase assets on the left and increase net assets (or owners' equity) on the right. Expenses are events that decrease assets on the left or increase liabilities on the right, and decrease net assets on the right.

The change in net assets (or net income) is simply the difference between revenues and expenses. If revenues and support exceed expenses, the organization has an increase in net assets. A for-profit organization in such an instance would have a positive net income. If expenses exceed revenues and support, the organization has a decrease in net assets, often referred to as a deficit or a loss.

Many organizations in the public service sector avoid use of the term *net income*, or profit, which seems to infer that making profit is the reason for existence of the organization. Instead they use terms such as surplus or deficit, or excess of revenues over expenses, or simply change in net assets.

All organizations need to measure their net income, profit, surplus, excess of revenues over expenses, or increase in net assets (or net loss, loss, deficit, excess of expenses over revenues, or decrease in net assets). This allows them to determine whether their asset inflows exceed or fall short of their asset outflows.

The activity statement presents the financial results of operations for a time period. Did revenues fall short of expenses for that period of time? Did revenues just barely cover expenses? Perhaps revenues exceeded expenses by too much. Public service organizations need to have adequate surpluses to sustain, update, and expand the services provided. Failure to earn a profit, or at least break even, can endanger organizations. So an increase in net assets is appropriate. However, since their mission is usually one of public service, many not-for-profit or government organizations do not wish to maximize their profits. For many public service organizations, profits are not the end in themselves, but rather a necessary means if the organization is to be able to accomplish its mission. An excessively large profit could indicate that the organization could provide more services, lower the price it charges for its services, or lower taxes.

The purpose of the activity statement is to provide management with information needed to steer the organization as necessary to best accomplish its objectives. Losses may be acceptable at times. Profits may be deemed to be too high at times. The role of financial accounting is to provide managers and outsiders with information about what the results of operations were. Financial accounting does not pass judgment on whether the results are good or bad. Rather, it provides the information that people can then use to make their own judgments about whether performance has been good or bad, appropriate or inappropriate, and what decisions should be made.

The simplest form of an activity or operating statement appears in [Exhibit 10-1](#). As we can see in that exhibit, expenses are subtracted from revenues to determine the net income, or excess of revenues over expenses, in this case called the “increase in net assets.”

Exhibit 10-1

Meals for the Homeless Activity Statement for the Year Ending December 31, 2017	
Revenues	\$196,000
Expenses	<u>191,000</u>
Increase in Net Assets	<u>\$ 5,000</u>

Recording Financial Events

As noted in [Chapter 9](#), to prepare financial statements in compliance with Generally Accepted Accounting Principles (GAAP), one must record and summarize financial events. This section focuses on recording revenues and expenses under the accrual basis of accounting.

Revenues are recorded if two requirements for revenue recognition are met: Revenues must be (1) earned and (2) realized. The first requirement—being earned—is met only if the organization has provided goods or services to the customer. If a legal transfer has occurred that establishes a legal right to collect payment, then the revenues have been earned and the first requirement is met. For the revenues to be realized, we must be able to objectively measure the amount of money owed, and there must be a reasonable likelihood of eventual collection.

Not-for-profit organizations often receive gifts and pledges of financial support. Support is a subcategory of revenue. The support may be used to provide goods or services to the organization’s constituent group. However, there is often no direct connection between the gift and the delivery of goods or services. In the case

of such support, the first requirement for recording the support is that all conditions of the gift have been met. In other words, donations are recorded as support even though the gift has not been received and even though no goods or services have actually been provided. An allowance for uncollectible pledges would be needed, since not all pledges are collected.

By contrast, if the organization received a general promise to provide a contribution of an unstated amount, the support could not be recognized because we cannot objectively determine how much will be contributed.

In some cases of support, specific conditions are created. For example, a philanthropist might offer to donate \$10 million to a university if it changes the name of one of its buildings to her name. Since there is a specific amount of money, there is objective evidence of the monetary value. Since the donor is rich, there is reasonable certainty of collection. However, until the building's name is changed, no support is recorded. When the name of the building is changed, all conditions have been met, and at that point the university can record a contribution receivable as an asset and an increase in support or revenue.

Recording expenses is somewhat complicated by the fact that some types of expenses are *product costs* and others are *period costs*. Product costs are those expenses that are directly connected to providing goods and services. Period costs are those that relate to the passage of time rather than the direct provision of services.

Product costs are treated as expenses based on the matching principle. The matching principle of GAAP holds that we should record revenues and the costs of generating those revenues in the same period. For example, if we treat a patient this year and record revenue for that treatment this year, then all the costs of providing that treatment should be recorded this year. If a technician provides service to the patient this year, thereby earning revenue for the organization, but the technician is not paid until next year, the expense related to the technician is recorded this year to match it with the revenues earned from the patient treated. This is in line with the accrual basis of accounting, discussed in earlier chapters.

Period costs are incurred with the passage of time. For example, rent, interest, management salaries, heat, and other costs are incurred largely irrespective of the specific provision of services. These costs are treated as expenses in the time period incurred. For example, rent for administrative office space for the month of December 2017 is recorded as an expense of 2017 regardless of whether that rent is paid in 2017 or 2018.

Another way of thinking about this is that expenses are recorded when assets expire or are used up. They can expire with the passage of time, such as rent on an office for a specific month or year. The passing of time can be considered to be a "using up" or "consumption" of the useful life of an asset. Or expenses can expire because they are physically used up or consumed specifically in the process of providing goods and services.

Suppose that Meals for the Homeless buys canned food for \$1,000. The food has a cost of \$1,000. The word *cost* can be ambiguous. What did the food cost Meals? The food cost \$1,000. However, is the food an asset or an expense? Assets can be thought of as cash or things that will become cash or things that will be consumed in the process of providing the organization's goods and services. Cash is clearly a valuable resource—that is, an asset. Receivables will become cash when they are collected, clearly making them valuable resources. Many assets, however, are *unexpired costs*. The cans of food, sitting on the shelf at Meals for the Homeless, are an

asset that is an unexpired cost. When the cans have been opened, cooked, and served, the asset has been used up. It has been consumed in the process of providing the organization's services. Accountants would call the food an *expired cost* at that point. An expired cost is an expense. Thus, the amount spent on food was a cost. As long as the cost was unexpired, it was an asset. When the asset was used up, it became an expired cost, or an expense.

The Activity Statement: A More Detailed Examination

In [Exhibit 10-2](#), Meals for the Homeless provides a more detailed activity statement than the one used in [Exhibit 10-1](#). Rather than simply showing revenues and expenses in summary form, they are subdivided into major categories. Management has some latitude regarding the amount of detail it provides. For example, it can choose to provide less information about individual types of revenues and expenses than we see in [Exhibit 10-2](#). In that case, less information is provided to competitors. However, less information is also provided to stakeholders² and creditors.

² Stakeholders are any persons who have something at stake with respect to the organization. This covers a wide variety of people, including employees, clients, regulators, vendors, creditors, and others.

Meals for the Homeless Activity Statement for the Years Ending December 31, 2017, and December 31, 2016		
	2017	2016
<i>Revenues and Support</i>		
Meals		
Client revenue	\$ 10,000	\$ 8,000
City revenue	20,000	16,000
Shelter Counseling		
Client revenue	1,000	1,000
County revenue	10,000	10,000
Fundraising		
Foundation grants	70,000	50,000
Annual ball	12,000	11,000
Telephone solicitation	25,000	28,000
Mail solicitation	48,000	45,000
Total Revenues and Support	<u>\$198,000</u>	<u>\$169,000</u>
<i>Expenses</i>		
Food	\$17,000	\$ 16,000
Kitchen staff	35,000	33,000
Counseling staff	35,000	34,000
Rent on kitchen locations	15,000	14,000
Administration and general	75,000	65,000
Bad debts	4,000	4,000
Depreciation	10,000	10,000
Total Expenses	<u>\$191,000</u>	<u>\$176,000</u>
Increase/(Decrease) in Net Assets	<u>\$ 5,000</u>	<u>\$ (7,000)</u>

Exhibit 10-2

In [Exhibit 10-2](#), the bottom line is shown as the Increase/(Decrease) in Net Assets. Notice that for the year ending December 31, 2016, expenses exceeded revenues and support, and the bottom line is shown in parentheses. For the year ending December 31, 2017, revenues and support exceeded expenses, and the change in net assets is a positive number, representing an increase in net assets.

Multiyear Presentation

One of the first things to notice in [Exhibit 10-2](#) is that 2 years' worth of information is provided. This is done for purposes of comparison. Rather than considering how profitable this organization has been for this year in isolation from any other information, providing multiple years' worth of data gives the user of the financial statement a better perspective on the results of operations.

For example, the \$5,000 increase in net assets this year is modest. It represents only about two and a half cents of profit from every dollar of revenues and support ($\$5,000 \text{ profit} \div \$196,000 \text{ Total Revenue and Support} = .0255$ or 2.55 cents of profit per dollar of revenue and support). However, by having 2 years' worth of data, we see that the modest increase in net assets is a turnaround from the previous year, when Meals had a \$7,000 decrease in net assets. Meals's performance is improving. In light of that prior loss, the current-year increase can be placed within a context that allows the user of the financial statement to make a more reasoned interpretation of the information.

Annual balance sheets and cash flow statements also generally provide 2 years' worth of information for comparative purposes.

Reporting In Thousands

Financial statements often round off or truncate numbers. Rounding off would show some digits as zeros. In [Exhibit 10-2](#), the numbers have been rounded off to the nearest thousand. An alternate presentation would be to truncate, or cut off, the three digits on the right completely. In that case, the heading of the financial statement would have to indicate that this has been done. Typical headings would say, "000's omitted" or "in thousands." For very large organizations, data are rounded off or truncated to the nearest hundred thousand or million dollars. For small organizations, financial statements sometimes report figures to the nearest dollar.

The numbers are rounded off or truncated for several reasons. First, it makes the information in the financial statement a bit easier to comprehend. Sometimes presenting data that are too detailed causes the reader to lose the important information content. Second, as noted in [Chapter 9](#)'s discussion of materiality, it is unlikely that all numbers in the organization's bookkeeping records are exact. If numbers are reported to the nearest dollar, there is an inference of greater accuracy than is really likely to exist. Reported financial information is unlikely to be 100 percent accurate in all respects. Financial statements are intended to be accurate enough to allow them to be used as a reasonable basis for decision making.

Reporting by Nature, Source, and Organizational Unit

In [Exhibit 10-2](#), are the revenues shown by their nature, source, or organizational unit? In terms of nature, we know how much of the revenue is earned in exchange for meals provided versus how much of the organization's resources come from responses to fundraising efforts. In terms of source, we know how much money was received directly from the organization's clients, how much came from the city and county, and how much came from each of the major types of contributors (foundations, event attendees, telephone, and mail). We do not really have information by organizational unit; we do not know revenues or support for one soup kitchen versus another, or about soup kitchens versus delivery by van.

Why is it beneficial to know about revenues by nature, source, and unit? The subcategorizations allow us to go beyond knowing simply whether we are making or losing money. How good a job are we doing at fundraising? Are our revenues from meals well matched with the costs of providing meals? If we start to lose money, what would be the impact of eliminating our shelter counseling services? Are we getting more client revenues per meal from costly van delivery service than from soup kitchens? Are foundation grants falling—do

we need to make a greater effort in that area?

Are expenses reported in [Exhibit 10-2](#) by nature, function, or organizational unit? There is a mix of information. We know some expenses by nature. For example, food, kitchen staff, counseling staff, rent, and depreciation are all nature-of-expense categorizations. By contrast, administration and general tells us the function but not the nature. Is that line made up of salaries, rent, and supplies, and in what proportions? We know a bit about function from some of the other lines as well. Rather than having one line for staff, we know how much staff was related to meals (kitchen) versus the counseling function. We can also infer that food is for meals. We do not have any information on organizational unit. Another organization might have chosen to provide information by organizational unit. Although there is some latitude in the detail that must be presented, there are a number of rules about how not-for-profit and health organizations must disclose their expense information. (Those rules are discussed in [Chapter 11](#).)

Regardless of the choice made regarding the level of detail to report, the activity statement must at least report revenues and support in a manner to disclose the total amount of revenue and support received. Similarly, total expenses must be shown. In addition to the straightforward expenses such as food, staff, and rent, four types of expenses warrant further discussion: administrative and general, bad debts, depreciation, and inventory used.

Administrative and General Expenses

The amount of money spent on administrative and general expense for Meals for the Homeless rose this year from \$65,000 to \$75,000 (see [Exhibit 10-2](#)). That represents a 15 percent increase in just 1 year. What kinds of things are in this category? It will include a wide variety of support services that the organization must have to carry out its mission. There is undoubtedly an executive director; there may be other office staff, such as secretaries, clerks, bookkeepers, and accountants. There may be office rent.

To some, these expenses may seem irrelevant to the mission of the organization. The mission of Meals is to provide food for the homeless. Why should it spend money on such irrelevant overhead costs when it could better be spent providing more meals or counseling the homeless to help them find shelter?

Others would argue that such a philosophy is shortsighted. First, all organizations need some administrative supervision and coordination. Someone has to buy supplies; pay for rent, food, and employees; file employee wage taxes; and do a host of other administrative activities without which the organization could not survive.

In addition, from [Exhibit 10-2](#), we know that clients (the homeless) provided Meals with just \$11,000 of revenue in 2017 for meals and counseling. Yet Meals spent \$17,000 on food alone. The kitchen staff and counseling staff cost another \$70,000. Add in rent on the soup kitchen locations, and costs exceed \$100,000 without even considering the depreciation on the kitchen equipment (ovens) and delivery van.

How does an organization survive with primary revenue of \$11,000 and primary expenses of more than \$100,000? For one thing, it has contracts with the city and county for meals and counseling that generate another \$30,000. Those contracts were negotiated by administrators, whose salary is within the administrative

and general category.

One might argue that at one time administrative costs were needed, but now that the city and county contracts exist, the effort to renew them annually is minor. Note, however, that even with the government contracts, the revenues still fall far short of the direct costs of providing meals and counseling.

Close examination of the activity statement reveals that the revenue from fundraising is critical to keeping this organization afloat. Foundation grants, the revenue from an annual ball, and telephone and mail solicitations raise approximately \$150,000. Without spending money on administrative and general expenses, including fundraising costs, it is doubtful that this organization could survive.

What about the sharp 15 percent increase in this category? Financial statements often raise more questions than they can answer. Potential red flags, such as the 15 percent increase, warrant management attention. There are a number of possible explanations. For example, city contract revenue and direct client revenue for meals both rose by more than 20 percent. Perhaps more administrative staff was hired to work on increasing revenues from these sources.

Another possibility relates to foundations. Foundation grants were up by 40 percent. Note that the previous year the organization lost money, and this year it made money. Suppose that the organization this year hired a consultant for \$10,000 to apply for foundation grants. Meals received \$20,000 more from grants in 2017 than in 2016. Perhaps there are even more applications still in the pipeline. Some would argue that spending \$10,000 on a consultant to achieve \$20,000 of grants is not cost-effective. Half of the grant money went directly to the consultant. Others would argue that Meals had a loss the previous year and a profit this year. Without the consultant and the extra foundation grants, Meals would have lost money again this year, so the investment was worthwhile.

Clearly, organizations will incur overhead costs. These costs do not directly relate to the provision of goods and services. In most cases, however, they do relate directly to the ability of the organization to exist and to be able to provide those goods and services.

Bad Debt Expense

Bad debts, or uncollectible accounts, arise because not everyone pays us what they owe us. Although we expect each individual client to pay, we also know that some of them probably will not. We just do not know who.

For instance, Meals for the Homeless receives pledges in response to telephone and mail solicitations. Assume that Meals's history has shown that approximately 92 percent of all pledges are ultimately collected. However, there is no way to know in advance which specific pledges will be collected and which will not. It would understate financial support to ignore all pledges, but it would overstate financial results to assume that we would collect 100 percent of the pledges. The solution used is to record 100 percent of the pledges as support (or revenue) and then also record 8 percent as a bad debt expense. This solution complies with the matching principle of GAAP, placing the revenue and the related bad debt expense in the same accounting period.

Recall that in [Chapter 9](#) it was noted that accounts receivable are shown on the balance sheet net of

uncollectible accounts (bad debts). The activity statement focuses on what has happened for a period of time. The bad debt expense represents the portion of the revenues earned for that period of time that will probably not be collected. By contrast, the balance sheet looks at a moment in time. Given the amount of receivables owed to us at that moment in time, it indicates the portion of those receivables that will probably not be collected.

The allowance for uncollectible accounts shown on the balance sheet can be a larger number than the bad debt expense on the activity statement. Suppose that Meals gives people at least 2 full years to pay their pledge before deciding that a specific pledge is uncollectible. At the end of the year, the balance sheet will show all receivables that have not yet been collected. Included in that amount will be all of the amounts related to pledges this year that have not yet been collected and all of the amounts related to pledges made the previous year that have not yet been collected. While the activity statement will show a bad debt expense related to just this year's revenue, the balance sheet will show an allowance for possible uncollectible accounts equal to 2 years' worth of bad debt expense.

For example, from [Exhibit 10-2](#), we can see that telephone and mail solicitations in 2016 raised \$28,000 and \$45,000, respectively. Assume that the telephone solicitations were all received as pledges. Also assume that the \$45,000 raised by the mail solicitation consisted of \$23,000 in immediate cash receipts (checks were mailed to Meals in response to the mail solicitation) and \$22,000 in pledges. The total pledges for the year were therefore \$50,000 (\$28,000 from telephone and \$22,000 from mail solicitations). At an anticipated bad debt rate of 8 percent of pledges, the bad debt expense for 2016 would be \$4,000. That amount would appear on the 2016 activity statement as an expense called bad debts (see [Exhibit 10-2](#)). For 2017, the telephone and mail support was \$25,000 and \$48,000, respectively ([Exhibit 10-2](#)). Assume that the total pledges included in those amounts were again \$50,000, and again bad debts expense was calculated at 8 percent of pledges or \$4,000.

Suppose that at the end of 2017, Meals had total pledges receivable of \$63,000. How could that be? The total pledges to Meals in 2017 were only \$50,000. It is possible that some of the pledges that have not been collected by the end of 2017 were made in 2016 or even earlier. The pledges receivable on the balance sheet include all pledges from all years that have not yet been received or specifically declared to be uncollectible. The pledge support on the activity statement, however, includes just support for the current accounting period.

What if the \$63,000 of pledges receivable at the end of 2017 represents \$45,000 of pledges that were made in 2017 and \$18,000 of pledges made in 2016? Each year Meals has charged a \$4,000 bad debt expense on the activity statement. From [Chapter 9](#), recall that a financial event must affect at least two accounts. When the bad debt expense goes up by \$4,000, another account called the allowance for uncollectible accounts also goes up by \$4,000. The allowance for uncollectible accounts (sometimes called the allowance for bad debts) is a *contra asset* account. Contra means "going against." The allowance for uncollectibles account is an asset account that always has a negative or zero balance. It offsets, or goes against, the accounts receivable balance. In this case, the accounts receivable are in the form of pledges receivable. Thus, at the end of 2017, the

balances related to pledges receivable might be as follows:

Pledges receivable from 2017	\$45,000
Pledges receivable from 2016	18,000
Allowance for uncollectible amounts from 2017 pledges	-4,000
Allowance for uncollectible amounts from 2016 pledges	-4,000
Pledges receivable, net	<u>\$55,000</u>

Note that the balance sheet contains some pledges receivable from 2 years and also contains the allowance from 2 years. The balance sheet reports the total allowance for uncollectible amounts balance and the pledges or accounts receivable, net balance, but not the individual years' pledges receivable separately.

Eventually the organization will decide that a particular pledge will never be collected. At that point the specific pledge is *written off*. This means that receivables are reduced for that one specific pledge. At the same time, the allowance is also reduced. Suppose that on January 10, 2018, Charlie Smith dies without paying a \$500 pledge he made in 2016. Meals decides it will never be able to collect that pledge. On that day, Meals will reduce pledges receivable and will reduce the allowance, resulting in new balances as follows:

Pledges receivable from 2017	\$45,000
Pledges receivable from 2016	17,500
Allowance for uncollectible amounts from 2017	-4,000
Allowance for uncollectible amounts from 2016	-3,500
Pledges receivable, net	<u>\$55,000</u>

Note that the net balance of \$55,000 has not changed. This is because no asset is consumed when the decision is made to write off an account. But there is a bad debt; Charlie Smith is not paying his pledge. That is true. However, the expense was recorded back in 2016 in the same year as the pledge was recorded as support. That way the revenue and expense were both in the same year, and the matching principle of GAAP was not violated. Lowering the specific pledge receivable and the allowance account allows the net pledges receivable to remain unchanged.³

³ In some cases, it is possible for the allowance for uncollectibles at the end of the year to be lower than the bad debt expense for the year. This could happen if some of the specific receivables from the current year are recognized as uncollectible and are written off before the end of the year.

Although healthcare organizations have traditionally shown bad debts as an expense, the Financial Accounting Standards Board (FASB) now requires that a healthcare organization that does not assess its patients' abilities to pay for care treat bad debt as a deduction from patient service revenue on its operating statement.⁴ Whether bad debts are shown as a deduction from patient service revenue in the revenue section of an operating statement (as for some healthcare organizations) or as an expense in the expense section of the operating statement (as for other organizations), the organization's profit or increase in net assets will be the same.

⁴ FASB, Accounting Standards Update No 2011-07 Health Care Entities (Topic 954) Presentation and Disclosure of Patient Service Revenue, Provision for Bad Debts, and the Allowance for Doubtful Accounts for Certain Health Care Entities, July 2011.

Depreciation Expense

Depreciation expense represents the allocation of the cost of a capital asset over its lifetime, charging a share of its cost into each year that the asset is used by the organization. This approach is required by the matching principle. Since we will use a long-term asset to earn revenues over a number of years, it would not make sense in an accrual accounting system to treat the entire cost as an expense in one year. The portion of the asset's cost treated as an expense in a year is called the depreciation expense of that asset for that year.

Ideally, one would want to base the amount of depreciation expense each year on the decline in the value of the item being depreciated. That would make sense from an economic perspective. However, it is difficult in practice to determine how much the value of each capital asset has declined each year. Accountants have developed formulas to allocate the cost of capital assets to the years the asset is expected to provide useful service. However, it should be noted that these formulas are only rough approximations at best. To the extent that they do not accurately estimate the decline in value of the asset, the depreciation expense for the year (on the activity statement) will be inaccurate, and the remaining asset balance (on the balance sheet) will be inaccurate.

The simplest approach to depreciation is to take the initial cost less the expected salvage value (discussed in [Chapter 9](#)) and divide that amount over the expected useful life. If Meals for the Homeless buys a delivery van for \$32,000 with a \$2,000 expected salvage value and a 5-year expected life, the annual depreciation would be \$6,000:

Cost	\$32,000
Less salvage value	-2,000
Depreciable amount	<u>\$30,000</u>
Divided by 5-year useful life	÷5
Depreciation expense per year	<u>\$ 6,000</u>

This approach, referred to as *straight-line depreciation*, assumes that assets are used up the same amount each year. Are things really used up evenly? In some cases, the value of assets declines more in their early years. This is not a major problem, since the goal of depreciation as used in practice by accountants is not to assign fixed assets a realistic value for the balance sheet. The goal is to allocate the cost of the asset over the asset's useful life.

However, the matching principle would hold that if we use up more of an asset in the early years of its life than in the later years, it would be appropriate to assign more expense to those early years. Suppose that equipment and buildings need more maintenance as they age. If we could charge more depreciation in the early years of an asset's life and less in the later years, the total of the depreciation cost and the maintenance costs would be more stable from year to year. To deal with this problem, there are several alternative methods of depreciation, referred to as *accelerated depreciation*. These accelerated methods charge more depreciation expense in the early years and less in the later years. In total, the depreciation taken over an asset's life stays the same. (Accelerated depreciation methods are discussed in Appendix 10-B.)

In addition to any possible improvement in matching, the added benefit of accelerated depreciation is that it makes net income lower in the current time period. For-profit organizations benefit from lower income by having lower income taxes. While the accelerated approaches result in higher depreciation and therefore lower income and lower taxes in early years of the asset's life, just the reverse is true in later years. However,

considering the time value of money (see [Chapter 5](#)), the present value of the taxes paid is less if lower taxes are paid in the early years and higher taxes in the latter years of the asset's useful life. Also, some not-for-profit organizations are reimbursed for their expenses. They may benefit from accelerated depreciation because the larger expense in the earlier years will result in larger reimbursements in the earlier years. Also, accelerated depreciation will make an organization look poorer in the earlier years of a capital asset's life and therefore more needful of donations.

Inventory Used Expense

As noted in [Chapter 9](#), inventory represents supplies that have been acquired to be used in making goods or providing services. Inventory is recorded as an asset based on its cost. When inventory is used up, it becomes an expired cost and is an expense.⁵ This expense is sometimes referred to as "supplies expense," "inventory expense," or "cost of goods sold" expense. A problem arises, however, because GAAP allows a choice of how the cost of inventory may be measured. The following discussion is provided not only to explain the treatment of inventory on the activity statement and balance sheet, but also to provide an example of a situation in which GAAP allows the organization to make a choice of accounting method. Although GAAP provides some measure of uniformity across organizations, there are a number of instances in which choice is allowed. When this occurs, the financial statements can be significantly affected, and the choice made must be reported in a note that accompanies the financial statements. However, GAAP generally does not allow organizations to switch back and forth between methods every year.

[5.](#) Government treatment of inventory may be different; it is discussed in [Chapter 12](#).

The inventory choice relates to an assumption about the flow of inventory. One would normally assume that the organization uses its oldest inventory first. However, during periods of high inflation, the expense reported on the activity statement could substantially understate the economic impact of the use of inventory. For instance, suppose that the Hospital for Ordinary Surgery (HOS) used an expensive medical supply item. At the start of the year, it owns one unit of an item that it paid \$50 to acquire. During the year, it purchases a unit for \$60. For the coming year, it expects to acquire a unit for \$70. It uses one unit during the year. What expense should appear on the activity or operating statement, and what asset value should appear on the balance sheet? (Note that most not-for-profit organizations use the activity statement title for the financial statement that reports revenues and expenses. Health organizations, by contrast, refer to the statement as the operating statement.)

Logically, if it uses its oldest inventory first, the expense on the operating statement will be \$50. The balance sheet value of inventory will show the \$60 cost of the unit purchased during the year. This is referred to as a *first-in, first-out (FIFO)* approach. However, the operating statement is not reporting the amount that it will cost HOS to replace the inventory it used. HOS will now have to replace that unit of inventory at a higher price.

As an alternative to the FIFO choice, organizations are allowed to assume that their inventory moves on a *last-in, first-out (LIFO)* basis. Under this method one would assume that HOS used the last item it had

purchased, at a cost of \$60, and held on to the one it had paid \$50 to acquire. The operating statement now shows an expense of \$60, and the balance sheet shows an asset value of \$50. One can see why it is important to disclose the choice made in a note. Two different organizations could have bought and used exactly the same inventory but reported different financial results simply because they chose to make different assumptions about which inventory was used and which was kept.

Note that financial statements report inventory as an asset on the balance sheet and as an expense on the operating statement based on an assumption of the order in which inventory is used. An organization can use its oldest inventory first (a FIFO approach) but use the LIFO approach to report on the financial statements. This allows the organization to use its inventory in its usual manner and also have the LIFO benefit of a more accurate operating statement during times of inflation.

Some would even contend that the operating statement should show a \$70 expense because that is the anticipated cost to acquire the unit of inventory that will replace the unit used. However, such a replacement cost approach is not allowed.

In some cases, there are specific advantages to reporting inventory consumption on a LIFO basis. If an organization is for-profit, LIFO will lower its taxes during periods of inflation. Why? Because as inventory prices rise, if you assume that you have used the last units purchased, they are likely to be the most expensive. Higher expenses result in lower income and therefore lower taxes. It should be noted that International Financial Reporting Standards (IFRS) do not allow the use of LIFO. The FASB and the International Accounting Standards Board (IASB) had been working to converge U.S. GAAP with IFRS over the past several years. At least in the near term, it is unlikely that the United States will adopt IFRS. If such a change is adopted in the future, it is likely that the Internal Revenue Service would no longer allow LIFO for tax reporting as well.

Why would a not-for-profit organization, exempt from income taxes, use LIFO? In some cases, it may receive payments that reimburse it for the cost of providing services. Suppose that Middle City pays Meals for the Homeless 75 percent of the cost of each meal served. If Meals uses LIFO during an inflationary period, it will report a higher cost per meal and receive higher current reimbursement as a direct result of this decision. This is the same reason that some not-for-profit organizations prefer to use accelerated depreciation.

In addition to the FIFO and LIFO inventory flow assumptions, there are several other allowable, less used, methods. They are discussed in Appendix 10-C, along with a more detailed discussion of inventory valuation calculations.

The Dangers of Estimates

One of the principles of GAAP is that the organization should use objective, verifiable evidence. That is why land is valued on the balance sheet based on its cost rather than some estimate of current market value. Sometimes, however, there is no reasonable alternative to making an estimate. Bad debts are one example. Depreciation is another.

Bad debt expense should be exactly the portion of current revenues that we will be unable to collect. However, we will not know the exact amount for a long time—perhaps several years. So an estimate is made, even though that estimate must be based on a subjective analysis. We try to minimize the subjectivity by basing the estimate on historical experience, the economy, who owes the money, and other factors that might affect ultimate collectability.

Depreciation is also an estimate. We cannot know objectively how the market value of an asset will change from year to year, so accountants use formulas to estimate annual depreciation. Even using those formulas, we cannot be sure how much we will be able to get for the fixed asset when it is sold, so the salvage value used in the calculation is an estimate. Nor can we be sure how long the useful life will be, so that is another estimate. These are subjective best guesses.

One danger with subjectivity is that it opens the door to both honest error and intentional manipulation. Estimates are likely to be imperfect and should be considered carefully, even when they are reasonable. Furthermore, if we want to look poor to encourage donations, we might be tempted to overstate bad debt expense or to underestimate the salvage value for a piece of equipment. Both of those actions would tend to lower the current increase in net assets, making us look poorer now. Conversely, if we planned to borrow a large amount of money in the future, we might want to overstate the increase in net assets to make the organization look more financially solvent to potential lenders. We might underestimate bad debts or overestimate the salvage value of equipment.

The use of a reasonable estimate can improve the information reported in financial statements considerably. Although one should be aware of the danger of information manipulation, this is not meant to say that we would be better off without reasonable estimates. Rather, one should carefully consider information based on estimates, much as one must be careful when interpreting most financial information.

Deferred Revenue

When is revenue not really revenue at all? When it is *deferred revenue*. Deferred revenue is a liability. It is sometimes called unearned revenue. At times, an organization will receive payments for services that have not yet been provided. This is very much like the asset prepaid expenses, except that we have received payment rather than made payment. In fact, it is a mirror image. The prepaid expense on the financial records of one organization will be a deferred revenue on the financial records of the other organization involved. If HOS pays for fire insurance in advance, it will have a prepaid insurance asset and the fire insurance company will have deferred revenue liability in the same amount.

At some future point, the organization with the deferred revenue liability must either provide the services or refund the money. Until then, the deferred revenue represents a liability rather than a revenue. When service is provided, the deferred revenue is converted from a liability to a revenue.

For example, suppose that a magazine publisher received \$120 for a 1-year subscription. At the time the money is received, the publisher has not yet provided its service to its customer. Therefore it must show a

liability. However, it never expects to actually pay the customer in cash. It expects the \$120 to become revenue when it provides the monthly issues of the magazine. Therefore, the liability is called unearned or deferred revenue because the point at which it can be recognized as revenue has been pushed off or deferred to the future.

What if the magazine publisher expects it to cost \$60 to fulfill its obligation to provide the monthly issues of the magazine? Should the deferred revenue liability be the \$120 that was received or the \$60 that it will cost to provide the magazine to the customer? The answer is the full \$120. Suppose that for some reason the publisher was unable to provide the magazine. How much would the customer be entitled to as a refund? The \$120 paid, or the \$60 that it would have cost the publisher? Clearly the customer is entitled to a refund of the \$120, so that is the amount of the recorded liability.

Note that many organizations use the term unearned revenue if the liability is short term and deferred revenue only for long-term liabilities. This parallels the common use of prepaid expense for short-term prepaid assets and deferred charge for those that are long term.

Earnings per Share

When for-profit corporations issue audited financial statements, in addition to net income, the income statement is required to show the earnings per share of common stock. We can see an example of this in [Exhibit 10-3](#) for Prisons R Us, a fictitious for-profit organization that runs prisons for a growing number of states around the country. Notice that this for-profit organization is likely to call this a statement of net income rather than an activity or operating statement. The excess of revenues over expenses is called net income rather than the increase in net assets. GAAP requires per share profit information because for many individual users of the financial statements, it is more relevant than total net income.

Prisons R Us Statement of Net Income for the Year Ending March 31, 2018	
Revenues	\$2,000,000
Less Expenses	<u>1,800,000</u>
Net Income	<u>\$ 200,000</u>
Earnings per Share	<u>\$ 2.00</u>

Exhibit 10-3

Imagine that a person is trying to decide whether to buy shares of stock in Prisons R Us or its main competitor, We Lock M Up. Prisons R Us had net income of \$200,000 this year. We Lock M Up had \$1,000,000 of net income. It might appear that the latter company is much more profitable and therefore a better buy. However, Prisons R Us has 100,000 shares of stock outstanding. Therefore, each owner of one share of stock owns \$2 of earnings ($\$200,000 \text{ earnings} \div 100,000 \text{ shares} = \$2$). We Lock M Up has 1,000,000 shares of stock outstanding. Therefore, its earnings per share are only \$1 ($\$1,000,000 \text{ earnings} \div 1,000,000 \text{ shares} = \$1$). Since owners only own their pro rata (proportional) share of the company and its profits, one can see that the earnings per share information may be more relevant than simply total profits.⁶

⁶ Note, however, that current earnings per share is just one of many indicators that must be considered in deciding whether to buy shares in a stock. One must consider potential growth in earnings, risk, and many other factors. Consideration of those factors is beyond the scope of this book.

Opportunity for Financial Analysis

The activity statement opens a wealth of opportunity for analysis. We noted earlier that foundation grants rose dramatically. Was that a one-shot increase? Can it be sustained in coming years? Will it likely increase even more in coming years? Why did administrative costs rise so steeply this year? Which changes from year to year make sense? Which changes do not make sense? What can we conclude from the income statement about the overall results of operations? Activity statements provide information that can be analyzed to better understand the overall financial health of an organization.

For most managers, even more important than being able to generate financial information is development of a critical eye for evaluating financial information. The purpose of becoming comfortable with financial reports such as balance sheets and activity statements is that it allows the manager to examine results and to get an understanding about what is going right and what is going wrong with the organization from a financial perspective. One cannot always get answers from the statements; but if review of the statements allows the manager to ask perceptive questions, the statements can aid enormously in the management of the organization. [Chapters 14](#) and [15](#) discuss approaches for analysis of the information contained in financial statements.

The Statement of Cash Flows

The activity statement focuses on the revenues and expenses of the organization. If we used a cash basis of accounting for reporting, the activity statement would provide a wealth of information about the organization's cash. However, most organizations use some form of accrual accounting. They do this to better represent how the organization did for the year by matching the revenues it earned (whether collected or not) to the expenses it incurred (whether paid for or not). Cash, however, is also vitally important.

The statement of cash flows focuses on financial rather than operating aspects of the organization. Where did the money come from, and how was it spent? While the major concern of the activity or operating statement may be profitability, the statement of cash flows focuses to a great extent on *viability*. Viability relates to whether the organization is generating and will generate enough cash to meet both short-term and long-term obligations and therefore will be able to continue in existence.

There have been a number of instances of profitable businesses that have fallen into desperate financial crises, at times even leading to bankruptcy. How could this happen? During profitable periods, many organizations expand. Since they are making profits on current services, expanding services should lead to even greater profits.

However, profitability alone does not ensure that such expansion is financially feasible. Expanding the quantity of services offered tends to require additional physical facilities. More employees must be hired and more supplies purchased. What is the problem if all of these additional expenses result in even more additional revenues? The problem relates to delays or lags between paying for expenses and collecting revenues. In many cases, organizations must acquire the resources of production (e.g., buildings, equipment, supplies, employees) and start paying for them before they start collecting revenues for those services. In other words, there may be a profit on an accrual basis, but we have paid more in cash for our expenses this year than the amount of money collected in cash from our revenues. Eventually cash collections should catch up, but by that time we may have failed to pay some obligations when they were due.

This problem is discussed in the planning section of this book. We cannot plan solely based on an accrual-based operating budget. Cash budgets are required as well. Similarly, we cannot judge how well things are turning out based only on a report of actual profitability. We also need to report on what has happened with respect to cash during the period of time being examined. Did we have a net gain in cash or decrease in cash during the time period? Where did we get our cash from and what did we spend our cash on?

Suppose that the Millbridge Blood Bank is having difficulty meeting its obligations as they come due. As a result, during the past year it sold its land for \$75,000. That land was purchased by the blood bank a number of years ago for \$40,000. The activity statement will include a \$35,000 gain from the sale of the land. Even with that gain, however, the organization showed a net income of only \$10,000 because of a loss of \$25,000 on its other activities. Between the loss of \$25,000 on other activities and lags in collection of receivables, at year-end the blood bank's cash balance had increased by just \$15,000.

One way to view what has transpired is that the organization made a profit of \$10,000 and cash increased by \$15,000. Both of those numbers are correct. However, this does not really convey what happened. By themselves, they imply an organization that is both profitable and generating cash surpluses. However, when we examine the sources and uses of cash we learn a different story. Although cash increased by \$15,000, the sale of land generated \$75,000 of cash. Without that sale, the cash balance would have gone down by \$60,000. The organization had only that one piece of land. Can it go on indefinitely selling off its assets to get the cash needed to provide its current services? Probably not. By looking at the sources of cash, we find that, rather than a rosy picture, there are serious financial problems that must be addressed if the organization is to be able to continue providing services.

Consider another example. Suppose that HOS had a cash decrease of \$2,000,000 for the year. That might cause great concern. Looking at a detailed statement of cash flows, however, we find that the routine ongoing activities of the organization generated a cash surplus of \$3,000,000. Then how did the cash balance decline? The organization is so profitable and generating so much cash that it decided to purchase \$5,000,000 of new equipment to expand services offered. It used the full \$3,000,000 of cash generated this year and took \$2,000,000 of cash out of its bank account. It anticipates that with the new equipment, next year it will generate even more than this year's \$3,000,000 increase in cash from ongoing activities.

In this second example, cash fell, but there really is no problem. In the first example, cash rose, but there was nothing to celebrate. In each case, managers could not really interpret the financial situation of the organization without some detailed analysis of the sources and uses of cash.

Cash flow statements are divided into three main categories: cash from operating activities, cash from investing activities, and cash from financing activities. Operating activities are those activities related to accomplishing the organization's primary mission. They include the day-in and day-out operations of the organization. Investing activities are related to buying and selling long-term fixed assets (property, plant, and equipment) and investments such as shares of stock. Financing activities are those related to borrowing and repaying loans.

Derivation of the Cash Flow Statement

The cash flow statement has links to both the activity statement and balance sheet. The first number on the cash flow statement is the change in net assets or net income, taken directly from the activity statement. The ending balance on the cash flow statement is also the cash balance from the balance sheet. In fact, there are additional links as well.

A good way to understand the content of the cash flow statement and also see some of the interdependency among the financial statements is to consider cash flow in terms of the fundamental equation of accounting:

$$\text{Assets} = \text{Liabilities} + \text{Net Assets}$$

As noted in [Chapter 9](#), any changes on the left side of this equation will equal the changes on the right side, so we can consider the organization's financial transactions by considering the following:

$$\Delta \text{ Assets} = \Delta \text{ Liabilities} + \Delta \text{ Net Assets}$$

where the Greek letter delta, Δ , is read as “the change in.”

The change in assets must consist of the change in cash and the change in all other assets. Since we want to focus on the causes of the change in cash, we separate the change in assets into the change in cash and change in all other assets, so the equation becomes the following:

$$\Delta \text{ Cash} + \Delta \text{ All Other Assets} = \Delta \text{ Liabilities} + \Delta \text{ Net Assets}$$

To focus clearly on the causes of the change in cash, the changes in all other assets can be subtracted from both sides of the equation, resulting in the following:

$$\Delta \text{ Cash} = \Delta \text{ Liabilities} + \Delta \text{ Net Assets} - \Delta \text{ All Other Assets}$$

Bear in mind that the change in net assets in that equation is generally the organization’s revenues less its expenses.⁷ Rearranging the equation, we get the following:

⁷ This is somewhat of an oversimplification. Other factors affect net assets besides revenues and expenses. For example, dividend payments to owners of a for-profit organization reduce net assets. For purposes of this introduction to cash flow statements, however, it is sufficient to note that for the most part, the changes in net assets are made up of revenues and support less expenses.

$$\Delta \text{ Cash} = \Delta \text{ Net Assets} + \Delta \text{ Liabilities} - \Delta \text{ All Other Assets}$$

This equation represents the information in the cash flow statement. The cash flow statement reports all of the changes on the right side of the equation that affect the organization’s cash flow, which is isolated on the left side of the equation.

The cash flow statement begins with the organization’s change in net assets, or net income, and then lists the changes in liabilities and the changes in all other assets. The changes in liabilities and changes in all other assets appear on the cash flow statement in the section that best represents whether they result from routine operating activities, investing activities, or financing activities. It is easier to derive the various components of the cash flow statement if one thinks of the statement in terms of this equation.

For example, if we borrow money, it increases a liability (the right side of the equation) and increases cash (the left side). If we repay a loan, it reduces the liability and also reduces the cash available. Note that the All Other Assets part of the equation has a negative sign in front of it. If we buy a building, assets go up, but the right side of the equation goes down because of the negative sign in front of $\Delta \text{ All Other Assets}$. But that makes sense because when one buys a building one uses cash, so both sides of this equation decrease.

Each type of financial statement is independent and provides different, valuable information. Yet all of the statements are derived from the same fundamental equation, and all of the statements are interdependent and should be taken together as a whole.

An Example

The cash flow statement for Meals for the Homeless is presented in [Exhibit 10-4](#). As with the activity statement, 2 years of financial information are presented in the cash flow statement to facilitate analysis of trends that are occurring over time.

Meals for the Homeless Statement of Cash Flows for the Years Ending December 31, 2017, and December 31, 2016		
	2017	2016
Cash Flows From Operating Activities		
Change in net assets	\$ 5,000	\$ (7,000)
Add expenses not requiring cash Depreciation	10,000	10,000
Other adjustments		
Add decrease in inventory	2,000	2,000
Add increase in accounts payable	-	1,000
Subtract increase in receivables	(17,000)	(12,000)
Subtract decrease in wages payable	(1,000)	-
Subtract increase in prepaid expenses	(1,000)	-
Net Cash Used for Operating Activities	<u>\$ (2,000)</u>	<u>\$ (6,000)</u>
Cash Flows From Investing Activities		
Sale of stock investments	\$ 4,000	\$ 4,000
Purchase of delivery van	-	(32,000)
Net Cash From/(Used for) Investing Activities	<u>\$ 4,000</u>	<u>\$ (28,000)</u>
Cash Flows From Financing Activities		
Increase in mortgages	\$ -	\$ 25,000
Repayments of mortgages	(5,000)	(4,000)
Net Cash From/(Used for) Financing Activities	<u>\$ (5,000)</u>	<u>\$ 21,000</u>
Net Increase/(Decrease) in Cash	<u>\$ (3,000)</u>	<u>\$ (13,000)</u>
Cash, Beginning of Year	4,000	17,000
Cash, End of Year	<u>\$ 1,000</u>	<u>\$ 4,000</u>

Exhibit 10-4

Cash from Operating Activities

The first section of cash flow statements is Cash Flows From Operating Activities. This is considered to be a critical element. The ability of an organization to continue operations over a long time period often depends on whether its normal daily operating activities generate more cash than they consume. An organization that generates more cash than it uses for operations is, *ceteris paribus*, more financially stable and viable.

A rapidly expanding profitable organization may suffer cash shortfalls as inventories and receivables increase. This need not create a crisis if management is aware of it and plans to handle the cash shortage. The cash flow statement focuses management's attention on the cash shortfall and its causes. It creates a warning flag. With sufficient lead time, other sources of cash, such as long-term debt, may be arranged to avoid a serious problem.

Looking at [Exhibit 10-4](#), the first item in the Cash Flows From Operating Activities section is the change in net assets. For 2017, net assets increased by \$5,000. That increase in net assets is taken directly from the activity statement, [Exhibit 10-2](#). The net asset change represents revenues less expenses. Often revenues are received in cash and expenses are paid in cash. So the change in net assets may represent a reasonable approximation of cash flow. However, in an accrual system, revenues and expenses are usually not the same as cash flow. Therefore, the change in net assets in the cash flow statement serves only as a first approximation of cash flows. A number of adjustments are needed to convert the change in net assets to cash flow.

The first adjustment made is for expense items that do not consume any cash. In nearly all cash flow statements, the first item listed after change in net assets is depreciation. In 2017, Meals for the Homeless had

\$10,000 of depreciation. The cash payment to acquire a capital asset would show up as a use of cash in the section of the statement called Cash Flows From Investing Activities. This would occur in the year the asset is acquired. In each year that we own the asset, a portion is charged as depreciation expense. However, there is no cash receipt or payment related to that annual depreciation charge.

Consider, for example, that Meals for the Homeless purchased a delivery van in 2016. In 2017, no equipment was purchased or paid for. However, the delivery van purchased in 2016 and the kitchen oven equipment purchased in earlier years are being depreciated during 2017. Since Meals used those assets in 2017 to provide meals, it is appropriate to charge some of their original cost as an expense in 2017. However, Meals is not paying cash for them in 2017. They were already paid for in earlier years. Depreciation is only an allocation of cost; it is not a cash payment.

This creates a minor problem. The change in net assets was used as an approximation of cash flow on the first line of the cash flow statement. One would therefore assume that revenues had been received in cash and all expenses paid in cash. However, if there is an expense such as depreciation that is not paid in cash, we must make an adjustment. Since expenses are subtracted to arrive at the change in net assets on the activity statement and since depreciation expense is not paid in cash, we must add depreciation back to changes in net assets to approximate cash flow better.

This creates some confusion. Many people assume that depreciation generates cash since they see depreciation as a positive number on the cash flow statement. It is important to realize that depreciation is not being added because it generates cash. It does not. It is being added to adjust for the fact that it was subtracted to arrive at the change in net assets but did not consume cash.

In addition to depreciation, there are other expense items, such as amortization, that reflect a current-year expense but do not consume cash. For example, a patent is not a tangible asset. As such, it cannot be depreciated. Depreciation is just used for tangible assets. But the patent does get used up over a period of time, and its cost is allocated each year as an amortization expense. Meals for the Homeless did not have any amortization for 2016 or 2017.

In addition to expense items that do not use cash, adjustments must be made for a variety of items for which the change in net assets does not capture true cash flow. For example, during 2017, Meals used more inventory than it purchased. We know this from the decrease in inventory on the balance sheet. [Exhibit 10-5](#) repeats Meals for the Homeless's balance sheet from [Chapter 9](#), adding comparative data for 2016 to the 2017 data we saw in [Chapter 9](#).

Meals for the Homeless Statement of Financial Position as of December 31, 2017, and December 31, 2016					
Assets			Liabilities and Net Assets		
	2017	2016		2017	2016
Current Assets			Liabilities		
Cash	\$ 1,000	\$ 4,000	Current Liabilities		
Marketable securities	3,000	3,000	Wages payable	\$ 2,000	\$ 3,000
Accounts receivable, net of estimated uncollectibles of \$8,000	55,000	38,000	Accounts payable	3,000	3,000
Inventory	2,000	4,000	Notes payable	5,000	5,000
Prepaid expenses	1,000	-	Current portion of mortgage payable	5,000	5,000
Total Current Assets	\$ 62,000	\$ 49,000	Total Current Liabilities	\$ 15,000	\$ 16,000
Long-Term Assets			Long-Term Liabilities		
Fixed assets			Mortgage payable	\$ 11,000	\$ 16,000
Property	\$ 40,000	\$ 40,000	Total Long-Term Liabilities	\$ 11,000	\$ 16,000
Equipment, net	35,000	35,000	Total Liabilities	\$ 26,000	\$ 32,000
Investments	8,000	12,000	Net Assets		
Total Long-Term Assets	\$ 83,000	\$ 97,000		110,000	114,000
Total Assets	\$145,000	\$146,000	Total Liabilities and Net Assets	\$145,000	\$146,000

Exhibit 10-5

From the end of 2016 to the end of 2017, inventory declined from \$4,000 to \$2,000. All inventory used this year has been treated as an expense on the activity statement. Therefore, all inventory used has been subtracted to arrive at the change in net assets, as if we paid for it with cash. However, part of the inventory used was not purchased and paid for this year. It had been purchased in some prior year. We know that is true because our inventory balance fell from \$4,000 to \$2,000. Therefore, our expenses overstate how much cash was used to buy inventory this year. To adjust for this, we add the \$2,000 decrease in inventory in [Exhibit 10-4](#). We are not adding this because it generates cash. We are adding this because we used less cash to acquire inventory than the activity statement implies.

Think of this complicated issue in another way. We began the year with inventory of \$4,000, the balance at the end of the prior year (see [Exhibit 10-5](#)). We acquired food inventory during the year. As we buy and pay for food, that uses cash. However, assume that we do not know how much we acquired and paid for. During the year, we had \$17,000 of expense related to the use of inventory (see Food line in [Exhibit 10-2](#)). As we used the food, it reduces the amount in the inventory account. So a summary of the transactions affecting the food inventory account is as follows:

End of 2016 inventory balance	\$ 4,000
Purchase inventory	???
Inventory expense	(17,000)
End of 2017 inventory balance	<u>\$ 2,000</u>

It turns out that for this account to be properly balanced we must have purchased \$15,000 of food, as follows:

End of 2016 inventory balance	\$ 4,000
Purchase inventory	15,000
Inventory expense	(17,000)
End of 2017 inventory balance	<u>\$ 2,000</u>

The activity statement assumes that the full \$17,000 of food used must have been paid for in cash. However, we see from the preceding calculation that we purchased only \$15,000 of food. The activity statement assumes that more cash was used than was actually the case. So we need to add back the difference between the \$17,000 and the \$15,000. This is equivalent to adding back the decrease in the inventory balance.

By contrast, what if we had purchased more inventory than we had used? Our inventory balance would have increased. Our expense for the use of inventory would show only the inventory used. It would not show the amount paid to acquire inventory that we still owned at the end of the year. It would be necessary to make an

adjustment in which we subtracted the year-to-year increase in inventory from the change in net assets. That subtraction would adjust for the fact that we not only paid cash for the inventory we used, but also paid cash to acquire more inventory that we still have at the end of the year.

A similar process is undertaken for all items that affect operations. According to the cash flow statement, [Exhibit 10-4](#), Meals must subtract the increase in receivables. Why? Increases in accounts receivable represent revenues that are included in the change in net assets but have not yet been collected. Meals started the year with \$38,000 in net receivables (see the 2016 ending balance, [Exhibit 10-5](#)). During 2017, revenues were \$196,000 (see the activity statement, [Exhibit 10-2](#)). At the end of the year, Meals still had outstanding net receivables of \$55,000 ([Exhibit 10-5](#)):

Beginning accounts receivable	\$ 38,000
Increase resulting from revenue	196,000
Collections reducing accounts receivable	???
Ending accounts receivable	<u>\$ 55,000</u>

For these receivables accounts to make sense, the organization must have collected \$179,000:

Beginning accounts receivable	\$ 38,000
Increase resulting from revenue	196,000
Collections reducing accounts receivable	(179,000)
Ending accounts receivable	<u>\$ 55,000</u>

However, the cash flow statement starts with the change in net assets. The change in net assets includes the full \$196,000 of revenues. Since we collected only \$179,000 rather than \$196,000, we must subtract the difference, which is the amount accounts receivable has increased.

After looking at inventory and accounts receivable, it becomes apparent that the adjustments in the cash flow from operations include adding decreases in current asset accounts and subtracting increases. Just the reverse is true for current liabilities. This is exactly consistent with the equation derived earlier:

$$\Delta \text{Cash} = \Delta \text{Net Assets} + \Delta \text{Liabilities} - \Delta \text{All Other Assets}$$

Changes in current assets are part of the change in all other assets in the equation. Increases in current assets are subtracted, for example, because we spend money to acquire those assets, causing both sides of the equation to decline. Notice the negative sign in front of $\Delta \text{All Other Assets}$ in the equation. Following this equation, Meals must also subtract the decrease in wages payable. If wages payable decline, it is because we have paid employees more than they earned this year. That means that payments to employees exceeded the amount treated as an expense in the activity statement. So a subtraction is required. Looking at the equation, a reduction in a liability reduces both sides of the equation.

Another common adjustment relates to unrealized gains and losses on investments. For example, suppose that an organization owns shares of stock with a value of \$30 per share at the beginning of the year. During the year the value of the stock rose, and at the end of the year it is worth \$40 per share. On the operating statement, a gain of \$10 per share will be shown to reflect this increase in the value of our investments. Since we have not yet sold the stock, this gain is considered to be “unrealized.” Although that change has resulted in an increase in net assets, there has been no cash flow. We didn’t actually sell the stock, so we didn’t receive cash. Therefore, we need an adjustment on the cash flow statement. We will subtract the unrealized gain on

investments. Similarly, if there were an unrealized loss on investments, that would have lowered net assets on the operating statement, even though cash is not paid to anyone when an unrealized loss occurs. So unrealized losses are added back in the operating section of the cash flow statement.

These adjustments can be complicated, and they make preparation of a cash flow statement difficult. The vast majority of managers, however, will not have to prepare the statement. So it is more important to focus on interpretation of the numbers. Managers should be able to answer questions such as “What are the implications of an increase in accounts receivable on the cash generated by operations? Does the increase in accounts receivable imply that we are not making an adequate effort to collect money owed to us? Does the lag in collection of money owed to us affect cash flow to a great enough extent to create a dangerous financial position for the organization?”

Meals for the Homeless has had decreases in cash from operating activities for both 2016 and 2017. The decrease in 2017 was smaller than in 2016, but given Meals’s profit in 2017, it might still be considered surprising. The cash decrease in 2017 is not extremely large. And it might be caused by expansion in services and lags in collections of receivables. It does, however, raise a note of caution, and it will be important for managers to keep their eyes on their cash flows during the coming year.

Cash from Investing Activities

The second part of the statement of cash flows is cash from investing activities. This section focuses on two very different types of investment activities. First is the purchase and sale of investments not directly related to the production of the organization’s goods and services. This would include, for example, the purchase and sale of shares of stock. The second type of activity relates to the purchase or sale of the capital assets the organization needs to provide its goods and services, such as buildings and equipment.

In either case, the investing activities section of the cash flow statement shows the total purchase amount for purchases and the total sales amount for sales. If we buy a building for \$1,000,000, in the investing activities section of the cash flow statement we would show that we used \$1,000,000 of cash. What if we pay only \$200,000 in cash when we buy the building, and we borrow the rest from a bank? In the investing activities section of the cash flow statement, we would still show that we used \$1,000,000 of cash to purchase the building. Effectively, we have borrowed \$800,000 from the bank and paid \$1,000,000 for the building. The investing activities section shows the full \$1,000,000 payment as a cash use, and the financing activities section of the statement (discussed below) would show that the bank loan provided an \$800,000 source of cash for the organization.

When we sell an investment, the investing activities section of the cash flow statement shows the full amount of cash received from the sale. Suppose that we had purchased a piece of equipment for \$20,000 three years ago. It had a 5-year expected life with no salvage value expected at the end of 5 years. At a depreciation rate of \$4,000 a year, the equipment had a net book value of \$8,000 at the end of 3 years. How would we show this equipment on the cash flow statement if we sold it for \$10,000 at the end of the third year? The entire \$10,000 that we receive from the sale represents a cash inflow to the organization. We would show that full

\$10,000 as a source of cash in the investing activities section of the statement. Note, however, that since the item had an \$8,000 net book value and it was sold for \$10,000, we made a \$2,000 profit on the sale. That profit or gain on the sale would be included in the activity or operating statement, because it does increase the organization's net assets. In order to avoid double-counting the cash impact of that profit, the gain on sale of equipment would be subtracted in the operating activities section of the cash flow statement. Similarly, the sale of stocks and other investments should not be reported net of unrealized gains or losses. When investments are sold, the cash from investing activities section of the cash flow statement reports the full cash proceeds of the sale, and the gain or loss is adjusted in the cash from operations section of the statement.

Note that Meals sold \$4,000 of stock investments during 2017 ([Exhibit 10-4](#)). Given that the proceeds were not reinvested (we can tell from the statement that Meals made no investments in 2016), the money from the sale probably went to cover the cash shortfall from operations. Meals still owns some investments. However, it clearly cannot sell investments indefinitely to provide cash to support operations.

In the prior year, Meals purchased a delivery van. That required a major cash outlay of \$32,000. Increases in fixed assets, such as the purchase of the van, require subtractions on the cash flow statement since they represent a use of cash. Decreases in fixed assets, such as the sale of a stock investment, require an addition on the statement because such sales generate cash for the organization. We see that in 2016 there is a \$32,000 use of cash to pay for the investment in the delivery van.

Cash from Financing Activities

The third section of the statement is cash flows from financing activities. In 2016, Meals did not have enough cash in the bank to pay the entire cost of the new delivery van. Further, its operations that year consumed \$6,000 more of cash than they generated. Therefore, it needed another source of cash to pay for the van. As we can see from the cash flow statement, during 2016 there was a \$25,000 mortgage increase. This increase in long-term borrowing provided the source of cash to buy the van.

The van was purchased early in the year, and mortgage repayments were made in both 2017 and 2016. These repayments of money that had been borrowed represent a use of cash. Thus, new loans are additions because they are a source of cash, and repayments or decreases in loans are subtractions because they require payment of cash.

For-profit corporations have another prominent potential source of cash from financing activities. They can sell more shares of ownership in the organization. Issuing stock in exchange for cash represents a source and therefore an addition in this section of the statement.

Discussion

Combining the cash flows from operating, investing, and financing activities yields the net increase or decrease in cash for the year. In 2016, Meals's cash declined by \$13,000; in 2017, it declined another \$3,000. The change in cash each year is added to the cash balance at the beginning of the year. This tells us how much cash there is at the end of the year. We can see that Meals finished 2016 with \$4,000 and 2017 with \$1,000.

These amounts at the bottom of the cash flow statement ([Exhibit 10-4](#)) also appear on the balance sheet ([Exhibit 10-5](#)).

In some ways, Meals needs to be more concerned about its cash position than it was a year ago, even though cash declined only \$3,000 this year as compared with the \$13,000 decline in the previous year. In 2016, Meals made a major equipment purchase. Meals borrowed \$25,000 on a mortgage and purchased a van for \$32,000, so there was a \$7,000 cash drain on the organization to buy the van. In 2017, Meals was profitable and did not make any investment in equipment. Yet it used \$2,000 more cash for operations than it generated from operations, and it finished the year with only \$1,000 cash in the bank.

Meals does not, however, have a crisis. With profitability improving, collections from receivables should rise. The cash deficit from operations declined in 2017, and similar improvements in 2018 could yield a positive cash flow from operations. However, Meals did not buy any equipment this year. It would be helpful if it could generate enough of a cash surplus in years when no new equipment investment is made in order to put money aside in savings. Such savings could help provide the down payments for future equipment purchases. It is unlikely that most organizations would be able to finance capital acquisitions without using some accumulated surpluses from prior periods.

Interrelationships Among Financial Statements

The balance sheet, activity statement, and cash flow statement are interconnected. The information from each relies to some extent on information from the others. It is important to realize the connectivity of the statements. All three financial statements have their origins in the fundamental equation of accounting discussed in [Chapter 9](#).

The activity statement considers revenues and expenses, both of which change net assets. Suppose that we use up inventory as we provide services during the year. Our asset (inventory) goes down. If we look at the balance sheet at the end of the year, total assets are lower than at the beginning of the year because there is less inventory. However, this cannot possibly tell the whole story, because an equation cannot remain in balance if only one thing changes. A reduction on the left side of the equation leaves the equation unbalanced. When inventory is used up, that lowers the assets owned by the organization or its owners. That creates an expense. Expenses are reductions in net assets and, therefore, reduce the right side of the equation.

Thus, the consumption of inventory causes assets to decline and expenses to rise. This affects the inventory asset reported on the balance sheet and the expense reported on the activity statement. Revenue transactions also affect both the balance sheet and the activity statement. When we charge clients for our services, accounts receivable rise, increasing assets on the balance sheet, and revenues rise, affecting the activity statement. These changes also affect the change in net assets, which is the starting point for the cash flow statement.

Notes To Financial Statements

The information reported in financial statements is often not enough to tell the entire story. For a variety of reasons, the balance sheet, activity statement, and cash flow statement are inadequate by themselves to give a fair representation of the financial position and results of operations of the organization. GAAP include a principle of full disclosure. This principle requires audited financial statements to contain all information that might be needed by a reasonable user for making decisions.

As a result of that principle, financial statements must be accompanied by a set of explanatory or supplementary notes in order to be deemed a fair representation of the organization's financial position and results of operations. Accounting is not a science. GAAP represent a set of conventions that contain numerous exceptions, choices, and complications. As a result, it is vital that the user of financial statements treats the notes that accompany financial statements as an integral part of the organization's financial report. Notes to financial statements are discussed at length in [Chapter 14](#).

Recording and Reporting Financial Information

In [Chapter 9](#), we introduced the process of using journals and ledgers to record and summarize financial transactions. After transactions are recorded in this manner, financial statements can be developed. We continue that example now, adding transactions that affect the activity or operating statement. Refer back to [Chapter 9](#) for the first five events for HOS in the year 2018 and also for a discussion of journal entries and posting to ledger accounts. For the reader's convenience, [Exhibit 9-3](#), the balance sheet for the end of the year 2017, appears here as [Exhibit 10-6](#).

Hospital for Ordinary Surgery Balance Sheet as of December 31, 2017	
Assets	
Current Assets	
Cash	\$ 52,000
Accounts receivable	18,000
Inventory	5,000
Total Current Assets	\$ 75,000
Fixed Assets	
Plant and equipment, net	\$240,000
Total Assets	\$315,000
Liabilities and Net Assets	
Liabilities	
Current Liabilities	
Accounts payable	\$ 7,000
Wages payable	30,000
Total Current Liabilities	\$ 37,000
Long-Term Liabilities	
Mortgage payable	140,000
Total Liabilities	\$177,000
Net Assets	
Unrestricted	\$113,000
Temporarily restricted	15,000
Permanently restricted	10,000
Total Net Assets	\$138,000
Total Liabilities and Net Assets	\$315,000

Exhibit 10-6

In [Chapter 9](#), all of the transactions affected the basic equation by causing changes in one or both sides of the equation:

$$\Delta \text{ Assets} = \Delta \text{ Liabilities} + \Delta \text{ Net Assets}$$

That is, the change in assets equals the change in liabilities plus the change in net assets. However, there were no changes to net assets in the example in [Chapter 9](#). The most common things that change net assets are revenues (or support) and expenses. Therefore, the equation can be shown as follows:

$$\Delta \text{ Assets} = \Delta \text{ Liabilities} + \text{Revenues} - \text{Expenses}$$

Continuing with the example from [Chapter 9](#), we pick up with transaction 6:

6. July 17. HOS provides services and charges patients \$81,000. Inventory that had cost \$4,000 was consumed. The hospital has not yet been paid.

The hospital has both revenues and expenses as a result of this transaction. The revenue side and expense side can be recorded as two separate transactions. First, we have sold patient services in the amount of \$81,000. That will increase both accounts receivable and patient revenues. Second, we have

consumed some inventory. That will lower inventory by \$4,000 and create an expense.

ASSETS	=	LIABILITIES	+	REVENUES	-	EXPENSES
Accounts Receivable + \$81,000	=		+	Patient Revenues + \$81,000		
Inventory - \$4,000	=				-	Supply Expense + \$4,000

Notice that although supply expense increased, expenses reduce net assets, so the effect of the expense is to lower the right side of the equation. The journal entries for transaction 6 and the remaining transactions in this example may be found in Appendix 10-D.

7. August 4. HOS orders \$4,000 of additional inventory to replace inventory that had been used up. The inventory has not yet been received and payment has not yet been made.

There will be no journal entry. We need to keep track of the order. However, this order is similar to the X-ray machine ordered in transaction 3 (see [Chapter 9](#)). There has been no exchange by either party to the transaction, so no journal entry is recorded.

8. November 28. HOS pays its employees \$48,000 of wages. This payment includes all balances outstanding from the previous year plus some payment for work done this year.

Clearly cash decreases by \$48,000. Is this all an expense of the current year? No. We owed employees \$30,000 for work from the previous year (see wages payable on the balance sheet in [Exhibit 10-6](#) from the end of the previous year). Thus, only \$18,000 is an expense of the current year. The rest is a reduction of the liability from the start of the year.

ASSETS	=	LIABILITIES	+	REVENUES	-	EXPENSES
Cash - \$48,000	=	Wages Payable - \$30,000			-	Labor Expense + \$18,000

9. December 10. HOS receives \$40,000 in payments from customers for services that were provided and billed for at an earlier date.

Cash increases by \$40,000 and accounts receivable decrease by that amount as a result of this transaction.

ASSETS	=	LIABILITIES	+	REVENUES	-	EXPENSES
Cash + \$40,000		Accounts Receivable - \$40,000	=			
				No change on right side		

10. December 31. At the end of the year, HOS makes a mortgage payment of \$20,000. The payment reduces the mortgage balance by \$7,000. The rest of the payment is interest.

Thus, cash is reduced by \$20,000, the mortgage payable liability is reduced by \$7,000, and there is \$13,000 of interest expense.

ASSETS	=	LIABILITIES	+	REVENUES	-	EXPENSES
Cash - \$20,000	=	Mortgage Payable - \$7,000			-	Interest Expense + \$13,000

11. December 31. At the end of the year, HOS makes an adjusting entry for prepaid insurance. Assume that the fire insurance premium paid is for 2 years of coverage.⁸

8. For a 2-year insurance premium, the initial entry for transaction 1 in [Chapter 9](#) could have shown an increase of \$50 in prepaid insurance and an increase of \$50 in deferred insurance charge. In that chapter, we simply increased prepaid insurance (the name we would use for a short-term asset) by \$100.

An adjusting entry is made because something has happened with the passage of time. In this case, half of the prepaid insurance has been used up because 1 year of the 2 years on the policy has expired.

Many financial transactions occur at a specific moment in time. Journal entries are recorded as of that date. Some transactions, however, occur over a period of time. One could contend that a small amount of fire insurance protection is used up each day, and a journal entry should be made daily to record that consumption. In practice, however, we do not need to make daily entries for things that occur over time. We just need to make one adjusting entry prior to preparing financial statements.

However, one might wonder why an adjusting entry is made before the item is completely used up. Why not simply wait until the insurance has completely expired? We do not wait because, if we did that, we would be overstating the value of the insurance asset on the balance sheet. We would also be understating the amount of resources used up and, therefore, the expense on the operating statement. Adjusting entries have a goal of placing expenses in the period during which revenues were generated as a result of those expenses.

ASSETS	=	LIABILITIES	+	REVENUES	-	EXPENSES
Prepaid Insurance						Insurance Expense
-\$50	=				-	+\$50

12. December 31. HOS owes clinical staff \$27,000 at the end of the year. These wages will not be paid until the following year.

This requires an adjusting entry. There is no specific transaction, such as a payment. However, the staff did provide their services to the organization, so there has been an exchange. We must record the obligation to pay for their services.

ASSETS	=	LIABILITIES	+	REVENUES	-	EXPENSES
No change on left side	=	Wages Payable				Labor Expense
		+\$27,000			-	+\$27,000

13. December 31. The hospital's building and equipment are now 1 year older. Depreciation for the year is \$18,000.

This adjusting entry transaction increases depreciation expense and reduces the net balance in buildings and equipment. For simplicity, we will directly reduce buildings and equipment. In practice, the original cost of buildings and equipment is maintained, and a separate offsetting contra account is established for accumulated depreciation.

ASSETS	=	LIABILITIES	+	REVENUES	-	EXPENSES
Plant & Equipment, net						Depreciation Expense
-\$18,000	=				-	+\$18,000

These transactions for HOS give a highly consolidated view of the thousands, possibly millions, of transactions that are recorded annually. Not all types of transactions have been considered. However,

one can begin to see that there is a systematic approach for recording the financial events that affect an organization.

Summarizing Financial Information

In [Chapter 9](#), we discussed creation of a balance sheet from the information contained in ledger accounts. Now we want to use the ending balance in the ledger accounts to generate both a balance sheet and an operating statement.

[Exhibit 10-7](#) presents the information from which we can prepare a set of financial statements for HOS. This exhibit builds on [Exhibit 9-4](#), adding rows for the transactions from this chapter. All of the journal entries for the year have been recorded, including those from [Chapter 9](#). As in [Chapter 9](#), the first row is the beginning balance, which can be found in [Exhibit 10-6](#). Each transaction is then shown. The last row is the ending balance for each ledger account. Each column presents a ledger account. Note that the total of the ending balances on the asset (left) side of [Exhibit 10-7](#) must equal the total of the ending balances on the liability and net assets (right) side, if the fundamental equation has been kept in balance.

Exhibit 10-7

	ASSETS					LIABILITIES AND NET ASSETS						
	Cash	Accounts Receivable	Inventory	Prepaid Insurance	Plant & Equipment, Net	Accounts Payable	Wages Payable	Mortgage Payable	Net Assets			
									Unrestricted	Temporarily Restricted	Permanently Restricted	
Beginning Balance	\$52,000	\$18,000	\$5,000	\$ 0	\$240,000	\$7,000	\$30,000	\$140,000	\$113,000		\$15,000	\$10,000
Transaction 1	(100)			100								
Transaction 2	(2,000)					(2,000)						
Transaction 3												
Transaction 4			3,000			3,000						
Transaction 5	12,000	(12,000)										
Transaction 6a		81,000							81,000	Patient Revenue		
Transaction 6b			(4,000)						(4,000)	Supply Expense		
Transaction 7												
Transaction 8	(48,000)						(30,000)		(18,000)	Labor Expense		
Transaction 9	40,000	(40,000)										
Transaction 10	(20,000)							(7,000)	(13,000)	Interest Expense		
Transaction 11				(50)					(50)	Insurance Expense		
Transaction 12							27,000		(27,000)	Labor Expense		
Transaction 13					(18,000)				(18,000)	Depreciation Expense		
Ending Balance	<u>\$33,900</u>	<u>\$47,000</u>	<u>\$4,000</u>	<u>\$50</u>	<u>\$222,000</u>	<u>\$6,000</u>	<u>\$27,000</u>	<u>\$133,000</u>	<u>\$113,950</u>		<u>\$15,000</u>	<u>\$10,000</u>

Notice that there are no columns for revenue and expense accounts. These temporary accounts have no balance at the beginning or end of the year. Revenue accounts increase net assets, and expense accounts decrease net assets. At the end of the year, the entire impact of revenues and expenses for the year is to change the unrestricted net assets.

Revenue and expense accounts are *temporary accounts* because we want the activity or operating statement to reflect just the revenues and expenses for the time period being reported, such as a year. Unlike the balance sheet, which shows the value at any specific point in time, the operating statement's purpose is to show what has occurred for a specific period of time. Once that period of time has passed, the accounts are emptied so they can start over for the next period. Balance sheet accounts are referred to as *permanent accounts* because their ending balance from one period continues on as the beginning balance for the next period. The complete

process from first recording transactions through creating financial statements and finally emptying out the temporary accounts is called the *accounting cycle*. The accounting cycle is discussed in Appendix 10-E.

The Operating Statement

[Exhibit 10-8](#) presents the *operating statement* for HOS. The operating statement is a summary of revenues and expenses. This information can be taken directly from [Exhibit 10-7](#).

Hospital for Ordinary Surgery Operating Statement for the Year Ending December 31, 2018	
<i>Revenues</i>	
Patient revenues	\$81,000
<i>Total Revenues</i>	<u>\$81,000</u>
<i>Expenses</i>	
Supplies expense	\$ 4,000
Labor expense	45,000
Insurance expense	50
Depreciation expense	18,000
Interest expense	13,000
<i>Total Expenses</i>	<u>\$80,050</u>
<i>Increase in Unrestricted Net Assets</i>	<u>\$950</u>

Exhibit 10-8

The preparation of [Exhibit 10-8](#) is straightforward. Each change in the unrestricted net assets column in [Exhibit 10-7](#) is taken and recorded on the operating statement. The order of appearance of the items on the operating statement depends on a number of decisions about how information should be presented. All changes to identical accounts, such as labor expense, are totaled and reported as one item. It is also common practice for some ledger accounts to be combined and reported as one summary amount, such as administrative and general expenses.

In practice, the operating statement is developed by taking the total balance from each revenue and expense ledger account. Each revenue and expense account would have its own detailed account information. [Exhibit 10-7](#) provides all of the ledger account information in one place; it is a very highly summarized document that is used for educational purposes only.

The Cash Flow Statement and the Direct and Indirect Methods

The cash flow statement appears in [Exhibit 10-9](#). This has been developed by taking the \$950 increase in unrestricted net assets from the last line of [Exhibit 10-8](#) and using that as the first item in [Exhibit 10-9](#). Then the opening balances from the transactions worksheet, [Exhibit 10-7](#), are compared with the closing balances in that worksheet, and the impact of the change in each account is reflected on the statement of cash flows. The development of a cash flow statement beginning with changes in net assets, or with net income, is referred to as the indirect method. It is indirect because of the use of changes in net assets as the starting point to determine cash flow. An alternative approach, referred to as the direct method, appears in [Exhibit 10-10](#).

Exhibit 10-9

Hospital for Ordinary Surgery Statement of Cash Flows for the Year Ending December 31, 2018	
<i>Cash Flows From Operating Activities</i>	
Increase in unrestricted net assets	\$ 950
Add expenses not requiring cash	
Depreciation	18,000
Other adjustments	
Add decrease in inventory	1,000
Add increase in accounts payable	1,000
Subtract increase in accounts receivables	(29,000)
Subtract increase in prepaid insurance	(50)
Subtract decrease in wages payable	(3,000)
Net cash used for operating activities	<u>\$(11,100)</u>
<i>Cash Flows From Investing Activities</i>	
Net cash from investing activities	\$ -
<i>Cash Flows From Financing Activities</i>	
Repayments of mortgages	<u>\$ (7,000)</u>
Net cash used for financing activities	<u>\$ (7,000)</u>
Net Increase/(Decrease) in Cash	\$(18,100)
Cash, Beginning of Year	52,000
Cash, End of Year	<u>\$ 33,900</u>

Hospital for Ordinary Surgery Statement of Cash Flows for the Year Ending December 31, 2018	
<i>Cash Flows From Operating Activities</i>	
Cash used to purchase insurance	\$ (100)
Cash used to pay suppliers	(2,000)
Cash received from patients	52,000
Cash used for payment of wages	(48,000)
Cash used to pay interest	(13,000)
Net cash used for operating activities	<u>\$(11,100)</u>
<i>Cash Flows From Investing Activities</i>	
Net cash from investing activities	\$ -
<i>Cash Flows From Financing Activities</i>	
Repayments of mortgages	<u>\$ (7,000)</u>
Net cash used for financing activities	<u>\$ (7,000)</u>
Net Increase/(Decrease) in Cash	\$(18,100)
Cash, Beginning of Year	52,000
Cash, End of Year	<u>\$ 33,900</u>
Reconciliation of increase in unrestricted net assets to net cash used for operating activities:	
Increase in unrestricted net assets	\$ 950
Add expenses not requiring cash:	
Depreciation	18,000
Other adjustments:	
Add decrease in inventory	1,000
Add increase in accounts payable	1,000
Subtract increase in accounts receivables	(29,000)
Subtract increase in prepaid insurance	(50)
Subtract decrease in wages payable	(3,000)
Net cash used for operating activities	<u>\$(11,100)</u>

Exhibit 10-10

The direct method considers each of the transactions that has affected cash and classifies it as being related to operations, investing, or financing. For example, consider [Exhibit 10-7](#). Rather than comparing the beginning and ending balances in each ledger account, the focus of the direct method is the cash ledger account. In the cash column in [Exhibit 10-7](#), transaction 1 has caused cash to decline by \$100. This was as a result of the purchase of prepaid insurance. Therefore, in the cash flow statement, we would show \$100 as a cash use for the purchase of insurance (see [Exhibit 10-10](#)).

Continuing down the cash column in [Exhibit 10-7](#), we can determine the other impacts on cash flow. Transaction 2 shows that \$2,000 was used to pay suppliers. Transactions 5 and 9 show that a total of \$52,000 was received from patients or their insurers. Transaction 8 shows that \$48,000 was paid to employees for wages. Transaction 10 shows that \$20,000 was paid for the mortgage. However, note that \$7,000 of this amount was a repayment of the loan and \$13,000 represented interest expense. The payment of interest is considered to be a routine operating expense, shown in the operating portion of the cash flow statement. The

repayment of the mortgage loan relates to a financing activity.

In looking at [Exhibit 10-10](#), we can see that the \$11,100 cash used for operating activities is exactly the same under the direct method as it is under the indirect approach used in [Exhibit 10-9](#). The totals of each section of the statement and the net change in cash are not affected by which method is used. In fact, many people prefer the direct method. Going down the transactions worksheet and generating the statement from the individual changes to the cash account seems more logical and understandable to many.

GAAP currently require that either the direct or indirect method be used. However, if the direct method is used, a reconciliation must be provided showing that the result is the same under the direct method as it would be under the indirect method. Note that the reconciliation at the bottom of [Exhibit 10-10](#) is essentially the first section of the cash flow statement shown in [Exhibit 10-9](#).

Because the indirect method is essentially required whenever the direct method is used, few organizations use the direct method; they generally just present the indirect method. In the near future, however, this requirement is likely to be eliminated and organizations will be required to report cash flow statements derived using the direct method only.

[Exhibit 10-11](#) presents the balance sheet as of December 31, 2018. This statement is prepared by using the information from the last (Ending Balance) row from [Exhibit 10-7](#), the transactions worksheet. Notice that the \$33,900 cash balance on the balance sheet, [Exhibit 10-11](#), is the same number as the Cash, End of Year amount on the statement of cash flows, [Exhibits 10-9](#) and [10-10](#). All three statements—the balance sheet, operating statement, and cash flow statement—are interrelated, as noted earlier.

Hospital for Ordinary Surgery Balance Sheet as of December 31, 2018	
Assets	
Current Assets	
Cash	\$ 33,900
Accounts receivable, net	47,000
Inventory	4,000
Prepaid insurance	50
Total Current Assets	\$ 84,950
Fixed Assets	
Plant and equipment, net	222,000
Total Assets	\$306,950
Liabilities and Net Assets	
Liabilities	
Current Liabilities:	
Accounts payable	\$ 8,000
Wages payable	27,000
Total Current Liabilities	\$ 35,000
Long-Term Liabilities	
Mortgage payable	133,000
Total Liabilities	\$168,000
Net Assets	
Unrestricted	\$113,950
Temporarily restricted	15,000
Permanently restricted	10,000
Total Net Assets	\$138,950
Total Liabilities and Net Assets	\$306,950

Exhibit 10-11

Financial Statement Headings

As one final point, note that financial statement headings indicate the time period covered by the statement. Balance sheets represent a moment in time. They give financial information as of a specific date and will generally read something like “As of June 30, 2018.” By contrast, activity, or operating, and cash flow

statements give information related to what has happened over a period of time. Often we see annual statements, but it is possible for them to cover a different time period, such as a month. To be clear about the information contained in the report, such statements will indicate the time period covered, such as “For the Month Ending May 31, 2018” or “For the Year Ending June 30, 2018.”

Chart of Accounts

A common approach used by organizations when they record transactions is to assign a code number to each account. A *chart of accounts* provides a listing of each account and its assigned code or account number. In most charts of accounts, assets start with a number 1, liabilities with number 2, net assets with number 3, revenues with number 4, and expenses with number 5.

The account number would typically have two digits following that first number, which provide information about the particular type of account. For example, within the asset class of accounts, 01 would usually be assigned to cash. Within the liability class of accounts, 01 would usually be assigned to accounts payable. Thus, if the account number began with 101 it would imply that the account was used to record increases and decreases to the asset cash. If the account number began with 201 it would imply that the account was used for the liability accounts payable. Account numbers in a chart of accounts might have quite a few digits, to be able to accommodate all of the desired information. For example, although 101 indicates the asset cash, we would typically want to know whether we are referring to currency on hand, cash in a checking account, cash in a savings account, and so on. These cash subaccounts might have numbers 10101, 10102, and 10103.

Why wouldn't the currency, checking, and savings accounts be 1011, 1012, and 1013? Why did we need to allow two digits for the type of account if there are only three different types of cash accounts? There may be another asset account, perhaps account 105, that has more than nine subaccounts and therefore needs two digits for its subaccounts. Even if that is not the case, charts of accounts should be established with the intent to provide flexibility over time. Perhaps as the years go by, the organization will add additional cash accounts as it expands geographically.

When the organization's operating results are reported in its financial statements, accounts are aggregated. For example, the value for cash shown on the balance sheet would be the sum of the account balances for all accounts beginning with the value 101. However, for internal management of the organization, having a detailed chart of accounts provides better control. Managers need to know the details of how much cash is in a drawer in the office, how much in a checking account, and how much in an interest-bearing savings account. The total amount of cash provides inadequate information for effective management.

Account numbers often have a decimal point or dash, with digits on the right as well as the left. The digits on the right can provide information about departments, programs, or projects. This makes it easier to aggregate all of the information that relates to a particular program, function, or responsibility center. As organizations become larger and more complex, so do their charts of accounts. For example, a large university might have accounts with 17 digits, in a format: xxxxx-xx-xxxxx-xxxxx. That account might offer information indicating that the item is an expense for salary spent on a faculty member in the not-for-profit management department

of the school of public administration for a specific research project funded by a grant from a specific foundation restricted for that particular purpose. This may seem complicated, but it provides vital information and is often worth the effort. The university will be able to aggregate all expenses charged to the research project so that it can send an invoice to the foundation. It will be able to generate reports of total salary expenses for the university and total expenses by school, by department, by project, and so on. Each of these aggregations will generate information that may be compared to budgeted amounts, letting the organization exercise better control over its operations. (See Problem 3-30 at the end of [Chapter 3](#) for an example using a chart of accounts for a state agency.)

Starting from Scratch

Most managers take jobs with organizations that already have an existing accounting system. However, in some cases a new organization is being formed, and one must set up an accounting system from scratch. The system should help in the budget process, record transactions, and provide not only financial statements, but also reports that will help managers control operations. Ideally, the organization would have sufficient funds to hire an accounting firm to set up the accounting books for the organization. However, that may not always be the case. Suppose that you had to set up an accounting system on your own.

A good starting point is to establish a chart of accounts, as discussed previously. The key is to establish the typical accounts that will be affected by transactions, often referred to as a general ledger system. (See the [Chapter 9](#) discussion of general ledgers.) It is not critical to list every ledger account at first. As long as the chart has reasonable flexibility, additional accounts may be added as transactions occur that require them. Once a chart of accounts exists, individual transactions may be recorded. Each transaction will not only be recorded as a journal entry, but will also impact on the balance of each individual account. At the end of an accounting period, those balances can be used to prepare financial statements. If need be, this entire process can be done by hand.

However, generally charts of accounts and general ledgers are an integral part of a computerized accounting system for the organization. As accounting transactions are recorded using account numbers from the chart of accounts, the information becomes part of a flexible database. Not only is the transaction recorded, but at the same time the individual ledger accounts are updated. Financial statements and numerous other reports can be generated. Such systems can cost millions of dollars to develop and customize for large organizations. However, for an organization starting from scratch, much less sophistication is required. Inexpensive accounting programs exist that can get an organization started. What can one expect from a relatively inexpensive accounting system? Look for a program that provides a guided approach to setting up and managing basic accounting tasks. These include setting up a general ledger with a chart of accounts specifically designed for the needs of a not-for-profit organization, recording transactions, printing checks, preparing invoices, generating financial statements, generating reports to aid in preparing the organization's annual Form 990 tax return, and generating reports such as a listing of contributions by donor. Such software should also have some forecasting ability and be able to prepare budgets and a range of other reports.

Also consider future expansion when an accounting system is initially selected. For example, as a not-for-profit organization grows it will need software that can deal with restricted revenues, government grants, endowments, and funding sources that span both programs and fiscal years. At some point, it may be necessary to allocate costs to different projects, grants, and so on. Many of the leading programs allow you to upgrade over time, adding more sophisticated not-for-profit modules. Some software caters to both not-for-profit and government organizations. For example, AccuFund offers a software program designed around the reporting requirements of both FASB and GASB.⁹ It includes modules for municipal governments, including some specifically designed to handle accounting areas such as utility billing, business licenses, and sales tax.

9. See www.accufund.com.

In starting an accounting system for a new organization, it almost always makes sense to hire a payroll service. Many state and federal laws govern payroll. These are often related to withholding taxes for income, Social Security, unemployment, workers' compensation, and so on. It often makes sense for a small organization to outsource this process, rather than trying to become competent in this complex area. Organizations such as Intuit, ADP, and Paychex offer these services.

Summary

The discussion in this chapter focuses on reporting the results of operations. This is achieved by generating an activity statement and statement of cash flows. Unlike the balance sheet, these statements report on what has happened over a period of time, rather than just disclosing the financial position of the organization at one specific point in time.

The activity statement compares the entity's revenues and other support with its expenses for a period of time, such as a fiscal year. The cash flow statement looks at where the organization obtained its cash and where it spent cash during that period of time. The focus is not only on how much cash came and went, but also on the sources and uses of cash. Together these statements provide the user with a sense of how well the organization has done over the period of time covered by the statements.

Key Terms from This Chapter

accelerated depreciation, 367
accounting cycle, 384
activity statement, 357
cash flow statement, 357
chart of accounts, 389
contra asset, 365
deferred revenues, 369
expired cost, 361
first-in, first-out (FIFO), 368
interim statements, 358
last-in, first-out (LIFO), 368
net income, 359
operating statement, 386
period costs, 360
permanent accounts, 384
product costs, 360
straight-line depreciation, 367
temporary accounts, 384
unexpired cost, 361
viability, 371
write off, 366

Questions for Discussion

- 10-1. What are some of the other names for the activity statement?
- 10-2. Why would public service organizations need to measure income?
- 10-3. What conditions must be met for revenue to be recorded? Can pledges meet those conditions?
- 10-4. What is the difference between assets being used up and expiring?
- 10-5. Why do financial statements often show numbers rounded off rather than exact to the dollar?
- 10-6. Consider the revenue results from telephone solicitations by Meals for the Homeless in 2016 (see [Exhibit 10-2](#)). What do you make of this? What are some possible explanations? What questions do you have?
- 10-7. Should bad debt expense on the activity statement match up with the allowance for uncollectible accounts on the balance sheet?
- 10-8. Does the difficulty in determining the current value of an asset create a problem in determining the depreciation expense that should be charged for a year?
- 10-9. Why would CPAs prefer to avoid estimates in financial reporting?
- 10-10. Is the cash flow statement a reasonable alternative to the activity or operating statement?
- 10-11. What are the sections of the cash flow statement? Why is it divided this way?
- 10-12. Is the information on the balance sheet, activity statement, and cash flow statement independent of one another or connected? Explain.
- 10-13. Explain the difference between permanent and temporary accounts.

Problems

10-14. For each of the transactions below, record whether it would result in an increase or decrease in assets, liabilities, and/or net assets. An organization:

1. Earns revenue.
2. Receives a donor pledge.
3. Purchases supplies with cash.
4. Purchases supplies on account.
5. Takes out a loan.
6. Repays loan principal.
7. Receives payment on a pledge.
8. Makes a payment on an amount it owes.
9. Prepays for insurance.
10. Uses prepaid insurance.
11. Uses supplies.
12. Uses a capital asset.
13. Receives cash in advance of providing goods or services to a client.
14. Provides goods and services to a client in exchange for a cash payment that was made in advance.
15. Employs workers who earn wages.
16. Pays employee wages that have been earned.
17. Deems a portion of a pledge is uncollectible.
18. Pays interest on a loan.

10-15. The American Research Council for Humanities (ARCH) had the following financial events during the current year:

1. January 12. Received a \$300,000 payment from a pledge made last year.
2. February 4. Placed an order for new cubicle partitions with 5-year useful lives, for \$15,000.
ARCH uses straight-line depreciation. Payment was not yet made, and the partitions have not yet been delivered.
3. March 1. Paid out a \$50,000 grant to the Governmental Archeological Research Committee for History (GARCH). This was a new grant made in the current fiscal year.
4. May 29. Paid a \$5,000 deposit for the partitions ordered on February 4.
5. June 12. Collected \$80,000 in new donations.
6. September 1. Bought \$60,000 of books ARCH has sponsored in the past to sell in its online bookstore. It paid half now, and still owes the other half, to be paid at the end of the year. ARCH has budgeted to sell the books for \$100,000 total.
7. October 15. The partitions ordered on February 4 arrived, and ARCH paid for the balance owed.
8. November 10. Borrowed \$75,000 from its bank on a note payable.
9. December 5. Repaid \$25,000 on the note payable and also \$3,000 in interest expenses.
10. December 28. Paid its employees \$75,000 of wages in cash for the year, \$70,000 of which was for

the current year and \$5,000 of which was for the outstanding balance owed. Employees earned \$90,000 in wages for the year.

11. December 31. Book sales from the Internet bookstore totaled \$110,000, and the cost of the books sold was \$58,000. ARCH has not collected \$12,000 of the sales. The balance owed for the inventory was paid.
12. ARCH expects that of the \$12,000 not collected to date, it will collect \$10,000.
13. December 31. Depreciation on ARCH's building for the year is \$40,000.
14. Record these transactions and any other required adjusting entries by showing their impact on the fundamental equation of accounting or journal entries.

10-16. ARCH began the year with the following balances (shown in alphabetical order) in their accounts:

Accounts Payable	\$ 27,000
Accounts Receivable, Net	26,000
Cash	10,000
Inventory	25,000
Notes Payable	270,000
Permanently Restricted Net Assets	100,000
Pledges Receivable	350,000
Property, Plant, and Equipment, Net	350,000
Temporarily Restricted Net Assets	30,000
Unrestricted Net Assets	302,000
Wages Payable	32,000

Record this information and the transactions from Problem 10-15 in a worksheet similar to [Exhibit 10-7](#).

10-17. Use Problems 10-15 and 10-16 to prepare an activity statement (operating statement), a comparative statement of financial position (balance sheet), and a statement of cash flows (using the indirect method). What do you learn from these statements, and what questions do they raise?

10-18. The Science Road Show (SRS) is a not-for-profit organization that puts on traveling science demonstrations throughout the state. SRS operates on a September 1–August 31 fiscal year. The organization began FY 2018 with the following account balances:

Cash	40,000
Grants Receivable	100,000
Inventory	4,000
Notes Payable	50,000
Pledges Receivable, Net	10,000
PP&E, Net	75,000
Prepaid Rent	10,000
Unrestricted Net Assets	160,000
Wages Payable	20,000

SRS recorded the following financial events during the 2018 fiscal year:

1. On September 1, SRS took out a \$200,000 bank loan with an annual interest rate of 4.5%. SRS's prior outstanding loan has an annual interest rate of 6.0%. Annual interest payments on both loans are due August 31.
2. Halfway through the fiscal year, SRS used the new loan proceeds to purchase a new set that is expected to last 10 years and have no salvage value. SRS also recorded \$5,000 in depreciation on its existing equipment, per its policy of recording depreciation annually.
3. On the first day of the fiscal year, SRS held a membership drive. Each 2-year membership is

priced at \$1,000 and entitles the member to benefits for 2 years. SRS sold and received payment for 50 memberships.

4. SRS sold \$375,000 in tickets. All tickets were paid for in cash.
5. SRS received a \$100,000 check for a foundation grant that was awarded in the previous fiscal year. At the end of FY 2018, SRS was awarded another \$50,000 foundation grant. Payment on the second grant is expected in October 2018.
6. During the fiscal year, SRS received \$60,000 in new donor pledges and collected 75% of those pledges. SRS also collected 60% of the outstanding pledges from the previous fiscal year. Based on past experience, SRS expects that none of the remaining outstanding pledges from the prior fiscal year will be collected.
7. Throughout FY 2018, SRS ordered, paid for, and used \$15,000 of program booklets. In August, SRS ordered (on account) \$5,000 of programs for the following fiscal year.
8. SRS's employees earned \$25,000 per month. Employees are paid with a 1-month lag. SRS also fully paid its prior-year obligations to employees.
9. Payments on SRS's leased vehicles and equipment are due 1 month in advance. In FY 2018, lease payments totaled \$10,000 per month. In FY 2016, they will rise to \$12,000 per month.
10. On August 31, in addition to making annual interest payments, SRS repaid the loan outstanding prior to FY 2018 in full. A \$25,000 principal repayment on the loan taken out at the beginning of FY 2018 is due on September 1, 2018.

Prepare an activity statement (operating statement), a comparative statement of financial position (balance sheet), and a statement of cash flows (using the indirect method). What do you learn from these statements, and what questions do they raise?

10-19. Assume you are the manager of a local hospital. You begin the year with 150 boxes of inventory, each at a cost of \$1,000. Your organization had the following inventory changes during the year: You purchased 110 additional boxes in March at a cost of \$1,200 each, purchased an additional 230 boxes in August at a cost of \$1,400 each, and used 400 boxes during the year. Calculate the value of the ending inventory and the value of the inventory used for the year using both the FIFO and LIFO methods.

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Appendix 10-A: Sources of Revenue for Governments

Government revenue comes from a number of different sources. Most government revenue comes from *nonexchange transactions*. This means that they are not the result of the sale of goods and services. Various types of taxes, fines, and fees make up the bulk of nonexchange revenue. In some cases, however, governments do charge for goods or services that they provide, so they typically have some exchange revenue as well.

Nonexchange Revenues

For-profit businesses typically generate revenues from *exchange transactions*. One party buys goods or services from the other party in exchange for a payment. Not-for-profit organizations also generate some of their revenues this way. For example, a hospital provides healthcare services in exchange for payment. However, governments primarily earn their revenues as a result of nonexchange transactions. In a nonexchange revenue transaction, a government does not give something that is relatively equal in value in exchange for what it receives.

There are three main categories of nonexchange transactions for governments:

- imposed tax revenues
- derived tax revenues
- grants

Imposed tax revenues arise when taxes are assessed directly on entities. Examples of imposed tax revenues are property taxes or fines. *Derived tax revenues* are amounts the government earns from taxes on exchange transactions. For example, sales taxes are a form of derived tax revenue. The government is not directly involved in the exchange. It is neither buyer nor seller. However, it earns sales tax revenue as a result of that transaction. Grants include both government-mandated transfers and voluntary gifts to a government.

Government-mandated nonexchange transactions are those in which one government gets revenue from another government but must use that revenue in a specified way. For example, the federal government gives money to state governments for Medicaid but restricts the use of that money to the state's Medicaid program. *Voluntary nonexchange transactions* are unrestricted grants or contributions.

Imposed Tax Revenues

Property taxes fall into a category of taxation that is referred to as *ad valorem taxes*. Ad valorem means “based on value.” Most typically, property taxes are assessed or levied on buildings and land. Some governments also impose such taxes on inventory and other business items or on cars and other personal property. In some cases property taxes may be imposed on securities and bank deposits. To assess a property tax, the property subject to the tax must be valued at a specific amount. Typically, governments will appraise the value of property and then assign an assessed value based on that appraisal. Generally, the government decides the total amount of revenue to be raised by the tax, then divides that by the total assessed value of all property subject to the tax to determine a rate. That tax rate is then multiplied by the assessed value of a specific piece of property to find the tax due on that property. Tax-exempt organizations are generally exempt from property taxes.

For many governments, fines represent a significant revenue source. We often think of fines as coming from parking and other traffic violations. However, governments may fine individuals and organizations for a wide variety of reasons. For example, construction without a proper permit (that kitchen or bathroom you've recently started to renovate), failure to adhere to fire regulations, restaurant health safety violations, and so on all generate nonexchange revenue for the government. At the same time, fines are used to achieve policy

objectives of the government, such as ensuring that restaurants do not create health hazards.

Derived Tax Revenues

Sales and income taxes are both derived tax revenues. They tax either the sale of goods and services or the income-producing activities of individuals or organizations. The revenue generated by these taxes is much more variable and much less certain than that generated by property taxes or even fines. For example, the government sets the total amount of revenue to be collected from property taxes before determining the property tax rate. The total amount that will be collected is fairly predictable. Even fines can be forecast with a reasonable amount of certainty. By contrast, sales and income tax revenues are much more dependent on factors such as the economy. A sudden economic downturn can dramatically reduce the tax revenues from these sources.

Another concern related to derived tax revenues is that the government is relying to a greater degree on self-reporting. With derived taxes, the government relies on the taxpayer to accurately report the amount of tax owed. The government must develop ways to ensure that taxpayers report the correct amount of tax.

Individuals or businesses might be tempted to underreport the amount of income subject to tax. In fact, they might not file an income tax return at all. Or businesses might underreport sales and then not submit the full amount of sales taxes that had been collected. A belief that the government is likely to detect and punish taxpayers who fail to report correctly discourages abuse of the system. Therefore, governments need to implement systems to ensure that tax returns are filed and that the amounts reported are correct.

Grants

Grants are another major source of revenue for many governments and may be classified in a variety of ways:

- restricted grants
- unrestricted grants
- contingent grants
- entitlements
- shared revenues
- payments in lieu of taxes

It is common for governments to receive grants that have restrictions on them, requiring that the revenue be used for specific purposes. Restricted grants may be either mandates or voluntary. For example, a state government might mandate that local governments improve their libraries and may provide a grant for that purpose. If the grant is in the form of a mandate, the local government must accept the state grant and must make the required library improvements. Often local governments object to mandates that cost the local government more than the amount of the state grant. However, mandates are a matter of law and must be accepted.

It is much more common for grants to be voluntary. If the government does not want to use the money for the restricted purpose, it does not have to accept the grant if it is voluntary. Unrestricted grants may be used

for any desired purpose, and it would be rare for a government to decline such a grant.

Contingent grants are paid to the government only if some requirement is met. For example, a grant to support a public health clinic may be contingent upon the government passing a law that ensures the continued existence of the clinic for at least the next 5 years.

Entitlements are grants that the government is automatically entitled to receive, typically from a higher-level government, based on a formula. For example, the state government may have a law that requires it to pay local governments a set amount for each day that a student attends school in the local government's school system. In such cases, school systems tend to work hard to encourage students not to miss too many days from school for illness or other reasons. This serves to not only support the local education system, but also provide an incentive for the local school system to try to achieve the policy objective of making sure students attend school regularly.

Shared revenues are those that are collected by one government but shared with other governments based on a set formula. For example, a county may share part of its property tax revenues with municipalities within the county if they agree to maintain country roads within their borders.

Payments in lieu of taxes typically represent payments made in place of property taxes. For example, a not-for-profit university would typically be exempt from property taxes. However, the university uses many local government resources, such as fire and police protection, garbage collection, and so on. To encourage the city to be responsive to its needs, the university may make an agreement to provide an annual payment to the local government in lieu of property taxes.

Exchange Revenues

Governments do earn some revenues from exchange transactions. For example, if a city operates a golf course and charges fees for its use, the transaction would be similar to that of a privately owned golf course. However, some government revenues are less clearly exchange transactions. Consider, for example, licenses and permit fees. Some license fees are charged to cover the costs of services related to the license. For example, fishing licenses may cover the cost of stocking lakes with fish. Other license fees may exist primarily as a way to raise general revenues. In such cases, they are much more closely related to nonexchange revenue than to exchange revenue.

Another type of exchange revenue that governments earn is related to investments. For example, if a government invests money in an interest-bearing account, the interest that is earned is recorded by the government as revenue. This is exchange revenue because the government receives the interest in exchange for lending its money to another entity for a period of time.

Key Terms from This Appendix

ad valorem tax, 396
derived tax revenues, 396
exchange transactions, 396
government-mandated nonexchange transactions, 396
imposed tax revenues, 396
nonexchange transactions, 396
voluntary nonexchange transactions, 396

Appendix 10-B: Accelerated Depreciation Methods

This appendix describes a number of accelerated depreciation methods. Accelerated depreciation does not imply shortening the asset life for depreciation purposes; rather, the amount of depreciation taken in the early years is increased, and the amount taken in the later years is reduced. The two most common accelerated methods are double-declining balance and sum-of-the-years digits. To describe these methods, we assume that the organization has purchased a new piece of equipment for \$2,400. It is expected to have a useful life of 6 years and a salvage value of \$300.

The straight-line method first calculates the depreciable base, which is the cost less the salvage value. In this case, the depreciable base is \$2,100 (\$2,400 cost – \$300 salvage). The base is then allocated equally among the years of the asset's life. For a 6-year life, the depreciation would be $1/6$ of \$2,100 each year, or \$350 per year.

The double-declining balance (DDB) method starts with a depreciable base equal to the total asset cost. It ignores the salvage value. The cost is multiplied by double the straight-line rate. In this case, the straight-line rate is $1/6$, so DDB uses $2/6$. Two-sixths of the \$2,400 cost is \$800. That is the depreciation for the first year.

At that rate, the asset will be fully depreciated in just 3 years, and we have said that accelerated methods do not shorten the asset life! Therefore, we need some device to prevent the depreciation from remaining at that high level of \$800 per year. This device is the declining balance. Each year we subtract the previous year's depreciation from the existing depreciable base to get a new depreciable base.

In the example, under DDB the depreciable base is \$2,400 and the depreciation in the first year is \$800. In the second year, the depreciable base becomes \$1,600 (\$2,400 cost – \$800 first-year depreciation). In the second year, depreciation would be $2/6$ of \$1,600, or \$533. For year 3, we will determine a new base equal to \$1,600 less the second year's depreciation of \$533. Thus, we have a new base of \$1,067, and so on. Note, however, that we cannot take more depreciation during the asset's life than its cost less its salvage value. In this problem, we can take no more than \$2,100 of depreciation in total.

Sum-of-the-years digits (SYD) calculates the sum of the digits in the years of the life of the asset. That sum simply consists of adding from 1 to the last year of the asset's life, inclusive. In our example, we would add $1 + 2 + 3 + 4 + 5 + 6$, because the asset has a 6-year life. The sum of these digits is 21. The cost less salvage is multiplied by the life of the asset divided by the sum to find depreciation in the first year. Therefore, we would multiply \$2,100 (cost less salvage) by $6/21$ (the life of the asset divided by the sum). This gives us first-year depreciation of \$600.

In each succeeding year, lower the numerator of the fraction by 1; that is, for year 2 the fraction becomes $5/21$, and the depreciation would be \$500 ($\$2,100 \times 5/21$). For year 3 the fraction becomes $4/21$ and the depreciation \$400, and so on.

[Figure 10-B-1](#) and [Exhibit 10-B-1](#) compare the three methods for this piece of equipment for its entire 6-year life. Note that all three methods produce exactly the same total depreciation over the life of the asset.

Figure 10-B-1 Annual Depreciation Expense

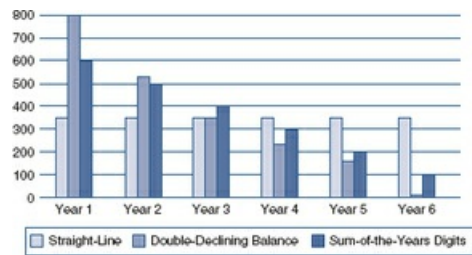


Exhibit 10-B-1

Year	Straight-Line	Double-Declining Balance	Sum-of-the-Years Digits
1	\$ 350	\$ 800	\$ 600
2	350	533	500
3	350	356	400
4	350	237	300
5	350	161	200
6	350	13	100
TOTAL	<u>\$2,100</u>	<u>\$2,100</u>	<u>\$2,100</u>

Appendix 10-C: Inventory Valuation Methods

Following the cost principle of accounting, inventory is shown on the balance sheet at its cost. The problem is trying to determine cost. Suppose that the Hospital for Ordinary Surgery (HOS) has 2,000 units of a drug on hand when the year begins. It had bought those units for \$10 each. During the year, HOS buys 18,000 more for \$12 each. At the end of the year, we count our inventory and find that 2,000 are left. How many did we use? How many are left? What did the leftover ones cost? We can use an equation to calculate the answer to some of these questions:

Beginning Inventory	+	Purchases	-	Consumption	=	Ending Inventory
2,000	+	18,000	-	X	=	2,000
				X	=	18,000

We must have used up 18,000 units. We have 2,000 units left, and they should appear on the balance sheet at their cost. How much did they cost?

This is not a simple question. We started with 2,000 units and bought another 18,000. So we had a total of 20,000 available. We have 2,000 left at year end. Which ones? The units that were in the inventory at the beginning of the year cost \$10 each. The ones purchased during the year cost \$12 each. So the inventory that is left over may have a cost of \$20,000 (\$10 per unit $\times$ 2,000 units), or \$24,000 (\$12 per unit $\times$ 2,000 units), or something in between.

There are four approaches to tracking inventory flow: first-in first-out (FIFO), last-in first-out (LIFO), weighted average, and specific identification methods. Regardless of which method is used for physical movement of inventory, we may use any of these four approaches for financial statement calculations. However, the organization is required to be consistent from year to year.

The FIFO method is the most widely used for physical flow of inventory. It follows the logical assumption that the oldest inventory (the first in) would always be used first (first out). If we use the FIFO method, then all 2,000 of the units we started with are used up first. Then the first 16,000 of the 18,000 purchased this year are used up. At year-end, we are left with the last 2,000 units purchased this year at a cost of \$12 each. We would show an inventory value of \$24,000 on the balance sheet.

The LIFO method uses the assumption that the last items acquired are the first used. At first this seems illogical. Why would anyone want to use up the newest inventory first? However, some inventory is piled up. When the town of Millbridge receives a new shipment of salt for melting ice on its roads, the new salt is piled on top of the old salt. When we go to use it, we take from the top of the pile. In that case, LIFO makes intuitive sense for physical flow of inventory. However, LIFO may be used for reporting even if it is not used for the physical flow of inventory.

If the hospital used its drugs under the LIFO method, it would consume this year's purchases first and still have the original 2,000 units on hand at the end of the year. They cost \$10 each, so the inventory on the balance sheet would be \$20,000.

The weighted-average (WA) method works under the assumption that all of the units get mixed together and we really cannot tell which have been used, so an average approach works best. The classic example would be a gas station. When you buy gas for your car, it is impossible to tell if you are getting gas from the oldest or most recent delivery. It all mixes together inside the underground tanks at the gas station. Using a WA assumption, we spent \$20,000 ($\$10 \times 2,000$) for the old units and \$216,000 ($\$12 \times 18,000$) for the new units. The total is \$236,000 for 20,000 units, or \$11.80 each ($\$236,000 \div 20,000$ units). The leftover 2,000 units at year-end cost \$23,600 ($2,000 \times \$11.80$), and that value would be placed on the balance sheet.

A superior method for tracking physical flow is the specific identification method. Under this more costly method, you would actually track each specific unit. At year-end, you would know not only how many units are left, but also which ones. Of course, this is likely to be costly, even under the perpetual inventory system discussed in [Chapter 7](#). It makes sense for high-priced items, such as automobiles, that each have a unique serial number. It generally does not make sense for lower-cost items, such as cartridges for laser printers.

Meals for the Homeless can use the LIFO method, even though it clearly does not want to keep food on hand for long periods of time. Suppose Meals ends each dinner with a piece of cake. One would think that cake should be on a FIFO basis to avoid becoming old and having to be thrown away. When it comes to inventory valuation, however, you can eat your cake and have it too! The organization can actually consume inventory on a FIFO basis but report on its balance sheet under the assumption that it was used on a LIFO basis.

In reading and interpreting a balance sheet, the reader should be aware that the inventory valuation method used can have a dramatic impact on the inventory value reported. For example, if an organization uses LIFO over a long period of time, the inventory reported on the balance sheet may have a cost from purchases made years and years ago, and may substantially understate the true value of the inventory. If the difference in inventory valuation is material, the inventory method used must be disclosed either in the balance sheet or in the notes that accompany an audited financial statement. For example, in [Exhibit 10-5](#) we see that Meals for the Homeless had \$2,000 of inventory at the end of 2017, based on the LIFO cost assumption.

Appendix 10-D: The Recording Process: Debits and Credits

As noted in this chapter,

$$\Delta \text{ ASSETS (A)} = \Delta \text{ LIABILITIES (L)} + \text{REVENUES (R)} - \text{EXPENSES (E)}$$

Recall from Appendix 9-A that for bookkeeping purposes expenses are added to both sides of the preceding equation, resulting in the following:

$$\Delta A + \Delta E = \Delta L + \Delta R$$

As noted in Appendix 9-A, increases on the left of this equation are debits (Dr.) and decreases are credits (Cr.). Conversely, increases on the right side are credits and decreases are debits. The journal entries for the transactions in this chapter would be as follows:

6. July 17. HOS provides services and charges patients \$81,000. Inventory that had cost \$4,000 was consumed. The hospital has not yet been paid.

DATE		DR.	CR.
7/17/18	Accounts Receivable	\$81,000	
	Patient Revenues		\$81,000

Explanation: Patient care provided on account.

DATE		DR.	CR.
7/17/18	Supply Expense	\$4,000	
	Inventory		\$4,000

Explanation: Inventory supplies consumed for patient care.

7. August 4. HOS orders \$4,000 of additional inventory to replace inventory that had been used up. The inventory has not yet been received and payment has not yet been made. There will be no journal entry.
8. November 28. HOS pays its employees \$48,000 of wages. This payment includes all balances outstanding from the previous year plus some payment for work done this year.

DATE		DR.	CR.
11/28/18	Labor Expense	\$18,000	
	Wages Payable	30,000	
	Cash		\$48,000

Explanation: Pay salaries to employees.

9. December 10. HOS receives \$40,000 in payments from customers for services that were provided and billed for at an earlier date.

DATE		DR.	CR.
12/10/18	Cash	\$40,000	
	Accounts Receivable		\$40,000

Explanation: Collect amounts due from patients.

10. December 31. At the end of the year, HOS makes a mortgage payment of \$20,000. The payment reduces the mortgage balance by \$7,000. The rest of the payment is interest.

DATE		DR.	CR.
12/31/18	Interest Expense	\$13,000	
	Mortgage Payable	7,000	
	Cash		\$20,000

Explanation: Mortgage payment.

11. December 31. At the end of the year, HOS makes an adjusting entry for prepaid insurance. An adjusting entry is made because something has happened with the passage of time. In this case, half of the prepaid insurance has been used up, because 1 year of the 2 years on the policy has expired.

DATE		DR.	CR.
12/31/18	Insurance Expense	\$50	
	Prepaid Insurance		\$50

Explanation: Expiration of prepaid insurance.

12. December 31. HOS owes clinical staff \$27,000 at the end of the year. These wages will not be paid until the following year.

DATE		DR.	CR.
12/31/18	Labor Expense	\$27,000	
	Wages Payable		\$27,000

Explanation: Accrued wages.

13. December 31. The hospital's building and equipment are now 1 year older. Depreciation for the year is \$18,000.

DATE		DR.	CR.
12/31/18	Depreciation Expense	\$18,000	
	Plant and Equip., Net		\$18,000

Explanation: Depreciation for year.

Appendix 10-E: The Accounting Cycle

The formal process that starts with the occurrence of financial events and ends with a complete set of financial statements is called the accounting cycle. The steps in the accounting cycle are as follows:

- use journal entries to record the individual transactions
- post the journal entries to the general ledger
- prepare an unadjusted trial balance when the accounting period ends
- prepare and post adjusting journal entries
- prepare an adjusted trial balance
- prepare the statement of financial position, activity statement, and cash flow statement
- close temporary accounts
- create a post closing trial balance to prepare for the next accounting period

Some of these steps have already been discussed in [Chapter 9](#) and this chapter. This appendix will fill in the gaps in the process.

The first step is to convert individual financial events into journal entries. This process is explained and discussed in Appendix 9-A. Essentially, it is a formalized bookkeeping approach to recording individual transactions.

The second step is to post the journal entries to the general ledger. This step is discussed in [Chapter 9](#) in the section headed “The General Ledger and Ledger Entries.”

The third step in the accounting cycle is to prepare an unadjusted trial balance. This is simply a listing of all of the organization’s accounts, together with their ledger balances, before any adjusting journal entries have been made. The primary purpose of the unadjusted trial balance is to quickly see if “the books are in balance” before moving on the adjusting entries. The trial balance shows the debit or credit balance for each account and then a total of all of the debits and a total of all of the credits. Although the total has no inherent meaning, the total of the debits must equal the total of the credits, or at least one transaction has been recorded incorrectly. This trial balance must be in balance before we can proceed.

The fourth step in the accounting cycle is to prepare adjusting entries. Adjusting entries were first introduced in this chapter, with transaction 11. There are four areas in which adjustments are needed at the end of the accounting period:

- accrued revenues
- accrued expenses
- deferred revenues
- deferred expenses

Each of these four types of adjustments reflects the fact that something has occurred not as a result of a specific event at a specific point in time, but rather due to the passage of time.

For example, suppose that a very sick patient has been in HOS for a full month. The end of the accounting period arrives, but we are not ready to discharge the patient and issue a bill to the patient or the patient's insurer for the care provided. Since we have provided care to the patient, we need to make a journal entry recording both revenue and account receivable for the care provided up until the end of the accounting period. That is an example of accrued revenue.

Accrued expenses are very similar to accrued revenues. Perhaps HOS's staff has worked to provide care to patients during the last 2 weeks of the accounting period but have not yet been paid. We need to calculate the amount that staff is owed for those 2 weeks and record it as both a labor expense and also as a wages payable liability. Transaction 12 for HOS falls into this category.

A deferred revenue arises if we receive money from a client before we have provided our goods and services. For example, suppose that HOS receives an \$18,000 contract to perform research over a 15-month period. At the time the money is received we would record an increase in cash and an increase in deferred revenue, which is a liability account. Suppose that by the end of the accounting period we have completed one third of the promised research. We can then make an adjusting entry reducing the deferred revenue liability by \$6,000 and increasing revenue by that amount.

A deferred expense arises if we pay money to acquire an asset that will expire as time passes. Transaction 11 for HOS presents an adjustment for prepaid insurance, which falls into this category. Transaction 13 provides the depreciation adjusting entry, which also falls into this category.

After we have finished recording our adjustments, the fifth step in the accounting cycle is preparation of an adjusted trial balance. All of the information needed to prepare an adjusted trial balance is available in [Exhibit 10-7](#). If we take the total from each column, or ledger account, in [Exhibit 10-7](#), and also separate the revenue and expense accounts out of the unrestricted net assets column in that exhibit, then HOS's adjusted trial balance would appear as shown in [Exhibit 10-E-1](#). Trial balances are usually presented with all accounts listed in alphabetical order. Note that asset and expense accounts typically have debit balances, which are shown in the left-hand column of numbers in the trial balance. The liability, revenue, and net asset accounts typically have credit balances, which are shown in the right-hand column of numbers. For further discussion of debits and credits as they relate to revenues and expenses, see Appendixes 9-A and 10-D. If the adjusted trial balance total of the debits is not equal to the total of the credits, then we have made an error as we recorded our adjusting entries.

Exhibit 10-E-1

Hospital for Ordinary Surgery Adjusted Trial Balance for the Period Ending December 31, 2018		
	Debits	Credits
Accounts Payable		\$ 8,000
Accounts Receivable	\$ 47,000	
Cash	33,900	
Depreciation Expense	18,000	
Insurance Expense	50	
Interest Expense	13,000	
Inventory	4,000	
Labor Expense	45,000	
Mortgage Payable		133,000
Patient Revenues		81,000
Permanently Restricted Net Assets		10,000
Plant & Equipment, Net	222,000	
Prepaid Insurance	50	
Supply Expense	4,000	
Temporarily Restricted Net Assets		15,000
Unrestricted Net Assets		113,000
Wages Payable		27,000
TOTAL	\$387,000	\$387,000

The sixth step in the accounting cycle is to prepare financial statements. In [Chapters 9 and 10](#), [Exhibits 9-4 and 10-7](#) were used to provide the information for creating financial statements. Although these exhibits are useful learning tools, transaction worksheets like these are not prepared in practice. Given the very large number of journal entries and different accounts, a transaction worksheet showing both journal entries and ledger accounts would not be practical. Instead, journal entries are recorded in chronological order, and then each entry is posted to the individual ledger accounts affected by that entry. The totals in each ledger account are listed in the adjusted trial balance. It is the numbers appearing on the adjusted trial balance that actually become the source information for preparing the financial statements.

The seventh step in the accounting cycle is to close temporary accounts. Some accounts are permanent, meaning that their balances carry over from year to year. This is true of assets and liabilities. Whatever we own or owe at the end of one year, we still own or owe at the beginning of the next year. For example, if HOS ends the year with \$33,900 of cash, it will begin the next year with \$33,900 of cash. Revenue and expense accounts, however, measure what happens just during the accounting period. The revenue and expense that we record this year relates just to this year. We want to begin next year with zero revenue and zero expense.

Remember, in the fundamental equation of accounting, revenues and expenses are merely the change in net assets for the accounting period (see Appendix 9-A). In fact, in [Exhibit 10-7](#), we simply showed the revenues and expenses in the unrestricted net assets column. The main reason we maintain separate revenue and expense ledger accounts, and show their values separately in the adjusted trial balance, is so we can use that detailed information to prepare the operating or activity statement. Once that statement has been prepared, we want to transfer the balances from the revenue and expense accounts to net assets. This will leave us with zero balances in revenue and expense accounts, so they are all ready to begin the next accounting period, and the net assets account will have been updated for the changes to net assets that occurred during the year as a result of revenue and expenses.

The closing process carries out the transfer of revenue and expenses balances to the unrestricted net assets account. For example, HOS had \$81,000 of patient revenue. In the closing process, we make a journal entry reducing patient revenue by \$81,000 and increasing unrestricted net assets by that amount. From a debit and credit viewpoint, the revenue account has an \$81,000 credit balance at the end of the accounting period before we close. We will debit that account by \$81,000 and credit unrestricted net assets by \$81,000. This will

completely eliminate the balance in the revenue account and will increase the net asset balance by this year's revenue. Similarly, we will empty all of the expense categories as well. Our expense accounts have debit balances. We will credit them to empty them out and then debit the unrestricted net asset account, decreasing the amount in the unrestricted net asset account. The net impact of this closing process is that our unrestricted net assets after closing will be the beginning balance, plus or minus any profit or loss that we had for the year. And the revenue and expense accounts will all have a zero balance.

The eighth and last step in the closing process is to create a post closing trial balance in order to prepare for the next accounting period. The balances in the post closing trial balance will be the beginning ledger balances for all of our ledger accounts for the coming period. Once again, we will check that the total of the debits and credits in the post closing trial balance is the same. If not, we have made an error during the closing process.

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Chapter 11 Unique Aspects of Accounting for Not-for-Profit and Healthcare Organizations

Learning Objectives

The learning objectives of this chapter are to:

- discuss unique rules of financial accounting for not-for-profit and healthcare organizations;
- explain special rules related to the balance sheet or statement of financial position, the activity or operating statement, and the cash flow statement;
- introduce the statement of functional expenses, explain when it is required, and the role it serves;
- define and describe fund accounting, including the typical types of funds, interfund transactions, and the current use of fund accounting by not-for-profit organizations;
- discuss depreciation rules for not-for-profit and healthcare organizations;
- discuss special rules related to the recognition and reporting of donated goods and services;
- explain the treatment of investments by not-for-profit and healthcare organizations on financial statements; and
- discuss tax issues related to not-for-profit organizations.

[Chapters 9](#) and [10](#) provide an introduction to financial accounting. The general principles of accounting are broadly applied to all types of organizations. For-profits—automotive, steel, and computer manufacturers—as well as not-for-profits, health, and government organizations—all have many common elements in their financial accounting. For example, the fundamental equation of accounting is used across all types of organizations. Virtually all organizations use a statement of financial position (balance sheet) and an activity statement (operating or income statement). However, there are also many unique aspects of financial accounting for health, not-for-profit, and government organizations. This chapter considers such unique aspects for not-for-profit and healthcare organizations. [Chapters 12](#) and [13](#) consider unique accounting issues for governments.

Generally Accepted Accounting Principles (GAAP) for all nongovernmental organizations are developed through a series of statements issued by the Financial Accounting Standards Board (FASB). In addition to general statements that affect all organizations, specific statements provided by FASB for not-for-profit and healthcare organizations help clarify presentation of financial information by these organizations. Those statements provide the basis for the discussions of this chapter.

Accounting for Not-for-Profit Organizations

Not-for-profit organizations generally have missions that differ substantially from those of for-profit organizations, and thus it should not be surprising that special reporting rules exist. According to GAAP, a not-for-profit organization is an entity that (1) receives contributions from providers who do not expect an equal return, (2) has goals other than providing goods and services for a profit, and (3) has an absence of ownership interest.¹ The intent of special GAAP for not-for-profit organizations is to provide guidance to “enhance the relevance, understandability, and comparability of financial statements issued by those organizations.”²

¹ Financial Accounting Standards Board. FAS 117: Financial Statements of Not-for-Profit Organizations. Norwalk, Conn.: FASB, 1993, p. 78.

² Ibid., Summary.

Some special rules apply to the class of not-for-profit organizations that are referred to as *voluntary health and welfare organizations (VHWOs)*. VHWOs are not-for-profit organizations “that provide voluntary services, supported by the public, usually trying to solve health and welfare problems, generally getting revenue from voluntary contributions rather than from the sale of goods or services.”³ The Red Cross is an example of a VHWO. Hospitals do not fall into this category because they generate substantial revenue from the sale of their services.

³ Ibid., p. 79.

Financial Statements

All not-for-profit organizations must include a statement of financial position (balance sheet), statement of activities (operating or income statement), statement of cash flows, and notes that accompany the statements, whenever they present a set of audited financial statements. VHWOs are also required to present a *statement of functional expenses*.

Financial statements should always provide useful, relevant information to individuals outside the organization, such as creditors and vendors; not-for-profit financial statements have the additional purpose of providing adequate information to donors. Thus, although the basic statements are very similar, their presentation has some significant differences.

Statement of Financial Position

The statement of financial position, or balance sheet, first examined in [Chapter 9](#), provides information about the financial position of the organization at a moment in time. Included in the statement is information about liquidity and the organization’s ability to meet its obligations.

Not-for-profit organizations are not required to segregate assets into current and long-term or fixed assets on

the balance sheet. However, at a minimum, either assets should be shown in order of decreasing liquidity (the most *liquid* assets listed first) or there must be disclosure of relative liquidity in the notes that accompany the financial statements. [Exhibit 11-1](#) presents assets as one group, with the most liquid assets listed first. FASB introduced proposed new accounting standards in 2015 that would require not-for-profits to disclose additional information about their liquidity in the notes that accompany their financial statements. Such information is likely to include the time horizon used to manage liquidity, the amount of financial assets unavailable for use (because of board or external decisions), the amount of financial liabilities due within 1 year, policies on establishing reserves, and the bases for establishing the time horizon.

Exhibit 11-1

Meals for the Homeless Statement of Financial Position as of December 31, 2017			
Assets		Liabilities and Net Assets	
Cash	\$ 100	Liabilities	
Marketable securities	3,000	Wages payable	\$ 2,000
Accounts receivable, net of estimated uncollectibles of \$8,000	55,000	Accounts payable	3,000
Inventory	2,000	Notes payable	5,000
Prepaid expenses	1,000	Mortgage payable	16,000
Property	40,000	Total Liabilities	\$ 26,000
Cash restricted for building acquisition	900	Net Assets	
Equipment, net	35,000	Unrestricted	\$ 84,100
Investments	8,000	Temporarily restricted (Note 3)	4,900
Total Assets	\$145,000	Permanently restricted (Note 4)	30,000
		Total Net Assets	\$119,000
		Total Liabilities and Net Assets	\$145,000

A second difference with the balance sheet relates to the treatment of restricted assets. Not-for-profit organizations often receive gifts in which the use of the money is restricted by the donor for certain purposes. Not-for-profits often set up separate funds internally to better control the use of restricted money in accordance with these restrictions.

Since this *fund accounting* approach treats restricted amounts as separate entities, a separate set of financial statements is prepared for each entity, or *fund*. The financial statements of one individual fund would not provide financial information for the organization taken as a whole. The fund accounting approach is commonly used as an internal control mechanism. However, GAAP require audited financial statements of not-for-profit and healthcare organizations to aggregate all fund information to reflect the organization as a whole. (Fund accounting issues are discussed later in this chapter.) Presenting all of the assets of the organization on one balance sheet gives the user of the financial statements a good understanding of the total resources that are available to the organization.

In general, unrestricted and restricted current assets may be combined on the balance sheet of the not-for-profit organization. Cash for general purposes and cash for current restricted purposes may be reported as one total number on the balance sheet. However, it is important not to give the impression that resources are available for uses for which they are not available. Therefore, if donors have placed restrictions on assets that prevent their use for current operations, they may not be *commingled* (mixed together) with current assets on the financial statements.

The key to when assets may be commingled on the balance sheet is their availability for use for current operations. If restricted assets may be used for the coming year's routine activities, they are commingled on the balance sheet. Otherwise they may not be commingled.

For example, if a donor specifies that the donated funds are to be used to provide healthcare services to the indigent in the coming year, then the donated cash would be combined with all of the organization's other cash and included on the balance sheet with the other current assets. That is because it can be used for operating activities in the coming year. On the other hand, if the donor gave cash and restricted it to be used only to provide service three years from now, then the cash could not be reported on the balance sheet combined with the organization's other cash. Instead, the cash from that donation would be shown on the balance sheet with the organization's long term assets, and would be labeled something like "cash restricted for future uses." A close examination of [Exhibit 11-1](#) informs the user that in the case of Meals for the Homeless, the organization has \$1,000 of cash. However, it is readily apparent from the balance sheet that only \$100 of that cash can be used in the coming year.

Restrictions on the use of assets have an impact on the net assets section of the balance sheet as well. The net assets section of the balance sheet must show three different groups of net assets: permanently restricted, temporarily restricted, and unrestricted (see [Exhibit 11-1](#)). Permanently restricted net assets generally arise as the result of endowment gifts. By contrast, temporarily restricted net assets are created when donors give gifts that have restrictions on their use related either to a specific use for the assets donated, a specific action the organization must undertake, or to a specific time when the assets can be used. For example, a donor might indicate that a gift cannot be used until at least 5 years has passed or can be used only to acquire a new building. All net assets that are neither permanently nor temporarily restricted are unrestricted. New accounting standards proposed in 2015 are likely to result in net assets being grouped in the future simply as "with donor restrictions" and "without donor restrictions," with both temporary and permanent restrictions combined into a common balance sheet classification. At the time of this text's production, these standards were not finalized.

To provide the user of financial statements with a better understanding of the organization's resources, information has to be provided about the specific restrictions. For example, from [Exhibit 11-1](#), we see that Meals for the Homeless has \$30,000 of permanently restricted net assets and there is a reference in the exhibit to Note 4. This note would accompany the statement and provide additional information about the nature of the restriction. That \$30,000 might be part of the land the organization owns, and it is possible that there are restrictions preventing the organization from ever selling the land. Alternatively, part of the \$30,000 might be investments that earn an annual return, which is used to subsidize the cost of providing meals.

Note in [Exhibit 11-1](#), there is \$4,900 of temporarily restricted net assets. Can the assets associated with those net assets be identified on the balance sheet? There is \$900 of cash restricted for building acquisition. Those are clearly temporarily restricted assets. The remaining \$4,000 of temporarily restricted assets are commingled on the balance sheet with the other assets that are either unrestricted or permanently restricted. In other words, except for the portion of restricted assets that cannot be used for operating activities in the coming year, the restricted assets are commingled with the unrestricted assets and cannot be specifically identified on the balance sheet.

Under the new proposed FASB standards, these two net asset categories would be combined. The balance

sheet would simply report \$34,900 of restricted net assets. Notes to the financial statements would continue to disclose the nature and amount of the donor restrictions. Net assets without donor restrictions would further disclose the amount, purpose, and type of board designations.

Although the assets are commingled on the balance sheet for financial statement reporting if they can be used for current operations, internal accounting practices may differ from reporting practices. Organizations often keep track of restricted assets separately. In some cases, as a result of either law or donor restrictions, organizations may place money in specific individual accounts for specific purposes. This creates a situation in which assets are not *fungible*, or interchangeable, even though they would appear to be if you just looked at how they are reported on the balance sheet.

Suppose that you went out for a night on the town and had \$50 in your left pocket and \$20 in your right pocket. You have \$70 available to spend. It is all your money. You can spend from the left pocket or from the right pocket. You can even move the money around. Put it all in the left pocket or all in the right pocket. Or just move some of the money from one pocket to the other without even counting how much. It would not matter. It is all your money. The money is fungible. It can be interchanged or moved around between the pockets as desired. A good accounting of the money that belongs in each pocket is unnecessary.

By contrast, suppose you left your house with \$70 in your left pocket and no money in your right pocket. You proceeded to your church, where you were in charge of selling items at the annual church bazaar. As people paid for the items they purchased, you put all of the receipts in your right pocket. In this case, the money in your pockets is no longer fungible. The money in the left pocket is yours. The money in the right pocket belongs to the church. You do not want to start moving money back and forth between the pockets because it might create confusion. By commingling your money and the church's money, it may become unclear how much is yours and how much belongs to the church. One of the primary roles of fund accounting is to track separately money and other resources that are not fungible, even if they are commingled on the balance sheet because of financial accounting reporting requirements.

Note that there is a distinction between donor-imposed restrictions and self-imposed restrictions. Donor restrictions obligate the organization to comply with the restriction.

If the restriction is deemed objectionable, then the organization can refuse the donation. For example, it is unlikely that a university would accept an endowment for a chaired professorship if the donor required that he or she be the first recipient of the chair. If the restrictions are agreed to, then the organization must comply with them.

Self-imposed restrictions often arise when the board of trustees or directors decides that money should be segregated and saved for a future purpose, such as building replacement. It is allowable to indicate such board-designated restrictions on assets and net assets. However, only donor-imposed restrictions create permanently or temporarily restricted net assets. Self-imposed restrictions would create a subtotal within the unrestricted net assets category.

For example, suppose that the board of Meals for the Homeless decided that the \$8,000 of investments

owned by the organization should be used to build a new building at some future time. The board could designate that \$8,000 for the specific use. In that case, the net assets portion of the balance sheet would appear as follows:

Net Assets	
Unrestricted	
Board-designated	\$ 8,000
Undesignated	76,100
Total unrestricted	\$ 84,100
Temporarily restricted (Note 3)	4,900
Permanently restricted (Note 4)	30,000
Total Net Assets	\$119,000

Note that the designation has not changed the temporarily or permanently restricted net assets. Total net assets are also unchanged (see [Exhibit 11-1](#)). The only impact of the board designation is on the presentation of the unrestricted net assets within the Net Assets section of the balance sheet. The investments on the balance sheet might show a restricted designation, such as the following:

Investments—designated for building acquisitions	\$8,000

Not-for-profit healthcare organizations follow the rules for balance sheets described here. For-profit healthcare organizations do not refer to equity as net assets. They typically have proprietary, partners', or stockholders' equity. The subdivisions of net assets do not apply to for-profit organizations. This is not typically a problem, as it would be unusual for donors to make gifts to a for-profit organization.

Statement of Activities

The statement of activities (activity statement) reports the results of operations over a period of time as well as some other events that affect the net assets of the organization. It encompasses the information in an income or operating statement but goes further in reporting other changes in net assets. The statement can help users understand how well the organization has done, how viable it is, and how effective its managers are.

The statement includes revenues, expenses, gains, and losses, just as the income statement would for most for-profit organizations. Revenues are shown as increases in unrestricted net assets, except when there are donor-imposed restrictions on the use of the assets received. Expenses are reported as decreases in unrestricted net assets. Contributions are considered to be revenues or gains and are categorized as a change in either unrestricted or restricted net assets depending on whether there are donor-imposed restrictions on their use. Gains and losses on investments and other assets are shown as changes in unrestricted net assets unless there are donor-imposed or legal restrictions.⁴

⁴ FASB, FAS 117, pp. 7–8.

In any financial report presented to users outside the organization, there is a balance to be achieved in the amount of disclosure. The organization does not want some outsiders, such as competitors, to know too much about its operations. Therefore, there is a tendency to try to restrict the amount of information provided. To prevent too much restriction, GAAP require that revenues be reported separately from expenses. That is, one cannot simply provide a net figure of the difference between revenues and expenses. Both revenue information and expense information must be provided. However, some “netting out” is allowed. For example, investment

revenues can be reported net of investment expenses, such as stockbroker's commissions.

Not-for-profit organizations have to use a presentation for the activity statement that clearly identifies changes in each category of net assets. For example, see [Exhibits 11-2](#) and [11-3](#) for two different approaches to providing this information. In [Exhibit 11-2](#), changes that affect unrestricted net assets are shown first, followed by changes in temporarily and then permanently restricted net assets. In [Exhibit 11-3](#), separate columns are used for unrestricted, temporarily restricted, and permanently restricted net assets. Under the proposed new FASB standards, the activity or operating statement will still report information that distinguishes “with donor restrictions” from “without donor restrictions.”

Meals for the Homeless Activity Statement for the Year Ending December 31, 2017	
<i>Changes in Unrestricted Net Assets</i>	
Revenues and support	
Client revenue	\$ 11,000
City revenue	20,000
County revenue	10,000
Foundation grants	60,000
Annual ball	12,000
Contributions	65,000
Total revenues and support	<u>\$178,000</u>
Net assets released from restrictions	
Satisfaction of program restrictions	\$ 10,000
Expiration of time restrictions	2,000
Total net assets released from restrictions	<u>\$ 12,000</u>
Total unrestricted revenues and other support	<u>\$190,000</u>
Expenses	
Meals	\$ 67,000
Counseling	35,000
Administration, fundraising and general	75,000
Bad debts	4,000
Depreciation	10,000
Total Expenses	<u>\$191,000</u>
Increase/(Decrease) in Unrestricted Net Assets	<u>\$ (1,000)</u>
<i>Changes in Temporarily Restricted Net Assets</i>	
Foundation grants	\$ 10,000
Contributions	50,000
Assets released from restrictions (Note 5)	(12,000)
Increase/(Decrease) in Temporarily Restricted Net Assets	<u>\$ 3,000</u>
<i>Changes in Permanently Restricted Net Assets</i>	
Contributions	\$ 3,000
Increase/(Decrease) in Permanently Restricted Net Assets	<u>\$ 3,000</u>
<i>Increase in Net Assets</i>	<u>\$ 5,000</u>
Net Assets at Beginning of Year	114,000
Net Assets at End of Year	<u>\$119,000</u>

Exhibit 11-2

Meals for the Homeless Activity Statement for the Year Ending December 31, 2017				
	Unrestricted	Temporarily Restricted	Permanently Restricted	Total
<i>Revenues and Other Support</i>				
Client revenue	\$ 11,000			\$ 11,000
City revenue	20,000			20,000
County revenue	10,000			10,000
Foundation grants	60,000	\$10,000		70,000
Annual ball	12,000			12,000
Contributions	65,000	5,000	\$ 3,000	73,000
Net Assets Released from Restrictions				-
Satisfaction of program restrictions	10,000	(10,000)		-
Expiration of time restrictions	2,000	(2,000)		-
Total revenues and other support	<u>\$190,000</u>	<u>\$ 3,000</u>	<u>\$ 3,000</u>	<u>\$196,000</u>
<i>Expenses</i>				
Meals	\$ 67,000			\$ 67,000
Counseling	35,000			35,000
Administration, fundraising and general	75,000			75,000
Bad debts	4,000			4,000
Depreciation	10,000			10,000
Total expenses	<u>\$191,000</u>			<u>\$191,000</u>
Change in Net Assets	\$ (1,000)	\$ 3,000	\$ 3,000	\$ 5,000
Net Assets at Beginning of Year	85,100	1,900	27,000	114,000
Net Assets at End of Year	<u>\$ 84,100</u>	<u>\$ 4,900</u>	<u>\$30,000</u>	<u>\$119,000</u>

Exhibit 11-3

The first section of [Exhibit 11-2](#) shows the changes in unrestricted net assets. This includes all revenue and

support that is unrestricted. In the case of Meals for the Homeless (Meals), this includes client revenue, city revenue, county revenue, foundation grants, the annual ball, and contributions. It also includes net assets that have been released from restrictions. In the case of Meals, some donations had restrictions limiting their use for specific purposes (program restrictions), and some were limited as to when they could be used (time restrictions). In [Exhibit 11-2](#), we see that unrestricted net assets increased by \$12,000 as a result of the release from restrictions. The first section of the activity statement also includes expenses, since expenses are all treated as decreases in unrestricted net assets.

The next section of [Exhibit 11-2](#) is changes in temporarily restricted net assets. For Meals, this section includes increases from foundation grants and donations that have restrictions and also decreases as restrictions are met and the donations become unrestricted. Note that the \$12,000 decrease in this section exactly offsets the \$12,000 increase in the earlier section of the statement. Effectively, net assets have not changed as a result of this reclassification from temporarily restricted to unrestricted. Total net assets increase when a restricted contribution or grant is first received. Notice that the \$10,000 foundation grants and the \$5,000 in contributions in this section do increase total net assets.

The third section of the statement shows changes in permanently restricted net assets. All three categories are then totaled and added to beginning net assets to determine net assets at the end of the year.

The activity statement is meant to capture all changes in net assets. It shows the change in net assets for each of the three net asset subdivisions: permanently restricted, temporarily restricted, and unrestricted. All increases or decreases in temporarily and permanently restricted net assets must be shown.⁵

⁵ Ibid., p. 7.

For example, suppose that \$1,000 was contributed to the organization on July 1, 2017, with the stipulation that \$500 could be used any time after December 31, 2018, and another \$500 any time after 2019. This transaction would be shown on the activity statement for the year ending December 31, 2017, as a \$1,000 increase in contributions under a heading of changes in temporarily restricted net assets. Total net assets would rise by \$1,000. This conveys the information not only that the organization has more resources, but also that resources are not currently available for use.

At the end of 2018, half of the money becomes available for any use. The activity statement for the year ending December 31, 2018, would show \$500 of net assets released from restrictions under the Changes in Unrestricted Net Assets section. It would also show \$500 of net assets released from restrictions as a decrease in the Changes in Temporarily Restricted Net Assets section. These two amounts offset each other. Total net assets are not affected during 2018 by the gift made in 2017.

Since the activity statement provides an explanation for all changes in net assets from one period to the next, it uses terms such as increase in net assets, change in net assets, or change in equity rather than net income. It is a more comprehensive statement than an income statement used by a for-profit organization. It includes the information that for-profits would show in the income statement as well as information that would be contained in a separate statement of changes in owners' equity.

Proposed new accounting standards introduced in 2015 will also require not-for-profits to report operating measures of financial performance explicitly, as healthcare organizations have been required for years. The operating measure will be based on whether resources are earned from or spent on carrying out the organization's mission (that is, operating activities versus financing and investing activities) and also whether resources are available for current period activities—reflecting restrictions from donors and limits from the Board.

Statement of Functional Expenses

Not only must expenses be shown separately from revenues, but expenses must also be shown in some amount of detail. This provides donors and other outsiders with a sense of where the organization's money is going. Specifically, expenses must be disclosed (either in the activity statement or in the notes) by their functional class. Such disclosure would provide information on expenses for major program services and supporting activities. VHWOs must report information not only by functional class, but also by natural classification such as salaries, rent, depreciation, and so on. The disclosure for VHWOs must be in the form of a matrix in a separate financial statement, called the statement of functional expenses.

The statement of functional expenses' matrix format shows expenses by function and by nature (or expense object; e.g., salary, fringe, supplies), as seen in [Exhibit 11-4](#). Note that the numbers in [Exhibits 11-3](#) and [11-4](#) cannot be easily compared because of cost allocations made to arrive at [Exhibit 11-4](#). Notice that expenses are divided between program services and support services. What are program services and support services? Program services are the direct areas that result in providing services (or goods) that achieve the organization's mission. For example, providing meals is one program area for Meals for the Homeless. Counseling services is another. The administration of the organization and the fundraising activities, however, are support services.

Meals for the Homeless Statement of Functional Expenses for the Year Ending December 31, 2017					
	Program Services		Support Services		Total
	Meals	Counseling	Management and General	Fundraising	
Expenses					
Salaries and benefits	\$35,000	\$35,000	\$40,000	\$17,000	\$127,000
Food	17,000				17,000
Supplies and brochures	2,000	1,000	1,000	2,000	6,000
Office expenses	1,000	1,000	1,000	3,000	6,000
Rent	14,000	1,000	2,000	1,000	18,000
Professional fees			3,000		3,000
Bad debts	4,000				4,000
Depreciation	10,000				10,000
Total expenses	<u>\$83,000</u>	<u>\$38,000</u>	<u>\$47,000</u>	<u>\$23,000</u>	<u>\$191,000</u>

Exhibit 11-4

Why would the financial statements need to provide information on program services separately from support services? The public is often concerned that not-for-profits spend too much on administrative activities and too little on providing services. There have been instances in which some organizations spent a substantial share of their total resources on fundraising, more than many believe appropriate. By reporting program activities separately, financial statement users can quickly determine the share of resources that is actually used in providing services.

Does a high share of spending on program services mean the organization is doing a good job in using its resources? Not necessarily. Meals could be paying too much for food. Or it could inaccurately estimate the number of people who will come for meals—running out of food some days and throwing away a lot of food other days. One might conclude that devoting a large share of overall resources to providing program services is a necessary but not sufficient requirement for efficient management of a not-for-profit organization (see Boxes 11-1 and 11-2).

Providing information about the underlying nature of expenses gives the user additional insight. Where does Meals's program money go? Is it for food? Does the vast majority of its money go for labor? These questions can be answered using the information in [Exhibit 11-4](#). The statement of functional expenses is particularly helpful to the user in gaining insight into the operations of an organization.

Only VHWOs are currently required to provide a separate statement of functional activities. Why should VHWOs have a different reporting requirement than other not-for-profit organizations? Current GAAP apply to all not-for-profit organizations, whereas earlier there were a variety of rules for different types of not-for-profits. Traditionally, VHWOs, getting most of their money from gifts rather than from the sale of goods and services, were required to provide this statement. Other not-for-profit organizations covered by other reporting rules were not. The FASB initially only required VHWOs to report on functional expenses, but proposed standards released in 2015 extended to all not-for-profits the requirement that functional and natural expense be reported. The new standards do not require a separate statement of functional expenses; rather, they require not-for-profits to report operating expenses by function and nature either in the activity statement, as a schedule in the notes, or as a separate financial statement. Additional new disclosures will require not-for-profits to explain how shared expenses are allocated between program and overhead services.

Box 11-1 Putting Charitable Dollars to Work

It is difficult to make generalizations about how much of an organization's resources should be devoted to programs as opposed to support services. However, in an era when some charities pay telephone solicitors a substantial commission on contributions generated, many users of financial statements are interested in the ratio of spending on program versus support services. Both the National Charities Information Bureau (NCIB) and the American Institute of Philanthropy (AIP) have studied the issue of the appropriate division between program and support services expenses.

Box 11-2 What Share of Total Spending Should Be for Program Services?

"The NCIB and the AIP consider a group that spends less than 60 percent of its budget on programs to be inefficient... . Consider too the nature of the group's mission and the demands placed on it. For example, a 'pass through' charity ... that channels money to [other organizations] may require little in the way of office space or staff. For such a group, a program ratio of 90 percent or better is appropriate... . An organization like a hospital that provides an extensive network of social services, on the other hand, could still be considered efficient with a ratio below 75 percent."

Source: Consumers Union. "Charitable Giving: How to Make Your Generosity Count," *Consumer Reports*, December 1997, Vol. 62 (No. 12), p. 55.

Statement of Cash Flows

Not-for-profit organizations are required to provide a statement of cash flows. The statement is similar to that discussed in [Chapter 10](#). However, it is necessary to distinguish between cash that has been received and is available for current operations (i.e., unrestricted resources) versus cash that is restricted and unavailable in the near term. In the Cash Flows From Operating Activities section at the top of [Exhibit 11-5](#), note the subtraction of \$4,000 of contributions restricted to long-term investments and \$3,000 of permanently restricted contributions. These contributions were included in the changes in net assets on the activity statement, which captures all changes in net assets. But they do not provide cash that is available for current operations. Therefore, they are backed out of (subtracted from) the change in net assets to determine cash flows from operating activities. They do, however, generate cash and are shown as a source of cash in the Cash Flows From Financing Activities section of the statement. FASB standards are likely to change in the future. Currently, not-for-profits are required to report the cash flow statement using the indirect method; proposed standards require that the direct method be used.

Meals for the Homeless Statement of Cash Flows for the Year Ending December 31, 2017	
Cash Flows From Operating Activities	
Change in net assets	\$ 5,000
Add expenses not requiring cash	
Depreciation	10,000
Other adjustments	
Add decrease in inventory	2,000
Subtract increase in receivables	(17,000)
Subtract decrease in wages payable	(1,000)
Subtract decrease in accounts payable	(1,000)
Subtract increase in prepaid expenses	(1,000)
Subtract contributions restricted to long-term investments	(4,000)
Subtract permanently restricted contributions	(3,000)
Net Cash Used for Operating Activities	\$(10,000)
Cash Flows From Investing Activities	
Sale of stock investments	\$ 4,000
Net Cash From Investing Activities	\$ 4,000
Cash Flows From Financing Activities	
Contributions restricted to endowment	\$ 3,000
Contributions restricted to long-term investment	4,000
Increase in notes payable	1,000
Repayments of mortgages	(5,000)
Net Cash From Financing Activities	\$ 3,000
Net (Decrease) in Cash	\$ (3,000)
Cash, Beginning of Year	4,000
Cash, End of Year	\$ 1,000

Exhibit 11-5

[Exhibit 11-6](#) provides a summary of the financial statements that are currently required by GAAP for

different types of organizations when presenting an audited set of financial statements. The notes to the statements, required for all types of organizations, are discussed further in [Chapter 14](#).

Summary of Required Financial Statements			
General For-Profit Organizations	Healthcare Organizations	General Not-for-Profit Organizations	Voluntary Health and Welfare Organizations
Statement of financial position (balance sheet)	Statement of financial position (balance sheet)	Statement of financial position (balance sheet)	Statement of financial position (balance sheet)
Income statement	Operating statement	Statement of activities*	Statement of activities*
Changes in equity	Changes in equity	—*	—*
Statement of cash flows	Statement of cash flows	Statement of cash flows	Statement of cash flows
—	—	—	Statement of functional expenses
Notes	Notes	Notes	Notes

Exhibit 11-6

*The statement of activities combines the information contained in the income statement or operating statement and the statement of changes in equity that are provided by for-profit and healthcare organizations.

Fund Accounting

Not-for-profit and governmental organizations have long used a unique approach to recording and reporting their financial information, referred to as fund accounting. In this approach, the organization's finances are divided into a number of separate entities called funds. A fund

is an accounting entity with a self-balancing set of accounts for recording assets, liabilities, the fund balance, and changes in the fund balance. Separate accounts are maintained for each fund to ensure that the limitations and restrictions on the use of resources are observed. Though the fund concept involves separate accounting records, it does not entail the physical segregation of resources. Fund accounting is basically a mechanism to assist in exercising control over the purpose of particular resources and amounts of those resources available for use.⁶

6. Vincent M. O'Reilly, Murray B. Hirsch, Philip L. Defliese, and Henry R. Jaenick. *Montgomery's Auditing*, 11th ed. New York, N.Y.: John Wiley & Sons, 1990, p. 791.

Instead of using the term *net assets* in fund accounting, the owners' equity section of the balance sheet is referred to as *fund balance*. This term refers to the remaining balance in the fund, if some or all of the assets were used to pay all liabilities. Since there are no owners of not-for-profits, fund balance is a fairly descriptive term.

Fund accounting is widely used by not-for-profit organizations as an internal control mechanism. Recent GAAP changes have reduced the role of fund accounting for external reporting by not-for-profits. Governments commonly use fund accounting both internally and for reporting. The fundamentals of fund accounting, discussed next, apply to governments as well as not-for-profit organizations.

Fund accounting is a system in which the organization is divided into separate entities, from an accounting perspective. Each organization would have a general unrestricted fund, used to support the general operations of the organization. In addition, there would be a variety of other funds for specific restricted purposes such as building replacement, endowment, and research projects.

As noted previously, each fund is a separate accounting entity with its own set of accounting books or records, yet it is also part of the larger organizational entity. Each fund has assets, liabilities, and a fund balance. The primary purpose of fund accounting is to ensure that resources are used in compliance with their restrictions.

Suppose that a donor restricts use of a donation to acquisition of a building. The donation would be placed in a building or plant fund. The only expenditures of money from that fund would be to buy buildings. The use of a specific fund for that purpose provides an aid in record keeping of the amount available and the amount used for the specific purpose.

The restrictions used in fund accounting can be even more stringent than those used for reporting. For

example, the only resources that are considered restricted for reporting purposes are those for which donors have placed restrictions. Public sector organizations often have a variety of other types of conditions and restrictions with which they must comply. For example, Meals might enter into a contract with a shelter to provide meals to those staying at the shelter. The shelter provides money to Meals and requires Meals to provide an accounting of how the money was used. This is not a donation, so the resources do not qualify as temporarily restricted resources for external reporting purposes. However, by placing the resources in a distinct fund, it is easier to ensure that the resources are used for purposes allowed by the contract.

Types of Funds

Different funds are used depending on the specific types of restrictions faced by the organization. Funds are divided into two main categories: unrestricted and restricted.

Virtually all not-for-profit organizations have an *unrestricted fund*. In hospitals, this might be called the *general fund* or the *operating fund*. Many not-for-profits simply call it the *current unrestricted fund*. This fund is used to account for the day-to-day operations of the organization and all of its resources that are not subject to restrictions.

There is substantially greater variation among the types of *restricted funds*. *Donor-restricted funds* exist to comply with various requirements donors have placed at the time of the donation. As a result of the differing restrictions, there might be *building replacement funds*, building expansion funds, *endowment funds*, *custodial funds*, strike funds, and other restricted funds.

Endowment funds are particularly important, since the donated amount must be kept intact, at least for a specified period of time—in some cases forever. Earnings on the principal amount can often be used for operations, and if so, they are transferred to the general unrestricted fund. The fund accounting approach helps to ensure that endowment funds are not inappropriately (accidentally or intentionally) expended.

Custodial funds represent those in which the organization is essentially holding funds for someone else. For example, a foundation might choose to use hospitals to distribute money to poor individuals. The foundation might give \$1 million to a hospital to distribute \$10 at a time to individuals who appear to need money for food. By tracking the use of the money in a custodial account, we can ensure that the money is used to provide small payments to hungry individuals rather than to buy a new X-ray machine.

Board-designated funds are those that are established to track the use of resources that the board has decided to devote to a specific purpose. Donor restrictions are generally difficult to change. By contrast, if board-designated resources are needed for other purposes, such as to support current operations, the board can remove the restriction and the resources can be transferred to an unrestricted fund. Although board-designated restricted funds are used for internal purposes, these funds are treated as being unrestricted for external reporting.

Many not-for-profit organizations also categorize their funds between *current restricted funds* and *long-term restricted funds*. Current restricted funds contain resources that are available for general operations within a 1-

year period but must be used for particular restricted purposes. For example, a foundation might provide a research grant. The project will be done during the coming year, and the money will be used to pay the salary of the researcher doing the project. By contrast, resources that are being accumulated to buy land or buildings, are being held for endowment purposes, or are being accumulated to use in case of a strike would be long-term restricted funds.

Note that there can be funds for resources that would normally fall into any of the three net asset classifications. The general unrestricted fund is an example of unrestricted net assets. A fund established as a result of a contract would also represent resources that would be part of unrestricted net assets. A fund could be set up to track the use of resources for a specific program as required by a donor. That fund represents part of temporarily restricted net assets. Funds set up for endowments represent part of permanently restricted net assets.

It is also possible for the resources from one donor to use funds that fall into each of the three net asset categories. For example, suppose a donor gave \$1 million to Millbridge University to be placed in permanent endowment, with a further restriction that half of the earnings can be used for any organizational purpose and half of the earnings can be used only for the law school's program that provides legal aid to the poor. The \$1 million goes into an endowment fund, which is part of permanently restricted net assets. Half of the earnings each year go into the law school legal aid fund, which is part of temporarily restricted net assets. And half of the earnings go into the general unrestricted fund, which is part of unrestricted net assets.

The term *restricted* has a narrow definition when applied to external reporting. It relates only to donor-imposed restrictions. Fund accounting uses the term *restricted* much more broadly. It can refer to resources that are restricted as a result of contracts, board decisions, management decisions, and so on. Often restricted funds are reported on the balance sheet as being unrestricted because they do not meet the narrow reporting definition.

Interfund Transactions

Fund accounting creates accounting entities within an entity, and this creates some unique problems. When you move money from your left pocket to your right pocket, how do you record that event? Essentially, there are three types of events that can occur that involve more than one fund in an organization. One is a loan, in which one fund borrows money from another. A second is the sale of services, in which one fund consumes services provided by another fund. The third type of event is a transfer, in which one fund gives resources to another.

Loans between funds are treated the same as a loan from a bank. The borrowing fund has a liability on its balance sheet reflecting the need to repay the loan, and the lending fund has a receivable. These are called "Due to" and "Due from." For example, suppose that the operating fund at the Hospital for Ordinary Surgery (HOS) borrowed \$100 from the building fund. This will affect the fundamental equation of accounting for each of the two funds:

Operating Fund			
ASSETS	=	LIABILITIES	+ FUND BALANCE
Cash +\$100	=	Due to Building Fund +\$100	

Building Fund			
ASSETS	=	LIABILITIES	+ FUND BALANCE
Cash -\$100		Due from Operating Fund +\$100	
	=	No change on right side.	

The operating fund now has more cash, and it also has a \$100 liability in an account called “Due to Building fund.” The building fund has less cash and also has an increase in a receivable account called “Due from Operating Fund.”

Sometimes one fund will purchase services from another. Suppose that under the umbrella of HOS, there is also a nursing school, which is operated as a separate fund. The hospital might purchase continuing education services for its nurses from the nursing school. The event would be recorded by both funds just as if the organizations were totally separate. HOS would record the expense the same as if it had used an outside source for the educational program. The nursing school would record the revenue as if it had provided the service to nurses from another hospital.

For example, the hospital sends 10 nurses to the nursing school. Both entities are part of the HOS parent organization. The tuition charge is \$10,000 for each nurse. Payment has not been made. The transaction would affect the two funds as follows:

Nursing School Operating Fund			
ASSETS	=	LIABILITIES	+ FUND BALANCE
Accounts Receivable +\$100,000	=		Tuition Revenue +\$100,000

Hospital Operating Fund			
ASSETS	=	LIABILITIES	+ FUND BALANCE
		Accounts Payable +\$100,000	Tuition Expense +\$100,000
No change on right side.	=		

Notice that the funds use accounts receivable and accounts payable for this transaction. “Due to” and “Due from” account titles are not used for purchase or sale transactions between funds. Also note that tuition revenue increases fund balance and the impact of tuition expense is to decrease fund balance.

A transfer between funds is a permanent movement of resources from one fund to another. The assets and fund balance (net assets) of one fund are reduced, and they are increased for another fund. Some transfers are done at the discretion of management. Other transfers may be mandatory. For example, income from an endowment fund can be transferred to the operating fund for general activities. Or a building can be moved from the building construction fund to the operating fund when its construction is complete. In some cases, there are legal requirements to make transfers, such as transferring enough money to a debt service fund to make loan payments as they come due.

Suppose that the town of Millbridge transfers \$10,000 from the general unrestricted fund to the debt service fund. The transaction would appear as follows:

General Fund			
ASSETS	=	LIABILITIES	+ FUND BALANCE
Cash			Transfer to Debt Service Fund
-\$10,000	=	-	+\$10,000
Debt Service Fund			
ASSETS	=	LIABILITIES	+ FUND BALANCE
Cash			Transfer from Operating Fund
+\$10,000	=	+	+\$10,000

Note that transfers are neither revenues nor expenses. However, they do directly increase or decrease fund balance. Transfers to another fund decrease fund balance. Transfers from another fund increase fund balance.

Interfund transactions affect each fund as a separate entity. When financial statements are prepared, the entities are all aggregated. Care must be taken at that time to ensure that assets and fund balance are appropriately classified as unrestricted, temporarily restricted, or permanently restricted.

Current Use of Fund Accounting

Prior to the GAAP adopted in the 1990s, most not-for-profit organizations provided a separate balance sheet for each fund or type of fund and an activity statement, which covered only the general unrestricted fund. Contributions made directly to restricted funds bypassed the activity statement completely. As a result, many users felt the financial statements were misleading.

The statements described earlier in this chapter are designed to show the financial position and the results of the organization when taken as a whole. This is believed to provide a better representation of the organization's financial results and status. Donations cannot bypass the activity statement because they must affect unrestricted, temporarily restricted, or permanently restricted net assets.

This does not mean that fund accounting is no longer used by not-for-profit organizations. Many organizations have established their accounting systems around funds and find them to be a useful device for control. In some cases, establishment of separate funds may be required by donors or by law. Fund accounting may be used internally as long as the information from all of the funds is appropriately summarized within the financial statements when an audited set of financials is provided to individuals outside of the organization. Furthermore, information about individual funds, though not required, may be included in audited financial statements as long as the required organization-wide data are provided. Governments still prominently use fund accounting for both internal and reporting purposes, as is discussed in [Chapters 12](#) and [13](#).

Depreciation

Throughout most of the 20th century, different types of organizations employed a variety of approaches for recording fixed assets. Most organizations recorded buildings and equipment at their cost and then depreciated the assets. However, that approach was far from universally employed.

Many colleges and universities historically recorded buildings at their cost and never adjusted that value upward or downward until the building was sold or torn down. So some organizations reported certain fixed assets on their balance sheet at their original cost. Other organizations depreciated them and reported the original cost less accumulated depreciation, while others charged the full cost as an expense when acquired and showed no fixed assets on the balance sheet!

Some argue that depreciation is inherent to accrual-based accounting. It provides a sense of the resources that the organization uses each year. Others argue that accounting depreciation does not measure the true change in value of the asset. For example, rather than being used up, buildings sometimes become more valuable over time. Buildings can be seen as being an investment that should not be depreciated. An alternative argument is that since not-for-profits often receive capital assets as gifts, it would overstate costs to depreciate them and include the depreciation expense as a cost.

Although there are differing views on whether depreciation is appropriate, GAAP for not-for-profit organizations now follow one approach. This provides for better comparability across organizations. All not-for-profits are required to depreciate their buildings and equipment and report the cost adjusted for accumulated depreciation when financial statements are prepared in compliance with GAAP. Even fixed assets that have been donated to the organization are subject to this rule. Since there is no payment for such assets, their fair market value is determined at the time of the donation. When they are received, there is an increase in either unrestricted or restricted support equal to the fair value. As they are used, the general rules for depreciation are followed (see Box 11-3). These rules do not, however, apply to governments, as is discussed in the next chapter.

BOX 11-3 Depreciation Requirements for Not-for-Profit Organizations

“Paragraph 149 of FASB Concepts Statement No. 6, *Elements of Financial Statements*, describes depreciation as a ‘systematic and rational’ process for allocating the cost of using up assets’ service potential or economic benefit over the assets’ useful economic lives. FASB Statement No. 93, *Recognition of Depreciation by Not-for-Profit Organizations*, requires all not-for-profit organizations to recognize depreciation for all property and equipment except land used as a building site and similar assets and collections. Depreciation should be recognized for contributed property and equipment as well as for plant and equipment acquired in exchange transactions.”

Source: American Institute for Certified Public Accountants. *AICPA and Accounting Guide for Not-for-Profit Organizations*. New York, N.Y.: AICPA, 1996, p. 140.

Donated Goods and Services

Not-for-profit organizations differ from for-profits in that many of them receive substantial amounts of gifts or donations. For some VHWOs, donations provide their entire financial support. GAAP provides guidance on recording donations to provide a level of uniformity and comparability across organizations.⁷

⁷ Financial Accounting Standards Board. FAS 116: *Accounting for Contributions Received and Contributions Made*. Norwalk, Conn.: FASB, 1993.

Contributions and Promises

Contributions, gifts, or donations are recorded at their fair market value at the time of donation. They are called support and are included in the revenue and support section of the activity statement. When the donated resources are used up, they are treated as expenses.

Donations, gifts, or contributions (used synonymously here) are recognized as support in the period the promise to donate is received. Thus, the organization does not actually have to receive cash or other tangible assets to record a contribution. Receipt of a promise is sufficient, as long as there is some proof that there was a promise and there is a likelihood of collection. As with other receivables, an allowance for uncollectible amounts is generally established.

In some cases, a donation is promised only if certain conditions are met. If the organization fails to meet the conditions, the contribution may not be made. Organizations cannot record such donations as revenue until they have met the conditions. For example, suppose that one were to promise a \$5 million donation to a university if a building is renamed in the donor's honor. Only after the building is renamed can the donation be recorded as revenue. What if the donor gives the \$5 million in cash as soon as the organization agrees to change the building's name? It still would not be recorded as revenue. Cash would increase and so would a liability. This reflects the fact that if the building name is never changed, the money received would have to be returned. The liability in such an instance is called a deferred revenue or deferred support. At the time the building is renamed, the liability will decrease and revenue will increase.

Donors can also place restrictions on the use of their gifts. Only donor-imposed restrictions can create restricted net assets for reporting purposes. See Box 11-4 for a contrast between donor-imposed conditions and restrictions.

BOX 11-4 Conditions and Restrictions

Donor conditions basically take the form of “I will give you money if you...” The organization cannot record the donation as support because if the organization does not meet the donor’s conditions, the donor does not have to make the gift.

Donor restrictions basically take the form of “I will give you money that you can only use for ...” The organization can record support. The donor is obligated to make the donation, and the organization is obligated to use the donation in accordance with the donor’s restrictions.

Donated Services

Somewhat more controversial is the treatment of donated personal services. For example, how would a social services organization record the services of a volunteer who visits and runs errands for housebound individuals? Personal services are recorded as support and expense in the financial records of the organization only if a number of conditions are met. Not-for-profit organizations record contributions of services only if

the services received (a) create or enhance nonfinancial assets or (b) require specialized skills, are provided by individuals possessing those skills, and would typically need to be purchased if not provided by donation. Services requiring specialized skills are provided by accountants, architects, carpenters, doctors, electricians, lawyers, nurses, plumbers, teachers, and other professionals and craftsmen. Contributed services that do not meet the above criteria shall not be recognized.⁸

⁸ Ibid., p. 3.

For those services that do fulfill the requirements, the financial statements should include some explanation of the donated services and the program or activities for which they were used. In such an instance, the organization will have support from the donation as well as an expense related to the use of the labor resources.

This is a fairly restrictive rule. The volunteer visiting the housebound would not be recorded. Neither would the volunteer who drives the van for Meals for the Homeless. Delivering meals is an essential part of the mission of Meals. Without the volunteer, a driver would have to be hired. Nevertheless, if the skill is not specialized, the volunteer activity goes unrecorded in the audited financial statements.

This does not mean that an organization cannot track the amount of volunteer work done and report it to the public. In fact, many not-for-profits disclose such information in the notes to their financial statements and in their annual Internal Revenue Service Form 990 filings (see [Chapter 8](#) for a discussion of the Form 990). It does, however, prevent the organization from treating the volunteer labor as a donation, increasing revenues, and also as an expense, increasing the cost and value of program services provided.

Investments

For many years, GAAP required organizations to report their investments at the lower of cost or market value. This meant that if the investment had gone up in value, it was reported at its cost. If it had declined in value, it was reported at its market value, which was less than its cost. However, stock and bond markets provide a specific, measurable market value. In 1995, the rules for reporting investments held by not-for-profit organizations were revised.⁹ Under the revised rules, investments in stocks and bonds are reported at their market value, whether that is higher or lower than the cost.

⁹ Financial Accounting Standards Board. FAS 124: *Accounting for Certain Investments Held by Not-for-Profit Organizations*. Norwalk, Conn.: FASB, 1995.

Gains and losses, both realized and unrealized, on investments are shown in the activity statement. A realized gain or loss is one that results from the sale of an asset during the accounting period. It is referred to as being realized because it is locked in. Once the sale has taken place, the amount of the gain or loss can be determined and will not change. An unrealized gain or loss results from the change in the value of an asset that is still owned by the organization. It may change in the future.

For example, suppose the organization buys two shares of Microsoft stock for \$100 each. During the year, it sells one share for \$110. At the end of the year, it still owns one share that has a current market value of \$120. For the share that was sold, there is a realized gain of \$10. For the share that is still owned, there is an unrealized gain (sometimes called a “paper gain”) of \$20. Note that the unrealized gain will change if the value of the Microsoft stock changes before the share of stock is sold. As noted previously, both realized and unrealized gains or losses are reported on the activity statement. Unless specifically restricted, gains and losses on securities are considered changes in unrestricted net assets.

This rule forces organizations to report increases or decreases in the value of their securities portfolio, even though the securities have not been sold. For example, the bull market of the 1990s increased endowment values substantially for many organizations. Some organizations might prefer not to show those gains. However, they are required to disclose them.

What if an unrealized gain is recorded one year, and the security falls in value the next? Suppose that the Microsoft stock held at a value of \$120 at the end of one year has a value of \$115 at the end of the following year. Assuming the organization still owns the share, there is a \$5 unrealized loss. How can there be a loss? The stock was purchased for \$100 and is now worth \$115. Since the organization recorded a \$20 gain in the first year, it has revalued the stock to its \$120 fair value on the balance sheet. If it falls in value from \$120 to \$115 during the second year, the organization has a \$5 loss.

Sometimes endowment fund investments lose money. Endowments are not always invested in bank accounts or treasury bonds. Often part or all of an endowment will be in stocks and bonds that can have fluctuating market values. This creates an interesting situation. The principal amount of a permanent endowment is permanently restricted. Suppose that Millbridge University has been given \$100 million of endowment over

the years. Suppose further that the endowment is invested in the stock market. Dividends received from the stocks are transferred to the unrestricted general fund.

If the stock market does well and the market value of the investment rises to \$110 million, there is a \$10 million gain reported on the activity statement. This gain is unrestricted. It does not have to remain as part of the endowment, unless so restricted by the donor or by law.

However, what happens if the stock market declines, as it did sharply in 2008, and the value of the endowment investment falls to \$60 million? This loss would similarly be recorded in the activity statement as a decrease in unrestricted net assets. The permanently restricted net asset value reported on the balance sheet would not decline. The next year, the stock market might start to recover, and the value of the endowment investment at the end of the second year might rise to \$67 million. How is the \$7 million dollar increase in value treated? It is an unrestricted gain.¹⁰

¹⁰ The National Conference of Commissioners on Uniform State Laws has extensive resources available on its website regarding endowment rules and responsibilities for not-for-profits under the Uniform Prudent Management of Institutional Funds Act, which has been enacted by 48 states. See <http://upmifa.org>.

However, proposed new FASB standards will change how net assets with donor restrictions reflect declines in value. Proposed standards issued in 2015 indicate that in this example, the \$100 million of endowment would be reported as \$60 million if the endowment value fell by \$40 million—even though the amount of the endowment is now less than the original gift amount. New disclosures in the notes would require the not-for-profit to reveal original gift amounts.

Taxes

Not-for-profit organizations are generally exempt from a variety of taxes, including federal and state income taxes, sales tax, and real estate tax. The tax-exempt benefit is substantial, saving some organizations millions of dollars a year. However, if tax-exempt not-for-profit organizations provide services that are not directly related to their charitable mission, they may be subject to tax. Even if they don't offer such services, sometimes they make voluntary payments to government bodies in lieu of taxes. Often this is done to try to counter a growing sentiment against the tax-exempt status of not-for-profit organizations.

The Unrelated Business Tax

Even though a not-for-profit organization may be classified as exempt from tax, it may be liable to pay an unrelated business tax. This tax arises when the organization conducts an activity that tends to compete with for-profit businesses. If a hospital owns a cafeteria inside the hospital building for the convenience of hospital employees and individuals coming to visit patients, that would typically be considered to be part of the hospital's normal activities. The profits of the cafeteria typically would *not* be subject to tax. However, what if the hospital opens an upscale restaurant in one corner of the building, with entrances from the street directly into the restaurant?

If the restaurant attracts customers who come for the restaurant, rather than for some hospital-related business, then the hospital has entered into an unrelated business activity, and the profits from that activity would be subject to income tax. From a public policy perspective, we can understand that if the restaurant did not have to pay tax, other tax-paying restaurants that it competes with would feel that they have been placed at an unfair disadvantage. The Unrelated Business Tax is discussed in more detail in Appendix 11-A.

Growing Pressure to Tax Not-for-Profit Organizations

In recent years, pressure has been growing to tax not-for-profit organizations. This pressure comes from different areas. Some individuals believe that it is a violation of the constitutional principle of separation of church and state to exempt religious organizations from tax. Others believe that not-for-profit healthcare organizations compete directly with for-profit healthcare providers and that tax-exempt status gives them an unfair advantage. Still others believe that not-for-profit organizations promise charitable benefits to society in exchange for their exemption, but never adequately deliver on their part of the bargain.

The tax-exempt treatment for religious organizations has long been a debated issue. Not only do churches, synagogues, mosques, and so on avoid paying income tax on any profits they earn, they also gain a major subsidy by not paying real estate taxes. They enjoy fire and police protection and many other general public services normally paid for by real estate taxes. Further, donors get a tax benefit on their personal income tax returns when they deduct contributions to religious organizations. All of this creates a system of subsidies that some view as being tantamount to state support of organized religion. Nevertheless, at this time, the tax-exemption of religious organizations seems secure.

However, sometimes other things are even more important to not-for-profits than tax exemption. For example, expansion of not-for-profit organizations may conflict with local zoning laws. In those cases, the organization will have to obtain zoning variances. Local governments are often extremely concerned by the expansion of not-for-profit organizations because it impacts the tax revenue of the government. Private businesses or homeowners pay real estate tax on their property. If that property is acquired by a not-for-profit organization and used for a charitable purpose, real estate tax is no longer collected on the property. To maintain good relations with the local government and/or to be able to secure necessary variances, some not-for-profits make voluntary payments to the government to help defray the various costs of government that are normally covered by real estate tax. Such amounts are generally referred to as “payments in lieu of real estate tax.”

Sometimes organizations provide services to the community to avoid having to commit to payments instead of real estate taxes. For example, the University of Massachusetts Memorial Medical Center acquired a piece of property in Worcester, Massachusetts, reducing city revenue by \$70,000. In the face of growing pressure to force them to make payments to the city in lieu of the lost taxes, the medical center opened the Worcester Housing Authority Health Clinic to offer healthcare services to the elderly population in the area.^{[11](#)}

^{[11](#)}. Anonymous editorial. "UMass Memorial Medical Center Steps Up." *Telegram & Gazette*, January 6, 2004, p. 6.

The last concern is related to ensuring that not-for-profits offer sufficient benefits to society to warrant their tax-exempt status. A team of researchers who developed a benchmark for community benefits argued that “estimates of nonprofits’ current level of community benefits are compared with the benchmark and show that actual provision appears to fall short.”^{[12](#)} That study focused on hospitals, a likely target for scrutiny because the operations of not-for-profit hospitals are similar in many ways to those of for-profit hospitals. However, there is a growing belief that many types of not-for-profit organizations benefit far more from their tax-exemption than society benefits from their existence. Pressure may grow on all not-for-profit organizations to justify their tax exemption by demonstrating that they significantly benefit society.

^{[12](#)}. Sean Nicolson, Mark V. Pauly, Lawton R. Burns, et al. “Measuring Community Benefits Provided by For-Profit and Nonprofit Hospitals.” *Health Affairs*, November/December 2000, Vol. 19, Issue 6, p. 168.

Accounting for Healthcare Organizations

Healthcare organizations pose an interesting dilemma for the accounting profession. The healthcare industry consists of both for-profit and not-for-profit organizations. We could have for-profits use rules generally employed by businesses and not-for-profits follow the not-for-profit rules discussed previously. However, comparability is desirable, so it makes sense to have all similar organizations, such as all hospitals, follow the same GAAP. The healthcare industry therefore follows special rules.¹³ These rules apply to for-profit, not-for-profit, and government healthcare organizations.¹⁴

¹³ American Institute of Certified Public Accountants. *AICPA Audit and Accounting Guide for Health Care Organizations*. New York, N.Y.: AICPA, 1996.

¹⁴ The GAAP in the *AICPA Audit and Accounting Guide for Health Care Organizations* (Health Guide) cover hospitals, home health, HMOs, nursing homes, rehabilitation facilities, clinics, medical group practices, individual practitioner associations, labs, surgi-centers, and so on. However, the Health Guide does not apply to VHWOs or fundraising foundations. Government healthcare organizations that use enterprise funds (see [Chapter 13](#)) follow this guide (as well as GASB rules) when issuing separate financial statements, as do hospitals that are part of universities and medical schools.

In many ways, the operations of health organizations are more similar to for-profit businesses than to charities. Often, they receive relatively little from contributions and grants, and most of the money for their assets and operations comes from charges to patients for services provided and from loans. These attributes argue in favor of using reporting rules of for-profit businesses rather than not-for-profit accounting. In many respects, therefore, healthcare reporting parallels general GAAP. All healthcare organizations use similar financial reporting except where it is clearly inapplicable.

Financial statements for healthcare organizations include a balance sheet, statement of operations (income statement), statement of changes in equity (or changes in net assets or fund balance), statement of cash flows, and notes. The statement of operations and statement of changes in equity combine to yield the information contained in the activity statement provided by other not-for-profit organizations. Not-for-profit healthcare organizations are allowed to combine these two statements into one.

The Statement of Financial Position

Several issues are related to the balance sheet of healthcare organizations: the disclosure of asset liquidity, the treatment of certain assets and liabilities, and the treatment of net assets.

The balance sheet for healthcare organizations should show current assets separately from noncurrent assets. This is more restrictive than the rules that other types of not-for-profits must follow. As noted earlier in this chapter, not-for-profits generally are allowed to group all assets in one section, as long as relative liquidity is in some way disclosed. That approach is not allowed for either for-profit or not-for-profit healthcare organizations.

Many of the customers (patients) of healthcare organizations do not directly pay their bills. Instead, an insurance organization is responsible for the payment. These payers are referred to as *third-party payers*. Third-party payers include private insurance companies, health maintenance organizations (HMOs), and also government payers. Some third-party payers, Medicare and Medicaid in particular, perform retroactive audits to ensure that their payments have been appropriate. At times the third-party payers find they have overpaid or underpaid. Healthcare organizations must estimate the likely amount of the future adjustments related to the year just ended and include either a receivable or payable to these payers on the balance sheet.

A number of healthcare organizations now incur liabilities as a result of actions that take place outside the organization. These present challenges for measurement and reporting. For example, HMOs contract with healthcare providers who give care to HMO members. Often these contracts call for the HMO to make a payment for care on a discounted fee-for-service basis. *Fee-for-service* means that there is a payment for each unit of care the patient consumes. Physicians will charge for office visits, tests, procedures, and so on.

It is not unusual for treatments to take place near the end of the fiscal year and not be reported immediately to the HMO. This results in a category of liability referred to as *incurred but not recorded (IBNR)*. Although the exact amount of the HMO's IBNR liabilities may not be known, they can be substantial. Accounting rules require that the IBNR liability be estimated and reported on the balance sheet, even though the HMO has not yet been invoiced for the services involved.

The reporting of net assets is a concern only for not-for-profit healthcare organizations. For-profit healthcare organizations will use traditional owners' equity categories such as stockholders' equity. Not-for-profit healthcare organizations report net assets in the same way as other not-for-profit organizations. Net assets must be divided into unrestricted, temporarily restricted, and permanently restricted net assets. Also, as with other not-for-profits, information must be provided on the nature of restrictions.

Operating Statement

The basic statement that healthcare organizations use for reporting their revenues and expenses is the operating statement. This is similar to the income statement used by most for-profit organizations. Healthcare organizations set prices for their various services. These prices are referred to as "charges." However, many patients or third-party payers do not pay the full amount of the charges for their care. This creates a problem for reporting revenues.

Many third-party payers receive discounts for care. Medicare and Medicaid impose the amounts that they are willing to pay. Blue Cross, HMOs, and some other third-party payers negotiate discounts that are then included in the contracts they make with healthcare organizations. All of these discounts, those to Medicare and Medicaid as well as those to other payers, are referred to as *contractual allowances*.

Some individuals do not pay for their care because they cannot afford to or because they choose not to. This gives rise to *charity care* and bad debts. Healthcare organizations must decide if they believe certain patients are too poor to pay for their care. If care is given to such patients for free, it is treated as charity care. No

revenue is shown for charity care that is provided. However, the cost of such care is included in the expenses of providing services.

Bad debts are the result of a failure to collect money that is owed to the organization by patients who are not treated as charity care patients. Services provided are treated as patient revenues, shown in the revenue section of the operating statement. An estimate is made of how much of these patient revenues will be uncollectible. That amount is treated as a bad debt expense in the expense section of the operating statement. However, if a healthcare organization records revenues for patient care without making an assessment of the patients' ability to pay, then bad debts are not reported as an expense. Instead, the anticipated bad debts are deducted from patient revenues, lowering net patient revenue.¹⁵

¹⁵ Financial Accounting Standards Board. Accounting Standards Update No. 2011-07, Health Care Entities (Topic 954): Presentation and Disclosure of Patient Service Revenue, Provision for Bad Debts, and the Allowance for Doubtful Accounts for Certain Health Care Entities, July 25, 2011.

It is not uncommon for healthcare organizations to charge two or three times the average amount collected. HOS might charge \$400 million for care, collect \$180 million, and have costs of \$175 million. The \$400 million charge seems to create a high profit margin when compared with the cost. However, since many of HOS's customers pay much less than the official charge, it must charge a very high amount so that those few customers that pay the full charges generate a modest profit needed to be a viable organization.

Since a large portion of the gross charges consists of an amount that the organization is contractually not entitled to receive, that portion cannot be treated as revenue. To treat it as such would give a misleading view of the true resource inflows of the organization. Therefore, revenue reported on the operating statement is the net amount after removing contractual allowances and charity care.

Although charity care cannot be included in revenues because the organization has no intention of collecting payment for that care, the amount of charity care provided must be disclosed. This is done with a note that explains the amount of care given for free. The measurement of charity care can be in terms of charges, cost, or percentage of total care delivered.

Contributions

The rules concerning the reporting of contributions by not-for-profit healthcare organizations are the same as for other not-for-profit organizations. Unconditional pledges are recorded as support when the pledge is made. Until cash is received, the pledge appears on the balance sheet as a receivable. Conditional pledges are not recorded until the condition is met. If payment has been received before the condition is met, a liability, deferred support, appears on the balance sheet.

Investments

The treatment of investments is one of the more complicated areas of financial accounting for healthcare organizations. The approach taken by for-profit (investor-owned) healthcare organizations differs from that

taken by those that are not-for-profit.

Investor-Owned (for-Profit) Healthcare Organizations

Investor-owned healthcare organizations track three classes of securities: *held-to-maturity securities*, *trading securities*, and *available-for-sale securities*.¹⁶

¹⁶ Financial Accounting Standards Board. FAS 115: *Accounting for Certain Investments in Debt and Equity Securities*. Norwalk, Conn.: FASB, p. 49.

Held-to-maturity securities are debt securities that will be held until their maturity date. Debt securities (e.g., bonds) tend to fluctuate in market value. This is the result of changes in interest rates over time as well as changes in the financial status of the borrowing organization. (See [Chapter 6](#) for calculations of bond value as interest rates fluctuate.) Many argue that the fluctuations are irrelevant if the organization expects to hold the bonds until maturity. The value to the holder is based more on the ultimate maturity value than on any interim market swings. Therefore, these securities are recorded at their cost.¹⁷

¹⁷ If a held-to-maturity debt security is purchased for more or less than the maturity value, the difference is gradually amortized (allocated over time), and the security is reported at its amortized cost. For example, suppose that HOS buys a \$1 million face value Microsoft bond for \$950,000 ten years before its maturity. At the time of purchase, it is recorded on the balance sheet at \$950,000. The \$50,000 discount from face value is spread out at a rate of \$5,000 per year. (Other amortization techniques exist that vary slightly.) Each succeeding year, the bond will appear on the balance sheet at a value \$5,000 higher. After holding the bond for 1 year, it is reported at an amortized cost of \$955,000. Note that the held-to-maturity bond would be reported at \$955,000 even if market conditions make the fair market value of the bond \$925,000 or \$975,000. The next year it is reported at \$960,000. At maturity, the value of the bond on the balance sheet would be \$1 million, and the bond would be given to Microsoft in exchange for \$1 million.

By contrast, trading securities are debt and equity securities that are bought principally for selling them in the near term. Debt securities represent loans receivable.

The holder of the security is entitled to receive interest payments and repayment of principal. Equity securities are those that reflect an ownership interest. In most cases, equity securities refer to shares of stock. Trading securities are reported at fair value, and gains and losses are reported as income whether they are realized (the security has been sold) or unrealized (the organization still owns the security).

Available-for-sale securities are all debt and equity securities that do not qualify as held-to-maturity or trading securities. They are reported at fair value. However, unrealized gains and losses on them are excluded from income and reported as a separate part of equity that does not affect net income from operations for the year.

The distinction between trading securities and available-for-sale securities relates to the role of the securities in the day-to-day operations of the organization. If buying and selling the securities is a regular part of normal operating activities, then the gains and losses are rightfully part of operating income or loss. By contrast, if a

security is purchased specifically as a long-term investment, then changes in its value should not affect the results of current-year operations. Since they are not part of operations, their gains and losses would not appropriately be included in annual operating income. However, since investments are generally reported at fair value, the asset value is adjusted, and the impact on equity is also shown.

For both investor-owned and not-for-profit healthcare organizations, the cash flow statement treats sales and maturities of trading securities as being cash from operating activities. All other cash from investments is recorded as being from investing activities. This reinforces the notion that trading securities are seen as being part of the annual routine operating activities of the organization.

Not-for-Profit Healthcare Organizations

Not-for-profit healthcare organizations follow the rules for investments discussed earlier in this chapter for not-for-profit organizations. All debt and equity securities are reported at fair value. Gains and losses are included in changes in net assets. Gains and losses are included in unrestricted net assets unless restricted by donor or law.

Note that all debt securities are shown at fair value, including those that would be considered held-to-maturity by investor-owned healthcare organizations. The reasoning behind this difference is that fair value gives outside users a better indication of the resources available to the not-for-profit healthcare organization to use in providing services related to its mission.

Not-for-profit organizations do not focus on net income to the same extent as investor-owned organizations. The totality of the resources available is of greater importance. Therefore, the distinction of whether to include gains and losses in net income does not exist. What is important is that all gains and losses be included in changes in net assets.

Summary

The general principles of accounting are broadly applied to all types of organizations. However, there are also many unique aspects of financial accounting for health, not-for-profit, and government organizations. This chapter considers unique reporting issues for not-for-profit and healthcare organizations.

Not-for-profit organization financial statements contain a number of important distinctions from the statements issued by for-profit organizations. For example, donor-imposed restrictions on net assets must be disclosed in the statement of financial position (balance sheet). A statement of functional expenses must be provided for voluntary health and welfare organizations. A specific set of conditions must be met for donated services to be recorded and reported on the financial statements.

Healthcare organizations must report their revenues net of contractual allowances and charity care. Bad debts should generally be reported as an expense rather than as a revenue offset. However, if an organization fails to assess its patients' ability to pay, bad debts are reported as an offset to revenues. Charity care is not included as a bad debt expense or a revenue offset. The only place it shows up is in the notes that accompany the financial statements.

Despite these unique reporting issues, for the most part not-for-profit and healthcare organizations do follow the general reporting model that is common to other nongovernmental organizations.

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Questions for Discussion

- 11-1. How does the accounting industry define a not-for-profit organization and a VHWO?
- 11-2. How do restrictions affect net assets?
- 11-3. Do you think that a not-for-profit organization's board can release the restrictions on money in a strike fund and use it for general operations? Does it matter whether we are talking about a strike fund held by a steel workers' union to pay benefits to its members during a strike versus a fund used by a not-for-profit as a safety reserve in case its workers go on strike?
- 11-4. Is an activity statement the same as an income statement?
- 11-5. What type of information must VHWOs provide that is not mandatory for other types of organizations?
- 11-6. What is a fund?
- 11-7. What are some common types of funds?
- 11-8. What are the possible types of interfund transactions? Explain.
- 11-9. To what extent do not-for-profit organizations have the ability to choose among the following:
1. using depreciation
 2. ignoring depreciation
 3. maintaining building and equipment on the balance sheet at their original cost
 4. showing such assets at their market value
 5. completely charging such assets as expenses in the year acquired
- 11-10. Donations in cash are easy to measure. What is the treatment that not-for-profit organizations use for donated goods and services?
- 11-11. At what value are debt and equity securities shown on the balance sheet of not-for-profit organizations? What is the treatment on the activity statement?
- 11-12. Distinguish between the way investor-owned and not-for-profit healthcare organizations treat investments.
- 11-13. The chapter did not specifically discuss whether healthcare organizations must depreciate their buildings and equipment. Do you believe that such depreciation is or is not required? Why?
- 11-14. Please use the following choices to fill in the blanks in the next two questions:
1. unrestricted
 2. temporarily restricted
 3. permanently restricted
1. When Professor Chellman endows an annual lecture series at the Wagner School, he stipulates that only the interest income derived from his gift may be used to fund the program. The Wagner School places the gift in its _____ fund.
2. When the Wagner School sets aside a portion of net assets to be used for computer software purchases, the designation is made in the _____ fund.

Problems

11-15. The Abby Arboretum (AA) is a not-for-profit organization that has several programs, such as gardening, grade-school education, environmental efforts, and a reforestation program. It draws many volunteers for its efforts. Indicate which, if any, of the following activities should be recorded as donated services.

1. An architect drew up blueprints for a new greenhouse free of charge. AA would have hired an architect otherwise.
2. The architect makes phone calls to past clients and investors to raise contributions on behalf of AA for a capital campaign to finance the greenhouse.
3. After the greenhouse is built, the architect spends several days planting vegetables and flowers.

11-16. Indicate whether each of the following actions would result in a change in unrestricted, temporarily restricted, or permanently restricted net assets this year:

1. A donor gives the organization a cash contribution to be used for expanding the organization's food pantry program.
2. The organization earns an unrealized gain on its permanent endowment.
3. A donor pledges money to the organization but has not paid it yet. The donor does not indicate how the money is to be used.
4. The organization sells goods from its online bookstore.
5. A donor gives the organization cash and specifies that the money is to be used in 4 years.
6. A donor gives 1,000 shares of Apple stock and stipulates the proceeds of the stock are not to be spent but held in perpetuity.

11-17. The Abby Arboretum (AA) has several programs, each of which has its own fund. AA also has several other important funds such as a Debt Service Fund and an Operating Fund (which handles all unrestricted transactions). For the following events, show the effect on the fundamental equation of accounting for each of the affected funds.

1. The Environmental Program borrows money from the Operating Fund to hire a consultant for \$10,000. The money is expected to be repaid in 6 months when a foundation grant is scheduled for receipt.
2. AA transfers \$20,000 to the Debt Service Fund, \$2,000 of which is interest, to pay back a tax-exempt bond.
3. AA charges out its Operations Department to each program equally, at \$1,000 each, for services performed to maintain property, plant, and equipment.

11-18. For Youth Agency (FYA) is a voluntary health and welfare organization that provides counseling and recreation programs for youthful offenders and delinquents. FYA's programs are financed through a contract with the county in which it is located and through contributions from local citizens. Its contract with the county provides for reimbursement of allowable costs based on monthly billings to the county. FYA uses the accrual basis of accounting, and the following transactions occurred during 2018:

1. FYA received pledges of gifts in the amount of \$25,000, to be used as the FYA board of directors

considers appropriate.

2. FYA collected \$17,000 cash on the pledges received in transaction 1.
3. FYA received a gift of Intel stock that had a fair market value of \$1,300 total at the time of the gift. The donor sent FYA's president a letter with the gift, saying that proceeds of the stock should be used only to purchase athletic equipment for the basketball team. FYA sold the stock upon receipt.
4. FYA paid \$800 cash for athletic equipment, using some of the proceeds received in transaction 3. The expense was charged to the Recreation programs account.
5. FYA spent \$12,000 cash on the following: \$8,000 for Counseling programs, \$3,000 for Recreation programs, and \$1,000 for Administration.
6. FYA billed the county \$6,500 for costs incurred under its contract.
7. A licensed social worker in the area donated 100 hours of her time to FYA. Her normal hourly rate is \$50 per hour. The CEO appreciates the donation because otherwise he would have to purchase the counseling services.
8. FYA borrowed \$10,000 from the local bank on an unsecured note. The whole amount will be repaid next year.
9. FYA paid the local bank \$1,600, of which \$400 was interest.
10. FYA recorded \$300 of depreciation for the year.
11. FYA prepaid next year's rent of \$12,000.
12. FYA determined that it will not be able to collect \$1,500 of pledges made in 2018.

Record the above transactions. Then, using the beginning balances in this table, produce the balance sheet, activity statement, and cash flow statement.

Account	Balance
Cash	\$2,000
Contracts Receivable	1,000
Equipment	2,500
Pledges Receivable, Net of Allowance	500
Unrestricted Net Assets	6,000

Case Study

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Individual Rehabilitation Services (IRS)¹⁸

¹⁸. Case developed by Ken Milani, University of Notre Dame. Reprinted with permission.

Individual Rehabilitation Services (IRS) is a not-for-profit organization that assists individuals returning to society following a substance abuse conviction. IRS has been greatly successful in its urban efforts. Thus, more resources are needed.

Late last year, IRS began a restaurant operation, The Golden Kettle, which specializes in soups. Last year's operation was a break-even effort. At the beginning of the year, The Golden Kettle relocated to a mall.

It has been clearly established by the district director of the Internal Revenue Service (the other IRS) that income generated by The Golden Kettle will be unrelated business income.

Required

Determine the minimum federal income tax liability and the taxes owed at the time of filing based on the following data:

Cash receipts: \$160,900 (sales of \$156,100 plus \$4,800 donated to IRS by Golden Kettle customers)

Cash Disbursements	
Merchandise purchases	\$ 52,000
Wages and related payroll taxes (a)	20,870
Rent—space and equipment (b)	3,600
Property insurance (c)	2,850
Equipment purchases (d)	15,000
Loan payments (e)	1,200
Utilities	1,400
Food license (f)	400
Professional fees (g)	1,000
Repairs and maintenance (R&M) (h)	950
Advertising and promotion (i)	4,000
Taxes (j)	10,000
Telephone	480
Supplies	1,300
Miscellaneous	520
Total	<u>\$116,470</u>

Other Information

1. IRS is an accrual-basis, calendar-year taxpayer.
2. Inventory information FIFO LIFO

Beginning Inventory \$12,000 \$11,200

Ending Inventory \$14,000 \$12,100

3. Explanation of notes:
 1. Includes employer's share of FICA.
 2. Rent is \$250 per month. A \$350 security deposit was made and the final month's rent was paid in advance on an 18-month lease.
 3. Two assets are insured: inventory—\$150 (a floating figure based on monthly inventory levels); tangible personal property—\$2,700 (a 3-year policy that was acquired on July 1 of the current year).
 4. Additional equipment not provided by the owner of the facility is required and acquired. Information pertaining to this equipment is shown below:

	Class Life	Cost	Current Year Depreciation
Description			
Cash register	5-year	\$ 5,000	\$1,000 (20% × \$5,000)
Broaster	7-year	\$10,000	\$1,430 (14.3% × \$10,000)

5. \$200 a month is paid to Buckner Bank on a \$3,000 loan used to purchase the equipment in (d). Interest expense is \$450.
6. \$200 is paid on January 1 and July 1 to the city controller, who issues a 6-month license at those dates.
7. Breakdown of this expense indicates:

\$200—Preparation of prior year's tax return.

\$600—Payment to an architect for her plans, which will be used to build another restaurant in the near future.

\$1,100—Attorney fee in settling a claim brought by a customer who claimed that she was served undercooked food, which led to her illness.

8. The previous customer claim brought about an extensive inspection by the Health Department, which ordered several changes (costing \$650) in the operation and fined IRS \$300. The \$300 is included in the \$950 R&M figure. (Note that fines are not deductible on a federal income tax return.)
9. Includes \$1,600 of newspaper advertising plus \$2,400 paid for a Yellow Pages ad that will appear in next year's telephone directory, which will be distributed in October of next year.
10. Estimated federal income tax payments during the year.

Appendix 11-A: Taxation of Not-for-Profit Entities¹⁹

Ken Milani

University of Notre Dame

¹⁹ This appendix was written by Ken Milani, University of Notre Dame. Used with permission.

Albert Einstein felt that “taxes are the most difficult thing to understand.” Not-for-profit (NFP) or nonprofit organizations (NPO) that have unrelated business income will find themselves wrestling with this “most difficult thing to understand” when they report unrelated business income, which the Internal Revenue Code (IRC) defines as follows: “Gross income derived from any ‘unrelated trade or business’ that is ‘regularly carried on’ less deductions directly connected with the carrying on of such trade or business.”

An unrelated trade or business is a venture or operation of the NPO that involves activities constituting a trade or business. Although not substantially related to the NPO’s exempt function, the activities display a frequency and continuity similar to the stance taken by a profit-making entity. The manner in which the activities are carried out is also considered in determining whether unrelated business income is being produced by the NPO. For example, the following would not be activities subject to taxation:

- Shuttle bus service operated downtown by Carol Shea College (CSC), an urban university, for the use of CSC faculty, staff, students, and visitors. A small annual fee is paid or a daily fee is charged.
- Corned beef and cabbage dinner served annually on St. Patrick’s Day as part of the day’s festivities by a local parish, St. Casey. The charges (\$3 per person or \$10 per family) are promoted widely in radio, newspaper, and Internet advertising. St. Casey sponsors the annual event and is the only recipient of the surplus generated.

On the other hand, the activities listed below would generate unrelated business income.

- Food service operated by Holtz Hospital, an exempt hospital, for its own use plus revenue-producing activity available to and promoted to other healthcare organizations in the area, which are also exempt. The charges are set at 70 percent of the going market rate.
- Cleaning establishment (i.e., dry cleaning and other laundry) operated by members of a religious organization who are trying to provide employment opportunities for inner-city residents.
- Stengel Signal, a DVD rental service operated as an exempt organization, which is offering wholesome and family-oriented movies to the public.

Use of the activity profits or proceeds to support an NPO will not allow the NPO to escape “the tax man,” meaning that the food service profits described above will be taxed no matter how they are used by Holtz Hospital.

Gross Income

Several sources of gross income are available to the NPO. The major categories are described below. Significant contrasts between the treatment of gross income for profit-seeking enterprises and the unrelated business activities of an NPO will be noted throughout.

Gross Profit

Sales of products or merchandise reduced by cost of goods sold and any returns and allowances represent gross profit. The cost-of-goods-sold calculation is based on allowed accounting procedures, including first-in first-out (FIFO), last-in first-out (LIFO), and other methods. Standard accounting procedures are used to compute returns and allowances.

Where services are the source of sales or revenue (e.g., DVD rental service), cost of goods sold is not determined while allowances must still be recognized.

Investment Income

Investment income (e.g., dividends, interest, and earnings from annuities) is generally *not* included in the gross income of an NPO. This treatment represents a significant tax break for the NPO since most taxpayers report and pay taxes on investment income.

There are two specific instances when the NPO must include investment income in gross income for tax purposes. The first occurs when the NPO receives investment income from a controlled corporation (i.e., an organization in which the NPO has at least 80 percent control through stock holdings or through representation on a board of directors or trustees). Debt financing, or the acquisition of assets with borrowed funds, triggers the second. This latter topic will be covered later in this appendix.

The example below illustrates the investment income provisions as they apply to NPOs.

Alleluia! Counseling Center (ACC) reports the following cash receipts during the year from a variety of investment vehicles:

\$1,200 from Cat & Deere Corporation. This represents a dividend on 800 shares of stock. Cat & Deere has over 2,400,000 shares of stock outstanding.

\$6,000 from ACC Resource Center (ARC). This is a dividend on 4,000 shares of stock. ARC has 9,000 shares of stock outstanding.

\$8,500 from the ACC Home Visitor Program (AHVP). A dividend paid per a directive from the AHVP Board of Directors. Seven of the eight directors are counselors or administrators at the Alleluia! Counseling Center.

\$6,800 from ACC Housing Corporation, a freestanding entity that has 2,900 of its 3,000 corporate shares owned by the Alleluia! Counseling Center. The money represents interest on a loan to the ACC Housing Corporation.

The first two items will not be reported as unrelated business income since the greater than or equal to 80 percent control factor is not present. However, the third and fourth items, \$8,500 and \$6,800, will be reported on the income tax return of Alleluia! Counseling Center since in both instances it maintains at least 80 percent of the control of the organizations making the payments—87.5 percent of the AHVP and 90 percent of the Housing Corporation.

Royalty Income

The approach of the IRC to royalty income is similar to its stance toward investment income. Royalty income from a controlled organization or generated by debt-financed holdings will be taxed while all other royalty income will not be reported for tax purposes.

Consider the following royalties collected by Alleluia! Counseling Center:

\$15,000 from Pinella Publishing, Inc. Royalty income on a book written by a benefactor who instructed Pinella to pay the royalty directly to ACC.

\$9,000 from ACC Publications, Inc. Book royalties from an organization that is owned 90 percent by Alleluia! Counseling Center.

Of the \$24,000 received, only the \$9,000 will be taxed since it came from a controlled organization.

Royalty income received by a profit-seeking entity is fully taxed. Thus, the treatment of royalty income by NPOs is another “tax break” enjoyed by NPOs.

Rent

Another source of income that can qualify for favorable treatment by the income tax law is rent. None of the rent income will be reported for tax purposes if the NPO occupies more than half of the space in a rented facility. Where the rent represents payment for space and the use of tangible personal property (e.g., machinery, equipment, furniture), if less than 10 percent of the rent pertains to the property, none of the rent income will be subject to taxation.

All rental income from the following situations will be included in gross income for tax purposes:

1. More than half the rent is attributable to tangible personal property.
2. Profits from the leased property are the basis for the rent.
3. Personal services, other than routine and ordinary maintenance activities, are rendered as part of the rental.

Only a portion of the rental income will be reported for income tax purposes if the rented property is debt-

financed or when the portion of rent allocated to tangible personal property is at least 10 percent but not over 50 percent. Debt-financed situations involve the use of borrowed funds (e.g., mortgages, bonds) to acquire the property. Full treatment of this topic is beyond the scope of this appendix. Suffice to say that if any debt remains on a rental property, part of the rent must be reported for federal income tax purposes.

The rent provisions are illustrated by the following example.

Cubs Care, an exempt organization, reports the following receipts from rentals during the current year:

\$24,000—Rent on the Banks Boulevard Apartments. The apartments are furnished, and 30 percent of the rent is attributable to the furnishings.

\$66,000—Rent on the Carey Circle Building (30%) and machinery and equipment (70%) utilized by the tenant.

\$18,000—Rent for use of space in the Cubs Care Convention Center.

\$30,000—Rent on the Lee Lane Office Complex. Cubs Care occupies 80 percent of the complex while various nonexempt tenants occupy the remainder.

\$19,000—Rent based on 20 percent of the profits generated by the tenant of the Santo Orchards.

\$54,000—Rent on the DeRosa Depot, which is computed based on the following formula: \$2,000 per month plus 3 percent of gross sales.

None of the \$18,000, \$30,000, or \$54,000 rents will be included in gross income for tax purposes because of the type of property involved (in the \$18,000 and \$54,000 examples) and the exempt organization's use of the facility (in the \$30,000 example).

All of the \$66,000 in the second example (rent for tangible personal property exceeds the 50 percent plateau) and the \$19,000 in the Santo Orchards example (rent tied to tenant's profit) will be taxable, while only 30 percent of the \$24,000 will be added to gross income since the tangible personal property portion falls between the 10 and 50 percent limits.

Gains

If an NPO disposes of property via a sale, trade, or exchange at a gain, none of the gain will be reported for income tax purposes unless the property is debt-financed. Where debt is involved, the NPO includes only a portion of the gain in its tax computation.

This treatment provides a substantial tax break to an NPO as it sells off surplus land or buildings. When properly planned, all of the gain will go unreported. For example,

AraDevine Enterprise (ADE), a tax-exempt organization, purchases a building, the Leahy Lane Facility (LLF), using borrowed money. Corporate tenants occupy the LLF. The mortgage is paid in full before the building is sold at a substantial gain. None of the gain on the sale to ADE is reported for income tax purposes.

Other Income

Several other sources of income can be generated by an NPO. Some of these (e.g., advertising, research, partnership agreements) are highly complex arrangements and are beyond the scope of this effort. A competent tax consultant should be engaged when dealing with these rigorous situations.

Deductions

To determine unrelated business taxable income (UBTI), NPOs are permitted to deduct ordinary operating expenses, special deductions, and a specific deduction. This portion of the appendix focuses on situations that are most pertinent or especially applicable to NPOs that will report UBTI.

Ordinary Operating Expenses

Expenses of an NPO involved in a trade or business are treated similarly to the expenses of a profit-seeking organization. To be deductible in the computation of UBTI, the expense must be incurred in the unrelated trade or business. In many cases, this is easy to determine. For example, wages and salaries of the unrelated unit, equipment and machinery depreciation for assets utilized in the unrelated entity, and other expenses can be readily identified and determined. However, some expenses may have to be allocated between exempt functions and unrelated business functions (e.g., building used for all activities of an NPO, vehicle used for a variety of activities by an NPO).

Metro Energy and Transportation Solutions (METS), an exempt organization, owns and operates a recycling business, Garbage to Gold Organization (GGO), which generates unrelated business income. The expenses listed below have been scrutinized and their tax reporting status determined.

\$40,000—Administrative assistant's yearly salary. Since this person spends about 30 percent of her time on GGO matters, \$12,000 will be deducted in determining UBTI.

\$70,000—Machinery depreciation. All of this will be deducted in the UBTI calculation since the machinery is devoted entirely to GGO operations.

\$6,000—Delivery vehicle operating costs. 80 percent of the delivery vehicle's usage applies to GGO activities, which means that \$4,800 will enter into the UBTI calculation.

\$90,000—Salary of the METS director of fundraising. None of this will be used when determining UBTI since the director of fundraising devotes all of his time to development activities.

Special Deductions

The unrelated business segment of an NPO is a corporate operation. Thus, it is eligible for some special deductions, including a dividends-received deduction and a write-off for charitable contributions.

Contributions to charities are fully deductible, but a limit of 10 percent of UBTI places a ceiling on the amount that can be written off yearly. Because of its limited applicability within an NPO, dividends-received deductions will not be addressed.

Specific Deduction

When calculating unrelated business taxable income, the IRC allows each NPO a \$1,000 specific deduction. In essence, the first \$1,000 of UBTI will not be taxed, as shown below.

Two NPOs report the following information about their unrelated business activities:

	NPO Bear	NPO Bull
Gross income	\$ 300,000	\$ 370,000
Less operating expenses	(240,000)	(368,600)
Special deductions	(3,000)	0
Specific deductions	<u>(1,000)</u>	<u>(1,000)</u>
UBTI	<u>\$ 56,000</u>	<u>\$ 400</u>

Tax Liability

Unrelated business taxable income is the basis for the tax liability of an NPO. The following tax rates applied to UBTI as of January 1, 2015.

Income Tax Rates—Corporations	
Taxable Income	Tax Rate (%)
Not over \$50,000	15
Over \$50,000 but not over \$75,000	25
Over \$75,000 but not over \$100,000	34
Over \$100,000 but not over \$335,000	39*
Over \$335,000 but not over \$10,000,000	34
Over \$ 10,000,000 but not over \$ 15,000,000	35
Over \$ 15,000,000 but not over \$18,333,333	38**
Over \$18,333,333	35

* Five percent of this rate represents a phase-out of the benefits of the lower tax rates on the first \$75,000 of taxable income.

** Three percent of this rate represents a phase-out of the benefits of the lower tax rate (34% rather than 35%) on the first \$10 million of taxable income.

The above rates are always subject to change. An updated tax service should be consulted for the present rate schedule in effect.

Paying the Tax

There are two basic ways of handling the tax liability of an NPO: (1) use credits to reduce the taxes or (2) disburse cash to the Internal Revenue Service. A wide variety of credits are available to the NPO engaged in an unrelated trade or business. These credits (e.g., for targeted jobs, building rehabilitation) will be a direct reduction to the tax liability within specific limits. Since tax credits are a complicated niche within a complex topic, NPOs should seek the assistance of a tax professional when reporting tax credits.

Disbursements to the federal government to satisfy any tax liability remaining after credits may have to occur five times for any taxable year. Four of these payments would be estimated payments made before a tax return is filed. If needed, the fifth and final cash outlay occurs as the return is filed. Estimated tax payments must be made or the NPO may pay a penalty for underpayment of tax. These payments are due on the 15th day of the fourth, sixth, ninth, and twelfth months of the NPO's taxable year (e.g., October 15, December 15, March 15, and June 15 for an NPO with a July 1 to June 30 fiscal year). The tax return of the NPO is filed on Form 990-T and is due on the 15th day of the third month following the close of the exempt organization's taxable year (e.g., September 15 for an NPO that closes its year on June 30).

Conclusion

This appendix has focused on a rigorous subject, the federal income tax provisions that apply to an NPO. Illustrated were the activities and specific elements leading to determination of UBTI. Also covered were the tax rate structure applied to UBTI and ways of handling the tax liability.

Planning is an imperative activity for the NPO. In the area of taxation, planning is critical since taxes can be minimized with proper procedures and practices. Some tax-trimming tips were included. However, a competent tax professional should be consulted due to the complexity of this area, the constant changes to the income tax laws, and the professional's ability to assist the NPO in planning in such a way as to minimize the income taxes that must be paid.

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Chapter 12 Unique Aspects of Accounting for State and Local Governments—Part I: The Recording Process

Learning Objectives

The learning objectives of this chapter are to:

- define and discuss the modified accrual basis of accounting and contrast it with the cash and accrual bases of accounting;
- define the types of funds used by governments, including governmental, proprietary, and fiduciary funds, and the role of those funds; and
- discuss the recording process for government financial transactions.

Governments have a unique accounting approach for recording and reporting their financial events. This chapter focuses on the recording process. In the next chapter we will turn our attention to the unique rules for reporting the financial position and results of operations of governmental organizations.

Bases of Accounting

Governments use fund accounting, which we introduced in [Chapter 11](#). Indeed, fund accounting is the very essence of government budgeting and financial management. Some funds record data using the traditional accrual basis of accounting. Other funds, however, record transactions using the modified accrual basis of accounting. And in some governments, still other funds record transactions on the cash or modified cash basis. As discussed in prior chapters, the basis of accounting used by an organization or fund determines when a financial event is recognized and how it is reported in that organization's financial statements. It guides organizations as to when to record assets, liabilities, revenues, and expenses (or expenditures). This chapter focuses on the bases of accounting used by most U.S. state and local governments.

Cash Basis of Accounting

The cash basis of accounting recognizes inflows and outflows of cash. Under this basis, revenues are recognized and recorded only when cash is received, and expenses are recognized only when payments are made. For example, suppose that a city issues tax bills for \$1,000. However, the city collects only \$800 during the year the bills are issued. It receives another \$150 30 days after the year ends, and it collects the last \$50 three months after the year ends. A government on a cash basis would record only \$800 of tax revenue in the year the tax bills were issued, because that is the amount it collected in cash:

ASSETS	=	LIABILITIES	+	FUND BALANCE
Cash +\$900	=			Tax Revenue +\$800

Under a strict cash basis of accounting, there are no receivables or payables. That does not mean that an organization would not keep track of how much it is owed or owes to others. However, those amounts do not become part of the financial statements. They would not appear on the balance sheet or activity statement.

Accrual Basis of Accounting

Using the accrual basis of accounting, revenue is recorded when it has been earned. If it has not yet been collected in cash, a receivable is recognized for the balance. Using the previous example, the full \$1,000 is recorded as revenue in the year the tax bills are issued, even though only \$800 is collected in cash. On the accrual basis, the fundamental equation of accounting would be affected as follows:

ASSETS	=	LIABILITIES	+	FUND BALANCE
Cash +\$800		Taxes Receivable +\$200	=	Tax Revenue +\$1,000

Accrual accounting is widely used by both for-profit and not-for-profit organizations, including healthcare organizations. The accrual system is designed to provide a reasonable, if imperfect, measurement of the value of the total economic resources an organization earns, has on hand, and uses. Under accrual, expenses are recorded in the same time period as the revenues they helped to generate—this is the matching principle—or in the time period when the resource is used if it cannot be matched directly to revenue. If an organization uses a supply item to provide a service, the cost of the supply item is considered an expense at the same time

that the revenue for providing that service is recognized. The same holds true for labor and other expenses. Capital resources, such as buildings and equipment, are depreciated, and a depreciation expense is recorded each year of the asset's expected useful life.

Modified Accrual Accounting

We now introduce the concept of *modified accrual accounting*, a method widely used by U.S. state and local governments. Under this basis of accounting, the primary focus is on near-term or current financial resources, as opposed to total economic resources. Current financial resources can be defined as “cash and other items that are expected to be transformed into cash in the normal course of operations (less current liabilities) ... ‘other items’ include investments and receivables but *not* capital assets” (emphasis in original).¹

¹ Michael H. Granof and Saleha Khumawala. *Government and Not-for-Profit Accounting: Concepts and Practices*, 6th edition. New York, N.Y.: John Wiley & Sons, 2013, p. 135.

This means that accruals are made only for items that are currently due. The timing of when accruals are made is the fundamental difference between the accrual and modified accrual bases of accounting. This difference in timing yields critical differences in when and how revenues, expenditures, fixed assets, and long-term liabilities are recorded.

Revenues

Under modified accrual accounting, a government recognizes revenues when it has a current financial resource inflow. This may occur before cash is received. For example, if taxes are owed to the government and are “measurable and available,” they are treated as revenues, even if they have not yet been collected. Clearly this differs from the cash basis. “Available” means that they must be collectible in or shortly after the end of the accounting period.

Although this means a government may recognize revenue before it collects cash, it is still a much more stringent rule for revenue recognition than that followed under accrual accounting. Under accrual, an organization would record revenue this year if it has provided services this year, even if the organization expects to wait 3, 6, 9, or more months to collect the money. Under modified accrual, revenues are recorded only if it is expected they will be collected either during the year or within a short period of time after the fiscal year ends.²

² Statement No. 38 of the Governmental Accounting Standards Board requires a government to provide disclosure of the time period it uses for resources to be considered available, in a note that accompanies the financial statements.

Therefore, a government must collect property taxes during the fiscal year or shortly after it ends to consider the revenue measurable and available. Sixty days or less is the time period widely used as a measure of availability. Any amounts that will be collected within 60 days of the end of the year are typically considered to be available and are treated as revenues by most governments during the year billed, rather than the

following year when they are collected.

Using the example discussed above, of the \$1,000 of tax bills issued during the year, \$950 would be considered revenue for that year under the modified accrual system. This is because \$800 was collected during the year, and another \$150 was collected shortly after the year ended. The remaining \$50 was not collected until 3 months after the end of the year. That \$50 is not considered “available” in the same fiscal year as the \$800 or even the \$150 because it is collected more than 60 days after the year ended—that is, the \$50 is not considered revenue in the year the tax bill was issued. Instead, it would be included in the revenue of the following year.

Note that on the cash basis of accounting, \$800 of revenue was recorded. On the accrual basis of accounting, \$1,000 of revenue was recorded. And on the modified accrual basis, \$950 of revenue was recorded. Per Statement No. 65 of the Governmental Accounting Standards Board (GASB), the remaining \$50 would be recorded as a “deferred inflow of resources.” GASB 65 reclassifies some items previously reported as assets or liabilities into two categories: deferred outflows of resources and deferred inflows of resources. These two categories, and their impact on the fundamental equation of accounting, are discussed in [Chapter 13](#). In this example, the \$50 is a deferred inflow of resources because it is applicable to a future reporting period.

Normally when an organization records a receivable, such as taxes receivable, the balancing part of the transaction is an increase in revenue. Although modified accrual accounting does not allow governments to treat taxes receivable that will not be collected within 60 days of the end of the year as revenue, they still need a way to balance the transaction. The mechanism to do this is to record an increase in deferred inflows of resources on the right side to offset the portion of the receivable that may not be recorded as revenue. In the following year when the \$50 is collected, the deferred inflows of resources account will be reduced by \$50 and the fund balance (tax revenue, specifically) will be increased by the same amount. Conceptually, one could argue that the reason governments record a deferred inflow of resources is that if the receivable is not collected in a timely manner to be used this year, they do not have the money available to provide the public services residents expect, so they will defer providing the services until they actually collect the money. At that time, they will have the money to provide the services, and we will reduce the deferred inflow of resources. This mechanism ensures that governments record as a tax receivable only the measurable amount that is owed to the government and will be available within the current year or shortly thereafter. The basis of accounting used can make a distinct difference in the revenues that a government records for a specific year.

Expenditures

Under modified accrual, resource outflows are expenditures rather than expenses. This is more than just semantics—the implications of expenses and expenditures are not the same.

Under cash accounting, resources are considered to flow out of the organization and an expense is incurred when cash is paid. Under accrual accounting, resources flow out of the organization and an expense is incurred when a resource has been consumed in the process of generating revenue. In modified accrual accounting, however, resources are considered to leave the organization and an expenditure occurs as soon as the

organization becomes legally obligated to pay for a resource and the organization knows that payment will be made from available resources. That is, expenditures are recognized when resources are acquired, while expenses are recognized when resources are either paid for (cash basis) or consumed (accrual basis).

In some cases, the acquisition and consumption of resources occur simultaneously. For example, this is true for most types of labor. It also tends to be the case for utilities or rent. However, there are times when the acquisition of a resource and the use of the resource may occur at significantly different points in time.

For example, suppose that the town of Millbridge has purchased a \$50,000 supply of fireworks to use at its annual Fourth of July celebration. The first event is placing an order for the fireworks. The second event is receiving the fireworks and an invoice from the distributor. The third event is using the fireworks. Finally, the town pays for the fireworks. Assume the events occur as follows:

May 1 Order fireworks [Encumbrance]

June 15 Fireworks arrive [Acquisition]

July 4 Fireworks are used [Use]

August 15 Payment is made [Payment]

At the time the fireworks are ordered, May 1, most governments would record an encumbrance. Recall from [Chapter 2](#) that an encumbrance is merely a reminder to the government that a certain amount of money has been earmarked for a particular purpose. It lowers the total amount of money available to be used on other spending. At the time that the order is placed, there would not be either an expense or an expenditure under cash, accrual, or modified accrual accounting.

Event	Cash Basis	Accrual Basis	Modified Accrual Basis
<i>May 1 Order is placed.</i>	No transaction is recorded.	No transaction is recorded.	No transaction is recorded.

When the fireworks arrive on June 15, the government, upon receiving them, becomes legally required to pay for them. The payment does not have to be immediate.

Nevertheless, under modified accrual accounting, a financial resource outflow, and therefore an expenditure, is recorded at that point. This is true because the payment for the fireworks will be made from currently available resources.

Event	Cash Basis	Accrual Basis	Modified Accrual Basis
<i>June 15 Fireworks arrive.</i>	No transaction is recorded.	No transaction is recorded.	Expenditure is recorded.

On July 4, when the fireworks are used, there is a resource outflow on the accrual basis of accounting. Accrual accounting is sometimes referred to as *full accrual* or *expense accrual* to clearly distinguish it from modified accrual. Thus, under full accrual, there is an expense on July 4.

Event	Cash Basis	Accrual Basis	Modified Accrual Basis
<i>July 4 Fireworks are used.</i>	No transaction is recorded.	Expense is recorded.	No transaction is recorded.

On August 15, when Millbridge finally pays for the fireworks, it would record an expense on the cash basis of accounting.

Event	Cash Basis	Accrual Basis	Modified Accrual Basis
August 15 Payment is made.	Expense is recorded.	No transaction is recorded.	No transaction is recorded.

Suppose that the town ends its fiscal year on June 30. The impact of the transactions is summarized in [Exhibit 12-1](#). Note that the purchase of fireworks never created an asset in the modified accrual system. As soon as a legal obligation to pay arose, an expenditure was recorded, decreasing the fund balance. Thus, acquisitions generally do not generate assets under modified accrual.

	Cash	Full Accrual	Modified Accrual
Order fireworks [Encumbrance]	No effect	No effect	No effect
Fireworks arrive [Acquisition]	No effect	Increase accounts payable Increase inventory	Increase accounts payable Decrease fund balance
Fireworks are used [Use]	No effect	Decrease inventory Decrease fund balance	No effect
Payment is made [Payment]	Decrease cash Decrease fund balance	Decrease cash Decrease accounts payable	Decrease cash Decrease accounts payable

Exhibit 12-1

Generally, expenditures are recorded when the government makes cash payments or something happens (such as receiving the fireworks) that obligates it to make cash payments within the current accounting period or shortly afterward. This is consistent with the modified accrual focus on current financial resources. As with revenues, many governments set a 60-day period after the end of the fiscal year as a cutoff. If a transaction this year will result in payments that will be made within 60 days after the end of the year, an expenditure and current liability are recorded. If payment will be made more than 60 days after the end of the accounting period, no transaction is recorded.

Long-Term Liabilities

When an organization using the modified accrual method borrows money on a long-term basis, a liability is *not* created in the fund. Rather, the asset cash and fund balance increase as follows:

ASSETS	=	LIABILITIES	+	FUND BALANCE
Cash Increase	=			Other Financing Sources Increase

This approach is controversial to those who favor the accrual basis of accounting. Although a loan is not revenue under modified accrual accounting, it has the same impact on fund balance as if it were a revenue. Under a full accrual system, a loan would increase liabilities and has no effect on fund balance or net assets. Some might contend that this is a seriously misleading element of modified accrual accounting. Look at the preceding transaction again. The government has borrowed money to meet its day-to-day operating expenditures but does not record any obligation to repay the money—at least from the perspective of the fund in which this accounting takes place. Instead, fund balance rises; essentially, the fund claims ownership of the cash increase.

Recall that governments place heavy emphasis on financial resource flows in the current year. Government funds that use the modified accrual basis of accounting tend to have a short-term focus because of the importance of annual budgets in government. However, the potential for abuse is serious. There could be a

failure to charge current-year operations for a variety of costs related to the current year. Since expenditures arise only if they will be paid from available resources, some obligations that result from current-year activities but will not be paid until well after the end of the year, such as increases in future pension benefits, are not recorded as expenditures or as liabilities. They become expenditures only at some future time when they are paid. Again, this is from the perspective of a fund using the modified accrual basis of accounting.

[Exhibit 12-2](#) provides a summary of the timing of revenues and expenses or expenditures under modified accrual and accrual bases of accounting. The exhibit also indicates the types of assets and liabilities that exist under each approach. Despite the framework provided in [Exhibit 12-2](#), it must be noted that modified accrual allows for a number of exceptions. For example, materials and supplies (including the fireworks described previously) may be recorded based on either a purchases or consumption method. That is, the expenditure can be recorded when the materials or supplies are acquired (purchased), as described previously, or when consumed.³ Prepayments (e.g., for fire insurance) also can be recorded as an expenditure using either a purchases or consumption approach.

3. The consumption method is similar to full accrual in treatment of both the asset and the expenditure. Upon acquisition, the inventory asset and a payable arise, and upon consumption, the inventory declines and an expenditure arises. Under the purchases method, an expenditure is recorded upon purchase as shown previously for the modified accrual method. However, if the value of the inventory is material, it must be shown as an asset on the balance sheet even if the purchases method is used. One might argue that this makes little sense. The recognition of an expenditure indicates a decrease in financial resources. However, recording the inventory as an asset would imply that the financial resource still exists. How can inventory be an asset on the balance sheet if an expenditure has already been recorded? The following transaction is recorded:

ASSETS	=	LIABILITIES	+	FUND BALANCE
Inventory Increase	=			Inventory Reserve Increase

The increase in inventory gives the desired result of showing that the inventory still exists. To keep the fundamental equation balanced, an equal amount is recorded in the fund balance and is called an inventory reserve. When the inventory is consumed, it is reduced on the asset side, and the inventory reserve is eliminated.

	Basis of Accounting	
	Accrual	Modified Accrual
<i>Outflow (expense or expenditure)</i>	When resource is used	When resource is acquired, legal obligation to pay exists, and payment will come from available resources
<i>Inflow (revenue)</i>	When resource is earned	When resource is legally owed to the organization and is measurable and available
<i>Assets</i>	Current and long-term assets	Current assets only
<i>Liabilities</i>	Current and long-term liabilities	Current liabilities only

Exhibit 12-2

Fixed Assets

Governments want to report adherence to the budget. If the government appropriates money to buy a truck this year and it is acquired, then the reporting should show the use of the money to acquire the truck. Therefore, the acquisition is reported as an expenditure within the governmental funds. No long-term assets exist in governmental funds. Even buildings and infrastructure are recorded as expenditures when acquired

and do not create long-term assets under the modified accrual basis of accounting.

The usual modified accrual approach to expenditure recognition—for example, recording the acquisition of a \$100 million building as an expenditure as soon as it is acquired—may appear to be very conservative. For example, under such an approach one would never overstate the value of a building on the balance sheet. However, the governmental approach to expenditures also results in some treatments that might be considered to understate governmental consumption of resources and obligations. Consider, for example, treatment of interest on long-term debt. Interest payments due after the year-end are not normally accrued under modified accrual accounting.

Suppose that Millbridge issues a \$1 million bond on April 1, with semiannual interest payments. If Millbridge ends its fiscal year on June 30, then the first interest payment is not due until September 30, six months after the bond is issued and three months into the next fiscal year. Under full accrual, Millbridge would have to recognize that it used the money it received from the bond issuance for three months before the end of the current fiscal year. Therefore, it would accrue three months' worth of interest as an expense. Under modified accrual, it is argued that the payment comes out of the budget appropriations in the following fiscal year. To match reporting with budgets, there is no need to accrue Millbridge's legal obligation to pay the interest. So no expenditure and no accrued interest liability is recorded at year-end. This is certainly not a conservative reporting approach.

To make matters more complicated, there is some inconsistency in the approach taken for different types of expenditures. While there are specific rules that indicate that interest on debt is not accrued, other types of expenses would be accrued. For example, suppose that Millbridge pays professional salaries on the second day of each month for work done the preceding month. In that case, salaries for June, the last month of the fiscal year, are not due and payable until July 2, two days into the next fiscal year. However, unlike interest, salaries would be accrued. The following has been noted: "Modified accrual accounting, both in theory and practice, is extremely undisciplined. It suffers from the availability of too many options and too many exceptions (both stated and implied) as compared to accrual accounting."⁴

⁴. Martin Ives, personal communication, August 2, 1998.

Government Fund Accounting

Fund accounting is a system that subdivides an organization's accounting records into separate subentities that are tracked and reported separately within the one larger entity. Fund accounting was introduced in [Chapter 11](#). The use of fund accounting, for both recording transactions and reporting financial information, is a defining feature of governmental accounting. The funds used by governments are generally broken down into three main classifications: *governmental funds*, *proprietary funds*, and *fiduciary funds*.

Governmental Funds

Governmental funds are the typical funds used to operate most governments. These include the general funds, *special revenue funds*, *capital projects funds*, *debt service funds*, and *permanent funds*. Governmental funds record transactions using the modified accrual basis of accounting.

The general fund is similar to the operating fund or unrestricted fund in not-for-profit organizations. This is the fund that is used for the bulk of the day-to-day revenues and expenditures of the government. Money from the general fund can be used for any of the routine, ordinary activities of government. In effect, any resource or obligation, revenue, or expenditure that is not accounted for in another fund will be accounted for in the general fund.

Special revenue funds are used for specific identifiable purposes other than debt service payments and the acquisition of capital assets. These are akin to temporarily restricted funds for not-for-profit organizations. The restrictions may be legal or may be based on management decisions to better control the use of resources. For example, revenue from state gasoline taxes might be earmarked for highway maintenance. All receipts from the tax would go into a special fund, and payments from that fund could be used only for the restricted or specified purpose.

The capital projects fund is used to account for major acquisitions of plant or equipment. Note that money is accumulated in this fund prior to acquisition of the capital assets. Alternatively, money may be transferred into the capital projects fund from another fund before a purchase is made. Often, a combination of accumulated and transferred monies is used for capital acquisitions. Some smaller acquisitions, such as the purchase of cars, may be paid for from the general fund. Usually, the decision of whether to use the capital projects fund depends on the dollar amount and expected life of the equipment. For example, in a large city, the cost of a police car might be low enough, and its life short enough, that it would not be considered a major capital acquisition. In such a case, it makes sense to pay for such cars from operating revenues in the general fund.

Note that whether the acquisition is a car paid for from the general fund or a building paid for from the capital projects fund, under the modified accrual basis of accounting used for governmental funds, no long-term asset is recorded. Instead, cash decreases or a short-term payable increases, and an expenditure is recorded for the full cost of the item.

The debt service fund is used to account for the accumulation of resources to repay principal and pay interest

on long-term debt. In many cases, governments are required to transfer enough money annually into the debt service fund to cover these required payments. Money in the fund is then restricted to making debt service payments.

Permanent funds are similar to endowment funds in not-for-profit organizations. Earnings, but not principal, may be spent from these funds. Environmental permanent funds and public education permanent funds are perhaps the most common examples of permanent funds in governments. Their function is to preserve some level of funding for specific purposes in perpetuity.

Proprietary Funds

Proprietary funds are used to account for activities that are run on a business-like basis. For example, these might include hospitals, museums, bridges, or an airport owned by a government. In general, governments do not match specific sources of revenues with specific expenses. For instance, governments provide police protection but do not have an earmarked tax for that purpose. Governmental funds are typically used to account for such services. In other cases, such as government-owned hospitals or marinas, there may be a desire to finance a program or activity primarily or wholly through user charges. In such cases, proprietary funds are used. Proprietary funds record transactions using the accrual basis of accounting.

Proprietary funds typically get their revenues from a variety of user fees, tolls, and other charges rather than from taxes. The two types of proprietary funds are *internal service funds* and *enterprise funds*.

Many governments own golf courses, other recreational facilities, and other activities that provide services to the public on a business-like basis. In some cases, there is a desire for these activities to earn a profit or at least be self-sufficient. When the government is essentially running a business, charging the public for services it consumes, it establishes an enterprise fund, such as a golf course fund. If the enterprise loses money, that might affect whether the government would want to continue offering the service or would be better off moving to privatize the service. Conversely, some enterprise funds, such as mass transit, are typically tax-subsidized.

Internal service funds are established for elements of government that provide specific services to other government units. For example, a government might have a car pool department. The car pool provides cars to all branches of government as needed. The idea of the car pool is that the city government will need to own fewer cars in total if each branch does not buy its own cars. This is because the cars will be more fully utilized; when one agency does not need a specific car, another agency can be using it.

An internal service fund, such as the car pool fund, charges other branches of the government for the services it provides. In many ways, the car pool becomes an in-house car rental agency for the government. The car pool is run on a business-like basis, and the government can assess whether it is less expensive to maintain the car pool department or to rent cars as needed directly from a private, for-profit car rental company.

Fiduciary Funds

Fiduciary funds are *trust* or *agency funds*. Such funds exist when the government is acting as a trustee or agent. These funds contain resources that the government holds for others. The money in fiduciary funds belongs to the ultimate recipient, not the government holding it. GAAP call for fiduciary funds to use an accrual basis.

Trust funds are established when money is given to the government under the legal terms of a trust. Trusts require that the money be used in a specific manner or for specific purposes. Pension plans are the most significant trust fund for many governments. For many state and local governments, pension liabilities far exceed pension assets. Accounting standards for pension reporting are discussed in [Chapter 13](#).

Agency funds are those that account for money the government holds as an agent for some other organization in a temporary, purely custodial capacity. For example, suppose that fire departments are predominantly volunteer not-for-profit organizations throughout a state. Further, a state law requires that each town give the volunteer fire department 3 percent of all real estate taxes collected to be used for equipment and operations. As the town collects its real estate taxes, it will immediately put 3 percent of the money collected in an agency fund, the fire department fund. From time to time, that money will be disbursed to the fire department, which is a separate distinct organization, not part of the town government. By keeping the money in a separate agency fund, it is clear that the money is not available to pay for general government expenses.

Recording Financial Information

The recording process used by governments is similar to that described in [Chapters 9](#) and [10](#) for all other organizations. However, there are some differences. First, the use of modified accrual accounting for governmental funds results in some transactions being recorded at different time periods than under accrual accounting, or not at all. For example, there will be no entries for depreciation in the governmental funds. Also, there tends to be a significant number of interfund transactions in government accounting.

Governments report information by function and by object of expenditure. General government, police, and social services are examples of functions. Salaries, supplies, and rent are examples of objects of expenditure. In the example that follows, information is recorded by function only. This is a simplification for purposes of the example. Within each function, governments would normally record expenditures by object of expenditure as well.

We now record transactions (journal entries) for the town of Millbridge, for the year ending December 31, 2018. In the next chapter, a set of financial statements is generated based on these transactions. Millbridge uses the modified accrual method of accounting for its general, capital projects, and debt service funds. The reader is referred to [Chapters 9](#) and [10](#) for a discussion of the recording process. Journal entries for the transactions, using debits and credits, are shown in Appendix 12-A.

The financial events for Millbridge are recorded on the worksheet in [Exhibit 12-3](#). That worksheet provides opening account balances as of the beginning of the fiscal year. Consider the following information and events for Millbridge during 2018:

Town of Millbridge Financial Transactions (Journal and Ledger) Prepared on the Modified Accrual Basis For the Year Ending December 31, 2018									
A. The General Fund									
	Assets			=	Liabilities			+	Fund Balance
	Cash	Property Taxes Receivable	State Aid Receivable		Accounts Payable	Due to Debt Service Fund	Due to Capital Projects Fund	Salaries Payable	Fund Balance
Beginning Balance	\$68,000	\$25,000	\$15,000		\$5,000	\$18,000	\$70,000	\$ 0	\$15,000
Transaction 1a		611,000							611,000 Property Tax Revenues
Transaction 1b	600,000	(600,000)							
Transaction 2a	15,000		(15,000)						
Transaction 2b			150,000						150,000 State Aid Revenues
Transaction 2c	125,000		(125,000)						
Transaction 3	(580,000)							20,000	(300,000) General Government Expenditures (200,000) Public Safety Expenditures (100,000) Sanitation Expenditures
Transaction 4a	(5,000)				(5,000)				
Transaction 4b	(53,000)				7,000				(40,000) General Government Expenditures (15,000) Public Safety Expenditures (5,000) Sanitation Expenditures
Transaction 5	(97,000)					3,000			(100,000) Transfer to Debt Service Fund
Transaction 6									
Transaction 7	(63,000)						(63,000)		
Transaction 8a									
Transaction 8b									
Transaction 9									
Ending Balance	\$10,000	\$36,000	\$25,000	=	\$7,000	\$21,000	\$ 7,000	\$20,000	+ \$16,000

B. The Debt Service Fund						
	Assets		=	Liabilities	+	Fund Balance
	Due From General Fund					
	Cash			Liabilities		Fund Balance
Beginning Balance	\$10,000	\$18,000		\$0		\$28,000
Transaction 1a						
Transaction 1b						
Transaction 2a						
Transaction 2b						
Transaction 2c						
Transaction 3						
Transaction 4a						
Transaction 4b						
Transaction 5	97,000	3,000			100,000	Transfer From General Fund
Transaction 6	(65,000)				(15,000)	Interest Expenditure
					(50,000)	Debt Service—Principal Expenditure
Transaction 7						
Transaction 8a						
Transaction 8b						
Transaction 9						
Ending Balance	<u>\$42,000</u>	<u>\$21,000</u>	=	<u>\$0</u>	+	<u>\$63,000</u>
C. The Capital Projects Fund						
Beginning Balance	\$20,000	\$70,000		\$0		\$90,000
Transaction 1a						
Transaction 1b						
Transaction 2a						
Transaction 2b						
Transaction 2c						
Transaction 3						
Transaction 4a						
Transaction 4b						
Transaction 5						
Transaction 6						
Transaction 7	63,000	(65,000)				
Transaction 8a	200,000				200,000	Other Sources of Financing—Bond Proceeds
Transaction 8b	(270,000)				(270,000)	Capital Outlay Expenditure
Transaction 9						
Ending Balance	<u>\$42,000</u>	<u>\$ 7,000</u>	=	<u>\$0</u>	+	<u>\$20,000</u>

1. Millbridge issues all of its property tax bills on the first day of the year. The total taxes levied are \$611,000. Total collections during the year are \$600,000. This includes the \$25,000 balance from the start of the year and \$575,000 from the current year. Millbridge expects to collect the remaining uncollected taxes during the first 2 months of the following year.

The first step in recording this transaction is to recognize the taxes that have been levied. Part (a) of the transaction is an increase in property tax receivables and property tax revenues of \$611,000. The next step is to record collection of taxes. Part (b) of the transaction is the receipt of \$600,000 of cash and a reduction of property taxes receivable in the same amount. Note that this transaction affects only the general fund (see [Exhibit 12-3](#), Part A).

Note that because Millbridge expects all the taxes levied this year to be collected within 2 months after the completion of the current fiscal year, all \$611,000 of the property taxes levied are considered both measurable and available. Therefore, all of the taxes are considered revenue on the modified accrual basis.

General Fund						
	ASSETS		=	LIABILITIES	+	FUND BALANCE
	Cash	Property Tax Receivable				Property Tax Revenue
1a.		+\$611,000	=			+\$611,000
1b.	+\$600,000		=	No change on right side.		

2. Millbridge is entitled to payments from the state in the form of aid. Assume that this is unrestricted aid.

The \$15,000 receivable at the start of the year was collected. In addition, Millbridge was entitled to receive \$150,000 of aid for this year. At year-end the state still owed Millbridge \$25,000, all of which will be received early in the following year.

Since the state aid will be received in full during or shortly after the year, the full amount is recorded as revenue. Of the total \$150,000 of aid for the year, \$25,000 was still owed to Millbridge at year-end, so \$125,000 of the aid for the year must have been collected. First, the receipt of \$15,000 from the previous year is recorded. Then the full amount of state aid for the current year is recorded as revenue. Finally, the impact of the receipt of part of this year's aid is recorded (see [Exhibit 12-3](#), Part A).

General Fund				
ASSETS		=	LIABILITIES	+ FUND BALANCE
	Cash		State Aid Receivable	State Aid Revenue
2a.	+\$ 15,000		-\$ 15,000	
2b.			+\$150,000	
2c.	+\$125,000		-\$125,000	
				+\$150,000
			No change on right side.	
			No change on right side.	

- Town workers earned \$600,000 in salaries during the year. General government accounted for \$300,000 of that amount, public safety for \$200,000, and sanitation \$100,000. All but \$20,000 of the total amount had been paid by the end of the year.

General Fund				
ASSETS		=	LIABILITIES	+ FUND BALANCE
	Cash		Salaries Payable	Expenditures
3.	-\$580,000		+\$20,000	-\$300,000 General Government
				-\$200,000 Public Safety
				-\$100,000 Sanitation

The cash payments for salaries must be \$580,000 because Millbridge paid town workers all but \$20,000 of the \$600,000 they earned. The unpaid portion results in a current salaries payable liability. The expenditures are recorded by function. Governments would also maintain information by object of expenditure so that they would know there were expenditures of \$600,000 for salaries (see [Exhibit 12-3](#), Part A).

- Millbridge paid the money it owed to suppliers. It then ordered and received \$60,000 of supplies and materials. At the end of the year, \$1,000 of these supplies had not yet been used up. Millbridge paid \$53,000 to its suppliers for its purchases made during the year. The \$60,000 total of supplies received were for general government in the amount of \$40,000, for public safety in the amount of \$15,000, and for sanitation in the amount of \$5,000. The \$1,000 of supplies that were not used by the end of the year were for general government activities. Assume there were no supplies on hand at the beginning of the year.

General Fund				
ASSETS		=	LIABILITIES	+ FUND BALANCE
	Cash		Accounts Payable	Expenditures
4a.	-\$ 5,000		-\$5,000	
4b.	-\$53,000		+\$7,000	-\$40,000 General Government
				-\$15,000 Public Safety
				-\$ 5,000 Sanitation

Under modified accrual, the entire \$60,000 is an expenditure, even though the town has not fully paid for, nor fully used up, the supplies (see [Exhibit 12-3](#), Part A). This assumes Millbridge uses the purchases method for recording inventory. (Recall that the purchases versus consumption methods for recording inventory are discussed in the “Long-Term Liabilities” subsection of the “Modified Accrual

Accounting” section earlier in the chapter.)

- During the year, Millbridge was legally required to transfer \$100,000 to its debt service Fund. It transferred only \$97,000 of cash from the general fund to the debt service fund, however.

This is the first of the transactions that will affect not only the general fund, but also another fund.

Since each fund records transactions from its own perspective, we will have mirror image entries:

General Fund				
ASSETS	=	LIABILITIES	+	FUND BALANCE
Cash	=	Due to Debt Service Fund		Other Financing Use
5. -97,000	=	+3,000		-100,000 Transfer to Debt Service Fund

Debt Service Fund				
ASSETS	=	LIABILITIES	+	FUND BALANCE
Cash	=	Due from General Fund		Other Financing Source
5. +97,000	=	+3,000		+100,000 Transfer from General Fund

Note that the full legally required transfer is recorded, even though the full amount of cash was not transferred. The difference is accounted for by recording a payable in the general fund and a receivable in the debt service fund (see [Exhibit 12-3](#), Parts A and B).

- Millbridge began the year with \$190,000 of long-term obligations related to the purchase of garbage trucks several years ago. The interest and principal due on this debt during the year were \$15,000 and \$50,000, respectively. These payments were made from the debt service fund. Also assume that when the year began there were \$190,000 of capital assets (consisting of the \$220,000 cost for garbage trucks less \$30,000 of accumulated depreciation). Also, assume that annual depreciation on the garbage trucks is \$15,000.

This transaction affects the debt service fund only (see [Exhibit 12-3](#), Part B). Under modified accrual, long-term liabilities, capital assets, and depreciation are not recorded.

Debt Service Fund				
ASSETS	=	LIABILITIES	+	FUND BALANCE
Cash	=			Expenditures
6. -65,000	=			-15,000 Interest
				-50,000 Debt Service Principal

- During the year, the general fund repaid \$63,000 of its debt to the capital projects fund.

This event affects both the general and capital projects funds (see [Exhibit 12-3](#), Parts A and C).

General Fund				
ASSETS	=	LIABILITIES	+	FUND BALANCE
Cash	=	Due to Capital Projects Fund		
7. -63,000	=	-63,000		

Capital Projects Fund				
ASSETS	=	LIABILITIES	+	FUND BALANCE
Cash	=	Due from General Fund		
7. +63,000	=	-63,000		
				No change on right side.

- The town of Millbridge acquired a building to use as a firehouse. It paid \$270,000 for the building and issued \$200,000 of bonds to help provide the resources to pay for it. Millbridge paid for the building in full, and it received the full proceeds of the bond issue.

The acquisition of a building is paid for from the capital projects fund. The building is not recorded as an asset by either the capital projects fund or the general fund. Although the bond interest and principal will be repaid from the debt service fund, the proceeds of the bond issuance flow into the capital projects fund. This inflow is treated as another source of financing (see [Exhibit 12-3](#), Part C).

Capital Projects Fund			
ASSETS	=	LIABILITIES	+ FUND BALANCE
Cash			+Other Financing Source – Expenditure
8a. +\$200,000	=		+ \$200,000 Bond Proceeds
8b. –\$270,000	=		–\$270,000 Capital Outlay

Assume that the firehouse was acquired at the very end of the year. Although the government owns it on the last day of the year, it will not use it until the beginning of the next year. Therefore, it would not have any depreciation expense for the year, even under accrual accounting, because it has not been used yet. This information is not needed to record the transaction in the capital projects fund, which uses modified accrual and therefore never records depreciation. However, it will be useful later in preparing a reconciliation of the governmental fund statements to the government-wide statements, which do use accrual and would therefore normally record depreciation.

9. The town of Millbridge has just concluded a legal dispute regarding a sexual harassment claim against the chief of police. The settlement is for \$100,000. However, it will not be paid for 3 years under the agreed terms.

In this situation, the obligation will not be paid out of current resources because it will not be paid during the year or shortly after it ends. Therefore, it cannot appear as a liability of the general fund and is not recorded under modified accrual accounting.

Budgetary Accounting

An additional complicating factor in recording financial information for governments is that governments formally record their budgets in the accounting system. A government uses budgetary accounts to record the legally adopted budget. These accounts help keep the government in compliance with legal restrictions. If an approved budget allows only \$493,000 to be spent, the government wants to ensure that spending does not exceed that amount. Budgetary accounts are also used for improved government-wide budgetary control. For example, if revenues are coming in below budgeted expectations, budget directors can instruct agency directors to cut their spending so that the government avoids a deficit for the year. The government needs to keep budgetary transactions or budgetary entries separate from the non-budgetary transactions that record actual revenues and expenditures.

Suppose that a government formally approved a budget with projected revenues of \$500,000, expenditures of \$493,000, and a surplus for the year of \$7,000. At the beginning of the year, the government would record an entry that would increase the following accounts:

Estimated Revenue	\$500,000
Appropriations	\$493,000
Budgetary Fund Balance	\$ 7,000

This government-wide entry covers all of the various agencies of the government. Note that Appropriations is

used rather than Expenditures. An appropriation is an amount that the government is authorized to spend. An expenditure is actual spending. Also, Estimated Revenues are a budget projection, in contrast with Revenues, which are actual amounts. Finally, Budgetary Fund Balance is used to distinguish budgeted from actual changes in the fund balance.

During the year, the government will record transactions for actual events as they occur. For example, suppose that the government expected to collect its revenues evenly throughout the year. Suppose further that during the first half of the year, actual revenues recorded are only \$220,000. If the Estimated Revenue account is compared with the total in the Revenue account, managers can determine how much more revenue is still needed to reach the budgeted amount. In this example, halfway through the year:

Estimated Revenue	\$500,000
Less: Revenue	220,000
Estimated Revenue Not Yet Received	<u>\$280,000</u>

From a control perspective, managers can easily see that to meet the budget, revenues in the second half of the year must be \$280,000, substantially more than half of the budget for the entire year.

Budgetary accounts are particularly helpful in ensuring that the government does not spend more than its authorized amount. This is done by using encumbrances. To encumber means to impede or hamper an activity. An encumbrance is a bookkeeping device that keeps the government from spending money that has already been committed for some other purpose. When a financial commitment is made, such as placing an order for supplies, a transaction is recorded that increases the balance in an Encumbrance account. The transaction also increases an account called Reserve for Encumbrances. The encumbrance and the reserve accounts offset each other and have no net effect on the fundamental accounting equation.

Before any order is placed, there must always be a check of the Appropriations, Expenditures, and Encumbrances account balances. For example, suppose that included in the \$493,000 of total appropriations for the government was an appropriation of \$130,000 for supplies for the Public Safety Department. Assume that early in the year, before there have been any prior orders or expenditures, a manager places an order for \$60,000 of supplies. Before actually placing the order, a check reveals that there is still \$130,000 available to spend, as follows:

Appropriation	\$130,000
Less: Expenditures	0
Less: Encumbrances	0
Amount Available for Spending	<u>\$130,000</u>

At the time the order for the supplies is placed, a transaction is recorded that increases encumbrances by \$60,000. After the order is placed, but before the supplies have been received, if someone wanted to place another order they would find that the balance available to spend is:

Appropriation	\$130,000
Less: Expenditures	0
Less: Encumbrances	60,000
Amount Available for Spending	<u>\$ 70,000</u>

When the \$60,000 worth of supplies is received, the earlier encumbrance transaction is reversed, and an expenditure transaction is recorded. If someone wanted to place an order at that point, the amount available to

spend would be:

Appropriation	\$130,000
Less: Expenditures	60,000
Less: Encumbrances	0
Amount Available for Spending	<u>\$ 70,000</u>

Notice that the actual receipt of the supplies had no impact on the amount available to spend. It is the same \$70,000 that we saw immediately after the order was placed.

The benefit of the encumbrance system is that it prevents the department from spending more than its appropriations. For example, suppose that at this point another order is placed for \$50,000 of supplies. We see above that there is \$70,000 available to spend, so the order may be placed. The supplies account would be encumbered by the amount of the order, and the new balance available to spend would be \$20,000, as follows:

Appropriation	\$130,000
Less: Expenditures	60,000
Less: Encumbrances	50,000
Amount Available for Spending	<u>\$ 20,000</u>

Since the budget places a legal spending limit on the government, it cannot risk the possibility that someone will simply look at the difference between appropriations and expenditures, and think that there is still \$70,000 available to spend. In fact, \$50,000 of that amount has already been committed to paying for supplies that we have ordered. On the other hand, we can't record an expenditure for those supplies until they arrive. The encumbrance system solves this problem. If someone now tries to place an order for \$35,000 of supplies, the order would not be processed because \$35,000 exceeds the \$20,000 amount available to spend, often referred to as the unencumbered balance. This approach provides governments with a means to ensure that unauthorized spending in excess of the legally approved budget does not occur.

Summary

There are a number of unique features to accounting for state and local governments. Such governments rely heavily on modified accrual basis accounting and use a variety of funds.

The modified accrual basis of accounting focuses on current financial resources. The implications of this focus are that revenues are recognized only when measurable and available, and expenditures are recorded when a legal obligation to pay for a resource arises. This creates a number of unique reporting results. For example, no long-term assets or liabilities are recorded, major capital acquisitions are treated as expenditures when acquired, and bonds are treated as expenditures when repaid.

Governments record their transactions in three main categories of funds: governmental, proprietary, and fiduciary. Governmental funds record transactions using the modified accrual basis of accounting and generally include the general fund, special revenue funds, capital projects funds, debt service funds, and permanent funds. Proprietary funds record transactions on an accrual basis and include enterprise funds and internal service funds. Fiduciary funds also record transactions on an accrual basis. They include trust funds and agency funds.

Key Terms from This Chapter

agency funds, 452
capital projects funds, 451
debt service funds, 451
enterprise funds, 452
expense accrual, 448
fiduciary funds, 451
full accrual, 448
governmental funds, 451
internal service funds, 452
modified accrual accounting, 445
permanent funds, 451
proprietary funds, 451
special revenue funds, 451
trust funds, 452

Questions for Discussion

- 12-1. What are the fund categories used by governments? Discuss.
- 12-2. What are the benefits of budgetary accounting? What is the difference between appropriations, expenditures, and encumbrances?
- 12-3. How does modified accrual accounting differ from cash and accrual accounting?

Problems

12-4. See [Exhibit 12-4](#) for opening account balances. Record the following financial transactions for Simonsen Village for the fiscal year ending December 31, 2018. Show the impact of the transactions on the fundamental equation of accounting (optional: show journal entries—see Appendix 12-A). Assume that the modified accrual basis is used.

	General Fund	Debt Service Fund	Capital Projects Fund
Cash	\$300,000	\$4,000	
Real estate taxes receivable	20,000		
State grants receivable	10,000		
Due from general fund		16,000	
Salaries payable	90,000		
Due to debt service fund	16,000		
Fund balance/unrestricted net assets	224,000	20,000	

Exhibit 12-4

1. Simonsen Village has employees who earned \$400,000 for the year. At the end of the year, the salaries payable balance was \$10,000. Note that \$200,000 of wages related to general government, \$140,000 was for education, and \$60,000 was for the public works, safety, and sanitation department.
 2. Inventory was ordered by Simonsen Village. The entire order was received. The bill for the inventory purchase was \$10,000. By the end of the fiscal year, it had used \$6,000 of the inventory, but no payment had been made. The purchases method is used. Each of the three departments had used \$2,000 of inventory. The remaining inventory was all earmarked for education.
 3. Simonsen Village's major source of funds is real estate taxes. Total tax bills issued were for \$300,000. Total collections were the \$20,000 from the previous year's ending balance in taxes receivable and \$260,000 of this year's taxes. Eighty percent of the outstanding balance at year-end is expected to be collected early in the next fiscal year.
 4. Simonsen Village is entitled to receive unrestricted grants from the state. During the year, grants in the amount of \$100,000 were made. The total collections on grants were just \$20,000. This \$20,000 consisted of \$10,000 that the state owed for the previous year and \$10,000 for the current year's grant. The state will be paying the balance owed to Simonsen Village within 30 days after the year ends.
 5. During the year, Simonsen Village was legally required to transfer \$60,000 to its debt service fund. A total of \$70,000 of cash was paid to the debt service fund. In years when the full required transfer is not made, the debt service fund has a receivable (Due From General Fund). If more than the required amount is paid, the debt service fund's receivable declines.
 6. Simonsen Village acquired a new fire truck early in the year for \$200,000. The fire truck is expected to last 10 years and has no salvage value. It was financed by a long-term note for the full amount. Simonsen Village has a capital projects fund.
 7. The interest and principal due on Simonsen Village's debt during the year and paid from the debt service fund were \$8,000 and \$30,000, respectively. The interest covers all long-term borrowing by Simonsen Village. The principal relates to the fire truck purchased during the year.
- 12-5. Simonsen Village is a relatively new community. At the start of the year, the government had no

long-term assets or liabilities. In fact, all of the infrastructure (e.g., roads) in the village are owned by the county or state rather than the town. However, the village government has the primary responsibility for putting out fires in the village. Transactions 6 and 7 for Simonsen Village, described in Problem 12-4, both relate to the town's new fire truck.

[Exhibit 12-4](#) presents January 1, 2018, balances for Simonsen Village's accounts. These balances at the start of the year were the same on both the modified accrual and accrual bases. (Hint: That may not be the case at the end of the year.) Show the beginning balances from [Exhibit 12-4](#) and the transactions from Problem 12-4 in a worksheet format similar to [Exhibit 12-3](#). Show ending balances. Make a separate section for each fund.

12-6. Please use the following choices to fill in the blanks below:

1. modified accrual
2. accrual
3. cash
1. Under the _____ method of accounting, expenses are recognized when assets are used up, while under the _____ method, expenditures are recognized when the asset is purchased.
2. The local government's water enterprise fund utilizes the _____ method of accounting because it is run like a business.

12-7. Marloweville, with 20,000 residents, is deciding how to finance the construction of a new municipal stadium that will enhance both recreation and tourism in the area. The construction cost of the stadium is \$10,000,000. By law, all proceeds from debt issuance are placed in Marloweville's Capital Projects Fund, and all capital expenditures are made using this fund.

1. Show how Marloweville would record the transaction(s) if it were to issue a \$10,000,000 bond and then use the proceeds to construct the stadium.
2. Show how Marloweville would record the transaction if it were to finance 50 percent of the construction with a municipal bond and 50 percent through a transfer from the Economic Development Fund (a governmental fund).
3. If at the end of the fiscal year, Marloweville makes a loan repayment of \$250,000, plus a \$50,000 interest payment, the total expenditure for the transaction will equal
 1. \$0
 2. \$250,000
 3. \$50,000
 4. \$300,000

12-8. The South City Golf Course purchased a new golf cart for \$18,000 in cash at the beginning of the fiscal year. South City accounts for the golf course using an enterprise fund. It plans on using straight-line depreciation for its capital assets. South City expects the cart to last 6 years and have no salvage value.

1. At the time of the cart purchase, the accountant for South City Golf Course will: (select the most correct answer)
 1. decrease cash by \$18,000 and increase expenses by \$18,000.

2. decrease cash by \$18,000 and increase equipment assets by \$18,000.
 3. increase equipment assets by \$18,000 and increase net assets by \$18,000.
 4. NOT record this transaction, as governments do not record long-term assets.
2. At the end of the fiscal year, the accountant for South City Golf Course will: (select the most correct answer)
1. increase accumulated depreciation by \$3,000 and increase expenditures by \$3,000.
 2. increase accumulated depreciation by \$3,000 and increase expenses by \$3,000.
 3. increase accumulated depreciation by \$18,000 and increase expenses by \$18,000.
 4. NOT be required to record journal entries at this time.

12-9. Match the following terms with the most correct statement below.

1. Debt service fund
 2. Component units
 3. Encumbrance
 4. Proprietary fund
 5. Internal service funds
 6. Special revenue fund
 7. General fund
 8. Trust fund
1. _____ Used to track resources earmarked for a specific purpose.
 2. _____ Used to track resources available to pay interest and loans.
 3. _____ An enterprise or internal service fund.
 4. _____ Used to designate funds that are obligated under a legal contract.
 5. _____ Used for routine ordinary activities of government.
 6. _____ A type of fiduciary fund.
 7. _____ Business-type fund where the services are provided to other units of government.

12-10. ⁵ The Lauth City Council has appropriated \$75,000 to the Parks and Recreation Department for the purchase of supplies. In the first week of the fiscal year, the department manager places an order for \$5,000 in supplies to be received in 2 weeks. Two weeks later, the same manager places another order for \$3,000 in supplies to be delivered in 1 month.

⁵ This problem was contributed by Chris Goodman.

1. At the end of the first month of the fiscal year, how much of the budget appropriation does the Parks and Recreation Department have remaining for supplies?
 1. \$75,000
 2. \$67,000
 3. \$72,000
 4. None of the above.
2. As of the end of the first month of the fiscal year, how much is encumbered by the Parks and Recreation Department?
 1. \$5,000

2. \$3,000
3. \$8,000
4. \$0

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Appendix 12-A: The Recording Process: Debits and Credits

This appendix provides journal entries for the Millbridge transactions described in the chapter. The reader is referred to [Chapters 9](#) and [10](#) and Appendix 9-A for a discussion of the recording process, including the use of journal entries, ledgers, debits, credits, and the accounting equation in the form $\Delta A + E = \Delta L + R$, the change in assets plus expenditures equals the change in liabilities plus revenues.

Refer to the detailed transactions information provided in the chapter.

Transaction 1

GENERAL FUND	DR.	CR.
a. Property Tax Receivables	\$611,000	
Property Tax Revenues		\$611,000
Explanation: To record annual property tax levy.		
b. Cash	\$600,000	
Property Tax Receivables		\$600,000
Explanation: To record receipt of property taxes.		

Transaction 2

GENERAL FUND	DR.	CR.
a. Cash	\$ 15,000	
State Aid Receivable		\$ 15,000
Explanation: To record receipt of state aid payments.		
b. State Aid Receivable	\$150,000	
State Aid Revenue		\$150,000
Explanation: To record annual state aid.		
c. Cash	\$125,000	
State Aid Receivable		\$125,000
Explanation: To record receipt of state aid payments.		

Transaction 3

GENERAL FUND	DR.	CR.
General Government Expenditure	\$300,000	
Public Safety Expenditure	200,000	
Sanitation Expenditure	100,000	
Cash		\$580,000
Salaries Payable		20,000
Explanation: To record salary expenditures.		

Transaction 4

GENERAL FUND	DR.	CR.
a. Accounts Payable	\$ 5,000	
Cash		\$ 5,000
Explanation: To record payment to suppliers.		
b. General Government Expenditure	\$40,000	
Public Safety Expenditure	15,000	
Sanitation Expenditure	5,000	
Accounts Payable		\$ 7,000
Cash		53,000
Explanation: To record acquisition of supplies.		

Transaction 5

GENERAL FUND	DR.	CR.
Transfer to Debt Service Fund	\$100,000	
Cash		\$ 97,000
Due to Debt Service Fund		3,000
Explanation: To record transfer.		
DEBT SERVICE FUND	DR.	CR.
Cash	\$ 97,000	
Due From General Fund	3,000	
Transfer From General Fund		\$100,000
Explanation: To record transfer.		

Transaction 6

DEBT SERVICE FUND	DR.	CR.
Interest Expenditure	\$15,000	
Bond Principal Expenditure	50,000	
Cash		\$65,000
Explanation: To record payment of debt service.		

Transaction 7

GENERAL FUND	DR.	CR.
Due to Capital Projects Fund	\$63,000	
Cash		\$63,000
Explanation: To record payment of payable to Capital Projects Fund.		
CAPITAL PROJECTS FUND	DR.	CR.
Cash	\$63,000	
Due From General Fund		\$63,000
Explanation: To record collection of receivable from General Fund.		

Transaction 8

CAPITAL PROJECTS FUND	DR.	CR.
a. Cash	\$200,000	
Bond Proceeds—Other Sources of Financing		\$200,000
Explanation: To record proceeds of bond issuance.		
b. Capital Outlay Expenditure	\$270,000	
Cash		\$270,000
Explanation: To record acquisition of building.		

Transaction 9

No journal entry.

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Chapter 13 Unique Aspects of Accounting for State and Local Governments—Part II: Reporting Financial Results

Learning Objectives

The learning objectives of this chapter are to:

- discuss financial reporting objectives for governments;
- define and discuss the governmental reporting components, including management's discussion and analysis, the basic financial statements, and other required supplementary information; and
- provide an example of the recording and reporting process for state and local governments.

Governmental financial reporting standards are developed by an accounting rule-making body, the *Governmental Accounting Standards Board* (GASB, pronounced *gaz-B*). GASB's official pronouncements are considered to be Generally Accepted Accounting Principles (GAAP) for U.S. state and local governments.¹ Federal government accounting does not follow the GAAP used for state and local government accounting and is beyond the scope of this text.

¹ State and local governments are subject to many laws and regulations that require them to prepare a wide variety of financial reports for different purposes. Not all state and local governments follow GASB GAAP. "The decision whether or not to follow GASB standards is dictated by state and local laws and customs, and/or by the needs of bondholders and other creditors, the general public, and anyone else to whom governments are accountable" (Dean Mead, personal communication, December 24, 1999).

The rules for reporting financial results that are discussed in this chapter are applicable to public colleges and universities as well as governments. Governments in the United States ultimately answer to the public. The information contained in their financial statements must serve the needs of not only lenders and vendors, but the public and its elected legislators as well.

Many governments prepare a *Comprehensive Annual Financial Report (CAFR)*. Included as part of that report is a set of audited *basic financial statements (BFS)*. There are specific guidelines as to what statements and information must be included in the audited BFS to be considered a fair presentation in accordance with GAAP.

As part of the government reporting rules, governments report for the entity as a whole. This is accomplished by including two government-wide statements within the BFS. However, unlike not-for-profit reporting, government reporting also requires additional financial statements that report information about the funds that make up the governmental entity.

Also, in addition to the BFS, GAAP require state and local governments to provide a *management's discussion and analysis (MD&A)* section and other *required supplementary information (RSI)*. One element of the other RSI is a comparison of actual results with authorized budgets.

Reporting Financial Information

The Objectives of Financial Reporting

Governmental financial reporting attempts to help keep the government accountable for its actions. An element of accountability is to ensure that information is provided that is helpful for making not only economic decisions, but also social and political decisions. To have such information, it is critical to be able to compare what actually took place with what was authorized (either directly by the public or by its elected representatives) in the form of an approved budget, to understand the financial condition of the government and the results of its operations, to assess whether finance-related laws and regulations were appropriately complied with, and to understand the effectiveness and efficiency of the government.²

² Governmental Accounting Standards Board. Concepts Statement No. 1, *Objectives of Financial Reporting*. Norwalk, Conn.: Financial Accounting Foundation, 1987, paragraph 32.

In addition, financial reporting by state and local governments should provide information that allows the user to determine if interperiod equity has been achieved. *Interperiod*, or *intergenerational*, *equity* refers to whether the government has used revenues from the current period to pay for services provided in the current period. If the government were to run a large surplus or deficit, one might argue that interperiod or intergenerational inequity might arise. People may be paying today to provide benefits to future generations or may be creating an unfair debt burden on future generations to pay for benefits that are being received today.

These objectives of financial reporting have guided the process of developing governmental accounting standards. *Governmental funds* are reported using the modified accrual basis of accounting. However, this basis does a better job of demonstrating budget compliance than it does of reporting on interperiod equity. Financial reporting requirements also call for government-wide statements prepared on the accrual basis. Such statements should provide better information for understanding how well a government has achieved interperiod equity. This issue is discussed further in the “Basic Financial Statements” section of this chapter.

Further, government-wide statements prepared on an accrual basis should help users of the financial statement do the following:

- understand the overall finances and operating results of the government
- assess whether financial results are improving or getting worse
- understand the cost of services provided to the public
- understand the sources of money that government uses to pay for its programs
- understand the government’s investment in capital assets
- be able to compare the government with other governments.³

³ GASB. Statement No. 34, Preface.

The Governmental Reporting Components

[Figure 13-1](#) provides an overview of the elements of governmental financial reporting. There are three main sections to a government's financial report: MD&A, BFS, and required RSI (other than the MD&A). In turn, there are three sections to the basic financial statements: government-wide financial statements, fund financial statements, and notes to the financial statements. There are two government-wide financial statements: *the statement of net position*⁴ and the *statement of activities*. There are three groupings of fund financial statements: governmental funds, proprietary funds, and *fiduciary funds* and component units. Each of these elements of governmental financial reporting is discussed below.

⁴ For financial statements prior to 2012, this was referred to as a statement of net assets. In 2011, Statement No. 63 of the GASB, "Financial Reporting of Deferred Outflows of Resources, Deferred Inflows of Resources, and Net Position," changed this statement to a *statement of net position*.

Figure 13-1 Governmental Reporting Components



Management'S Discussion and Analysis

To best achieve the objectives of financial reporting, GASB requires that managers provide a discussion placed before the financial statements. Because MD&A is not a part of the financial statements themselves, it is considered supplementary information. Because it is required, it must accompany the financial statements to have a presentation that complies with GAAP. According to GASB:

MD&A should provide an objective and easily readable analysis of the government's financial activities based on currently known facts, decisions, or conditions.... It should provide an analysis of the government's overall financial position and results of operations to assist users in assessing whether that financial position has improved or deteriorated as a result of the year's activities. MD&A should conclude with a description of currently known facts, decisions, or conditions that are expected to have a significant effect on financial position or the results of operations.⁵

⁵ GASB. Statement No. 34, Summary.

To make the MD&A as useful as possible, the inclusion of graphs, charts, and tables is appropriate. It is up to the managers who are preparing the document to include the most relevant information and to be creative in providing an MD&A that achieves the goals of the document rather than following a rigid format that might exclude important information.

Basic Financial Statements

The BFS for governmental organizations include two major categories: government-wide financial statements and fund financial statements. The basic financial statements also include notes to the financial statements, as is required for all types of organizations (see [Figure 13-1](#)).

Government-Wide Financial Statements

There are two government-wide financial statements: the statement of net position and a statement of activities (see [Figure 13-1](#)). These statements are reported on the accrual basis of accounting, which is the same basis required for health and not-for-profit financial statements that are prepared in accordance with GAAP. They provide information about the government as a whole.

Most governments are complex organizations. Various agencies, districts, and authorities may be part of the government, or they may be legally separate entities. But even if they are separate, the government may have financial responsibility for them. When a town, city, county, or state government issues financial statements, should all commissions, subgovernments, agencies, and authorities be included or excluded? What entities should be included in a government's financial statements?

The key to these questions is the reporting entity. Financial statements can convey meaningful information only if we know what makes up the entity being reported on. Generally, the reporting entity includes the *primary government*, all organizations for which the primary government is financially accountable, and certain other organizations.

The primary government is defined as being a state or local governmental body that has a separately elected governing body and is legally and financially separate from other governments.

In preparing government-wide financial statements, the focus is on the primary government. It is shown separately from its *component units*, but information for both the primary government and the component units is provided in the statements. Component units are governmental bodies that are legally separate from the primary government. However, the controlling majority of the component unit's governing body is appointed by the primary government, and there is some close financial relationship between the primary government and the component unit. For instance, the primary government might be obligated to pay any debts of a component unit if it cannot make payment, or the primary government might be able to impose its will on a component unit.

For example, suppose that a city's airport is established as a legally separate entity. However, assume that the city appoints the controlling majority of the airport board and the city is legally responsible for the airport's debt. The airport is reported as a component unit. Clearly, if the debt were substantial, it would be misleading for the city to fail to disclose information about this component unit. See the additional discussion of component units in Box 13-1.

Government-wide statements also provide separate columns to distinguish between activities of the primary government that are governmental versus those that relate to business-type activities. Providing education, police protection, and social services are considered basic governmental functions. A golf course is generally

considered a business-type activity because it is usually run like a private business. Prices are set with the intention of at least covering costs. The business is financed primarily or entirely by user fees rather than by taxing the general public.

It is beneficial to separate governmental from business-type activities because users of financial reports might have substantially different expectations for the financial results of governmental versus business-type activities. For example, deficits in governmental activities subsidized by profits from business-type activities would almost certainly be considered to be a more acceptable outcome than the reverse.

Box 13-1 Fundraising Organization Component Units

Sometimes fundraising organizations may be component units of governments. If so, they must be included in the financial statements of the primary government. Such organizations generally must be considered component units of the primary government if they generate and hold economic resources that are intended to directly benefit of governmental unit.

Public colleges and universities often have fundraising arms. The same is true of many public healthcare organizations. These fundraising organizations may appear at first glance to be separate entities. Until recently, they were not always included in the financial statements of the governmental body. However, under current rules even an organization that is a legally separate, tax-exempt entity must be included as a component unit if the resources it generates are almost entirely for the benefit of the government unit (such as a public university), if it has the ability to access or use most of the resources of the entity, and if the amount of resources involved is significant to the primary government.

Statement of Net position.

The government-wide statement of net position is similar to a traditional balance sheet. On this statement, the government equivalent of owners' equity is referred to as net position. Although the statement contains the same information as a balance sheet, the recommended format is the following form of the fundamental equation of accounting⁶:

⁶. Deferred outflows of resources should be reported separately from assets, and deferred inflows of resources should be reported separately from liabilities. Assets and deferred outflows of resources may be subtotaled, and liabilities and deferred inflows of resources may be subtotaled. Alternatively, a balance sheet format may be used, where Assets + Deferred Outflows of Resources = Liabilities + Deferred Inflows of Resources + Net Position.

Assets + Deferred Outflows of Resources – Liabilities – Deferred Inflows of Resources = Net Position

That is, assets would be presented at the top of the statement. Then, *deferred outflows of resources* would be added to assets, and liabilities and *deferred inflows of resources* would be subtracted to arrive at net position. Deferred outflows of resources represent the consumption of resources by the government that is applicable to a future reporting period, while deferred inflows of resources represent the acquisition of resources by the government that is applicable to a future reporting period.⁷ This helps to emphasize the governmental focus on resources that are available to the government. See [Exhibit 13-1](#) for a sample statement of net position for the fictional Smith City.⁸ For illustrative purposes, the exhibit includes a row for deferred outflows of resources even though Smith City does not have any deferred outflows of resources.

⁷. GASB, Summary of Concepts Statement No. 4.

⁸. Note that assets and liabilities have been divided into current and noncurrent (long-term) sections in [Exhibit 13-1](#). This approach is referred to as a classified statement of net position. This approach is permissible but not required (GASB, Statement No. 34, para. 31).

Smith City Statement of Net Position As of June 30, 2018				
	Primary Government			Component Units
	Governmental Activities	Business-Type Activities	Total	
Assets				
Current assets				
Cash and cash equivalents	\$ 8,198,980	\$ 7,361,774	\$ 15,560,754	\$ 212,755
Investments	11,588,438	45,203	11,633,641	5,200,266
Receivables, net	8,983,192	2,526,731	11,509,923	2,829,603
Internal balances	219,638	(219,638)	—	—
Inventories	225,504	88,672	314,176	58,588
Total current assets	<u>\$ 29,215,753</u>	<u>\$ 9,802,741</u>	<u>\$ 39,018,494</u>	<u>\$ 8,301,212</u>
Noncurrent assets				
Restricted cash and cash equivalents	\$ 8,886,765	\$ —	\$ 8,886,765	\$ —
Equity interest in joint venture	1,612,279	—	1,612,279	—
Capital assets				
Land and construction-in-progress	19,904,518	4,485,705	24,390,223	525,867
Buildings, equipment, and infrastructure, net of depreciation	<u>99,111,415</u>	<u>101,486,421</u>	<u>200,597,835</u>	<u>25,895,483</u>
Total noncurrent assets	<u>\$129,514,976</u>	<u>\$105,972,126</u>	<u>\$235,487,102</u>	<u>\$26,421,350</u>
Total Assets [A]	<u>\$158,730,729</u>	<u>\$115,774,867</u>	<u>\$274,505,596</u>	<u>\$34,722,562</u>
Deferred Outflows of Resources [B]	<u>\$ —</u>	<u>\$ —</u>	<u>\$ —</u>	<u>\$ —</u>
Liabilities				
Current liabilities				
Accounts payable	\$ 5,276,980	\$ 550,789	\$ 5,827,770	\$ 1,262,332
Current portion of long-term liabilities	<u>6,465,200</u>	<u>3,098,400</u>	<u>9,563,600</u>	<u>998,647</u>
Total current liabilities	<u>\$ 11,742,180</u>	<u>\$ 3,649,190</u>	<u>\$ 15,391,370</u>	<u>\$2,260,980</u>
Noncurrent liabilities				
Noncurrent portion of long-term liabilities	<u>58,311,665</u>	<u>52,137,591</u>	<u>110,449,256</u>	<u>18,974,306</u>
Total Liabilities [C]	<u>\$ 70,053,845</u>	<u>\$ 55,786,781</u>	<u>\$ 125,840,625</u>	<u>\$ 21,235,285</u>
Deferred Inflows of Resources				
Prepaid property taxes	<u>\$ 1,004,919</u>	<u>\$ —</u>	<u>\$ 1,004,919</u>	<u>\$ 27,238</u>
Total Deferred Inflows of Resources [D]	<u>\$ 1,004,919</u>	<u>\$ —</u>	<u>\$ 1,004,919</u>	<u>\$ 27,238</u>
Net Position				
Net investment in capital assets	\$ 72,597,970	\$ 51,162,002	\$ 123,759,972	\$ 11,134,474
Restricted for:				
Transportation and new city hall project	7,459,016	—	7,459,016	—
Debt service	2,153,780	1,016,397	3,170,178	—
Low income housing and industrial redevelopment	4,791,940	—	4,791,940	—
Other purposes	1,038,371	—	1,038,371	344,712
Unrestricted (deficit)	<u>(369,112)</u>	<u>7,809,687</u>	<u>7,440,575</u>	<u>1,980,853</u>
Total Net Position [A + B – C – D]	<u>\$ 87,671,966</u>	<u>\$ 59,988,086</u>	<u>\$ 147,660,052</u>	<u>\$ 13,460,030</u>

Exhibit 13-1

Source: Based on Dean Michael Mead. "Figure 1: Government-Wide Statement of Net Position," *What You Should Know About Your Local Government's Finances: A Guide to Financial Statements*, 2nd ed. Norwalk, Conn.: GASB, 2011, p. 8.

Note: Row and column totals may not equate due to rounding.

In the Assets section of [Exhibit 13-1](#), there is a heading for Capital assets. Included under the heading are land and construction-in-progress, and also buildings, equipment, and infrastructure. Note that land and construction-in-progress are assets that are not depreciated. *Infrastructure* assets are stationary assets with extremely long lifetimes, including bridges, tunnels, dams, roads, and similar assets. Such assets last longer than buildings and equipment. Buildings would be considered infrastructure only if they are part of an infrastructure network, such as a building attached to a dam project. In general, governmental capital assets are depreciated in the government-wide statements in a manner similar to that used by other organizations.

As an alternative to depreciation, a modified approach is allowed for reporting some infrastructure. The infrastructure would have to be a network or part of a network, such as a sewer system. To use the modified approach, the government would have to establish a level of condition at which it intends to maintain the infrastructure and document that the infrastructure is being maintained in that level of condition. It would

also have to provide an estimate of the annual cost of preserving or maintaining the infrastructure at the condition level specified.⁹

⁹ One might expect that the government would incur maintenance expense instead of depreciation expense, but that is not explicitly called for by the reporting requirements. See GASB Statement No. 34, paras. 22–26, 132–133, 148–166, and 335–342, for further details.

The Net Position section of the statement of net position ([Exhibit 13-1](#)) must be divided into three subcategories: (1) Net investment in capital assets, (2) Restricted, and (3) Unrestricted. The first of these subcategories consists of all capital assets, less accumulated depreciation and less the outstanding balance of any debt related to them.

For example, suppose that the town of Millbridge purchased new buses for \$2,000,000, paying one quarter in cash and borrowing the balance on a 10-year mortgage. At the date of acquisition, the Assets section of the statement of net position would include \$2,000,000 for the bus capital asset, the Liabilities section would include \$1,500,000 for the mortgage liability on the buses, and the Net Investment in Capital Assets section of Net Position would include \$500,000, which is the town's equity in the buses. Each year, the balance in this section of Net Position would be adjusted for the depreciation on the buses and for the change in the mortgage payable balance.¹⁰

¹⁰ That is, depreciation would reduce the net value of the capital asset, reducing net position, but repayment of the mortgage would offset at least part of the reduction.

The second section of Net Position is Restricted net position. Net position is considered restricted for reporting purposes on this statement if restrictions have been imposed by creditors, grantors, donors, law, or regulation.¹¹

¹¹ If some of the restricted net position is a permanent endowment, then this section of net position would have to be further subdivided to show the *nonspendable* portion.

The last section of Net Position, Unrestricted net position, is the net position balance. This would be the amount that does not have to be classified in either of the other two categories. Internal designations of intended use do not constitute restrictions. Thus, if management intends to use some of its net position for a particular purpose, it would still be classed as unrestricted net position unless legislation had been enacted, placing a legal restriction on its use.

Statement of Activities.

The second government-wide financial statement is the *statement of activities*. See [Exhibit 13-2](#) for an example of this statement. This statement provides information about the revenues and expenses of the government as a whole as well as other changes in net position. Looking at the headings on the left, one can see that the top half of the statement breaks down information by function or program. These functions or programs are divided between the primary government and the component units. Within the primary government, the

information is further broken down by type of governmental activity and type of business-type activity.

Smith City Statement of Activities For the Year Ending June 30, 2018								
Functions/Programs	Program Revenues				Net (Expense) Revenue and Changes in Net Position			Component Units
	Expenses	Operating		Capital	Primary Government		Total	
		Charges for Services	Grants and Contributions	Grants and Contributions	Governmental Activities	Business- Type Activities		
Primary Government								
Governmental activities								
General government	\$ 6,796,656	\$ 2,333,286	\$ 590,532	\$ —	\$ (3,872,839)		\$ (3,872,839)	
Fire and police	24,347,501	839,199	915,385	43,610	(22,549,307)		(22,549,307)	
Public works	7,092,350	595,000	—	1,576,831	(4,920,519)		(4,920,519)	
Engineering services	909,752	493,355	—	—	(416,396)		(416,396)	
Health	4,693,973	3,928,587	402,500	—	(362,886)		(362,886)	
Cemetery	515,106	148,747	50,882	—	(315,477)		(315,477)	
Parks and recreation	8,073,832	2,796,639	1,715,000	—	(3,562,192)		(3,562,192)	
Industrial redevelopment	2,096,072	—	—	1,806,000	(290,072)		(290,072)	
Education	15,325,291	—	—	—	(15,325,291)		(15,325,291)	
Interest on long-term debt	4,370,025	—	—	—	(4,370,025)		(4,370,025)	
Total governmental activities	\$74,220,557	\$11,134,813	\$3,674,290	\$3,426,441	\$55,985,005		\$55,985,005	
Business-type activities								
Sewer treatment	\$ 2,550,321	\$ 2,911,545	\$ —	\$811,936	\$ —	\$1,173,161	\$ 1,173,161	
Garbage collection	3,436,920	5,019,373	—	340,207	—	1,922,661	1,922,661	
Recreation	1,977,058	1,014,908	—	—	—	(962,749)	(962,749)	
Total business-type activities	\$ 7,964,298	\$ 8,945,227	\$ —	\$1,152,143	\$ —	\$2,133,072	\$ 2,133,072	
Total Primary Government	\$82,184,855	\$20,080,039	\$3,674,290	\$4,578,584	\$55,985,005	\$2,133,072	\$53,851,932	
Component Units								
Landfill	\$ 2,367,510	\$ 2,700,501	\$ —	\$ 7,978				\$ 340,969
Public schools	21,830,549	494,036	2,755,958	—				(18,580,555)
Total Component Units	\$24,198,059	\$ 3,194,536	\$2,755,958	\$ 7,978				\$18,239,586
General Revenues								
Taxes								
Property taxes, levied for general purposes					\$36,185,501	\$	\$ 36,185,501	\$ —
Property taxes, levied for debt service					3,308,371	—	3,308,371	—
Franchise taxes					2,838,854	—	2,838,854	—
Public service taxes					6,278,921	—	6,278,921	—
Payment from Pottell Township					—	—	—	15,325,291
Grants and contributions not restricted to specific programs					1,020,474	—	1,020,474	4,523,196
Unrestricted investment earnings					1,319,819	433,991	1,753,809	618,994
Other					619,435	—	619,435	13,065
Special item—gain on sale of parking deck					1,857,442	—	1,857,442	—
Transfers					350,986	(350,986)	—	—
Total general revenues, special items, and transfers					\$53,770,802	\$ 83,005	\$ 53,862,806	\$ 20,481,446
Change in Net Position					\$2,205,203	\$ 2,216,077	\$ 10,874	\$ 2,241,859
Net position—beginning					89,877,169	57,772,000	147,649,178	11,218,180
Net position—ending					\$87,671,966	\$59,988,096	\$147,660,052	\$13,460,039

Exhibit 13-2

Source: Based on Dean Michael Mead. "Figure 3: Government-Wide Statement of Activities," *What You Should Know About Your Local Government's Finances: A Guide to Financial Statements*, 2nd ed. Norwalk, Conn.: GASB, 2011, p. 20.

Note: Row and column totals may not equate due to rounding.

In [Exhibit 13-2](#), the first column of numbers shows the expenses related to each activity. Some governments may choose to allocate expenses from some functions to other functions. For example, the general government might process payroll for many of the other parts of the government. To get a better sense of the cost to operate each of those other functions or programs, it might be appropriate to allocate some of the cost of the payroll to them. If such allocation is done, direct and indirect expenses should be shown in two separate columns. This facilitates comparison of expenses with those of other governments that do not allocate indirect expenses.

Depreciation is generally treated as a direct expense. It would therefore be included in the expenses of each function. Infrastructure depreciation should be included in the direct expenses of the function that would

normally be responsible for the acquisition and maintenance of the infrastructure, such as a public works or transportation department.

In the statement of activities, revenues are either associated directly with functions in the top part of the statement or included in general revenues and other changes in net position in the bottom part. In [Exhibit 13-2](#), revenues that can be directly associated with functions appear in the second, third, and fourth columns of numbers, in the top part of the statement. All other revenues would appear in the first two columns of the bottom part of the statement.

Governmental revenues come from four primary sources: (1) taxes, (2) user fees, (3) intergovernmental grants and other outside organizations, and (4) the government itself (e.g., earnings on investments). Taxes are always treated as general revenue, even if their use is limited to a particular program. Therefore, all tax revenue is shown in the bottom part of the statement. User fees are always associated with a particular program and shown in the top part of the statement. Intergovernmental grants and other revenue from outside organizations are treated as general revenue unless they are restricted in use to a particular program. Revenue from the government itself is typically considered general revenue.

The second through fourth columns of numbers in the top part of [Exhibit 13-2](#) indicate the revenues related to each activity, under the broad heading of Program Revenues. Under that heading, the three columns indicate the amount of revenue from charges for services, operating grants and contributions, and capital grants and contributions.

The Charges for Services column includes user fees. These revenues result from exchange transactions. An exchange transaction is one in which goods or services are provided in exchange for money or other consideration approximately equal in value to the goods or services. For example, a toll to use a bridge or a charge to use a county ice rink would be a user fee or charge, and the use of the bridge and/or ice rink would be considered an exchange transaction.

The Grants and Contributions columns include revenues that are not the result of an exchange and are restricted to use for specific programs. If the grants and contributions are to be spent to pay for operating costs, they would appear in the third column of the exhibit (Operating Grants and Contributions). If they are intended to pay for capital assets (e.g., buildings, equipment, land, infrastructure) then they would appear in the fourth column of numbers (Capital Grants and Contributions).

This creates a curious anomaly. Since this statement is prepared on the accrual basis, the expense column does not include the full cost of capital assets. Rather, it includes only 1 year's worth of depreciation expense.

However, the full capital grant is treated as current period revenue. For example, suppose that a state government made a capital grant of \$4 million to pay for a town's new police station. Assume that the police station will be depreciated over 40 years. One could reasonably argue that under accrual accounting, only \$100,000 (i.e., 1/40) of the capital grant should be treated as revenue each year, because that will match the amount of expense that is included in the town's activity statement. The remainder would be a deferred inflow of resources. The requirement to show the full capital grant as revenue might mislead the financial statement

user about the typical annual financial results of the town's police department, which is unlikely to receive a \$4 million capital grant each year. Nevertheless, the full grant is recorded as revenue, and only 1 year's worth of depreciation is recorded as an expense, under GAAP.

In the top part of [Exhibit 13-2](#), the information from the first four columns of numbers is summarized in the remaining four columns. These four columns on the right side of the exhibit indicate whether expenses exceed direct revenues and whether the function is governmental, business-type, or component unit in nature.

The difference between the revenues and expenses is referred to as the net revenue or net expense. The overall heading for these four columns on the right side of the exhibit is Net (Expense) Revenue and Changes in Net Position. If expenses are greater than revenues, the net amount is shown in parentheses. Such activities draw on the government's general revenues—they are not financially self-sustaining based on their direct revenues. Activities with revenues exceeding expenses are net contributors providing the government with more resources than they consume. The net revenue or expense for the governmental activities is shown in the first of these four columns, while the net for the business-type activities is shown in the second. Those two columns are then combined in the third of the four columns to get the totals for the primary government. The net revenue or expense of the component units is shown in the last column in [Exhibit 13-2](#).

One of the goals of governmental financial reporting is to allow the user to have a sense of which services are funded by general revenues versus which governmental activities are largely self-financing as a result of fees or intergovernmental aid. The format in the top part of [Exhibit 13-2](#) allows the user to quickly get a sense of the extent to which functions are self-financing. In the case of Smith City, it is apparent that the governmental activities generate revenues that are only a small portion of their expenses. The total expenses for governmental activities were just over \$74 million (taken from the first column of numbers in the exhibit). The net expense of the governmental activities was approximately \$56 million (see the Total governmental activities row of the fifth column in the exhibit). That \$56 million must be covered by general revenues, special items, and transfers, or the government will have a deficit from its governmental activities. A large net expense for governmental activities would be typical for most state and local governments.

By contrast, we see that the business-type activities are more than self-sustaining. Smith City has three identifiable activities handled on a business-type basis: sewer treatment, garbage collection, and recreation. From the sixth column of numbers in the exhibit (headed Business-Type Activities), we see that the sewer treatment and garbage collection activities had net revenue; they earned a surplus on a direct revenue and expense basis. Exercise care in interpreting this surplus. We can see from the fourth column of numbers in the activity statement that there were approximately \$1.15 million of capital grants and contributions for sewer treatment and garbage collection. These were undoubtedly restricted for capital acquisitions and would not be available to pay for operating expenses. Recreation had nearly \$1 million more in expenses than revenues. In total, however, the revenues of business-type activities exceeded their costs, even if the capital grants are subtracted. Such information might be of particular interest to some users of the statement. Part of that surplus could be used to help offset the \$56 million by which governmental activity costs exceeded revenues.

The bottom part of the statement shows other information about the changes in net position of the

government. The first item listed is general revenues. All taxes are considered to be general revenues. Therefore, even if a portion of the property tax is specifically restricted to be used for education, it is included in the general revenues category in the bottom part of the statement.¹² Taxes are reported separately by type.

¹² Some, including the authors of this text, would argue that a tax whose revenue is restricted for education should be shown as revenue in the top half of the statement, on the line for the education function. However, GASB decided to treat them as general revenues "based on the belief that tax revenues that are raised by the government through its own powers and that are earmarked or restricted for use in a program (as distinct from charges to program customers or applicants for services) should not be regarded as reducing the net cost of the program to be financed from general revenue sources. Rather, it is more meaningful to regard such taxes as one of the sources of general revenues through which the government finances the net cost of the program" (GASB Statement No. 34, para. 374).

Other government sources of financing (e.g., endowment contributions, *extraordinary items*, special items, transfers between governmental and business-type funds) are also reported in this part of the statement. Intergovernmental grants are a large source of revenue for many governments. If they are restricted for use in a specific program, they would appear in the Program Revenues columns in the top part of the statement. If they are not restricted, they would appear in the Governmental Activities column in the bottom part of the statement.

Extraordinary items are unusual *and* infrequent items. For example, the Joplin, Missouri, city government's costs related to a devastating tornado in 2011 were an extraordinary item because it was both an unusual and infrequent occurrence. Extraordinary items need not be natural disasters, however. For instance, in 2013 many city and county governments in California reported extraordinary losses due to the dissolution of the state's Redevelopment Agencies in 2012.

Special items are unusual *or* infrequent items that are within the control of government. For example, if a government had a large gain on the sale of a building or a piece of land, it would be treated as a special item if such sales are unusual or infrequent, and within the control of the government. In [Exhibit 13-2](#), in the bottom part of the statement, below General revenues, we see that Smith City sold a parking deck, and the profit on the sale was reported as a special item.

Separate reporting of extraordinary and special items is quite beneficial. It allows users of the financial statements to compare usual, recurring revenues and expenses from year to year. It also allows examination of whether the government's ordinary operating activities for a given year are generating an increase or a decrease in net position. Separating one-shot revenues, gimmicks, or other atypical changes in net position is done so that the financial statements are less likely to mislead users.

Similarly, the information from showing transfers as a separate category in the statement of activities is quite valuable. Transfers represent the movement of resources from one fund to another. In [Exhibit 13-2](#), the government's business-type activities transferred \$350,986 to the governmental activities. We see this as both an increase in the Governmental Activities column and a decrease in the Business-Type Activities column.

The requirement to report contributions, special items, extraordinary items, and transfers separately from the information in the top part of the statement provides the user with an ability to gain greater insight regarding the financial results of the routine, continuing operations of the government.

From the Change in Net Position line near the bottom of [Exhibit 13-2](#), in the Total column, we see that even after the inclusion of general revenues, Smith City had a very modest \$10,874 increase in net position for the year ending June 30, 2018. It would appear that the city had to sell a parking deck to avoid having a deficit for the year. The very last line in the [Exhibit 13-2](#) statement of activities for Smith City is Net position—ending. Note that there are exactly the same amounts as the total net position in the last line of the [Exhibit 13-1](#) statement of net position.

Fund Financial Statements

The next element of the basic financial statements is a set of fund financial statements (see [Figure 13-1](#)). A separate set of fund financial statements is prepared for the governmental funds, *proprietary funds*, and fiduciary funds. Fund financial statements are required in addition to government-wide statements. This is somewhat controversial. Some individuals argue that these statements do not provide enough valuable information to be worth requiring. Others argue that the fund financial statements may provide better ability to determine compliance with finance-related laws, rules, and regulations; find information about the sources and uses of financial resources; and assess the management of short-term resources.

Governmental funds.

Recall that governmental funds are the typical funds used to operate most governments. These include the *general fund*, *special revenue funds*, *capital projects funds*, *debt service funds*, and *permanent funds*. A separate set of fund financial statements must be provided for the governmental funds of the primary government. These statements use information recorded on the modified accrual basis of accounting. The required statements are a balance sheet and a statement of revenues, expenditures, and changes in fund balances. See [Exhibits 13-3](#) and [13-4](#) for examples of governmental funds financial statements for Smith City. Note that *fund balance* is equivalent to owners' equity, net assets, or net position. It is often used when reporting for a fund or funds.

Exhibit 13-3

Smith City Balance Sheet—Governmental Funds As of June 30, 2018						
	General Fund	New City Hall Project	Low-Income Housing	Industrial Redevelopment	Other Governmental Funds	Total Governmental Funds
Assets						
Cash and cash equivalents	\$2,392,940	\$ 865,566	\$ —	\$ —	\$3,924,754	\$ 7,183,260
Investments	—	—	9,283,887	7,326,926	2,439,676	19,050,489
Taxes receivable, net	2,665,116	2,067,407	247,338	7,700	7,155	4,994,715
Due from other funds	959,530	—	—	—	—	959,530
Receivables from state government	440,425	83,341	—	—	1,117,227	1,640,993
Property receivable	—	2,237,022	—	—	—	2,237,022
Inventories	127,975	—	—	—	—	127,975
Total Assets	\$6,585,985	3	\$9,531,225	\$7,334,626	\$7,488,812	\$36,193,983
Liabilities						
Accounts payable	\$2,386,076	\$ 90,983	\$ 133,384	\$ 773,242	\$ 752,382	\$ 4,136,066
Due to other funds	—	17,758	—	—	—	17,758
Payable to other governments	65,852	—	—	—	—	65,852
Matured bonds and interest payable	—	—	—	—	—	—
Total Liabilities	\$2,451,928	\$ 108,741	\$ 133,384	\$ 773,242	\$ 752,382	\$ 4,219,676
Deferred Inflows of Resources						
Prepaid property taxes and other deferred inflows of resources	2,975,301	4,391,132	175,000	7,700	—	7,549,133
Total Deferred Inflows of Resources	\$2,975,301	\$4,391,132	\$ 175,000	\$ 7,700	\$ —	\$ 7,549,133
Fund balances						
Nonspendable						
Inventories and noncurrent receivables	\$156,179	\$ —	\$ —	\$ —	\$ —	\$ 156,179
Permanent fund principal	—	—	—	—	458,025	458,025
Restricted for:						
Public safety programs	54,661	—	—	—	—	54,661
New City Hall Project and Low-Income Housing	—	724,739	9,222,841	—	—	9,947,580
Debt service	—	—	—	—	2,682,443	2,682,443
Transportation and Industrial Redevelopment	676,318	—	—	4,054,811	2,720,187	7,451,316
Cemetery perpetual care	—	—	—	—	525,685	525,685
Committed for:						
Transportation and New City Hall Project	69,859	28,724	—	2,498,873	217,174	2,814,629
Parks and recreation	23,380	—	—	—	9,016	32,396
Assigned to:						
Parks and recreation	—	—	—	—	123,900	123,900
Unassigned	178,359	—	—	—	—	178,359
Total fund balances	\$1,158,756	\$ 753,463	\$9,222,841	\$6,553,684	\$6,736,430	\$24,425,174
Total Liabilities, Deferred Inflows of Resources, and Fund Balances	\$6,585,985	\$5,253,336	\$9,531,225	\$7,334,626	\$7,488,812	\$36,193,983
Amounts reported for governmental activities in the statement of net position are different because:						
Capital assets used in governmental activities are not financial resources and therefore are not reported in the funds.						112,757,897
Other long-term assets are not available to pay for current-period expenditures and therefore are deferred in the funds.						6,544,213
The city has an equity interest with Nearby City in the Joint Sewerage Facility upgrade project. That equity is not reported in the funds.						1,612,279
Internal service funds used by management to charge the cost of certain activities, such as communications, power, and heat, to individual funds.						2,193,421
Some liabilities, including bonds payable, are not due and payable in the current period and therefore are not reported in the fund.						(50,861,018)
Net position of governmental activities						\$ 87,671,966

Source: Based on Dean Michael Mead. "Figure 4: Governmental Funds Balance Sheet," *What You Should Know About Your Local Government's Finances: A Guide to Financial Statements*, 2nd ed. Norwalk, Conn.: GASB, 2011, p. 34.

Note: Row and column totals may not equate due to rounding.

Smith City Statement of Revenues, Expenditures, and Changes in Fund Balances—Governmental Funds For the Year Ending June 30, 2018						
	General Fund	New City Hall Project	Low-Income Housing	Industrial Redevelopment	Other Governmental Funds	Total Governmental Funds
Revenues						
Property taxes	\$35,821,405	\$ —	\$ —	\$ —	\$ 3,276,134	\$ 39,097,540
Local sales taxes	2,838,854	—	—	—	—	2,838,854
Licenses	6,278,921	—	—	—	—	6,278,921
Fees and fines	424,862	—	—	—	—	424,862
Investment earnings	1,601,456	—	—	—	—	1,601,456
Intergovernmental	4,283,957	1,804,734	—	—	1,981,641	8,070,332
Charges for services	7,962,122	—	—	—	21,496	7,983,618
Permits	386,628	60,974	384,642	189,113	255,031	1,276,388
Miscellaneous	617,312	46,323	—	2,057	66	665,758
Total Revenues	\$60,215,516	\$1,912,031	\$ 384,642	\$ 191,170	\$ 5,534,368	\$ 68,237,727
Expenditures						
Current						
General government	\$ 6,041,585	\$ —	\$ 292,470	\$ 11,600	\$ 84,736	\$ 6,430,481
Fire and police	23,610,736	—	—	—	—	23,610,736
Public works	3,483,043	—	—	—	2,605,079	6,088,122
Road engineering services	909,752	—	—	—	—	909,752
Sanitation	4,249,022	—	—	—	—	4,249,022
Cemetery	404,414	—	—	—	—	404,414
Parks and recreation	7,988,180	—	—	—	—	7,988,180
New City Hall Project	—	2,068,072	—	—	—	2,068,072
Education—payment to school district	15,325,291	—	—	—	—	15,325,291
Debt service						
Principal	—	—	—	—	2,415,000	2,415,000
Interest and other charges	—	—	329,308	—	3,650,606	3,979,914
Capital outlay	—	—	1,572,670	7,897,238	2,233,146	1 1,709,054
Total Expenditures	\$62,102,021	\$2,068,072	\$ 2,194,448	\$ 7,908,928	\$10,968,568	\$ 85,262,037
(Deficiency) of Revenues Over Expenditures	\$(1,886,506)	\$(156,041)	\$(1,809,806)	\$(7,717,758)	\$(5,454,200)	\$(17,024,310)
Other Financing Sources (Uses)						
Refunding bonds issued	\$ —	\$ —	\$ —	\$ —	\$26,631,500	\$ 26,631,500
Capital-related debt issued	—	—	12,600,000	—	910,000	13,510,000
Payment to bond refunding escrow agent	—	—	—	—	(26,098,901)	(26,098,901)
Transfers in	90,526	—	—	—	3,885,831	3,976,357
Transfers out	(1,514,631)	(243,632)	(1,591,231)	—	(153,353)	(3,502,848)
Total Other Financing Sources and Uses	\$(1,424,105)	\$243,632	\$11,008,769	\$ —	\$ 5,175,077	\$ 14,516,109
Special Item						
Proceeds from sale of parking deck	\$ 2,433,542	\$ —	\$ —	\$ —	\$ —	\$ 2,433,542
Total Other Financing Sources (Uses) and Special Items	\$ 1,009,436	\$(243,632)	\$11,008,769	\$ —	\$ 5,175,077	\$ 16,440,650
Net Change in Fund Balances	\$ (877,060)	\$ (309,673)	\$ 9,198,964	\$(7,717,758)	\$ (279,123)	\$ (74,660)
Fund balances—beginning	2,035,825	1,153,137	23,877	14,271,442	7,015,553	2 4,409,834
Fund balances—ending	\$ 1,158,756	\$ 753,463	\$ 9,222,841	\$ 6,553,684	\$ 6,736,430	\$ 24,425,174

Exhibit 13-4

Source: Based on Dean Michael Mead. "Figure 5: Governmental Funds Statement of Revenues, Expenditures, and Changes in Fund Balances," *What You Should Know About Your Local Government's Finances: A Guide to Financial Statements*, 2nd ed. Norwalk, Conn.: GASB, 2011, p. 41.

Note: Row and column totals may not equate due to rounding.

Some funds can be grouped together in these statements. However, *major funds* are reported individually in their own columns. The general fund is always treated as a major fund. It is the fund used for most of the government's routine activities and is essential in every government. In addition, funds that represent a substantial portion of the assets, liabilities, revenues, or expenditures/expenses of their class or type of fund are also considered to be major funds.¹³ Governments may also treat any other fund as a major fund if they believe the extra information would be valuable to users of the BFS.

¹³ Specifically, according to GASB Statement No. 37, major funds are those that are at least 10 percent of the revenues, expenditures/expenses, assets, or liabilities of all funds of their type or category (e.g., all

governmental funds) and *also* exceed 5 percent of that element (e.g., revenues) for all governmental and enterprise funds in aggregate. Enterprise funds are discussed subsequently in the "Proprietary Funds" section.

For example, in [Exhibits 13-3](#) and [13-4](#), in addition to the general fund there are also individual columns for New City Hall Project, Low-Income Housing, and Industrial Redevelopment, each of which is a major fund. Next comes a summary column for all other governmental funds and a totals column. Requiring disclosure of major funds allows users of the statement to immediately see things such as the money being put aside for the Industrial Redevelopment project.

Notice in [Exhibit 13-3](#), the balance sheet, that fund balances are divided into *nonspendable*, *restricted*, *committed*, *assigned*, and *unassigned*¹⁴ amounts. The nonspendable amount includes those assets that are not in spendable form. This would include items such as inventories and long-term receivables. It also includes amounts legally required to be maintained intact, such as endowments. Restricted amounts are those that have been restricted externally by donors, grantors, creditors, or laws passed by other governments, or restricted internally by laws passed by the government itself. *Committed amounts* represent constraints imposed by the government's highest decision-making authority. Assigned amounts are those that are to be used for specific purposes based on a decision of someone who has the authority to do so, and the remaining balance of the fund balance is unassigned. Notice, in [Exhibit 13-3](#), that some of the restricted fund balance is listed as being in each of the columns. This is because some of the amounts for each of these funds has been restricted as to its use, either by outsiders or by laws that the government has passed. Since the balance sheet provides only summary information about the funds, this treatment allows the user to better understand which types of governmental funds have positive or negative fund balances and their amount.

[14.](#) See GASB Statement No. 54.

In contrast with the government-wide financial statements, which are prepared on the accrual basis, the governmental funds statements are prepared on the modified accrual basis. At the bottom of the balance sheet, a reconciliation is provided to explain the differences between this statement and the government-wide statement of net position. In the last column of [Exhibit 13-3](#), Total Governmental Funds, the total fund balance line shows a balance of \$24,425,174. This number is adjusted by the reconciling items at the bottom of the page. For example, [Exhibit 13-3](#) does not include any capital assets, because of their treatment under the modified accrual basis of accounting. This balance sheet does not show any infrastructure, land, buildings, or equipment. The first item in the reconciliation in [Exhibit 13-3](#) is \$112,757,897, which is the impact of recording capital assets under the accrual basis. The very last line in the exhibit shows what the fund balance for total governmental funds would have been if the accrual basis had been used. Note that this amount—\$87,671,966—is exactly the same as the total net position for governmental activities in the first column of numbers in [Exhibit 13-1](#).

The statement of revenues, expenditures, and changes in fund balances (see [Exhibit 13-4](#)) reports revenues by major sources and expenditures in a detailed fashion, at least by function, similar to the government-wide statements. Notice, however, that in this funds statement, both interest payments and principal repayments as well as capital outlays are shown as expenditures. Also, the proceeds from long-term capital-related debt,

listed as another financing source, has the impact of increasing fund balance. This treatment is a result of the use of the modified accrual system for governmental funds financial statements.

Expenditures are subtracted from revenues to arrive at a subtotal, the excess (deficiency) of revenues over expenditures. After this subtotal, other financing sources or uses and special items are shown. The other sources or uses section would include proceeds from long-term debt, as noted previously, and also transfers between funds. In [Exhibit 13-4](#), notice that the total of the transfers into governmental funds of \$3,976,357 differs from the \$3,502,848 total of transfers out of funds. Logically one might expect the transfers between funds to be exactly equal. Keep in mind, however, that this statement reflects only the governmental funds. There are other transfers in the proprietary funds that account for this difference. They are discussed in Appendix 13-A.

The governmental funds financial statements present reconciliations of the fund balances and changes in fund balances to the net position and changes in net position, respectively, of the governmental activities in the government-wide statements. As discussed previously, [Exhibit 13-3](#) includes a reconciliation at the bottom of the statement. However, the reconciliations may be shown separately. For example, [Exhibit 13-4](#) does not provide a reconciliation. Instead, [Exhibit 13-5](#) provides a separate reconciliation to explain the differences between the governmental funds statement of revenues, expenditures, and changes in fund balances and the government-wide statement of activities.

Smith City Reconciliation of the Statement of Revenues, Expenditures, and Changes in Fund Balances of Governmental Funds to the Statement of Activities for the Year Ending June 30, 2018	
Net change in fund balances—total governmental funds	\$ (74,660)
Amounts reported for governmental activities in the statement of activities are different because:	
Governmental funds report capital outlays as expenditures. However, in the statement of activities, the cost of those assets is allocated over their estimated useful lives and reported as depreciation expense. This is the amount by which capital outlays exceeded depreciation in the current period.	9,827,802
In the statement of activities, only the gain on the sale of the parking deck is reported, whereas for governmental funds, the proceeds from the sale increase available financial resources. The change in net position differs from the change in fund balance by the cost of the parking deck.	(576,100)
Revenues in the statement of activities that do not provide current financial resources are not reported as revenues in the funds.	1,344,441
Bond proceeds provide current financial resources to governmental funds, but issuing debt increases long-term liabilities in the statement of net assets. Repayment of bond principal is an expenditure in the governmental funds, but the repayment reduces long-term liabilities in the statement of net position. This is the amount by which proceeds exceeded repayments.	(11,627,590)
Some expenses reported in the statement of activities do not require the use of current financial resources and therefore are not reported as expenditures in governmental funds.	(665,050)
The net revenue (expense) of certain internal service funds is reported with governmental activities.	(434,028)
Change in net position of governmental activities	<u>\$2,205,203</u>

Exhibit 13-5

Source: Based on Dean Michael Mead. “Figure 6: Reconciliation of Net Changes in Governmental Fund Balances to Governmental Activities Changes in Net Position (Separate Page Format),” *What You Should Know About Your Local Government’s Finances: A Guide to Financial Statements*, 2nd ed. Norwalk, Conn.: GASB, 2011, p. 44.

From the Total Governmental Funds column of [Exhibit 13-4](#), we know that the total net change in fund balances was a decrease of \$74,660. This becomes the starting point for [Exhibit 13-5](#). The reconciliation continues with a description of each of the major classes of items that cause the accrual-based government-

wide statement of activities to differ from the governmental funds statement. In the case of Smith City, the two largest reconciling items are the treatment of capital outlays and bond proceeds. The governmental funds treat capital outlays as expenditures, rather than as capital assets, and treat bond proceeds as a source of fund balance, rather than as long-term liabilities. These require adjustments of \$9,827,802 and (\$11,627,599), respectively, as shown in [Exhibit 13-5](#). All of the adjustments together result in a change in net position of governmental activities of (\$2,205,203). Note that this is the same amount as the change in net position of governmental activities reported in [Exhibit 13-2](#).

Proprietary Funds.

Proprietary funds are used to account for activities that are run on a business-like basis. The two types of proprietary funds are *internal service funds* and *enterprise funds*. The fund financial statements that are used for proprietary funds are a statement of net position¹⁵; statement of revenues, expenses, and changes in fund net position; and statement of cash flows. See [Exhibits 13-6](#) through [13-8](#) for examples of these statements for Smith City. Proprietary funds statements are prepared using the accrual basis of accounting and, in most respects, use the accounting approaches of most for-profit industries.¹⁶ There is no need for reconciliations from the proprietary funds statements to the government-wide statements, because the proprietary and government-wide statements are all prepared on an accrual basis of accounting.

¹⁵ The balance sheet format is an acceptable alternative to the statement of net position for proprietary funds.

¹⁶ It would be inappropriate to say proprietary funds use all for-profit GAAP.

Smith City Statement of Net Position Proprietary Funds as of June 30, 2018				
	Business-Type Activities— Enterprise Funds			Internal Service Funds
	Garbage Collection	Golf and Marina	Total	
Assets				
Current assets				
Cash	\$ 5,891,657	\$ 258,418	\$ 6,150,075	\$2,501,643
Investments	—	—	—	150,368
Restricted cash	—	1,045,325	1,045,325	—
Taxes receivables, net	2,495,210	2,475	2,497,685	110,463
Due from state government	29,046	—	29,046	—
Inventories	88,672	—	88,672	97,530
Total current assets	<u>\$ 8,504,585</u>	<u>\$ 1,306,218</u>	<u>\$ 9,810,802</u>	<u>\$2,860,004</u>
Noncurrent assets				
Capital assets				
Land and improvements	\$ 569,459	\$ 2,115,146	\$ 2,684,605	\$ —
Construction-in-progress	1,800,474	—	1,800,474	—
Distribution and collection systems	29,361,628	—	29,361,628	—
Buildings and equipment	70,785,793	16,120,416	86,906,209	10,305,250
Less accumulated depreciation	(10,730,238)	(4,050,552)	(14,780,790)	(4,047,214)
Total noncurrent assets	<u>\$ 91,787,116</u>	<u>\$14,185,010</u>	<u>\$105,972,126</u>	<u>\$6,258,036</u>
Total Assets	<u>\$100,291,701</u>	<u>\$15,491,228</u>	<u>\$115,782,928</u>	<u>\$9,118,040</u>
Liabilities				
Current liabilities				
Accounts payable	\$ 313,199	\$ 212,802	\$ 526,001	\$ 571,187
Due to other funds	122,500	—	122,500	819,272
Compensated absences	78,995	6,179	85,174	166,383
Claims and judgments	—	—	—	1,181,583
Bonds, notes, and loans payable	2,761,226	252,000	3,013,226	174,514
Total current liabilities	<u>\$ 3,275,920</u>	<u>\$ 470,981</u>	<u>\$ 3,746,901</u>	<u>\$2,912,939</u>
Noncurrent liabilities				
Compensated absences	\$ 315,979	\$ 24,714	\$ 340,694	\$ —
Claims and judgments	—	—	—	3,922,030
Bonds, notes, and loans payable	38,116,084	13,680,813	51,796,898	—
Total noncurrent liabilities	<u>\$ 38,432,064</u>	<u>\$13,705,528</u>	<u>\$ 52,137,591</u>	<u>\$3,922,030</u>
Total Liabilities	<u>\$ 41,707,984</u>	<u>\$14,176,509</u>	<u>\$ 55,884,492</u>	<u>\$6,834,969</u>
Net Position				
Net investment in capital assets	\$ 50,909,805	\$ 252,197	\$ 51,162,002	\$6,083,522
Restricted for debt service	—	1,016,397	1,016,397	—
Unrestricted	7,673,912	46,125	7,720,037	(3,800,451)
Total Net Position	<u>\$ 58,583,717</u>	<u>\$ 1,314,719</u>	<u>\$ 59,898,436</u>	<u>\$2,283,072</u>
Some amounts reported for business-type activities in the statement of net position (Exhibit 13-1) are different because certain internal service fund assets and liabilities are included with business-type activities.				
			89,650	
Net position of business-type activities			<u>\$ 59,988,086</u>	

Exhibit 13-6

Source: Based on Dean Michael Mead. "Figure 7: Proprietary Funds Statement of Net Position," *What You Should Know About Your Local Government's Finances: A Guide to Financial Statements*, 2nd ed. Norwalk, Conn.: GASB, 2011, p. 48.

Note: Row and column totals may not equate due to rounding.

Smith City Statement of Cash Flows Proprietary Funds for the Year Ending June 30, 2018				
	Business-Type Activities— Enterprise Funds			Internal Service Funds
	Garbage Collection	Golf and Marina	Total	
Cash Flows From Operating Activities				
User charges	\$ 7,980,140	\$ 941,704	\$ 8,921,844	\$11,763,750
Payments to suppliers	(1,907,744)	(255,596)	(2,163,340)	(2,118,169)
Payments to employees	(2,352,099)	(525,580)	(2,877,618)	(2,946,782)
Payments to other funds	(907,738)	—	(907,738)	(834,348)
Claims paid	—	—	—	(5,937,716)
Other receipts (payments)	(815,902)	—	(815,902)	742,783
Net Cash Provided by Operating Activities	\$ 1,096,718	\$ 160,520	\$ 2,157,247	\$ 669,518
Cash Flows From Noncapital Financing Activities				
Operating subsidies and transfers to other funds	\$ (203,000)	\$ (147,966)	\$ (350,966)	\$ (122,523)
Net Cash (Used) by Noncapital Financing Activities	\$ (203,000)	\$ (147,966)	\$ (350,966)	\$ (122,523)
Cash Flows From Capital and Related Financing Activities				
Capital debt proceeds	\$ 2,828,925	\$ 6,062,545	\$ 8,891,470	\$ —
Capital contributions	340,207	—	340,207	—
Capital asset purchases	(2,935,825)	(101,301)	(3,037,126)	(280,060)
Capital debt principal payments	(1,524,944)	(6,226,500)	(7,751,444)	(667,896)
Capital debt interest payments	(1,035,796)	(816,582)	(1,852,378)	(29,131)
Other receipts (payments)	—	13,422	13,422	91,991
Net Cash (Used) by Capital and Related Financing Activities	\$(2,327,431)	\$(1,068,417)	\$(3,395,848)	\$ (885,096)
Cash Flows From Investing Activities				
Proceeds from sales of investments	\$ —	\$ —	\$ —	\$ 10,979
Interest and dividends	318,355	100,623	418,978	103,732
Net Cash Provided by Investing Activities	\$ 318,355	\$ 100,623	\$ 418,978	\$ 114,710
Net (Decrease) in Cash and Cash Equivalents				
	\$ (215,359)	\$ (955,252)	\$ (1,170,610)	\$ (223,391)
Balances—beginning of the year	6,107,016	2,258,995	8,366,010	2,725,034
Balances—end of the year	\$ 5,891,657	\$ 1,303,743	\$ 7,195,400	\$ 2,501,643

Exhibit 13-8

Source: Based on Dean Michael Mead. "Figure 9: Proprietary Funds Statement of Cash Flows," *What You Should Know About Your Local Government's Finances: A Guide to Financial Statements*, 2nd ed. Norwalk, Conn.: GASB, 2011, p. 52.

Note: Row and column totals may not equate due to rounding.

Enterprise-type proprietary funds use the major fund reporting approach discussed earlier with respect to governmental funds. Thus, any enterprise fund that is a major fund would be reported separately. Nonmajor enterprise funds may be aggregated and reported in one column. A total is shown for the enterprise funds. To the right of that total, internal service funds are aggregated and reported. Major internal service funds do not have to be segregated. The proprietary fund statement of net position shown in [Exhibit 13-6](#) reports on two enterprise funds, the Garbage Collection Fund and the Golf and Marina Fund.

For proprietary funds, the operating results are reported in a statement of revenues, expenses, and changes in fund net position (see [Exhibit 13-7](#)). This statement lists operating revenues and operating expenses before nonoperating items such as interest, transfers, and capital contributions. Transfers are amounts provided by one fund to another. Capital contributions are things such as grants or payments by a developer or a higher-level government.

Smith City Statement of Revenues, Expenses, and Changes in Fund Net Position Proprietary Funds for the Year Ending June 30, 2018				
	Business-Type Activities— Enterprise Funds			Internal Service Funds
	Garbage Collection	Golf and Marina	Total	
Operating Revenues				
Charges for services	\$ 7,930,918	\$ 938,183	\$ 8,869,101	\$11,727,776
Miscellaneous	—	2,678	2,678	746,733
Total Operating Revenues	\$ 7,930,918	\$ 940,861	\$ 8,871,779	\$12,474,509
Operating Expenses				
Salaries	\$ 2,380,391	\$ 533,644	\$ 2,914,035	\$ 3,744,357
Contractual services	241,095	67,222	308,318	400,077
Utilities	527,875	70,508	598,383	167,776
Repairs and maintenance	523,121	45,232	568,352	1,372,343
Other supplies and expenses	348,749	11,983	360,732	301,417
Insurance claims and expenses	—	—	—	5,603,000
Depreciation	814,198	379,434	1,193,632	1,195,510
Total Operating Expenses	\$ 4,835,429	\$1,108,024	\$ 5,943,453	\$12,703,481
Operating Income (Loss)	\$ 3,095,489	\$ (167,163)	\$ 2,928,326	\$ (318,973)
Nonoperating Revenues (Expenses)				
Interest and investment revenue	\$ 318,355	\$ 102,589	\$ 420,944	\$ 107,360
Miscellaneous revenue	—	73,448	73,448	14,599
Interest expense	(1,120,581)	(816,582)	(1,937,163)	(29,131)
Miscellaneous expense	—	(32,792)	(32,792)	(123,202)
Total Nonoperating Revenues (Expenses)	\$ (802,226)	\$ (673,338)	\$ (1,475,564)	\$ (30,375)
Income (Loss) Before Contributions and Transfers	\$ 2,293,263	\$ (840,501)	\$1,452,763	\$ (349,348)
Capital Contributions	1,152,143	—	1,152,143	—
Transfers in	—	—	—	6,306
Transfers out	(203,000)	(147,986)	(350,986)	(128,829)
Change in Net Position	\$ 3,242,406	\$ (988,487)	\$ 2,253,920	\$ (471,871)
Total net position—beginning	55,341,311	2,303,206	57,644,516	2,754,942
Total net position—ending	\$58,583,717	\$1,314,719	\$59,898,436	\$ 2,283,072

Exhibit 13-7

Source: Based on Dean Michael Mead. "Figure 8: Proprietary Funds Statement of Revenues, Expenses, and Changes in Fund Net Position," *What You Should Know About Your Government's Finances: A Guide to Financial Statements*, 2nd ed. Norwalk, Conn.: GASB, 2011, p. 50.

Notes: Row and column totals may not equate due to rounding. Some amounts reported for business-type activities in the statement of activities ([Exhibit 13-2](#)) are different because the net revenue (expense) of certain internal service funds is reported with business-type activities.

Why would a developer ever want to give a grant to a government? Suppose that a city-owned boat marina rents dock space only for sailboats. However, the city, under pressure from owners of motorboats, decides to let motorboats dock at the marina as well. It will be costly to build the additional dock space needed to accommodate the motorboat owners. One way to recover the cost of building the new docks is to allow a gasoline company to contribute the cost of building them in exchange for the right to sell gas from the docks. The government will recover the full cost of construction from the gas company contribution and will also gain new revenues it charges the motorboat owners for using the docks. The gas company will gain sales of its product.

Proprietary fund statements also include a statement of cash flows (see [Exhibit 13-8](#)). This statement differs from the cash flow statement used in most other types of organizations in several respects. First, it must be presented using the direct method. Second, the categories and their contents are slightly different than those used for the cash flow statement used by for-profit and not-for-profit organizations. A reconciliation at the bottom of the exhibit shows the adjustments that would be needed to convert income to cash flow from operating activities.

The cash flow statement discussed in [Chapter 10](#) has three sections: cash from operating activities, cash from

investing activities, and cash from financing activities. As shown in [Exhibit 13-8](#), governments use a different order of presentation and break the information into four categories: cash flows from operating activities, cash flows from noncapital financing activities, cash flows from capital and related financing activities, and cash flows from investing activities.

The first category, cash flows from operating activities, includes receipts and disbursements related to the operations of the fund. All cash flows that do not belong in one of the other categories are included in this section.

The second category, cash flows from noncapital financing, relates to borrowing or repaying money for purposes other than to acquire or improve capital assets. Also included in this category are receipts from grants, other funds, and other governments, and some taxes that are not received for either capital or operating purposes. For example, if the general fund transfers money to cover an operating deficit, that cash receipt by the enterprise fund would fall into this category.

The third category, cash flows from capital and related financing activities, is primarily related to acquisition and disposition of capital assets and borrowing and repaying money related to the acquisition of capital assets. Note that much of this would fall into the investing category for other types of organizations.

The fourth category, cash flows from investing activities, focuses on cash flows related to buying and selling debt and equity instruments (not including the initial issuance of such instruments) as well as lending money and collecting payments on those loans.

Under the GASB approach, interest paid is categorized as a financing activity, and interest received is categorized as an investing activity. This differs from the FASB approach for nongovernmental organizations, which treats interest as an operating activity.

The proprietary funds financial statements, governmental funds financial statements, and government-wide financial statements are interrelated. Examples of the connections among these statements are provided in Appendix 13-A at the end of this chapter.

Fiduciary Funds.

The resources in the fiduciary funds are not really resources of the government because they are being held in trust or as agent. These funds are commonly called *trust funds* or *agency funds*. These resources are not available for the government to use for the provision of services to the public. Therefore, fiduciary funds are not included in the government-wide financial statements. The fund financial statements that are used for fiduciary funds are the statement of fiduciary net position and the statement of changes in fiduciary net position. See [Exhibits 13-9](#) and [13-10](#) for examples for Smith City. Separate columns aggregate the fiduciary funds by type, such as pension or agency funds. These fund financial statements are the only place where fiduciary funds financial information is reported in the BFS. Component units that are fiduciary in nature are not included in the government-wide financial statements. Instead they are included in the fund financial statements of the fiduciary funds.

Smith City Statement of Fiduciary Net Position Fiduciary Funds as of June 30, 2018			
	Pension Trust	Investment Trusts	Agency Funds
Assets			
Cash and cash equivalents	\$ 1,381	\$ 875	\$ 31,422
Receivables:			
Interest and dividends	\$ 355,933	\$ 532	\$ -
Other receivables	4,778	-	128,213
Total receivables	\$ 360,711	\$ 532	\$128,213
Investments, at fair value:			
U.S. Treasuries	\$ 9,139,226	\$56,000	\$ -
Municipal bonds	4,569,613	-	-
Corporate bonds	11,424,033	-	-
Common stock	18,278,453	-	-
Preferred stock	2,285,757	-	-
Total investments	\$45,697,082	\$56,000	\$ -
Total Assets	\$46,059,174	\$57,407	\$159,635
Liabilities			
Accounts payable	\$ -	\$ 864	\$ -
Refunds payable and others	-	-	150,635
Total Liabilities	\$ -	\$ 864	\$159,635
Net Position			
Held in trust for pension benefits and other purposes	\$46,059,174	\$56,543	\$ -

Exhibit 13-9

Source: Based on Dean Michael Mead. "Figure 10: Statement of Fiduciary Net Position," *What You Should Know About Your Local Government's Finances: A Guide to Financial Statements*, 2nd ed. Norwalk, Conn.: GASB, 2011, p.59.

Smith City Statement of Changes in Fiduciary Net Position Fiduciary Funds for the Year Ending December 31, 2018		
	Pension Trust	Investment Trusts
Additions		
Contributions		
Employer	\$ 1,904,939	\$ -
Plan members	994,863	-
Total contributions	\$ 2,899,802	\$ -
Investment earnings		
Net (decrease) in fair value of investments	\$ (188,863)	\$ -
Interest	1,722,610	3,192
Dividends	1,011,691	-
Less investment expense	(151,500)	-
Net investment earnings	\$ 2,393,938	\$ 3,192
Total Additions	\$ 5,203,740	\$ 3,192
Deductions		
Benefits	\$ 1,717,133	\$ 2,660
Refunds of contributions	325,284	-
Administrative expenses	61,272	475
Total Deductions	\$ 2,103,689	\$ 3,135
Change in Net Position	\$ 3,190,051	\$ 57
Net position—beginning of year	42,869,124	56,486
Net position—end of year	\$46,059,174	\$56,543

Exhibit 13-10

Source: Based on Dean Michael Mead. "Figure 11: Statement of Changes in Fiduciary Net Position," *What You Should Know About Your Local Government's Finances: A Guide to Financial Statements*, 2nd ed. Norwalk, Conn.: GASB, 2011, p. 60.

Notice in the statement of fiduciary net position ([Exhibit 13-9](#)) that the Net Position section is not subdivided as is required in the proprietary funds. Also notice that in the statement of fiduciary net position, the total assets of agency funds always equal their total liabilities. There is no net position because all of the assets are just being held temporarily by the government. They will be passed along to other organizations; consequently, there is no net position balance left over. Logically, because agency funds have no net position, they are not included in the statement of changes in fiduciary net position ([Exhibit 13-10](#)).

Notes to the Financial Statements.

In addition to government-wide financial statements and fund financial statements, the basic financial statements of the government should include a set of notes (see [Figure 13-1](#)). Notes should disclose all information needed for the financial statements, taken as a whole, to make a fair presentation of the financial position and results of operations of the government. The notes are considered an integral part of the basic financial statements.

GASB Statements No. 38 and 40 provide considerable discussion of required disclosures that should appear in the notes. These disclosures include areas such as schedules of interfund transfers and balances, detailed information about long-term obligations, detailed information about payables and receivables balances, and the risks related to government deposits and investments.

Required Supplementary Information

Governments also present RSI in addition to the basic financial statements (see [Figure 13-1](#)). A variety of information geared to different types of users is provided in the RSI. One element of RSI is discussed in an earlier section: MD&A. Another RSI element is a budgetary comparison schedule “for the general fund and for each major special revenue fund that has a legally adopted annual budget.”¹⁷ See [Exhibit 13-11](#) for an example of a budgetary comparison schedule for Smith City.

¹⁷ Alternatively, the government may provide a budgetary comparison statement, included in the BFS (GASB Statement No. 34, para. 130).

Smith City Budgetary Comparison Schedule for the General Fund for the Year Ending June 30, 2018							
	Budgeted Amounts		Actual Amounts Budgetary Basis	Variances		Budget to GAAP Differences Over(Under)	Actual Amounts GAAP Basis
	Original	Final		Original to Final	Final to Actual		
Revenues							
Property taxes	\$36,412,483	\$36,297,113	\$35,821,405	\$ (115,371)	\$ (475,707)	\$ —	\$35,821,405
Local sales taxes and licenses	8,988,846	8,985,217	9,117,774	(3,630)	132,558	—	9,117,774
Fees and fines	503,160	503,160	424,862	—	(78,298)	—	424,862
Investment earnings	1,488,620	1,488,620	1,601,456	—	112,836	—	1,601,456
Intergovernmental	4,834,129	4,599,952	4,283,957	(234,177)	(315,995)	—	4,283,957
Charges for services	8,675,080	7,841,505	7,962,122	(833,575)	120,617	—	7,962,122
Permits	711,162	385,000	386,628	(326,162)	1,628	—	386,628
Other	2,117,004	854,694	617,312	(1,262,311)	(237,382)	—	617,312
Total Revenues	\$63,730,484	\$60,955,260	\$60,215,516	\$ (2,775,224)	\$ (739,745)	\$ —	\$60,215,516
Expenditures							
General government	\$ 8,286,274	\$ 6,627,709	\$ 6,035,050	\$ (1,658,565)	\$ (592,659)	\$ (6,535)	\$ 6,041,585
Fire and police	23,135,676	23,788,594	23,659,706	652,918	(128,798)	49,060	23,610,736
Public works	3,650,941	3,518,094	3,495,231	(132,847)	(22,863)	12,188	3,483,043
Road engineering services	907,393	907,893	907,893	501	—	(1,859)	909,752
Sanitation	4,029,375	4,322,257	4,322,257	292,882	—	73,235	4,249,022
Cemetery	507,150	507,150	494,414	—	(12,737)	—	494,414
Parks and recreation	7,741,398	7,957,649	7,902,402	216,251	(55,247)	(85,777)	7,988,180
Education	15,400,000	15,400,000	15,325,291	—	(74,709)	—	15,325,291
Total Expenditures	\$63,658,207	\$63,029,345	\$62,142,334	\$ (628,861)	\$ (887,011)	\$ 40,313	\$62,102,021
Excess(Deficiency) of Revenues Over Expenditures [A]	\$ 72,278	\$ (2,074,085)	\$ (1,926,819)	\$ (2,146,363)	\$ 147,267	\$ (40,313)	\$ (1,886,506)
Other Financing Sources(Uses)							
Transfers in	\$ 657,668	\$91,000	\$ 90,526	\$ (566,668)	\$ (474)	\$ —	\$ 90,526
Transfers out	(2,079,179)	(1,514,631)	(1,514,631)	564,548	—	—	(1,514,631)
Total Other Financing Sources and Uses [B]	\$ (1,421,512)	\$ (1,423,631)	\$ (1,424,105)	\$ (2,120)	\$ (474)	\$ —	\$ (1,424,105)
Special Item							
Proceeds From Sale of Parking Deck [C]	\$ 948,675	\$ 2,450,000	\$ 2,433,542	\$ 1,501,325	\$ (16,458)	\$ —	\$ 2,433,542
Fund balances—beginning [D]	\$ 2,470,125	\$ 1,910,950	\$ 1,919,950	\$ (550,166)	\$ —	\$ (115,866)	\$ 2,035,825
Fund balances—ending [A + B + C + D]	\$ 2,069,566	\$ 872,243	\$ 1,002,577	\$ (1,197,323)	\$ 130,334	\$ (156,179)	\$ 1,158,756

Exhibit 13-11

Fund balances—ending [A + B + C + D]

Source: Based on Dean Michael Mead. “Figure 16: Illustrative Budgetary Comparison Schedule,” What You Should Know About Your

Explanation of differences:

- (1) (a) The city budgets for vacation and sick leave only to the extent expected to be paid, rather than on the modified accrual basis.
 - (b) Encumbrances for equipment and supplies ordered but not received are reported in the year the orders are placed for budgetary purposes but are reported in the year the equipment and supplies are received for GAAP purposes.
 - (c) Net increases in fund balance—budget to GAAP.
- (2) The amount reported as “fund balance” on the budgetary basis of accounting derives from the basis of accounting used in preparing the city’s budget.

This amount differs from the fund balance reported in the statement of revenues, expenditures, and changes in fund balances because of the cumulative effect of transactions such as those described above.

For governments, accountability is essential. The *budgetary comparison schedule*, or *statement*, presents the original adopted budget, the final budget, and the actual results. Governments are encouraged to include a column presenting the variance between the final budget and the actual results, and may have a column for the difference between the original budget and the actual budget. The final budget may be the result of numerous changes that have been authorized legally during the year.

For example, consider [Exhibit 13-11](#). The first two columns of numbers provide the original and final budgets. The third column reports on the actual results. The next two columns allow the reader to compare the original budget with the final budget and the final budget with the actual results. One can see that the variance of the original budget from the final budget was substantially greater than the variance of the final budget versus the actual results. The comparison of the final budget versus the actual amounts allows the user to assess legal and budgetary compliance. The comparison of the original budget with the final budget allows the user to assess the competence of the original estimation and the ability of the government and its managers to control its operations.

As discussed earlier, the government uses accrual accounting for government-wide statements and modified accrual for governmental funds financial statements. The cash basis of accounting is also discussed in [Chapter 12](#). The *budgetary comparison statements* are prepared using the *budgetary basis of accounting*, the basis of accounting that the government uses for its budgets. This varies for different governments. Use of the cash basis for budgeting is not uncommon. A reconciliation must be provided for the differences between the budgetary information and information on a GAAP basis.¹⁸ In [Exhibit 13-11](#), the last two columns provide information to help the user convert from the budgetary basis to GAAP. The next to last column shows differences between the final budget and GAAP, and the last column shows the actual results on a GAAP rather than budgetary basis. At the bottom of the page a summary explanation is given for the differences.

18. GASB Statement No. 34 does not explicitly indicate if the reconciliation should be from the budgetary basis to an accrual or a modified accrual basis. However, since governmental funds use the modified accrual basis, the comparison would be from the budgetary basis to the modified accrual basis.

RSI also includes a variety of other schedules and statistical data. The various other elements of RSI are beyond the scope of this book.

The Millbridge Example

The information that was recorded in [Chapter 12](#) for Millbridge is now used to prepare financial statements. [Exhibit 12-3](#) from [Chapter 12](#), which summarizes all of the financial events for Millbridge, is repeated here as [Exhibit 13-12](#), for convenience.

A. The General Fund Town of Millbridge Financial Transactions (Journal and Ledger) Prepared on the Modified Accrual Basis For the Year Ending December 31, 2018									
	Assets			=	Liabilities			+	Fund Balance
	Cash	Property Taxes Receivable	State Aid Receivable		Accounts Payable	Due to Debt Service Fund	Due to Capital Projects Fund	Salaries Payable	Fund Balance
Beginning Balance	\$68,000	\$25,000	\$15,000		\$5,000	\$18,000	\$70,000	\$ 0	\$15,000
Transaction 1a		611,000							611,000 Property Tax Revenues
Transaction 1b	600,000	(600,000)							
Transaction 2a	15,000		(15,000)						
Transaction 2b			150,000						150,000 State Aid Revenues
Transaction 2c	125,000		(125,000)						
Transaction 3	(580,000)							20,000	(300,000) General Government Expenditures
									(200,000) Public Safety Expenditures
									(100,000) Sanitation Expenditures
Transaction 4a	(5,000)				(5,000)				
Transaction 4b	(53,000)				7,000				(40,000) General Government Expenditures
									(15,000) Public Safety Expenditures
									(5,000) Sanitation Expenditures
Transaction 5	(97,000)					3,000			(100,000) Transfer to Debt Service Fund
Transaction 6									
Transaction 7	(63,000)						(63,000)		
Transaction 8a									
Transaction 8b									
Transaction 9									
Ending Balance	<u>\$10,000</u>	<u>\$36,000</u>	<u>\$25,000</u>	=	<u>\$7,000</u>	<u>\$21,000</u>	<u>\$ 7,000</u>	<u>\$20,000</u>	+ <u>\$16,000</u>

Exhibit 13-12

B. The Debt Service Fund						
	Assets		=	Liabilities	+	Fund Balance
	Cash	Due from General Fund		Liabilities		Fund Balance
Beginning Balance	\$ 10,000	\$ 18,000		\$ 0		\$28,000
Transaction 1a						
Transaction 1b						
Transaction 2a						
Transaction 2b						
Transaction 2c						
Transaction 3						
Transaction 4a						
Transaction 4b						
Transaction 5	97,000	3,000			100,000	Transfer From General Fund
Transaction 6	(65,000)				(15,000)	Interest Expenditure
					(50,000)	Debt Service—Principal Expenditure
Transaction 7						
Transaction 8a						
Transaction 8b						
Transaction 9						
Ending Balance	\$ 42,000	\$ 21,000	=	\$ 0	+	\$63,000
C. The Capital Projects Fund						
Beginning Balance	\$20,000	\$70,000		\$0		\$90,000
Transaction 1a						
Transaction 1b						
Transaction 2a						
Transaction 2b						
Transaction 2c						
Transaction 3						
Transaction 4a						
Transaction 4b						
Transaction 5						
Transaction 6						
Transaction 7	63,000	(63,000)				
Transaction 8a	200,000				200,000	Other Sources of Financing—Bond Proceeds
Transaction 8b	(270,000)				(270,000)	Capital Outlay Expenditure
Transaction 9						
Ending Balance	\$13,000	\$7,000	=	\$0	+	\$20,000

Governmental Funds Financial Statements

The governmental funds financial statements are reported on a modified accrual basis, so they may be developed directly from the information in [Exhibit 13-12](#), which was recorded on that basis. [Exhibits 13-13](#) and [13-14](#) present the governmental funds balance sheet and statement of revenues, expenditures, and changes in fund balances. Note that each of the governmental funds is shown in this example because they all meet the criteria for being considered major funds.

Town of Millbridge Balance Sheet Governmental Funds December 31, 2018				
	General Fund	Debt Service Fund	Capital Projects Fund	Total Governmental Funds
Assets				
Cash	\$10,000	\$42,000	\$13,000	\$ 65,000
Property taxes receivable, net	36,000	-	-	36,000
State aid receivable	25,000	-	-	25,000
Due from other funds	-	21,000	7,000	28,000
Total Assets	\$71,000	\$63,000	\$20,000	\$154,000
Liabilities				
Accounts payable	\$ 7,000	\$ -	\$ -	\$7,000
Salaries payable	20,000	-	-	20,000
Due to debt service fund	21,000	-	-	21,000
Due to capital projects fund	7,000	-	-	7,000
Total Liabilities	\$55,000	\$ -	\$ -	\$ 55,000
Fund Balances				
Unassigned	\$16,000	\$63,000	\$20,000	\$ 99,000
Total fund balances	\$16,000	\$63,000	\$20,000	\$ 99,000
Total Liabilities and Fund Balances	\$71,000	\$63,000	\$20,000	
Reconciliation:				1,000
Amounts reported for governmental activities in the statement of net position (Exhibit 13-16) are different because:				
Inventory is treated on a purchase basis in the funds.				445,000
Capital assets used in governmental activities are not financial resources and therefore are not reported in the funds.				(440,000)
Long-term liabilities are not due and payable in the current period and therefore are not reported in the funds.				
Net position of governmental activities (Exhibit 13-16)				\$105,000

Exhibit 13-13

Town of Millbridge Statement of Revenues, Expenditures, and Changes in Fund Balances Governmental Funds December 31, 2018				
	General Fund	Debt Service Fund	Capital Projects Fund	Total Governmental Funds
Revenues				
Property Taxes	\$ 611,000	\$ -	\$ -	\$ 611,000
Fees	-	-	-	-
Permits	-	-	-	-
Intergovernmental—state aid	150,000	-	-	150,000
Charges for services	-	-	-	-
Investment earnings	-	-	-	-
Total Revenues	\$ 761,000	\$ -	\$ -	\$ 761,000
Expenditures				
Current:				
General government	\$ 340,000	\$ -	\$ -	\$ 340,000
Public safety	215,000	-	-	215,000
Sanitation	105,000	-	-	105,000
Debt service:				
Principal	-	50,000	-	50,000
Interest and other charges	-	15,000	-	15,000
Capital outlay	-	-	270,000	270,000
Total Expenditures	\$ 660,000	\$ 65,000	\$ 270,000	\$ 995,000
Excess/(Deficiency) of Revenues Over Expenditures	\$ 101,000	\$ (65,000)	\$ (270,000)	\$ (234,000)
Other Financing Sources/(Uses)				
Proceeds from long-term capital related debt	\$ -	\$ -	\$ 200,000	\$ 200,000
Transfers in	-	100,000	-	-
Transfers out	(100,000)	-	-	(100,000)
Total Other Financing Sources and Uses	\$ (100,000)	\$ 100,000	\$ 200,000	\$ 200,000
Net Change in Fund Balances	\$ 1,000	\$ 35,000	\$ (70,000)	\$ (34,000)
Fund balances—beginning	15,000	28,000	90,000	133,000
Fund balances—beginning	\$ 16,000	\$ 63,000	\$ 20,000	\$ 99,000

Exhibit 13-14

The assets and liabilities in [Exhibit 13-13](#) come directly from the ending balances in [Exhibit 13-12](#). For example, the \$10,000 of cash in the General Fund column comes from the ending balance in the Cash column in [Exhibit 13-12](#), Part A. The \$42,000 in cash in the Debt Service Fund column comes from [Exhibit 13-12](#), Part B. The remainder of the assets and liabilities can be found for all three funds using the ending

balances from [Exhibit 13-12](#), Parts A, B, and C.

Now examine [Exhibit 13-14](#), the statement of revenues, expenditures, and changes in fund balances. The revenues and expenditures also come directly from the changes in the fund balance columns of [Exhibit 13-12](#), Parts A, B, and C.

Reconciliations are required to show the connection between the government-wide statement of net position and the governmental funds balance sheet, and between the government-wide statement of activities and the governmental funds statement of revenues, expenditures, and changes in fund balances. At the bottom of [Exhibit 13-13](#), we can see that for this example there are three factors that explain the difference between the \$99,000 total fund balance as reported on the governmental funds balance sheet and the \$105,000 total net position that will be reported on the government-wide statement of net position. They are related to inventory, reporting capital assets, and long-term liabilities. These items are discussed subsequently.

[Exhibit 13-15](#) provides a reconciliation of the statement of revenues, expenditures, and changes in fund balances of governmental funds ([Exhibit 13-14](#)) to the statement of activities. In this reconciliation, we can see that there were four reasons that the changes in fund balances on the governmental funds financial statement will differ from the change in net position that we will see on the government-wide statement. These relate to treatment of expenditures for supplies, bond proceeds, capital outlays, and a special item. These reconciling items are discussed subsequently as well.

Town of Millbridge Reconciliation of the Statement of Revenues, Expenditures, and Changes in Fund Balances of Governmental Funds to the Statement of Activities for the Year Ending June 30, 2018	
Net change in fund balances—total governmental funds (Exhibit 13-14)	\$(34,000)
Amounts reported for governmental activities in the statement of activities (Exhibit 13-17) are different because:	
1. Expenditures for supplies that have not been consumed require the use of current financial resources. However, on the statement of net position they are treated as an inventory asset. This is the amount by which the expenditure for supplies exceeds the expense related to their consumption.	1,000
2. Bond proceeds provide current financial resources to governmental funds, but issuing debt increases long-term liabilities in the statement of net assets. Repayment of bond principal is an expenditure in the governmental funds, but the repayment reduces long-term liabilities in the statement of net position. This is the amount by which proceeds exceeded payments.	(150,000)
3. Governmental funds report capital outlays as expenditures. However, in the statement of activities, the cost of those assets is allocated over their estimated useful lives as depreciation expense. This is the amount by which capital outlays exceeded depreciation in the current period.	255,000
4. The special item related to a lawsuit settlement did not require current financial resources. However, in the statement of activities, this is treated as an expense for the current year. Change in net position of governmental activities (Exhibit 13-17)	(100,000)
	<u>\$28,000</u>

Exhibit 13-15

Government-Wide Financial Statements

[Exhibits 13-16](#) and [13-17](#) present the government-wide statement of net position and statement of activities. Notice that there are no amounts in the Business-Type Activities column or in the Component Units column because Millbridge has neither business-type activities nor component units. These columns would not have to be shown since there is no information in them.

Town of Millbridge Statement of Net Position as of December 31, 2018				
	Primary Government		Total	Component Units
	Governmental Activities	Business-Type Activities		
Assets				
Cash	\$ 65,000	\$ -	\$ 65,000	\$ -
Property taxes receivable (net)	96,000	-	96,000	-
State aid receivable	25,000	-	25,000	-
Inventories	1,000	-	1,000	-
Capital assets, net	445,000	-	445,000	-
Total Assets	\$572,000	\$ -	\$572,000	\$ -
Liabilities				
Accounts payable	\$ 7,000	\$ -	\$ 7,000	\$ -
Salaries payable	20,000	-	20,000	-
Current portion of long-term obligations	75,000	-	75,000	-
Noncurrent portion of long-term obligations	365,000	-	365,000	-
Total Liabilities	\$467,000	\$ -	\$467,000	\$ -
Net Position				
Net investment in capital assets	\$105,000	\$ -	\$105,000	\$ -
Restricted for:				
Capital projects	20,000	-	20,000	-
Debt service	63,000	-	63,000	-
Unrestricted	(83,000)	-	(83,000)	-
Total Net Position	\$105,000	\$ -	\$105,000	\$ -

Exhibit 13-16

Town of Millbridge Statement of Activities December 31, 2018							
Functions/Programs	Program Revenues				Net (Expense) Revenue and Changes in Net Position		
	Expenses	Charges for Services	Operating Grants and Contributions	Capital Grants and Contributions	Primary Government		Component Units
					Governmental Activities	Business-Type Activities	
Primary Government							
Governmental activities							
General government	\$339,000	\$ -	\$ -	\$ -	\$ (339,000)		\$ (339,000)
Public safety	215,000	-	-	-	(215,000)		(215,000)
Sanitation	120,000	-	-	-	(120,000)		(120,000)
Interest on long-term debt	15,000	-	-	-	(15,000)		(15,000)
Total governmental activities	\$689,000	\$ -	\$ -	\$ -	\$ (689,000)		\$ (689,000)
Business-type activities							
None	\$ -	\$ -	\$ -	\$ -			\$ -
Total Primary Government	\$689,000	\$ -	\$ -	\$ -	\$ (689,000)		\$ (689,000)
Component Units							
None	\$ -	\$ -	\$ -	\$ -			\$ -
					General revenues—Property tax	\$ 611,000	\$ 611,000
					General revenues—State aid	150,000	150,000
					Special items—Lawsuit settlement	(100,000)	(100,000)
					Total general revenues and special items	\$ 661,000	\$ 661,000
					Change in Net Position	\$ (28,000)	\$ (28,000)
					Net position—beginning	133,000	133,000
					Net position—ending	\$ 105,000	\$ 105,000

Exhibit 13-17

How are these statements derived? To prepare government-wide statements, the ending balances in the various governmental funds are aggregated. For example, consider the \$65,000 of cash in the Governmental Activities column ([Exhibit 13-16](#)). It is the sum of the ending cash balance of \$10,000 from the general fund, \$42,000 from the debt service fund, and \$13,000 from the capital projects fund. See [Exhibit 13-12](#), Parts A, B, and C, respectively, for those amounts.

All of the other elements of these two statements can similarly be found by looking at the ending balances in [Exhibit 13-12](#), and aggregating amounts for the different funds (as shown in Parts A, B, and C of the exhibit). For example, the [Exhibit 13-16](#) balances for property tax receivables of \$36,000 and state aid receivable of \$25,000 in [Exhibit 13-16](#) come directly from the last row of Part A of [Exhibit 13-12](#).

However, some adjustments are required because the government-wide statements are prepared on an accrual basis, while the governmental fund statements are prepared on a modified accrual basis. We can review the individual transactions in [Chapter 12](#) to determine the necessary adjustments.

The first two transactions (see page 465) involve revenues. Since all of the revenues are expected to be received early in the next year, there is no adjustment. If some of the taxes or aid was not going to be received until late in the following year, it might not have been considered revenue under modified accrual. In that case, it would be adjusted to be shown as revenue on the accrual-based government-wide statements.

The third transaction (465), related to labor, does not require an adjustment because it would have been the same on an accrual basis.

The fourth transaction (466) relates to supplies. On an accrual basis, the \$1,000 of unused supplies would be shown as an inventory asset. This asset appears in [Exhibit 13-16](#), the government-wide statement of net position. It does not appear in [Exhibit 13-13](#), the governmental funds balance sheet. This is because all of the supplies were treated as an expenditure under the modified accrual basis of accounting. The first reconciling item at the bottom of [Exhibit 13-13](#) shows this \$1,000 difference between the two statements.

As a result of recording the inventory asset under accrual accounting, the supply expense that was charged to the general government activity should be reduced by \$1,000. Therefore, general government total expenditures are reduced from the \$340,000 reported on [Exhibit 13-14](#) to an expense of \$339,000 shown on [Exhibit 13-17](#). This \$1,000 difference is explained in the first reconciling item in [Exhibit 13-15](#).

Transaction 5 (466) involves transactions between governmental funds. These transactions have no impact on the government-wide statements, so no adjustment is required. When the governmental funds are combined to prepare the government-wide statements, these items offset each other and are not shown.

In transaction 6 (466), the \$50,000 principal payment was an expenditure. Under accrual accounting, the principal payment would instead be a decrease in a long-term liability. Note also that for transaction 8 (466), the \$200,000 of bond proceeds would create a liability under accrual rather than being treated as an increase in fund balance. These two differences [$\$50,000 - \$200,000 = \$(150,000)$] are explained by the second reconciling item in [Exhibit 13-15](#).

From transaction 6, we can also determine that there should be \$15,000 of depreciation expense for the garbage trucks under accrual accounting. That will be charged to the sanitation function. As a result of recording this depreciation expense under accrual, the \$105,000 sanitation expenditure that appears on [Exhibit 13-14](#) becomes a \$120,000 expense on [Exhibit 13-17](#). From transaction 8, we note that there was a \$270,000 capital outlay for a firehouse building acquisition. Under accrual accounting, that would create a long-term asset rather than being an expenditure. The impact of recording the \$270,000 firehouse capital asset increase, less the \$15,000 of depreciation expense on the garbage trucks [$\$270,000 - \$15,000 = \$255,000$], is explained in the third reconciling item in [Exhibit 13-15](#).

Transaction 7 (466) does not require any adjustments. The transaction results in offsetting entries within the

governmental funds. These entries cancel each other out and do not appear on the government-wide statements.

Transaction 9 (466) was not recorded under modified accrual because the payment was not going to be made from currently available funds. However, under accrual accounting, a liability must be recorded. The full \$100,000 must be treated as an expense and as a long-term liability.¹⁹ It is tempting to assign the expense to the public safety function (since the alleged harassment took place in the Police Department). However, if this was a fairly unusual and infrequent type of an expense for Millbridge, it should be segregated as a special item. Otherwise, a user of the financial statements might assume that the typical, ongoing costs of the public safety function are \$100,000 per year more than they really are. This expense, which appears as a special item in [Exhibit 13-17](#), does not appear on [Exhibit 13-14](#). It is explained by the fourth reconciling item in [Exhibit 13-15](#).

¹⁹ Under GAAP used for organizations other than governments, we would record an expense and liability equal to the present value of the future \$100,000 payment. However, GASB does not require use of present value for such liabilities.

The preceding discussion provides all the information needed to prepare the government-wide statement of activities ([Exhibit 13-17](#)). A few more elements are needed to understand the source of all of the numbers in the statement of net position ([Exhibit 13-16](#)). First we consider the capital assets that appear in [Exhibit 13-16](#) but not in [Exhibit 13-13](#). They are shown in the statement of net position as being \$445,000, net (of accumulated depreciation). In transaction 6, we are told that the beginning balance in capital assets, net, for the year was \$190,000. From the same transaction, we also know that under accrual accounting this amount must be reduced by \$15,000 for depreciation. From transaction 8, we know that it must be increased by \$270,000 for the purchase of a new firehouse. The beginning balance, less the depreciation, plus the acquisition, totals to \$445,000 ($\$190,000 - \$15,000 + \$270,000$). This amount is explained by the second reconciling item at the bottom of [Exhibit 13-13](#).

[Exhibit 13-16](#) also shows long-term obligations that do not appear on [Exhibit 13-13](#). Transaction 6 gave the opening balance of long-term obligations as \$190,000. During the year \$50,000 was repaid (transaction 6), lowering the liability to \$140,000. However, \$200,000 was borrowed (transaction 8), raising the total long-term obligation related to capital assets to \$340,000. In addition, the lawsuit settlement (transaction 9) results in another \$100,000 long-term liability. The total long-term obligation is therefore \$440,000, and that amount is explained in the last reconciliation on the bottom of [Exhibit 13-13](#).

To prepare the statement of net position ([Exhibit 13-16](#)), the government must know how much of its long-term debt is payable in the coming year. Assume that \$75,000 must be paid during the coming year as principal payments for the garbage trucks and the firehouse. That amount is the current portion of the long-term liabilities, and the remaining \$365,000 is the noncurrent portion.

Finally, we need to understand the derivation of the components of net position in [Exhibit 13-16](#). The portion of net position invested in capital assets is simply the \$445,000 of capital assets calculated previously,

less the \$340,000 of long-term obligations related to capital assets (i.e., the total long-term obligation of \$440,000 calculated previously, less the \$100,000 related to the lawsuit). The resulting amount is \$105,000 (i.e., \$445,000 – \$340,000), as seen in [Exhibit 13-16](#).

Assume that by legal restriction the assets of the debt service fund are restricted to debt service and the assets of the capital projects fund are restricted to specific capital projects. Therefore, the total of the ending balances for the assets in Part B of [Exhibit 13-12](#) less liabilities (there are none in this case) provides the ending restricted fund balance (or net position) of \$63,000 for debt service. Similarly, the total of the assets in Part C of [Exhibit 13-12](#) less liabilities gives the ending restricted net position of \$20,000 for capital projects. These amounts appear under the restricted net position heading in [Exhibit 13-16](#).

The unrestricted net position balance is the portion of total net position that has not been restricted for one of the other purposes listed in the net position section of the statement. The \$71,000 total of the general fund ending asset balances from [Exhibit 13-12](#), Part A, plus the inventory of \$1,000 and the capital assets of \$445,000 (from the previous adjustments) is \$517,000. The \$55,000 total of the liability balances from [Exhibit 13-12](#), Part A, and the long-term obligation of \$440,000 (from the previous adjustments) equals \$495,000. The assets less the liabilities equals the net position of the general fund, \$22,000. Once the net position of the general fund is found, the \$105,000 portion of net position that is restricted for capital assets must be deducted. This leaves an unrestricted net position balance of (\$83,000).²⁰ We see this amount in [Exhibit 13-16](#).

²⁰ The assets of the general fund are \$10,000 cash plus \$36,000 taxes receivable, plus \$25,000 aid receivable, plus \$1,000 inventory, plus \$445,000 capital assets net of accumulated depreciation, for a total of \$517,000. The general fund liabilities are \$7,000 accounts payable, plus \$21,000 due to the debt service fund, plus \$7,000 due to the capital projects fund, plus \$20,000 salaries payable, plus \$440,000 long-term liabilities, for a total of \$495,000. The net position of the general fund are the \$517,000 of assets less the \$495,000 of liabilities, or \$22,000. Since \$105,000 of the general fund net position is invested in capital assets, the unrestricted net position is the \$22,000 total less the \$105,000 portion invested in capital assets, or (\$83,000).

We do not have budget information in this example. However, if we did, the government would also prepare a budgetary comparison schedule. A set of notes to the financial statements, MD&A, and other RSI would also be critical parts of the reported information.

Furthermore, this example has only looked at governmental funds. Proprietary and fiduciary funds would also be reported if they existed. However, the fiduciary funds would not be included in the government-wide statements, as discussed earlier. [Exhibit 13-18](#) provides a summary of some key characteristics to keep in mind in preparing government financial statements.

	Government- Wide Financial Statements	Governmental Fund Financial Statements	Proprietary Fund Financial Statements
Accrual	X		X
Modified accrual		X	
Reports buildings and depreciation	X		X
Reports funds in separate columns		X	X
Reports governmental activities and business-type activities in different columns	X		
Cash flow statement			X
Reports financial results of component units	X		

general fund is found, the \$105,000 portion of net position that is restricted for capital assets must be deducted. This leaves an unrestricted net position balance of (\$83,000).¹⁰⁰ We see this amount in Exhibit 13-16.

We do not have budget information in this example. However, if we did, the government would also prepare a budgetary comparison schedule. A set of notes to the financial statements, MD&A, and other RSI would also be critical parts of the reported information.

Furthermore, this example has only looked at governmental funds. Proprietary and fiduciary funds would also be reported if they existed. However, the fiduciary funds would not be included in the government-wide statements, as discussed earlier. Exhibit 13-18 provides a summary of some key characteristics to keep in mind in preparing government financial statements.

Exhibit 13-18

Summary

There are a number of unique features to accounting for state and local governments. Such governments have a complex set of reporting requirements.

Many government bodies prepare a *Comprehensive Annual Financial Report* as required by GAAP. Included as part of that report is a set of audited basic financial statements (BFS). In these statements, governments focus on reporting for the entity as a whole. This is accomplished by the use of government-wide statements prepared on an accrual basis. However, governments also report more detailed fund financial information. In addition to the BFS, GAAP require state and local governments to provide a management's discussion and analysis section and other required supplementary information (RSI). One element of the other RSI is a comparison of actual results with authorized budgets.

Key Terms from This Chapter

agency fund, 489
assigned amounts, 480
basic financial statements (BFS), 467
budgetary basis of accounting, 491
budgetary comparison schedule, 491
budgetary comparison statement, 491
capital projects fund, 480
committed amounts, 480
component units, 470
Comprehensive Annual Financial Report (CAFR), 467
debt service fund, 480
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required supplementary information (RSI), 467
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statement of net position, 469
trust fund, 489

Questions for Discussion

- 13-1. What are the objectives of governmental financial reporting?
- 13-2. What is a CAFR? Discuss.
- 13-3. Describe the contents of the MD&A.
- 13-4. What do BFS contain? Discuss.
- 13-5. How does one decide what entities to include in the government's BFS?
- 13-6. What bases of accounting are used in the BFS?
- 13-7. Will long-term assets appear on the governmental funds balance sheet? Why?

Problem

13-8. For Simonsen Village (see Problems 12-4 and 12-5 from [Chapter 12](#)), prepare a government-wide statement of net position and statement of activities, and a governmental funds balance sheet and statement of revenues, expenditures, and changes in fund balances. Any ending balance in the Debt Service Fund is legally restricted to debt service payments on the firetruck. Also prepare reconciliations for the differences between the governmental and government-wide financial statements. (Hint: The reconciliations require you to determine what would differ under accrual accounting compared with modified accrual.)

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Appendix 13-A Interrelationships Among Government Financial Statements

The transfers shown in [Exhibit 13-7](#), the statement of revenues, expenses, and changes in fund net position, provide a good example of some of the interrelationships among the various financial statements. Transfers are amounts provided by one fund to another.

In [Exhibit 13-2](#), the government-wide statement of activities for Smith City, we see a transfer of \$350,986 into the Governmental Activities column and out of the Business-type Activities column. In [Exhibit 13-7](#), we see that there is a transfer out of \$350,986 in the Totals column for the Business-Type Activities—Enterprise Funds. The activities that the government operates that are accounted for in the enterprise funds have transferred \$350,986 to the governmental activities of the government, and this transfer appears on the government-wide statement, [Exhibit 13-2](#).

In [Exhibit 13-7](#), we see that there is also a transfer of \$128,829 out of the internal service funds. But that transfer does not show up in [Exhibit 13-2](#). The transfer is not coming from the enterprise funds. Rather, it is being made from proprietary funds that relate to governmental activities. And it is being transferred to the governmental funds that also relate to governmental activities. Since the transfer out and the transfer in both relate to governmental activities, these transfers offset each other and do not appear on the government-wide statement of activities.

Does that mean we cannot trace the \$128,829 transfer from the proprietary funds to where it goes? No. Look at [Exhibit 13-4](#), the statement of revenues, expenditures, and changes in fund balances for the governmental funds. The total transfers in are \$3,976,357 and the total transfers out are \$3,502,848. What accounts for the \$473,509 difference between these two numbers? It is exactly the sum of the two transfers out, net of transfers in, that appear on the proprietary funds statement of revenues, expenses, and changes in fund net position, [Exhibit 13-7](#)!

From this we can surmise that all transfers out on [Exhibit 13-4](#), the full \$3,502,848, are transfers from some of the funds that appear in that exhibit to other funds in the exhibit. All of that movement is from governmental funds to governmental funds. Such offsetting amounts would not appear in [Exhibit 13-2](#), which summarizes governmental activities in one column. However, they do appear in the fund financial statements. In addition, \$350,986 from the Business-type activities and \$128,829 from the governmental activities in [Exhibit 13-7](#) are transferred to the governmental funds in [Exhibit 13-4](#). Thus, total transfers in to governmental funds are \$3,976,357, as we see in the Transfers in line in the last column of [Exhibit 13-4](#).

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Part V Financial Analysis

Chapter 14 Financial Statement Analysis

Learning Objectives

The learning objectives of this chapter are to:

- discuss the elements of financial statement analysis, including review of the financial statements, examination of the notes that accompany the financial statements, calculation of ratios, and final assessment;
- explain the parts of a financial statement review, including the audit opinion letter and the individual financial statements;
- explain the importance of examining the notes that accompany the financial statements and discuss the note that focuses on significant accounting policies as well as other more specific notes;
- define ratio analysis and discuss the role that ratios play in assessing the financial situation of an organization;
- explain the importance of comparing the organization's ratios with its own ratios over time, as well as those of comparable organizations, and the industry as a whole;
- provide cautions in the use of ratio analysis;
- define and explain a number of major classes of ratios and specific individual ratios that are of value in financial statement analysis; and
- discuss the importance of bringing all of the information together to make a final financial assessment of the organization.

[Chapters 9 to 13](#), Part IV of this book, focused on reporting results using financial accounting. The role of financial accounting is to gather, summarize, and report information about the financial history of the organization. The financial statements discussed in the preceding chapters are the vehicle used to communicate the results of operations and the financial position of the entity. The focus of this chapter and the next is on how that information can be analyzed to gain additional insight into the financial situation of the organization. This chapter focuses on a general framework for financial statement analysis. [Chapter 15](#) focuses on special concerns in the analysis of the financial condition of governments.

The two chapters also consider other indirect sources and types of information that may be valuable in understanding the finances of an organization. For example, comparison of the organization's financial results with those of similar organizations can be particularly enlightening. The same is true for comparisons with the organization's industry as a whole.

There are many potential purposes of financial analysis. Managers must understand the financial situation of the organization to assess its ability to achieve its mission. They want to understand their organization's financial position and results so that they can make decisions that will maintain a satisfactory financial situation or improve an unsatisfactory one. Managers also want to compare the financial performance of their organization with similar organizations to learn if perhaps they could improve their organization's performance.

Donors desire to evaluate organizations to which they are considering making a contribution. Vendors want to understand whether their customers will be able to pay for their purchases. Lenders want to consider the likelihood of an organization being able to repay loans. These represent just a few of the many uses of financial information.

Different users and different uses of information call for different types of information. Some users want an assessment of the likelihood of repayment of a loan due in 20 years. That requires some prediction of long-term *solvency*. Vendors may be concerned with only short-term liquidity: Will the organization be able to make payments next month for its purchases this month? Before investing in an entity, we may wish to know about its profitability. Before making a donation, we may wish to know how much of the money spent by the organization goes to program rather than support services. The goal of financial analysis is to use financial statements and other sources to gather the information needed to answer questions and make decisions.

For most organizations, the primary focus of financial analysis is on the audited financial statements. The statements themselves are reviewed, the contents of the notes that accompany audited financial statements are carefully considered, and a set of ratios are calculated. The notes to financial statements are critical because financial statements alone are often inadequate to convey all important financial information. The Generally Accepted Accounting Principle (GAAP) of *full disclosure* requires that notes be used to convey important financial information that the financial statements do not adequately disclose. *Ratio analysis* compares numbers from financial statements with each other to gain insight from the relationship between the numbers. Finally, all of the information gathered is brought together, and an assessment is made based on the information as a whole.

Financial Statement Review

A good place to commence a financial statement analysis is by carefully and thoroughly reading the financial statements and the accompanying notes. Ratios should then be calculated and comparative data should be obtained if possible. Finally, based on a review of all data, an assessment can be made about the financial status of the organization.

In reviewing the financial statements, three overriding concerns are as follows: (1) Is the organization accomplishing its mission? (2) Is the organization financially stable? (3) Are the results of operations acceptable? By looking at the financial statements, we are not just looking for numbers; we are also trying to gain an insight as to what has happened to the organization and where it is today. The extent to which we can determine an organization's effectiveness on the basis of its financial statements is limited, however. The Certified Public Accountant's (CPA's) opinion letter and management's discussion are other elements of an annual report that should be included in the review process.

Trend information often makes analysis easier and more fruitful. If possible, analysis should use financial statements that show more than 1 year of information. If such statements are not available, the individual annual financial statements from several preceding years can provide comparable data. In reviewing the statements, changes should be noted. If the changes appear significant in amount, one would want to try to investigate them to determine why they occurred and whether they represent a trend that is likely to continue.

The Audit and the Auditor's Opinion Letter

A *financial audit*, or simply an audit, is a detailed examination of the financial statements and financial records of an organization. *Audited financial statements* are financial statements that have been examined by a CPA. The CPA issues an opinion letter, called the *auditor's report*, providing expert opinion about whether the financial statements provide a fair representation of the organization's financial position and the results of its operations. As an outsider, the auditor provides an independent review of the financial statements. The discovery of fraud is an occasional by-product but is not the primary focus of the audit. The primary focus is on whether the financial statements are in compliance with GAAP and are free of material misstatements.

Note that it is the accountant who is certified (by a state licensing board) and not the financial statements, although often people refer to audited financial statements as the "certified financials."

In some cases, the auditor is hired to do something less than an audit. Small organizations, including many not-for-profits, are not required to have an audit by a CPA, which can be quite costly. Sometimes such organizations employ a CPA to perform a *compilation or review of financial statements*. In a compilation engagement, the auditor is hired to develop a set of financial statements. The auditor takes the information that has been recorded by the organization during the year and summarizes that information into a set of financial statements that report the results of operations and the financial position of the organization. In a review engagement, the organization has prepared the financial statements, and the CPA reviews them for form and accuracy. However, in neither a compilation nor a review engagement does the CPA perform the

extensive testing of records and detailed review that are part of an audit. The statements compiled or reviewed may not be referred to as audited or certified financials.

One of the major functions of an audit is to review not only specific transactions but also systems. It is too expensive to review every single transaction and find every error that has been made. Instead, auditors use sampling techniques to determine how often errors are occurring and how large they tend to be. If an unacceptable level of errors is occurring, the auditor works with the organization to improve its internal control systems (see [Chapter 8](#)). The auditor will send a letter, referred to as the *management letter*, to the organization's management discussing its internal control weaknesses. That letter does not become part of the annual report issued to outsiders.

The management letter, written by the auditor, should not be confused with a separate letter called *management's discussion*, which is written by the organization's management and discusses their assessment of the organization's performance.

In addition to the management letter, the auditor issues an *opinion letter*. This letter follows a standard format, with much of the same wording used for many different organizations. The following auditor's opinion letter for the fictional XYZ Foundation is an example of the language that is commonly found in an opinion letter:

Independent Auditors' Report

Board of Directors

XYZ Foundation, Inc.

Alphabet City, California

We have audited the accompanying financial statements of XYZ Foundation, Inc., which comprise the statements of financial position as of December 31, 2018 and 2017, and the related statements of activities, functional expenses, and cash flows for the years then ended, and the related notes to the financial statements. These financial statements are the responsibility of the management of the Foundation. Our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. The auditor considers internal control relevant to the entity's preparation and fair presentation of the consolidated financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, evaluating the appropriateness of the accounting principles used and the reasonableness of significant estimates made by management, as well as the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of XYZ Foundation as of December 31, 2018 and 2017, and the changes in its net assets and its cash flows for the years then ended in conformity with accounting principles generally accepted in the United States of America.

Powell + McClane LLC

Los Angeles, CA

July 15, 2019

The first, introductory, paragraph explains what type of job the auditor was hired to do. Sometimes auditors do consulting or tax work, or are hired to perform a compilation or review. The paragraph indicates that in this instance an audit was performed and indicates the specific financial statements that were included in the audit process. For XYZ Foundation, the fictional CPA firm of Powell + McClane LLC¹ audited the statements of financial position, as of December 31, 2018 and 2017, and the related statements of activities, functional expenses, and cash flows for the years then ended, in addition to the related notes to the financial statements. Note that since a balance sheet shows the financial position at a moment in time, the letter refers to the statements of financial position as of a particular date, December 31 of each of the years covered by the audit. The other statements provide information on what has happened over a period of time. They are grouped together with an indication that they cover the “years then ended.”

1. LLC stands for Limited Liability Corporation.

The first paragraph of the letter points out that although the auditor can provide an expert opinion, management holds primary responsibility for the contents of the financial statements. In some organizations, the auditors, in practice, provide a substantial amount of help in compiling the financial statements as part of the audit. Nevertheless, managers must remember that if there are later problems with the information contained in the financial statements, it is the organization’s management, rather than the auditors, that bears the primary responsibility for its content. Regardless of who actually prepares the statements, managers should assure themselves that they understand their statements and agree with the estimates made and the contents of the statements.

That paragraph also explains the type of work the auditor did to ensure that the financial statements were in compliance with GAAP. Its purpose is to clarify that not every transaction was examined and that immaterial errors were not necessarily found and corrected. The types and extent of examinations that are undertaken as part of the audit are dictated by generally accepted auditing standards that CPAs follow in carrying out their audit.

The third, opinion, paragraph gives the auditor’s opinion on whether the financial statements provide a fair representation of the financial position and results of operations in accordance with GAAP. It is unusual and serious if the statements are not a fair representation (adverse opinion) in the opinion of the auditor. Some

auditors condense the information from all three of these paragraphs into one paragraph.

The reader should also carefully examine any additional paragraphs beyond the standard three or the one condensed paragraph. In XYZ Foundation's letter, there are no additional paragraphs. In other instances, additional paragraphs might call the reader's attention to a particularly important note, such as one regarding a major lawsuit against the organization.

The auditor's letter often appears to be standard and contain nothing out of the ordinary. Nevertheless, it should always be reviewed as one of the first steps. If it does have anything out of the ordinary, it is worth giving it careful attention. Once the audit letter has been reviewed, the next step in financial statement analysis is to thoroughly review the financial statements. We begin with a discussion of the balance sheet.

The Balance Sheet

[Exhibit 14-1](#) provides comparative statements of financial position (balance sheets) for the hypothetical Meals for the Homeless. (Note that this is a new example. The numbers in the Meals for the Homeless financial statements in this chapter are not the same as those in [Chapters 10](#) and [11](#).) *Comparative financial statements* present financial information for more than one fiscal period. Each number on the balance sheet should be examined.

Meals for the Homeless Statements of Financial Position as of December 31, 2018 and 2017					
Assets			Liabilities and Net Assets		
	2018	2017		2018	2017
Current Assets			Liabilities		
Cash	\$ 100	\$ 3,100	Current Liabilities		
Marketable securities	3,000	3,000	Wages payable	\$ 2,000	\$ 3,000
Accounts receivable, net of estimated uncollectibles of \$8,000 and \$7,000	55,000	38,000	Accounts payable	2,000	3,000
Inventory (LIFO basis)	2,000	4,000	Notes payable	6,000	5,000
Prepaid expenses	1,000	0	Current portion of mortgage payable	4,000	5,000
Total Current Assets	\$ 61,100	\$ 48,100	Total Current Liabilities	\$ 14,000	\$ 16,000
Long-Term Assets			Long-Term Liabilities		
Cash restricted for building and equipment acquisition	\$ 900	\$900	Mortgage payable	\$ 12,000	\$ 16,000
Fixed assets			Total Long-Term Liabilities	\$ 12,000	\$ 16,000
Property	\$ 40,000	\$ 40,000	Total Liabilities	\$ 26,000	\$ 32,000
Equipment, net	35,000	45,000	Net Assets		
Investments	8,000	12,000	Unrestricted	\$ 84,100	\$ 85,100
Total Long-Term Assets	\$ 83,900	\$ 97,900	Temporarily restricted	4,900	1,900
Total Assets	\$145,000	\$146,000	Permanently restricted	30,000	27,000
			Total Net Assets	\$119,000	\$114,000
			Total Liabilities and Net Assets	\$145,000	\$146,000

The accompanying notes are an integral part of these statements.

The first section of the balance sheet is current assets. Current assets are the most liquid of the firm's resources. They generally represent resources that will become cash or will be used up within 1 year. In [Exhibit 14-1](#), one of the first things we notice is that total current assets have increased from \$48,100 to \$61,100. At the same time, on the liability side of the balance sheet, we see that current liabilities, which will have to be paid in the near term, fell from \$16,000 to \$14,000. The increase in current assets during a period when there is a decrease in current liabilities, by itself, is a good thing.

It is important, however, to review critically all numbers rather than just subtotals and totals. Although current assets increased, most of the increase is in accounts receivable. In fact, cash has declined from \$3,100

to \$100. Even though current assets seem adequate overall, one might question whether the \$100 is adequate cash on hand to meet obligations as they come due. Furthermore, the increase in accounts receivable is a concern. If this is the result of increased revenues, then it is a positive sign. However, if revenues have not increased substantially, this is more likely to be indicative of problems collecting receivables. In that case, it may be a flag that a problem exists.

All assets that are not current assets fall into the general category of long-term assets. Prominent among the long-term assets are fixed assets, or property, plant, and equipment. Meals's long-term assets have declined from \$97,900 to \$83,900. The largest element in this decline is a \$10,000 reduction in equipment, net of depreciation. This indicates that the equipment of the organization is aging faster than it is being replaced. Depending on the specific circumstances of the organization, this might or might not be cause for concern. For example, if Meals had 10 delivery vans and a goal to replace 2 each year, the purchases of 2 new vans would offset the depreciation on the 10 vans. Given inflation, the new vans would cost more than the old ones, and we should see equipment gradually rise on the balance sheet each year. However, if Meals has only 1 van, it would not be surprising to see equipment, net of accumulated depreciation, decline from year to year until the year that the van is replaced.

We also note that investments declined from \$12,000 to \$8,000. Perhaps investments were sold to provide cash due to a shortfall from operations. If that is the case, it will show up on the cash flow statement. Alternatively, perhaps the market value of the investments has declined. We can look for more clues in the activity statement. Note that the first review of financial statements is a process that tends to raise more questions than it answers.

Long-term liabilities include any recorded liabilities that are not current liabilities. The only long-term liability for Meals is a mortgage. Note that the part of the mortgage that is due in the coming year is shown as a current liability. Overall, the mortgage for Meals has declined from the end of 2017 to the end of 2018. This is a positive indicator. It would be desirable, however, for the long-term liability reduction to be as great as the reduction in long-term assets. That was not the case for Meals.

The last thing we note in the case of the balance sheet for Meals is that although its total assets are approximately the same in both years and the total liabilities and net assets are approximately the same from 2017 to 2018 year-end, the net assets have increased by \$5,000 from \$114,000 to \$119,000. A healthy, thriving organization generally requires at least a modest increase in net assets over time. In sum, Meals has performed reasonably in this area. The details of the increase will become apparent as we review the other financial statements.

The Activity Statement

The comparative activity statements (sometimes called operating statements, income statements, statements of revenues and expenses, or statements of revenues and expenditures) are shown in [Exhibit 14-2](#). Revenues and support have increased by \$9,000 from \$169,000 to \$178,000. This is a positive sign. However, it is not a large enough increase to explain the \$17,000 increase in accounts receivable that was noted when reviewing

the balance sheet. This change would therefore warrant further investigation. It is a potential sign of problems with management of the collections process.

Meals for the Homeless Activity Statements for the Years Ending December 31, 2018 and 2017		
	2018	2017
<i>Changes in Unrestricted Net Assets</i>		
Revenues and support		
Client revenue	\$ 11,000	\$ 9,000
City revenue	20,000	16,000
County revenue	10,000	10,000
Foundation grants	60,000	50,000
Annual ball	12,000	11,000
Contributions	65,000	73,000
Total revenues and support	<u>\$178,000</u>	<u>\$169,000</u>
Net Assets Released From Restrictions		
Satisfaction of program restrictions (see Note 5)	\$ 10,000	\$ 10,000
Expiration of time restrictions (see Note 5)	2,000	1,000
Total Net Assets Released From Restrictions	<u>\$ 12,000</u>	<u>\$ 11,000</u>
Total Unrestricted Revenues and Other Support	<u>\$190,000</u>	<u>\$180,000</u>
Expenses		
Meals	\$ 67,000	\$ 63,000
Counseling	35,000	34,000
Administration, fundraising and general	75,000	66,000
Bad debts	4,000	4,000
Depreciation	10,000	10,000
Total Expenses	<u>\$191,000</u>	<u>\$178,000</u>
Increase/(Decrease) in Unrestricted Net Assets	<u>\$ (1,000)</u>	<u>\$ 4,000</u>
<i>Changes in Temporarily Restricted Net Assets</i>		
Foundation grants	10,000	10,000
Contributions	5,000	2,000
Assets released from restrictions (see Note 5)	(12,000)	(11,000)
Increase in Temporarily Restricted Net Assets	<u>\$ 3,000</u>	<u>\$ 1,000</u>
<i>Changes in Permanently Restricted Net Assets</i>		
Contributions	\$ 3,000	\$ 2,000
Increase in Permanently Restricted Net Assets	<u>\$ 3,000</u>	<u>\$ 2,000</u>
Increase in Net Assets	\$ 5,000	\$ 7,000
Net Assets at Beginning of Year	114,000	107,000
Net Assets at End of Year	<u>\$119,000</u>	<u>\$114,000</u>

The accompanying notes are an integral part of these statements.

Examination of the individual revenue and support items shows that foundation grants are up sharply, by \$10,000. However, there is a disturbing decline in contributions to \$65,000, down from \$73,000. We would want to investigate and determine if this is a 1-year aberration or the beginning of an unfavorable downward trend.

Unrestricted net assets increased by \$12,000 during 2018 due to release from restrictions. It is likely that most of this is the result of having spent money in compliance with restrictions. A note is often provided to explain net assets that are released from restrictions.

Although total unrestricted revenues and support have increased by \$10,000 from \$180,000 to \$190,000, expenses have increased at an even faster pace. It is important to compare the organization with itself over time. The total \$1,000 decrease in unrestricted net assets in 2018 is not a large amount. However, we note that the previous year there was a \$4,000 increase. The implication is that we are possibly seeing a declining trend developing in the financial results of operations.

Overall, net assets increased by \$5,000 in 2018. This is only \$2,000 less than the increase the prior year. It is possible that the main change is that more of Meals's contributions are coming with temporary and permanent restrictions. Note that while unrestricted contributions fell by \$8,000 (from \$73,000 to \$65,000), temporarily restricted contributions rose by \$3,000 (from \$2,000 to \$5,000), and permanently restricted

contributions rose by \$1,000 (from \$2,000 to \$3,000). While this helps reduce the sting of the reduction in unrestricted net assets, it is not totally reassuring. Restricted donations do restrict the organization's use of resources. They do not provide the organization with the same degree of flexibility in directing resources where management believes they are most needed. Management might decide after reviewing these financial statements that a greater effort is needed to raise additional unrestricted contributions.

The Cash Flow Statement

The cash flow statement focuses on financial rather than operating aspects of the organization. The concern is not with specific revenues and expenses but rather with the general sources and uses of money. The statement provides less information about profitability than the activity statement and more information about viability. It is possible to go long periods without making a profit. However, negative cash flows can create immediate questions regarding continued survival. The cash flow statement can provide some early warning signs when viability problems start to arise.

Sometimes the overall change in cash may seem to be fine, but it turns out that the organization's routine activities lose cash. Long-term assets are sold or money is borrowed to overcome an operating cash deficit. Unless annual cash deficits from operations can be reversed, the survival of the organization is not ensured. In [Exhibit 14-3](#), we see comparative cash flow statements for Meals for the Homeless for 2018 and 2017.

Operating activities in 2018 consumed \$10,000 more of cash than they generated. This shortfall was partially made up by selling investments for \$4,000 and by receiving contributions that are restricted to long-term investments. Overall cash decreased by \$3,000.

Meals for the Homeless Statements of Cash Flows for the Years Ending December 31, 2018 and 2017		
	2018	2017
Cash Flows From Operating Activities		
Change in net assets	\$ 5,000	\$ 7,000
Add expenses not requiring cash		
Depreciation	10,000	10,000
Other adjustments		
Add decrease in inventory	2,000	2,000
Subtract increase in receivables	(17,000)	(2,000)
Subtract decrease in wages payable	(1,000)	0
Subtract decrease in accounts payable	(1,000)	(2,000)
Subtract increase in prepaid expenses	(1,000)	0
Subtract contributions restricted to long-term investments	(4,000)	0
Subtract permanently restricted contributions	(3,000)	0
Net Cash (Used for) From Operating Activities	<u>\$(10,000)</u>	<u>\$15,000</u>
Cash Flows From Investing Activities		
Sale of stock investments	4,000	5,000
Purchase of delivery van	0	(32,000)
Net Cash From/(Used for) Investing Activities	<u>\$ 4,000</u>	<u>\$(27,000)</u>
Cash Flows From Financing Activities		
Contributions restricted to endowment	3,000	0
Increase in notes payable	1,000	3,000
Contributions restricted to long-term investments	4,000	0
Increase in mortgages	0	9,000
Repayments of mortgages	(5,000)	(6,000)
Net Cash From Financing Activities	<u>\$ 3,000</u>	<u>\$ 6,000</u>
Net (Decrease) in Cash	\$ (3,000)	\$ (6,000)
Cash, Beginning of Year	3,100	9,100
Cash, End of Year	<u>\$ 100</u>	<u>\$ 3,100</u>
Supplemental Cash Flow Information		
Interest paid	\$ 1,280	\$ 1,600

The accompanying notes are an integral part of these statements.

The cash decline of \$3,000 was only half as great as the decline for 2017, when the cash balance fell from

\$9,100 at the start of the year to \$3,100 at the end. However, the implications are much worse. The 2017 cash decline was the result of acquiring a van, which required a \$32,000 cash payment. We can see this in the Cash Flows From Investing Activities section of the statement. The purchase of the van required an increase in mortgages of only \$9,000 (see the Cash Flows from Financing Activities section of the statement). Part of the acquisition was paid for by selling investments and part by lowering the cash balance. A substantial portion of the cash for the van, however, was generated by operations. In 2017, there was \$15,000 more cash generated from operations than was used for operations. In 2018, the organization sold nearly as much of its stock investments as it did in 2017 but did not acquire any fixed assets. If the trend from 2017 to 2018 is allowed to continue, it will likely have severe consequences for the organization.

When routine operating activities generate a surplus of cash, the organization is more financially stable and viable than if operating activities consume more cash than they generate. There are times when cash deficits from operations cannot be avoided. Growing organizations often have this problem. Receivables and inventory grow faster than collections can keep up. Even when the deficit is the result of healthy growth, however, caution is needed. Rapid expansion will require, at a minimum, careful planning. There must be a determination of how much cash will be needed from sources other than operations. Agreements from banks or other sources must be obtained to ensure that a cash crisis does not occur. It is far easier to obtain financing while one still has cash than it is if one waits until one runs out of cash.

The Statement of Functional Expenses

The comparative statements of functional expenses, shown in [Exhibit 14-4](#) for Meals, provide a great deal of detailed information about the different expenses incurred by the organization. One can see the mix between salaries versus materials and the mix of expenses by type of program. In 2018, Meals spent \$121,000 on program services (\$83,000 for meals plus \$38,000 for counseling) while it spent \$70,000 on support services (\$47,000 for management and general plus \$23,000 for fundraising). The amounts spent on different types of expenses should be carefully considered. Also, changes from one year to the next should be evaluated, especially if the amount of the change is large.

Meals for the Homeless Statements of Functional Expenses for the Years Ended December 31, 2018 and 2017					
	Program Services		Support Services		Total
	Meals	Counseling	Management and General	Fundraising	
Expenses					
For the Year Ending 12/31/18					
Salaries and benefits	\$35,000	\$35,000	\$40,000	\$17,000	\$127,000
Food	17,000				17,000
Supplies and brochures	2,000	1,000	1,000	2,000	6,000
Office expenses	1,000	1,000	1,000	3,000	6,000
Rent	13,000	1,000	1,720	1,000	16,720
Interest	1,000		280		1,280
Professional fees			3,000		3,000
Bad debts	4,000				4,000
Depreciation	10,000				10,000
Total Expenses	<u>\$83,000</u>	<u>\$38,000</u>	<u>\$47,000</u>	<u>\$23,000</u>	<u>\$191,000</u>
For the Year Ending 12/31/17					
Salaries and benefits	\$33,000	\$34,000	\$36,000	\$12,000	\$115,000
Food	15,000				15,000
Supplies and brochures	2,000	800	1,000	2,000	5,800
Office expenses	1,000	800	1,000	3,000	5,800
Rent	12,100	1,000	1,700	1,000	15,800
Interest	1,300		300		1,600
Professional fees			3,000		3,000
Bad debts	4,000				4,000
Depreciation	10,000				10,000
Total Expenses	<u>\$78,400</u>	<u>\$36,600</u>	<u>\$43,000</u>	<u>\$18,000</u>	<u>\$176,000</u>

The accompanying notes are an integral part of these statements.

It was once taken for granted that if a not-for-profit organization spends less than 75 to 80 percent of its resources on program services, then it's not sufficiently dedicated to achieving its mission. There are extreme examples of organizations that do not put their resources toward achieving their mission. For instance, Charity Navigator reports that the Firefighters Charitable Foundation, for the year ending December 31, 2013, spent \$534,794 on program expenses, \$373,387 on administrative expenses, and \$6,541,488 on fundraising expenses.² That comes out to just 7.2 percent spent on program services. In the vast majority of cases in which the ratio of program expenses to total expenses is neither extremely high nor extremely low, however, one may have to interview an organization's program officers to determine its effectiveness. The way we evaluate not-for-profits has become more nuanced with time.

2. See <http://www.charitynavigator.org/index.cfm?bay=search.summary&orgid=3698>.

The Notes that Accompany Financial Statements

Financial statements, in themselves, do not provide a complete picture of the organization's finances. Audited financial statements all refer the reader to the "notes" that follow or accompany the financial statements. In trying to analyze the finances of an organization, the user cannot simply look at total assets and net income. A thorough reading of the statements provides just a start. The notes that accompany the financial statements are an integral part of the annual financial report. In fact, many analysts prefer to review the notes carefully before even beginning to look at the financial statements.

Financial statements do an excellent job of summarizing a very large number of transactions into a usable form. However, they are limited. Throughout this book, we discuss some of the causes of the limitations. Fixed assets are recorded based on their historical cost adjusted for depreciation. Therefore, the balance sheet does not convey the current fair value of the fixed assets. Inventory may be valued on the financial statements based on a last-in, first-out (LIFO) or first-in, first-out (FIFO) cost assumption. Depreciation can be calculated based on a straight-line or accelerated approach.

The notes that accompany financial statements are designed to provide explanations about choices made, methods used, and anything else the reader needs to understand the financial position and results of operations of the organization. They ensure that the financial report presents a "fair representation of financial results in accordance with GAAP." That means that all relevant information that a reasonable person who is knowledgeable of GAAP would need is provided. In many cases, the notes are considerably longer than the financial statements themselves.

To provide a sense of the types of notes that are used and the information they provide, a hypothetical set of notes for Meals for the Homeless is provided in the next section. In addition, examples from real organizations are shown. Notes for Meals are shown in italics, with commentary in normal type. Excerpts of notes from real organizations are shown in boxes.

Significant Accounting Policies

Each organization provides a unique set of notes that apply to its own unique circumstances. However, the notes section generally begins with a statement of accounting policies. This note often has a number of subsections.

Note A: Significant Accounting Policies

Meals for the Homeless ("Meals") is subject to the requirements of Statements of Financial Accounting Standard ("SFAS") No. 117—"Financial Statements of Not-for-Profit Organizations." Under SFAS No. 117, Meals is required to report information regarding its financial position and activities according to three classes of net assets: unrestricted, temporarily restricted, and permanently restricted. In addition, Meals is required to present a statement of cash flows and a statement of functional expenses.

Unrestricted net assets represent that part of the net assets that are neither permanently restricted nor temporarily restricted by donor-imposed stipulations. Temporarily restricted net assets represent the part of net assets resulting from contributions and other inflows of assets whose use is limited by donor-imposed stipulations that either expire by passage of time or can be fulfilled and removed by actions of Meals pursuant to those stipulations. Permanently restricted net assets represent the part of Meals's net assets resulting from contributions and other inflows of assets whose use by Meals is limited by donor-imposed stipulations that neither expire by passage of time nor can be fulfilled or otherwise removed by actions of Meals.

When a donor restriction expires or the purpose is accomplished, the restricted net assets are reclassified to unrestricted net assets and reported in the statement of activities as net assets released from restrictions.

The preceding note is fairly standard for not-for-profit organizations. However, it is important to include this note since it indicates critical differences from other types of organizations. The first note for Meals continues with some specific policies:

Recognition of Revenues and Expenses

Revenues and expenses are recorded on an accrual basis.

Since some organizations use cash, others use accrual, and others use modified accrual accounting, a note is often included to indicate the basis of accounting. See Box 14-1 for the basis of accounting note for Globus Relief.

BOX 14-1 Basis of Accounting

The financial statements of the Organization have been prepared on the accrual basis. The Organization follows the provisions of Accounting Standards Codification (ASC) 958, Not-for-Profit Entities.

Source: Globus Relief. Year Ended December 31, 2013: *Financial Statements and Independent Auditor's Report*. August 22, 2014, p. 7. <http://www.globusrelief.org/File/View/GR-Audit-2013.pdf>.

Accounting for Contributions

All contributions are considered to be available for unrestricted use unless specifically restricted by the donor.

Amounts received that are designated for future periods or are restricted by the donor for specific purposes are reported as temporarily restricted or permanently restricted support that increases those net asset classes.

Unconditional promises to give that are silent as to the due date are presumed to be time-restricted by the donor until received and are reported as contributions receivable and as temporarily restricted net assets.

This means that if no payment date is specified when a pledge is made, the organization is not free to spend that money until it has been received. Although the organization may have the right to collect the pledge and one might consider treating it as current period unrestricted resources, this more conservative approach is being taken by the organization. This information is helpful to a user who might be concerned that the organization might get into financial trouble by spending money based on pledges that may never be collected. See Box 14-2 for the contributions note for the American National Red Cross.

Donated Materials, Marketable Securities, and Services

Donated food and other materials, and marketable securities are reflected as contributions in the accompanying statements at their fair values at date of receipt. Conditional donations are not considered revenue until the conditions have been met.

A substantial number of volunteers donated significant amounts of their time to Meals's food services. SFAS 116 requires that donated services be recognized if the services received (a) create or enhance nonfinancial assets or (b) require specialized skills, are provided by individuals possessing skills, and would typically need to be purchased if not provided by donation. For the years ended December 31, 2018 and 2017, Meals received \$80,000 and \$72,000 worth of donated services, respectively, that would otherwise have had to be purchased. However, these services (related to cooking and serving meals) do not qualify as skilled services. Thus, no amounts have been reflected in the statements for these donated services.

In not-for-profit organizations, a great deal of labor is provided by volunteers. It is important to indicate the extent to which those volunteers' services are recorded as both a contribution and an expense related to providing services. See Box 14-3 for Scholarship America's note related to contributed services.

BOX 14-2 Contributions

Contributions are considered to be unrestricted unless specifically restricted by the donor. The Organization reports contributions in the temporarily or permanently restricted net asset class if they are received with donor stipulations as to their use. When a donor restriction expires, that is, when a stipulated time restriction ends or purpose restriction is accomplished, temporarily restricted net assets are released and reclassified to unrestricted net assets in the consolidated statement of activities. Donor-restricted contributions are initially reported in the temporarily restricted net asset class, even if it is anticipated such restrictions will be met in the current reporting period.

Source: American National Red Cross. *Consolidated Financial Statements, June 30, 2014 (With Summarized Information for the Year Ended June 30, 2013) (With Independent Auditors' Report Thereon)*. October 29, 2014, p. 10.

http://www.redcross.org/images/MEDIA_CustomProductCatalog/m43540127_2014_TheAmericanNationalRedCrossFS.PDF.

Inventories

Inventories are stated at cost, not to exceed market value. Cost is calculated using the last-in, first-out method.

By stating that inventory is not valued in excess of market, the organization is telling the user of the financial statements that if inventories have declined in value, they are shown at the lower value. This is referred to as using the lower of cost or market and occurs because of the GAAP of conservatism. Even though we might charge more for the inventory when we use it, we cannot record it above its cost. If it declines in value (e.g., food spoils), we can record a value lower than cost. An important question, however, is how we determine cost. We could use LIFO or FIFO. This note indicates that Meals uses LIFO. Since different organizations can use different approaches, this note helps the reader understand this organization and compare it with others. See Box 14-4 for the American National Red Cross inventory note. The Red Cross uses the average cost method rather than LIFO or FIFO.

BOX 14-3 Contributed Services

A number of volunteers have made significant donations of their time to program and support functions. The value of this contributed time does not meet the criteria for recognition of contributed services, and accordingly, is not reflected in the accompanying financial statements.

Source: Scholarship America. *Financial Statements Including Independent Auditor's Report As of December 31, 2014 and 2013 and for the Year Ended December 31, 2014 and the Six Months Ended December 31, 2013.* May 18, 2015, p. 8.

<https://scholarshipamerica.org/files/scholarship-america-financials-ar14.pdf>.

BOX 14-4 Inventories

Inventories of supplies purchased for use in program and support services are valued using the average cost method. Whole blood and its components are valued at the lower of average cost or market.

Source: American National Red Cross, op. cit., p. 9.

Property, Buildings, and Equipment

Land, buildings, and equipment are recorded at cost, and depreciation over the useful lives of buildings and equipment is charged annually using the straight-line method.

This note distinguishes the organization from organizations that do not depreciate all of their buildings and equipment or that use accelerated depreciation methods. The specific amounts of accumulated depreciation on fixed assets currently owned appear in a note discussed later in this section.

If a user of financial statements is comparing two similar organizations, but one uses straight-line depreciation and another uses accelerated depreciation, one may appear to have higher expenses and lower assets than the other. The user might infer a greater difference between the two organizations than actually exists. By providing information such as this in the notes, the user can make a more meaningful comparison between the organizations. See Box 14-5 for the American Diabetes Association's note on fixed assets.

BOX 14-5 Fixed Assets

All fixed assets are stated at cost or fair value a straight-line basis over the following useful on the date of receipt and are depreciated on lives:

Leasehold improvements	10 years or life of lease, if shorter
Furniture, fixtures, and equipment	5 years
Software	5–7 years

Source: American Diabetes Association, *Consolidated Financial Statements and Consolidating Schedules, December 31, 2014 (With Independent Auditors' Report Thereon)*. May 29, 2015, p. 9.

http://main.diabetes.org/dorg/PDFs/Financial/American_Diabetes_Association_2014_Consolidated_Financials.pdf.

Tax Status

Meals is a not-for-profit voluntary organization exempt from income taxes under Section 501(c)(3) of the U.S. Internal Revenue Code.

This note is quite important for users of the financial statements. It indicates to creditors that the organization will not have to pay income taxes, thereby removing a competing creditor. When organizations go bankrupt, the Internal Revenue Service (IRS) is aggressive in collecting amounts owed to it. It also indicates to potential donors that their contributions will be tax-deductible.

Accounting For Investments

In accordance with the Statement of Financial Accounting Standards ("SFAS") No. 124, "Accounting for Certain Investments Held by Not-for-Profit Organizations," Meals reports debt and equity securities at their fair value with the related gains and losses included in the statement of activities.

Since investments at one time were reported at lower of cost or market value, this is an important policy statement to include. For Meals, Note A concludes with "Use of Estimates."

Use of Estimates

The preparation of financial statements requires management to make estimates and assumptions that affect the reported amounts of certain assets and liabilities at the date of the financial statements and the reported amounts of revenue and expenses during the period. Actual results could differ.

Many individuals tend to believe that accountants have an ability to be more precise and accurate than is in fact the case. This note's purpose is to point out to the reader that despite the conventions of GAAP, financial statements remain subjective and subject to uncertainty. See Box 14-6 for the Wildlife Conservation Society's (WCS) note regarding its policy for accounting estimates.

BOX 14-6 Use of Estimates

The preparation of consolidated financial statements in conformity with U.S. generally accepted accounting principles requires management to make estimates and judgments that affect the reported amounts of assets and liabilities and disclosures of contingent assets and liabilities at the date of the consolidated financial statements and the reported amounts of revenues and expenses during the reporting period.... Actual results could differ from those estimates.

Source: Wildlife Conservation Society and Subsidiaries. *Consolidated Financial Statements and Schedules, June 30, 2014 (With Comparative Summarized Financial Information as of and for the Year Ended June 30, 2013) (With Independent Auditor's Report Thereon)*. October 20, 2014, p. 9. <http://www.wcs.org/about-us/-/media/Files/pdfs/Audited%20Financial%20Statements%202018%20WCS.pdf>.

Other Notes

The first note covers a wide range of accounting policies. The remaining notes for the most part focus on a specific issue in somewhat more detail. Where the first note is policy oriented, the remaining notes provide information about specific circumstances or values.

Note B: Program Services

The activities of Meals for the Homeless consist of providing meals and counseling services. The meals are provided in soup kitchens throughout the city. Meals also uses vans to deliver food to shelters. Counseling services are provided to assist clients in finding both temporary shelter and permanent housing.

In 2018, Meals provided 587 meals per day in its 4 kitchens. In addition, 147 meals, on average, were delivered each day to shelters. Approximately 1,292 individuals are counseled each year. Meals's services are consumed by both individuals and families.

As a result of Meals's programs, a number of individuals have the physical strength to continue work or return to work. Others avoid hospitalization from malnutrition. It is the belief of the organization that without its services, a number of its clients would die each year.

See Box 14-7 for the program services note for the Fresh Air Fund.

BOX 14-7 Program Services

Fresh Air Camping activities consist of sending approximately 3,000 children from their homes in New York City to the Fund's camps in Fishkill, New York. The summer program provides direction, leadership, food, medical care and recreation for two or more weeks at no cost to the children's families. Included within this program is the Fund's Career Awareness Camp, which serves approximately 300 children. The camp program fosters critical career-related qualities such as responsibility, cooperation and leadership. Additionally, the Fund's year-round camping program serves 2,000 disadvantaged teenagers each year.

Source: Fresh Air Fund. *Financial Statements Years Ended September 30, 2013 and 2012 With Report of Independent Auditors*, p. 8.

Note C: Marketable Securities

The market value of Meals's investments in marketable securities at December 31³ was:

3. The value of balance sheet accounts is given as of a specific point in time. Accountants often refer to a value "at" the date, such as "at December 31."

	2018				2017
	Level 1	Level 2	Level 3	Total	Total
Treasury bills	\$1,000	\$ -	\$ -	\$1,000	\$1,500
Common stock	2,000	-	-	2,000	1,500
Total investments	\$3,000	\$ -	\$ -	\$3,000	\$3,000

As discussed in [Chapter 9](#), not-for-profit organizations must report all securities that have readily determinable fair values at those values, and there is a hierarchy of fair values that must be used when asset values are reported in audited financial statements. This information describes the composition of the organization's securities and other investments as well as the reliability of their values. Meals's marketable securities consist of one third Treasury Bills and two thirds common stock. By contrast, in the prior year its portfolio consisted of equal amounts of T-bills and common stock. Treasury Bills are generally considered risk-free investments, while investing in common stock entails risk.

Note D: Property, Buildings, and Equipment

As of December 31, the property, buildings, and equipment owned by Meals consisted of the following:

	2018	2017
Land	\$ 40,000	\$ 40,000
Equipment	<u>70,000</u>	<u>70,000</u>
	\$110,000	\$110,000
Less Accumulated Depreciation	<u>35,000</u>	<u>25,000</u>
Net Property and Equipment	<u>\$ 75,000</u>	<u>\$ 85,000</u>

From the net amount, we cannot tell how old our equipment is. However, from this note, we can see that we have \$70,000 worth of equipment that is about half depreciated. This note therefore gives information that we would not know from looking at the balance sheet. Notice that the information in the notes following Note A provide specific details such as the cost of fixed assets, while Note A and its subparts provide information on the organization's accounting policies. The fixed asset note for the American Diabetes Association is shown in Box 14-8.

BOX 14-8 Fixed Assets

Fixed assets consist of the following as of December 31, 2014 and 2013 (in thousands):

	2014	2013
Land	\$ 67	\$ 195
Leasehold improvements	1,098	1,412
Software	20,448	18,341
Furniture, fixtures and equipment	18,374	18,255
Total fixed assets	<u>\$30,987</u>	<u>\$38,200</u>
Less: accumulated depreciation and amortization	<u>(30,396)</u>	<u>(28,962)</u>
Fixed assets, net	<u>\$ 9,591</u>	<u>\$ 9,238</u>

Source: American Diabetes Association, op. cit., p. 15.

Note E: Pension Plan

Meals has established a defined contribution plan for all eligible employees, effective January 1, 1992. Employees who have completed 1 year of service and have attained the age of 21 are eligible for participation. Contributions are discretionary and are determined by the Board of Trustees. The contributions are allocated based on an equal percentage of each participant's compensation. No employee contributions are permitted. Participants are fully vested after 2 years of service. Contributions during 2018 and 2017 were \$6,000 and \$5,500, respectively.

Pension plans can be extremely complicated. There are two major categories: *defined contribution plans* and *defined benefit plans*. In a defined contribution plan, the amount required to be put aside by the organization is determined each year. That amount is the organization's total obligation to the pension plan. Depending on investment returns, the participants will be able to receive larger or smaller amounts upon retirement. In a defined benefit plan, the organization is required to make specific defined payments to participants upon retirement. The risk or benefit of investment experience falls on the organization rather than the participants. The retirement benefit note for St. Jude Children's Research Hospital is shown in Box 14-9.

BOX 14-9 Employee Retirement Benefit Plans

The Hospital sponsors a defined-contribution retirement annuity plan generally covering all employees who have completed one year of service. The plan requires that the Hospital make annual contributions based on participants' base compensation and employee classification. The plan allows individuals to begin making contributions to the plan as pretax deferral as soon as administratively feasible after hire date. The Hospital's contributions are 50% vested after two years of service and 100% vested after three years of service. Employee contributions are immediately 100% vested. Total cash contributions to the plan were approximately \$18,900,000 and \$17,900,000 for the years ended June 30, 2014 and 2013, respectively.

Source: St. Jude Children's Research Hospital & American Lebanese Syrian Associated Charities. *Combined Financial Statements as of and for the Years Ended June 30, 2014 and 2013, and Independent Auditor's Report.* October 14, 2014, p. 23.

<https://www.stjude.org/SJFile/combined-sjcrh-alsac-audited-fs-fy14.pdf>.

Note F: Contingent Liabilities

There are various lawsuits and threatened actions against Meals, arising out of accidents and other matters, some of which claim substantial amounts of damages. In the opinion of Meals's management, these lawsuits are either without merit or covered by insurance and will not result in any material adverse effect on the financial position of Meals.

There are times that organizations have large potential liabilities, called *contingent liabilities*, that are not shown on the balance sheet. For example, the organization might expect to have to make a large payment as a result of a lawsuit, but the exact amount cannot be determined. Rather than show an approximate amount, the balance sheet would have a reference to the notes. The note would indicate the nature of the liability. The Wildlife Conservation Society's note on contingencies is shown in Box 14-10.

Box 14-10 Contingencies

In the usual course of carrying out its mission, WCS may be a party to litigation and other claims. WCS carries insurance that, generally, covers the cost of defending and settling such litigation and claims. While it is not feasible to predict the ultimate outcomes of such matters, WCS's management is not aware of any pending litigation or claims that would have a material adverse effect on WCS's financial position.

Source: Wildlife Conservation Society and Subsidiaries, op. cit., p. 13.

Note G: Commitments

Although Meals does not own any buildings, it does lease space for its soup kitchens and management offices.

Meals has several noncancellable lease agreements that terminate December 31, 2022. Minimum rentals under these leases are as follows:

Year Ending December 31:	
2019	\$20,000
2020	21,000
2021	22,000
2022	23,000
Total	<u>\$86,000</u>

If Meals owned its own buildings and had borrowed money on a mortgage to finance the buildings, the mortgage would show as a liability on its balance sheet. If it signs a 5-year lease on a building, that lease will not show on the balance sheet as a liability. However, the organization is still required to make payments, the same as if it had a mortgage. This note discloses that important commitment to make payments in future years. This information would be quite important to someone contemplating making a loan to Meals and wondering what other payments it is committed to making. Box 14-11 provides the note on lease *commitments* from the American Diabetes Association's annual financial report.

Note that although some leases meet rules that result in treating them as liabilities that show on the balance sheet, many do not. Leases that are noncancellable but do not qualify for treatment as a liability would be reported as commitments, if material in amount.

Box 14-11 Commitments

The Association is obligated under various noncancelable operating lease agreements for facilities expiring at various dates through July 2021. Many of these agreements contain cost escalations providing for increases in rental rates.

As of December 31, 2014, the future minimum lease payments under operating leases with noncancelable lease terms in excess of one year were (in thousands):

Year ending December 31:	
2015	\$ 6,952
2016	5,913
2017	2,222
2018	1,212
2019	890
2020 and thereafter	289
Total minimum lease payments	<u>\$17,478</u>

Source: American Diabetes Association, op. cit., p. 19.

Note H: Restricted Net Assets

Temporarily restricted net assets were available for the following purposes at December 31, 2018 and 2017:

	2018	2017
Children's Outreach Program	\$4,000	\$1,000
Building and Equipment	900	900
	<u>\$4,900</u>	<u>\$1,900</u>

Temporarily restricted net assets were released from restrictions during 2018 and 2017 by incurring expenses satisfying restricted purposes. Net releases were as follows:

	2018	2017
Satisfaction of Program Restrictions		
Used to provide meals	\$ 10,000	\$ 2,000
Used to acquire delivery van		8,000
Subtotal	<u>\$ 10,000</u>	<u>\$ 10,000</u>
Expiration of Time Restrictions		
Bequest to be used over 10 years	\$ 1,000	\$ 1,000
2017 donation for use in 2018	1,000	
	<u>\$ 2,000</u>	<u>\$ 1,000</u>
Total Net Assets Released From Restrictions	<u>\$ 12,000</u>	<u>\$ 11,000</u>

Permanently restricted net assets were restricted as follows:

	2018	2017
Invested permanently with income to be used for any organizational purposes:	<u>\$ 30,000</u>	<u>\$ 27,000</u>

The note related to restricted net assets for St. Jude Children's Research Hospital/American Lebanese Syrian Associated Charities in its 2014 annual report is shown in Box 14-12.

BOX 14-12 Restrictions on Net Assets

Permanently restricted net assets as of June 30, 2014 and 2013, are restricted for the following purposes:

	2014	2013
Future needs of the hospital	\$ 745,055,660	\$ 690,695,778
Endowed chairs	155,158,991	138,259,741
Treatment and research	14,889,475	14,887,754
Total	<u>\$ 915,104,075</u>	<u>\$ 843,843,273</u>

Temporarily restricted net assets of approximately \$66,082,000 and \$60,144,000 at June 30, 2014 and 2013, respectively, consisted primarily of charitable gift agreements and charitable remainder trusts receivable.

Source: St. Jude Children's Research Hospital & American Lebanese Syrian Associated Charities, op. cit., p. 20.

Note I: Inventory

If the FIFO method of inventory had been used, inventories would have been \$1,000 and \$900 higher at December 31, 2018 and 2017, respectively.

This note allows a financial statement user to convert income and assets calculated on a LIFO basis to what it would have been if the organization used FIFO, thus making comparison between organizations easier.

Summary of Notes

This section does not provide an inclusive listing of all possible notes. Rather, just a few common notes have been shown to provide the reader with some familiarity and awareness of notes that accompany audited financial statements. Depending on the exact circumstances of different organizations, a wide variety of disclosures are required by GAAP.

Given the wide range of possible ways to report information, it is vital to examine the notes to gain an understanding of which choices were made and the impact of those choices. A good understanding of financial position and results requires more information than the financial statements themselves can convey. What contingent liabilities are there, and are they material in amount? How old are the organization's buildings and equipment?

Not all notes are relevant to all readers. Some items are of more concern to employees than creditors. Some items help donors more than internal managers. Whatever one's purpose in using a financial report, the key is that the financial statements by themselves are incapable of telling the full story. To avoid being misled by the numbers, it is necessary to supplement the information in the statements with the information in the notes that accompany the statements.

Ratio Analysis

Another crucial element in financial analysis is the use of ratios. A ratio is a comparison of one number to another. Ratios help the organization's managers and external users understand the organization's strengths and weaknesses. A better understanding of strengths can allow the organization to build on them. A better understanding of weaknesses can lead to corrective actions.

In financial statement analysis, we compare numbers taken from the financial statements. For instance, if we want to know how much Meals for the Homeless had in current assets compared with its current liabilities at the end of 2018, we would compare its \$61,100 in current assets with its \$14,000 in current liabilities ([Exhibit 14-1](#)). The comparison is done by dividing one number by the other. If we divide \$61,100 by \$14,000, the result is 4.4. This means that there are 4.4 dollars of current assets for every 1 dollar of current liabilities. This would be referred to either as a ratio of 4.4 to 1 or simply as a ratio of 4.4. This particular ratio is called the current ratio.

Ratios are used because the comparison between two numbers generates information that is more useful than either or both of the numbers separately. If we know that we have \$61,100, that does not tell us whether the organization has adequate short-term resources to meet its obligations. Knowing that we have 4.4 dollars of liquid assets for each dollar of short-term obligations tells us much more about the relative safety of the organization.

Ratios are generally computed using computer spreadsheet software programs. However, it is important to think about why each ratio is being computed and the implications of various values for each ratio. Ratio analysis is more of an art than a science and cannot be usefully approached in a mechanical manner.

This chapter provides a number of examples of ratios. However, the discussion is not all inclusive. Each organization can develop its own set of ratios that serve as useful indicators about the health and efficiency of the organization. For example, a key ratio for the health maintenance organization (HMO) industry is the medical loss ratio, which indicates the percentage of total premiums spent on providing medical care as opposed to marketing and administrative costs. New ratios can be created by simply finding a relationship between two numbers that provides useful information.

Making Comparisons

We have calculated the current ratio for Meals as being 4.4. What does that mean? Is 4.4 a very high ratio or a very low one? We do not want to have too few current assets and risk a financial crisis for nonpayment of obligations. However, it is quite difficult to evaluate a ratio without a standard for comparison. Comparisons are necessary to get a sense of the implications of a ratio. We can compare a ratio with the same ratio for the organization at different points in time, with close competitors, and with the industry. By looking for points of comparison, the organization can determine benchmark standards that it wants to use as targets or goals.

It is often hard for public service organizations to get data from other organizations that are totally

comparable. At a minimum, however, any organization can make comparisons of its own data over time. By considering a ratio's value from year to year over a 3- to 5-year period, trends can be seen unfolding. This is often referred to as trend analysis. Gradual changes, either favorable or unfavorable, may be observed, and sudden sharp turnarounds, for better or worse, will be quickly discovered.

In addition to using its own data over time, an organization should make an effort to find a similar organization. Once we determine an organization that is similar, its financial statements should be obtained. Many health care, not-for-profit, and government organizations will provide a copy of their audited financial report upon request. If one cannot be obtained by direct contact, a substantial amount of financial statement information can be obtained from the annual Form 990 tax return that not-for-profits are generally required to file with the IRS. Those tax returns are public documents and must be made available to the public by the organization. Many 990 tax returns may be found online at www.guidestar.org.

A ratio-by-ratio comparison should be undertaken. This can be very helpful in determining why one organization is doing better or worse than another. An analysis of the difference in ratios can provide insight into actions that are required to improve results.

An additional comparative analysis that can be very helpful is comparison with an entire industry. Data for a wide range of for-profit industries are provided by organizations such as Dun and Bradstreet and RMA, the Risk Management Association. Ingenix publishes an annual almanac of ratios for the hospital industry. Many organizations have trade associations that prepare industry data for their members. Data provided by such organizations and associations often break down ratios by size of organization, geographic region, and other critical elements that differentiate organizations within the industry. Thus, a large, urban teaching hospital in the South can compare its own ratios with those of all other large, urban teaching hospitals in the South.

Data are often provided not only for the mean, but also by percentiles. For example, suppose that the average current ratio for the soup kitchen industry is 2. Meals has a ratio of 4.4, which is substantially higher. However, a trade association publication might indicate that 25 percent of all soup kitchens have a current ratio over 5. That would provide a very different implication than if we found that less than 5 percent of all soup kitchens had a current ratio above 3.

Cautions in the Use of Ratios

Although ratios are a powerful analytical tool, they do have certain weaknesses. First, no one ratio is adequate. Ratios must be viewed in context of each other and of the overall financial statement review. Second, ratios are generally drawn from financial statement information, which is subject to many GAAP-imposed limitations. Third, one should not become overly concerned with the precise value of a ratio. Fourth, one cannot assume that we desire to maximize or minimize the value of the ratio. Fifth, one should use common sense. Finally, ratios that are useful for health and not-for-profit organizations will not necessarily be helpful for governments. Each of these issues is discussed here.

Ratio analysis requires a mosaic approach. When you look at a picture made up of individual mosaic tiles, you

cannot really learn anything about the picture from one tile. If the tile is blue, it could be sky, water, or almost anything else. Similarly with ratios—a value for a ratio means little by itself. For example, the current ratio may be very high. This would seem to imply robust financial health. However, often a failing organization will sell off its fixed assets in desperation to raise money to pay its creditors. As of the moment the ratio is calculated, current assets may be high. However, ongoing losses may soon wipe out the liquid resources. You must look at the entire picture to get a more realistic understanding of the organization's financial situation.

Ratios are often generated by using numbers from the audited financial statements. However, we know that financial statement data are limited. Fixed assets are reported at historical cost adjusted for depreciation. Some organizations will use straight-line depreciation, while others may use accelerated depreciation. Neither approach will ensure that the balance sheet reflects the market value of the assets. Inventories for some organizations will be reported on a LIFO basis, but others may use a FIFO basis. As a result of these, and similar issues, it cannot be assumed that ratios are perfectly comparable across organizations. This is a serious weakness, given that comparison is one of the major functions of ratio analysis.

Given the inherent weaknesses in financial data and the problem in trying to draw conclusions based on any one or a few ratios, it becomes important to recognize that ratio analysis should be used to develop general impressions about an organization. As noted previously, ratio analysis is an art form rather than a precise science. Different users of ratios may draw different conclusions. It is useful to focus on the gestalt—an overall sense of what we learn about the organization rather than a precise measurement of what each ratio indicates. Thus, it is important to gather information without being overly mesmerized by the level of detail available.

We can calculate ratios to many decimal places. In the current ratio calculated previously for Meals, the true ratio value is 4.36428571428571. Is that a useful number? Do you know more or less about Meals if you use the full number shown here or if you simply know that Meals has about \$4 of current assets for every dollar of current liabilities? In other words, it is important not to become overly concerned with the exactness of the ratio's value. Instead, focus on the implications of a ratio of approximately the amount calculated.

When we look at ratios, it would simplify analysis if we knew that a particular ratio should be as low as possible or as high as possible. However, many times a desirable ratio value is somewhere in between. On the one hand, if a current ratio is too low, it implies the organization may not be able to meet its obligations. That would be a sign of weak financial status. On the other hand, if the ratio is very high, then an unduly large amount of resources are being tied up in current assets. The organization could likely better employ those assets in other ways. This would imply management is not operating the organization efficiently. Unfortunately, this means the analyst has to determine how low is too low and how high is too high. It is like walking a tightrope, trying not to fall on either side.

The use of ratio analysis should always be governed by common sense. One can easily calculate dozens of ratios and quickly suffer from data overload. It is useful to first review the financial statements and notes, and a few representative ratios of each major class. Based on that information, one can identify potential problem areas and then calculate a variety of more detailed ratios for use in a more focused analysis.

Many of the ratios to be calculated in this section of the chapter do not relate directly to governments or must be modified to be used by governments. Specific issues related to using ratios for governments are discussed in [Chapter 15](#).

A final note of caution relates to the specific definitions of ratios. Not everyone calculates ratios using the same definitions. A debt to equity ratio could divide total liabilities by net assets or just long-term debt by net assets. Although the latter approach is more properly called long-term debt to net assets, confusion can arise. It is always important to define ratios clearly or to determine the exact definitions that have been used. The purpose of the ratio discussion here is not to establish the “correct” ratio definitions, but rather to consider the uses and possibilities of ratio analysis. Ratios can be redefined or invented to meet the needs of the user.

Major Classes of Ratios

Ratios can be grouped in a variety of ways. This chapter groups them into the following six principal types: (1) common size, (2) liquidity, (3) asset turnover, (4) leverage, (5) coverage, and (6) profitability.

Common Size Ratios

A starting point in ratio analysis is the calculation of a set of *common size ratios*. A common size ratio compares all the numbers on a financial statement with one key number. For example, each asset on the balance sheet is compared with total assets. Each item on the activity statement is compared with total revenues.

One of the difficult aspects of comparing different organizations is that they may be substantially different in size. Suppose that Museum A has \$100 in cash and Museum B has \$500. Does A have too little cash? What if it turns out that Museum A has \$1,000 of total assets and Museum B has \$5,000 of total assets? Museum B has five times as much cash, but it also has five times as many assets; it is a larger organization. It does not make sense to compare the absolute amount of cash. A common size ratio’s purpose is to make the numbers on the financial statement more comparable across organizations.

In the case of the museums, the common size ratio would be cash divided by total assets. We can see that both organizations have one tenth of their assets in cash:

$$\text{Common Sized Cash} = \frac{\text{Cash}}{\text{Total Assets}} = \frac{\text{Museum A } \$100}{\$1,000} = .1 \quad \frac{\text{Museum B } \$500}{\$5,000} = .1$$

Relative to the size of the organizations, their cash is similar. If we did this for an entire industry, we would get a sense of what portion of assets is typically held in cash. Common size ratios are usually shown as a percentage. Rather than referring to the cash holdings of the museums as being 0.1, or one tenth of total assets, we indicate that their cash is 10 percent. Ratios are converted to percentages by multiplying them by 100%:

$$\frac{\$100}{\$1,000} \times 100\% = 10\% \quad \frac{\$500}{\$5,000} \times 100\% = 10\%$$

The common size ratios for Meals for the Homeless’s comparative balance sheets are presented in [Exhibit 14-5](#). A ratio is computed for each individual item by dividing it by total assets and converting the result to a percentage.

Meals for the Homeless Statements of Financial Position as of December 31, 2018 and 2017									
Assets					Liabilities and Net Assets				
	Percent	2018	Percent	2017		Percent	2018	Percent	2017
Current Assets					Liabilities				
Cash	0.1	\$ 100	2.1	\$ 3,100	Current Liabilities				
Marketable securities	2.1	3,000	2.1	3,000	Wages payable	1.4	\$ 2,000	2.1	\$ 3,000
Accounts receivable, net of estimated uncollectibles					Accounts payable	1.4	2,000	2.1	3,000
of \$8,000 and \$7,000	37.9	55,000	26.0	38,000	Notes payable	4.1	6,000	3.4	5,000
Inventory (LIFO basis)	1.4	2,000	2.7	4,000	Current portion of mortgage payable	2.8	4,000	3.4	5,000
Prepaid expenses	0.7	1,000	0.0	0	Total Current Liabilities	9.7	\$ 14,000	11.0	\$ 16,000
Total Current Assets	42.1	\$ 61,100	32.9	\$ 48,100	Long-Term Liabilities				
Long-Term Assets					Mortgage payable	8.3	\$ 12,000	11.0	\$ 16,000
Cash restricted for building and equipment acquisition	0.6	\$ 900	0.6	\$ 900	Total Long-Term Liabilities	8.3	\$ 12,000	11.0	\$ 16,000
Fixed assets					Total Liabilities	17.9	\$ 26,000	21.9	\$ 32,000
Property	27.6	40,000	27.4	40,000	Net Assets				
Equipment, net	24.1	35,000	30.8	45,000	Unrestricted	58.0	\$ 84,100	58.3	\$ 85,100
Investments	5.5	8,000	8.2	12,000	Temporarily restricted	3.4	4,900	1.3	1,900
Total Long-Term Assets	57.9	\$ 83,900	67.1	\$ 97,900	Permanently restricted	20.7	30,000	18.5	27,000
Total Assets	100.0	\$145,000	100.0	\$146,000	Total Net Assets	82.1	\$119,000	78.1	\$114,000
					Total Liabilities and Net Assets	100.0	\$145,000	100.0	\$146,000

Exhibit 14-5

Examine the common size ratios for the 2 years. We can see that total current assets have increased from approximately 33 percent to about 42 percent of total assets. The primary reason for this is the change in accounts receivable. This again points out a need to investigate the growth in this area. There has been a considerable decrease in equipment as a percentage of assets, which may be cause for some concern.

The common size cash ratio should be neither too high nor too low. Too low a ratio indicates the possibility of inability to pay obligations when due. Too high a ratio indicates surplus cash that could have been used to provide services, reduce high-cost debt, or invest in higher-yielding investments. There is no rule of thumb. Appropriate values differ by industry. We must consider the trend over time and the values at other organizations. For Meals, we note that this ratio has fallen from 2.1 percent to 0.1 percent in just 1 year, a cause for some concern.

The accounts receivable common size ratio generally should be relatively low. A high ratio might indicate difficulty collecting money due to the organization. Conversely, too low a ratio might indicate that the organization is unwilling to provide credit to potentially good customers. A rising ratio might not be bad news. It might indicate that total revenues are way up (good news) and that receivables are rising in proportion. Care must be exercised in trying to understand what the number has to say.

The value of common size ratios is greater when they are used to compare the organization with other organizations. However, even if one is using ratios only for internal comparison, it is probably worth the effort to prepare common size ratios. We might note that revenues are changing and so are expenses without common size ratios. However, we can get better insight as to whether the changes are proportional by using ratios.

For example, consider [Exhibit 14-6](#), which displays the common size ratios for Meals's comparative activity statements. Common size ratios for the activity statement are calculated by dividing each individual item by total unrestricted revenues and other support. Thus, each element on the activity statement is assessed as a percentage of unrestricted resource inflows. Note that [Exhibit 14-6](#) not only shows each element as a common size ratio, but also has a column for the percent change. This allows the user to not only understand the

relationship between each item and the total, but also get a better sense for how each item is changing over time.

Meals for the Homeless Activity Statements for the Years Ending December 31, 2018 and 2017					
	Percent Change	Percent	2018	Percent	2017
Changes in Unrestricted Net Assets					
Revenues and support					
Client revenue	22.2	5.8	\$ 11,000	5.0	\$ 9,000
City revenue	25.0	10.5	20,000	8.9	16,000
County revenue	0.0	5.3	10,000	5.6	10,000
Foundation grants	20.0	31.6	60,000	27.8	50,000
Annual ball	9.1	6.3	12,000	6.1	11,000
Contributions	-11.0	34.2	65,000	40.6	73,000
Total revenues and support	5.3	93.7	<u>\$178,000</u>	93.9	<u>\$169,000</u>
Net Assets Released From Restrictions					
Satisfaction of program restrictions (see Note 5)	0.0	5.3	\$ 10,000	5.6	\$ 10,000
Expiration of time restrictions (see Note 5)	100.0	1.1	<u>2,000</u>	0.6	<u>1,000</u>
Total Net Assets Released From Restrictions	9.1	6.3	<u>\$ 12,000</u>	6.1	<u>\$ 11,000</u>
Total Unrestricted Revenues and Other Support	5.6	100.0	<u>\$190,000</u>	100.0	<u>\$180,000</u>
Expenses					
Meals	6.3	35.3	\$ 67,000	35.0	\$ 63,000
Counseling	2.9	18.4	35,000	18.9	34,000
Administration, fundraising and general	15.4	39.5	75,000	36.1	65,000
Bad debts	0.0	2.1	4,000	2.2	4,000
Depreciation	0.0	5.3	10,000	5.6	10,000
Total Expenses	8.5	100.5	<u>\$191,000</u>	97.8	<u>\$176,000</u>
Increase/(Decrease) in Unrestricted Net Assets	-125.0	-0.5	<u>\$ (1,000)</u>	2.2	<u>\$ 4,000</u>
Changes in Temporarily Restricted Net Assets					
Foundation grants	0.0	5.3	10,000	5.6	10,000
Contributions	150.0	2.6	5,000	1.1	2,000
Assets released from restrictions (see Note 5)	9.1	-6.3	<u>(12,000)</u>	-6.1	<u>(11,000)</u>
Increase in Temporarily Restricted Net Assets	200.0	1.6	<u>\$ 3,000</u>	0.6	<u>\$ 1,000</u>
Changes in Permanently Restricted Net Assets					
Contributions	50.0	1.6	\$ 3,000	1.1	\$ 2,000
Increase in Permanently Restricted Net Assets	50.0	1.6	<u>\$ 3,000</u>	1.1	<u>\$ 2,000</u>
Increase in Net Assets	-28.6	2.6	\$ 5,000	3.9	\$ 7,000
Net Assets at Beginning of Year	6.5	60.0	114,000	59.4	107,000
Net Assets at End of Year	4.4	62.6	<u>\$119,000</u>	63.3	<u>\$114,000</u>

Exhibit 14-6

The percent change is calculated by dividing the change in each item by the base year value. For example, client revenue rose from \$9,000 in 2017 to \$11,000 in 2018. The change from 2017 to 2018 was \$2,000. Dividing that by the 2017 value of \$9,000 yields 0.222. Multiplying that by 100% produces the 22.2 percent change in client revenues from 2017 to 2018.

A good way to begin a financial analysis is to look at the common size ratios of all financial statements to get a sense of the size of each element as a percentage of the total and also to consider each element on a percentage change basis. Combining the two pieces of information (size and change) lets the user see which elements are important and where significant changes have occurred.

Total unrestricted revenues and other support have risen from \$180,000 to \$190,000. As we can see in the Percent Change column in [Exhibit 14-6](#), this is a 5.6 percent increase. Meanwhile, the cost of meals rose \$4,000. Is that in line with the total increase in resources? The \$4,000 increase was a 6.3 percent rise, not very different from the 5.6 percent increase in resources. We note from the common size ratios that the cost of meals is actually a fairly stable percentage of total revenues in 2018 as compared with 2017, rising from 35.0 percent to 35.3 percent. Administration rose by \$10,000, nearly the same dollar amount as total revenues and support. However, administration expenses rose by 15.4 percent, from \$65,000 to \$75,000, or from 36.1 percent of revenues to 39.5 percent. This is possibly an unfavorable relationship and should definitely be investigated.

Once we have calculated the common size ratios and the percent change ratios, we can use them to compare

our organization with itself over time, with specific competitors, and with industrywide statistics.

Liquidity Ratios

Perhaps the most important focus for any organization must be maintaining financial viability. If the organization cannot remain in business, it cannot provide services to any of its clients. *Liquidity ratios* focus on whether the organization has enough cash and other liquid resources to meet its obligations in the near term. At the same time, we can use liquidity ratios to assess whether the organization is wastefully maintaining too much liquidity. If liquidity is excessive, long-term investments with high relevance to the organization's mission and perhaps high profit potential may be lost.

A manufacturing industry generally has high levels of inventories and receivables. Both of those items result in significant amounts of current assets. An airline, conversely, collects most payments in advance of providing service, so its receivables are low. Its inventory needs are low. One would expect the airline industry to have a very low current ratio. Therefore, one must consider the nature of the organization when determining an appropriate level for the ratio.

The two most common liquidity ratios are the current and *quick ratios*. The current ratio compares current assets with current liabilities. Since current assets become cash or are used up within a year and current liabilities are paid within a year, this matchup has relevance for the ability of the organization to meet obligations as they come due.

The quick ratio (sometimes called the *acid test*) is more conservative. It excludes all assets except cash, marketable securities, and receivables in making the comparison with current liabilities. The quick ratio provides a more stringent measure. The rationale behind this calculation is that often current liabilities must be paid off within just a few months. It may take longer than that to use inventory, invoice our customers, and collect payment. Other current assets may be used up rather than becoming cash. Therefore, the acid test compares the current assets that become cash fairly quickly with the current liabilities.

Using numbers from [Exhibit 14-1](#), the two liquidity ratios for Meals for the Homeless can be calculated as follows:

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}} = \frac{\$61,000}{\$14,000} = 4.4 \quad \frac{\$48,100}{\$16,000} = 3.0$$

Cash + Marketable \$100 + \$3,000 \$3,100 + \$3,000

$$\text{Quick Ratio} = \frac{\text{Cash + Marketable Securities + Receivables}}{\text{Current Liabilities}} = \frac{\$100 + \$3,000}{\$14,000} = 4.2 \quad \frac{\$3,100 + \$3,000}{\$16,000} = 2.8$$

Note that marketable securities may be reported on the balance sheet as "short-term investments," or along with cash as "cash and short-term investments." If short-term investments are not reported separately from long-term investments, one must consult the accompanying notes to determine which investments are current and which are long-term. A widely used rule of thumb across industries is that the current ratio should be about 2.0 and the quick ratio 1.0. However, as noted earlier, rules of thumb should be adjusted to the needs of a particular type of organization. Too low a ratio indicates a possible financial crisis in the near term. Too

high a ratio indicates failure to wisely invest resources in higher-yielding assets.

Another widely used liquidity ratio is *days of cash on hand*. This measure compares cash and marketable securities with daily operating expenses. This is more stringent yet. Its purpose is to assess how long the organization could meet its typical daily expenses using just the cash (and near cash assets) on hand. If something happened that cut off future cash inflows, how long could the organization meet its cash outflows using just the resources on hand?

For instance, not-for-profit organizations frequently contract with governments to provide public goods and services, and many not-for-profits have large percentages of their budgets derived from such public contracts. If a government fails to pass a budget on time, organizations may find they need to provide goods and services to the public without timely receipt of payments from the government. A manager would want to know how long the not-for-profit organization could continue to provide such goods and services before it would have to borrow money to pay its expenses.

The days of cash on hand ratio is calculated by dividing the cash and cash equivalents by the daily operating expenses that must be paid. Too low is a sign of risk. Too high is a sign of cash lying around rather than being fruitfully invested in plant and equipment to provide resources or services.

This ratio could be particularly helpful in the case of Meals. Accounts receivable have been increasing, and we do not know why. It is possible that we will have trouble collecting those receivables on a timely basis. Days of cash on hand can help us understand the organization's ability to handle a collection crisis. Using numbers from [Exhibits 14-1](#) and [14-2](#), the days of cash on hand ratio can be calculated:

	2018	2017
Days of Cash on Hand =		
$\frac{\text{Cash + Marketable Securities}}{(\text{Operating Expenses - Bad Debts - Depreciation})/365}$	$\frac{\$100 + \$3,000}{(\$191,000 - \$4,000 - \$10,000)/365}$	$\frac{\$3,100 + \$3,000}{(\$176,000 - \$4,000 - \$10,000)/365}$
	$= 6.4 \text{ days}$	$= 13.7 \text{ days}$

Bad debts and depreciation are subtracted in the denominator because they do not require a cash outflow. The denominator is divided by 365 to convert annual expenses to daily expenses. Note that the decrease in cash from 2017 to 2018 caused a reduction in this ratio from nearly two weeks to about one week.

Asset Turnover Ratios

Few government, health, or not-for-profit organizations have money to waste. Therefore, these organizations want to operate in an efficient manner. A set of ratios called asset turnover ratios (sometimes called *efficiency ratios*) can help in this area. The ratios in this category are related to *receivables*, *inventory*, *fixed assets*, and *total assets*.

Timely collection of receivables is important for all types of organizations. Once receivables are collected, the money received can be used to pay creditors, or it can be invested. This means that once the money is received, either we would be paying less interest or we would be earning more interest. The *receivables turnover* ratio is calculated by dividing annual credit sales by accounts receivable. Credit sales are those that result in receivables as opposed to immediate cash payment. The *average collection period* (sometimes called days of sales

outstanding or days receivable or average age of receivables) can then be calculated by dividing 365 by the receivables turnover. Sometimes the receivables ratios are calculated using average accounts receivable (the beginning balance plus the ending balance divided by 2).

For Meals, credit sales would probably not include client revenue but would include all other revenues and support.⁴ Using data from [Exhibits 14-1](#) and [14-2](#), we get the following:

4. Client sales would not be included for Meals because all revenues collected from homeless people are likely to be from cash sales rather than sales on account.

		2018	2017
Receivables Turnover	$\frac{\text{Revenues and Support} - \text{Client Revenue}}{\text{Accounts Receivable}}$	$\frac{\$178,000 - \$11,000}{\$55,000}$	$\frac{\$169,000 - \$9,000}{\$38,000}$
		3.0	4.2
Average Collection Period	$\frac{365}{\text{Receivables Turnover}}$	$\frac{365}{3.0}$	$\frac{365}{4.2}$
		121.7 days	86.9 days

Note that total revenues and support, not including net assets released from restrictions, is used in the numerator of the receivables turnover ratio. In 2017 and 2018, the receivables of Meals turned over only 4.2 and 3.0 times, respectively. This means that the collection of receivables is as if we fully collected and generated receivables 4.2 and 3.0 times in the year. The average collection period presents the same information in a more intuitive fashion. On average, it is taking Meals nearly 122 days to collect a receivable, up from 87 days the prior year. These numbers are both high, indicating that Meals has substantial problems with its collections and that the problems appear to be getting worse. An unfavorable trend over time could indicate lax management in this area. In most industries, a collection period of 30 to 60 days is more normal. Some industries may tend to have a higher average age of receivables, and this is one situation in which the analysis could benefit substantially from industry comparison. The discussion in Box 14-13 raises a potential problem in the calculation of the average collection period.

The same type of ratios calculated for receivables can also be calculated with respect to inventory (with the same type of problem as that discussed in Box 14-3). The *inventory turnover* ratio is the cost of inventory used divided by the inventory balance (sometimes average inventory is used: $[\text{beginning} + \text{ending inventory}] \div 2$). In the not-for-profit sector, supplies expense is most commonly used as a measure of the cost of inventory consumed. However, many organizations, particularly for-profits, instead report cost of goods sold (COGS). Because COGS may include labor and other costs, it may overstate the cost of inventory consumed when comparing COGS to the supplies expense line reported by most not-for-profits. In conducting a financial statement analysis that compares not-for-profit organizations or spans sectors, it is best to use COGS for calculating turnover ratios only if it is also used in calculating benchmark comparisons. For public service organizations, we often have to examine the financial statements and determine which inventory categories are most relevant to the inventory turnover ratio. In the case of Meals, the appropriate measure of inventory used is food, which is found on the statement of functional expenses, [Exhibit 14-4](#). The ending inventory balance is taken from [Exhibit 14-1](#). We can calculate the ratios as follows:

		2018	2017
Inventory Turnover	=	$\frac{\text{Cost of Inventory}}{\text{Inventory}}$	$\frac{\$17,000}{\$15,000}$
		$\frac{\$2,000}{\$4,000}$	
	=	8.5	3.8
Days of Inventory on Hand	=	$\frac{365}{\text{Inventory Turnover}}$	$\frac{365}{3.8}$
		$\frac{365}{8.5}$	
	=	42.9 days	96.1 days

For Meals, the inventory turnover ratio is 8.5 and 3.8 for 2018 and 2017, respectively. That means that inventory turns over only about eight or nine times per year in 2018. That would be considered a slow turnover rate in most industries, let alone one for which the inventory is food. Even with the improvement in 2018 as compared to 2017, food was on hand an average of 43 days (*days of inventory on hand*) before it was consumed. At best, this implies that Meals keeps canned goods on hand for long periods of time. At worst, it may be using food that has passed its safe use expiration date.

By keeping inventory on hand for long periods of time, Meals is using resources inefficiently. It is paying for inventory before it needs to have that inventory. It may also pay for storage costs and will possibly have spoilage costs as well. Meals has a dilemma because it cannot accurately predict when donations of food will arrive and wants to have enough food on hand in case donations are not received (e.g., restaurants may be very busy and have few leftovers). However, the turnover appears to be too low, and management should definitely focus its attention on this problem. Note that a review of the financial statements and the notes did not make us aware of this problem. Ratio analysis is an essential element of financial analysis.

We are also concerned with the efficient use of fixed and total assets. If our organization requires more of these assets than similar organizations, we would like to try to find out why. We are likely to be able to afford to provide more services if we have fewer resources tied up in assets. The fixed asset turnover ratio is calculated by dividing total revenues by net fixed assets. Ratios can be defined in a variety of ways. In the case of Meals, the asset base is supporting all revenues generated. Therefore, it is appropriate to use the total unrestricted revenues and other support as the revenue measure. The net fixed assets in the following calculation are found by subtracting the cash restricted for building acquisitions from the total long-term assets. The *total asset turnover* ratio is calculated by dividing total revenues by total assets:

		2018	2017
Fixed Asset Turnover	=	$\frac{\text{Total Unrestricted Revenues and Other Support}}{\text{Net Fixed Assets}}$	$\frac{\$190,000}{\$180,000}$
		$\frac{\$83,000}{\$97,000}$	
	=	2.3	1.9
Total Asset Turnover	=	$\frac{\text{Total Unrestricted Revenues and Other Support}}{\text{Total Assets}}$	$\frac{\$190,000}{\$145,000}$
		$\frac{\$145,000}{\$146,000}$	
	=	1.3	1.2

The *fixed asset turnover* ratio for 2018 indicates that \$2.30 of revenue is generated by each dollar invested in fixed assets. The total asset turnover showed \$1.30 of revenues for each dollar of total assets. It is difficult to determine whether these ratio levels are appropriate without comparison with other similar organizations.

Note that the fixed asset turnover is good for comparisons that focus primarily on the organization's use of buildings and equipment in generating revenue. By contrast, total assets turnover is more useful if one wants to include management of cash, inventories, and receivables in the comparison over time or between

organizations. For example, a museum might have large amounts of fixed assets, making the fixed asset turnover of primary interest, while a hospital might also have major amounts of receivables, making the total asset turnover more relevant.

BOX 14-13 Stocks and Flows: Apples and Oranges?

The average collection period ratio draws information from both the balance sheet and the activity statement. It is important to bear in mind that the balance sheet represents a stock. It reports the balance in accounts at a specific point in time. By contrast, the activity statement represents a flow, reporting what has occurred over a period of time. This can create problems when ratios are based on information from both statements.

For instance, suppose that the Hospital for Ordinary Surgery (HOS) appears to have a reasonable average collection period ratio of 45 days. That ratio, however, is based on the receivables turnover ratio, which looks at revenues (from the activity statement) for the full year and accounts receivable (from the balance sheet) at the end of the year. This could result in misleading information.

Suppose that HOS ends its year on August 31, an extremely slow point in its activity. Perhaps November through April represents a very busy period for HOS, and most of its annual revenues are generated during that period. It might take HOS 3 or 4 months on average to collect receivables. However, by the end of August, 4 months after the busy period, receivables are at a very low point. Comparing annual revenues, which include busy and slow periods, with receivables at a particularly low point in the year will overstate the receivables turnover and understate the average collection period.

This is a potential problem wherever ratios are calculated using information from stock and flow statements. One solution is to use average information based on monthly values. For example, if the accounts receivable balance at the end of each month was averaged for the year and that average was used in the calculation, the ratio would be more accurate.

Leverage And Coverage Ratios

Leverage refers to the extent to which an organization supports its activities by using debt. The greater the debt, the riskier the organization becomes. In contrast to the liquidity ratios, whose purpose is to assess short-term risk, the leverage ratios provide insight into the ability of the organization to meet its long-term obligations. In particular, we are concerned with whether the organization has incurred obligations to make principal and interest payments in excess of its capacity. While leverage ratios examine the amount borrowed, *coverage ratios* examine the capacity to make payments. These two types of ratios are together referred to as solvency ratios.

Debt is a double-edged sword. It often provides organizations with the ability to undertake programs and provide services that they otherwise could not. While some debt may enhance the level of services provided, excessive levels of debt threaten the continued existence of the organization. How much debt is too much? Leverage and coverage ratios are used to help assess whether the organization has a safe level of debt.

Two prominent leverage ratios are the *debt and debt to equity ratios*. The debt and debt to equity ratios examine the extent to which the organization uses debt to finance the acquisition of its assets. General rules of thumb are that the *debt ratio* ($\text{debt} \div \text{total assets}$) should not exceed .5, and the debt to equity ratio ($\text{debt} \div \text{equity}$) should not exceed 1. Under those rules of thumb, no more than half of the assets of an organization would be financed with debt. However, the appropriate level will vary from industry to industry, and comparisons are critical.

Some would argue that coverage ratios are even more critical. They examine the organization's capacity to make debt service payments (interest and principal) as they come due. Coverage ratios include *times-interest-earned* and the *cash flow coverage ratios*. The times-interest-earned ratio examines how many times over the

organization could pay its interest. For example, if net income before considering interest expense was \$200 and interest expense was \$100, then the organization has earned twice as much as it needed be able to meet its interest payments. Bear in mind that if the organization fails to make required interest payments, it can be forced into bankruptcy by its creditors. The higher the times-interest-earned ratio, the better. The cash flow coverage ratio is more encompassing, considering not only interest payments but all required payments, including required lease payments, occupancy costs, interest, and debt repayments.

For Meals for the Homeless, we could calculate the leverage and coverage ratios as follows:

			2018		2017
Debt	=	Total Debt	\$26,000	=	\$32,000
		Total Assets	\$145,000		\$146,000
			.18 or 18%		.22 or 22%
Debt to Equity	=	Total Debt	\$26,000	=	\$32,000
		Total Net Assets	\$119,000		\$114,000
			.22 or 22%		.28 or 28%
Times-Interest-Earned	=	Increase in Unrestricted Net Assets	(\$1,000) +	=	\$4,000 +
		+ Interest Expense	\$1,280		\$1,600
		Interest Expense	\$1,280		\$1,600
			.2		3.5

Debt ratios can be calculated using a range of different definitions for debt. Here we are using total liabilities from [Exhibit 14-1](#). Sometimes the ratio is calculated using just long-term obligations (and is then referred to as long-term debt to equity). The measurement of equity in the debt to equity ratio depends on the type of the organization. It could be stockholders' equity, fund balance, or net assets. For 2018, the debt ratio of .18 and the debt to equity ratio of .22 seem to be at reasonably low levels.

The times-interest-earned ratio provides a number of definitional challenges for not-for-profit organizations. Exactly what is net income? We could use the increase in net assets. However, increases in temporarily and permanently restricted net assets are not available for paying current-year interest. Therefore, a more appropriate measure would be the increase in unrestricted net assets.

A second problem arises in trying to locate interest expense on the financial statements. In some cases, interest will be a separate item on the activity statement. Often, however, it is included in another category, such as General and Administration. Cash flow statements generally provide a supplemental line at the bottom indicating the amount of interest paid. It may also show up in the notes or the statement of functional expenses. For Meals, interest can be found in both [Exhibits 14-3](#) and [14-4](#). The 2017 times-interest-earned coverage ratio of 3.5 is adequate. By 2018, however, the ratio had fallen to an unacceptably low level, below 1. That means that the organization did not have sufficient increases in unrestricted net assets to even pay the current year's interest.

This problem may be offset somewhat if there is sufficient cash flow. Note that to arrive at the measure of net income used in the times-interest-earned ratio, depreciation is subtracted as an expense (see [Exhibit 14-2](#)). However, depreciation does not require cash payments. Therefore, the cash flow coverage ratio may provide important additional information. The following cash flow coverage ratio begins with cash from operations taken from the statement of cash flows and adds interest and rent.⁵ That total is divided by interest, rent, and debt payments. The numerator is an approximation of the cash available for required payments. The

denominator represents the required cash flow payments. Debt payment information can be taken from the [Exhibit 14-3](#) cash flow statement's Cash Flows From Financing Activities section, and rent appears on [Exhibit 14-4](#).

5. An alternative approach starts with income and adds back depreciation as well as interest and rent.

	2018	2017
Cash Flow Coverage =		
Cash from Operations	\$(10,000)+	\$(15,000)+
+ Interest + Rent	\$1,280 + \$16,720	\$1,600 + \$15,800
Interest + Rent	\$1,280 + \$16,720	\$1,600 + \$15,800
+ Debt Payments	+ \$ 5,000	+ \$ 6,000
	= .35	= 1.38

For Meals, the 2018 value for the cash flow coverage ratio is .35, or 35 percent of required payments. This represents a potentially serious problem for Meals. Some charities work on extremely tight margins, with cash barely covering expenses each year. This creates the potential for financial crisis at any time. In the case of Meals, we note that without borrowing money or selling investments, the organization would not be able to meet required payments. This situation cannot continue for long periods without creating serious financial crises, possibly leading to cessation of operations.

A problem with the cash flow coverage ratio is that it is retrospective. It involves looking at whether sufficient cash flow was generated to meet payments that were due. At times loans have large payments at maturity. The notes to the financial statements should be carefully examined for future debt principal payment requirements. It is helpful to recalculate the ratio on a pro-forma basis. By pro forma, we mean a projected number. Taking into account likely future cash inflows and committed future cash payments, we can get a sense of whether the ratio value is likely to deteriorate even further in coming years.

Note that different industries have different perspectives on what is an acceptable level of debt relative to equity and what level of interest payments can be considered reasonably safe. For an organization with very constant sales and earnings, more debt is relatively safer than for one that has wide swings in activity. Therefore, an arbitrary rule of thumb, such as a debt to equity ratio of .5, is of limited value.

Profitability Ratios

All organizations desire to be safe and efficient. But do all organizations want to be profitable? Public service organizations do not provide services primarily to make profits. So why would *profitability* ratios be of concern? Virtually all organizations need to earn a profit to be financially healthy—to be able to replace equipment with newer costlier equipment, acquire new technologies, expand services, and meet the challenges of the future. At the same time, it might be inappropriate for many not-for-profit organizations to make an excessive profit.

One way to assess profitability is with a performance indicator. GAAP require that health organizations provide a performance indicator that reports the results of operations.

Because of the importance of the performance indicator, it should be clearly labeled with a descriptive term such as revenues over expenses, revenues and gains over expenses and losses, earned income, or

performance earnings. The notes to the financial statements should include a description of the nature and composition of the performance indicator. Not-for-profit organizations should report the performance indicator in a statement that also presents the total changes in unrestricted net assets.⁶

6. American Institute of Certified Public Accountants. *AICPA Audit and Accounting Guide: Health Care Organizations*. New York: N.Y., AICPA, 1996, p. 101.

Profitability ratios can also help managers and outside users assess whether the organization is making an adequate but not excessive profit. For some types of organizations, a somewhat larger profit might be appropriate. For others, a small surplus might be desirable.

Four of the most common measures of profitability are the *operating margin*, *total margin*, *return on assets*, and *return on equity* ratios. The operating margin compares the operating profit (operating revenue less operating expenses) with operating revenue. It assesses the profitability of each dollar of revenues generated by the routine ongoing activities of the organization. For example, if revenues are \$100 and operating profits are \$3, then operating profits compared with revenues are 3 percent. In other words, the organization earns 3 cents of operating profits for every dollar of revenues generated.

The total margin compares the excess of revenues over expenses with total revenues. That determines the overall profits, including all sources of revenues and expenses, per dollar of revenues. In some cases, organizations will have sources of profits that do not come from routine operations. For example, gains on investments might fall into that category. The return on assets compares the profit with assets to determine the amount of profit earned for each dollar invested in the organization. The return on equity (profits divided by equity) assesses the amount of profit earned on each dollar of equity.

Ratio analysis techniques were originally developed primarily for proprietary (for-profit) organizations. Applying the traditional ratios to health, not-for-profit, and government organizations is a constant challenge because the vocabulary changes and, more substantively, the format of the financial statements changes. Nowhere is this problem more evident than with the profitability ratios.

One might suppose that one could simply look at the amount of net income or increase in unrestricted net assets to assess profitability. However, we can learn more from the relationships developed by the ratios. In an era of inflation, even at low levels, replacing buildings and equipment, and even inventory, will cost more in future years. Knowing that an organization earns \$10,000 does not tell us much. Knowing that it earns 3 cents for every dollar of assets tells us that it is accumulating the money needed to replace inventory and facilities at 3 percent annually higher prices than their current cost.

Profit margin ratios are really common size ratios. Both the operating and total margin ratios are comparisons with total revenues. In [Exhibit 14-6](#), note that the increase in unrestricted net assets compared with revenues and support is –.5 percent in 2018 and 2.2 percent in 2017. This is equivalent to the operating margin ratio. The total margin is the overall increase in net assets compared with revenues and support, which was 2.6 percent in 2018 and 3.9 percent in 2017:

		2016	2017
Operating Margin	$= \frac{\text{Increase in Unrestricted Net Assets}}{\text{Total Unrestricted Revenues and Other Support}}$	$= \frac{\$(1,000)}{\$190,000}$	$= \frac{\$4,000}{\$180,000}$
		$= -.005 \text{ or } -.5\%$	$= .022 \text{ or } 2.2\%$
Total Margin	$= \frac{\text{Increase in Net Assets}}{\text{Total Unrestricted Revenues and Other Support}}$	$= \frac{\$5,000}{\$190,000}$	$= \frac{\$7,000}{\$180,000}$
		$= .026 \text{ or } 2.6\%$	$= .039 \text{ or } 3.9\%$

We can see from these margin ratios that although Meals is not quite breaking even from operations, when all changes to net assets are taken into account, it is earning a modest 2.6 percent increase in net assets for each dollar of revenues.

Operating and total margins, however, can be misleading. Some organizations, such as supermarkets, earn only a modest 1 percent to 2 percent margin, but they can still be very profitable because their sales are very large. Some industries earn a small margin on large sales, while other industries have lower sales but higher margins. For this reason, some believe that return on assets and return on equity are more useful measures. These ratios are often referred to as return on investment (ROI) ratios.

Return on assets (ROA) is an ROI measure that evaluates the organization's return (net income, surplus, excess of revenues over expenses) relative to the asset base used to generate that income. Consider a for-profit health care organization. If the organization could invest \$500 in each of two alternative programs and one program generated twice as much income as the other, it would prefer that program, all other things being equal. Obviously, the benefit to the health of the organization's client base should be considered in making a final decision. The organization that generates more income, relative to the amount of investment, is doing a better job, all other things being equal.

Another profitability measure is the return on equity (ROE). For Meals that would be the *return on net assets (RONA)*. If the organization earns a return on total assets that equals or exceeds the inflation rate, it should be able to replace all of its assets over time. However, to the extent that the organization relies on debt, it does not have to earn a profit equal to the inflation rate on its total amount of assets. As long as it earns at least the inflation rate on its equity or net assets, it can keep pace. For example, Meals has \$145,000 of total assets. Meals can keep its debt to equity ratio stable at the current level of .22 and still let its total assets grow at the rate of inflation, as long as the profits each year equal the net assets multiplied by the inflation rate.

Consider an example with simpler numbers. XYZ organization begins the year with \$1,000 of assets, \$400 of liabilities, and \$600 of net assets. Inflation is 4 percent and XYZ needs to have assets of \$1,040, or 4 percent more assets, next year to support its operations at the same level as this year. Creditors are still willing to finance 40 percent of its assets, but the net assets need to remain at 60 percent of total assets to keep the organization secure. The required 60 percent of \$1,040 of assets is \$624. In order for the organization to increase its assets by \$40 and keep up with inflation, its net assets need to increase by \$24. It will be able to borrow the remaining \$16 that it needs to expand its total assets by \$40. Thus, the organization needs an ROE, or in this case an RONA, of 4 percent. Notice that this necessary \$24 increase to net assets requires a profit equal to only 2.4 percent of total of assets ($\$1,000 \times 2.4\% = \$24$ profit), even though the inflation rate is 4 percent.

In the case of Meals for the Homeless, we can calculate the ROA and RONA as follows:

		2018	2017
ROA	$= \frac{\text{Increase in Net Assets}}{\text{Total Assets}}$	$= \frac{\$5,000}{\$145,000}$	$= \frac{\$7,000}{\$140,000}$
		$= .034 \text{ or } 3.4\%$	$= .048 \text{ or } 4.8\%$
RONA	$= \frac{\text{Increase in Net Assets}}{\text{Net Assets}}$	$= \frac{\$5,000}{\$119,000}$	$= \frac{\$7,000}{\$114,000}$
		$= .042 \text{ or } 4.2\%$	$= .061 \text{ or } 6.1\%$

Despite some of the other problems our ratio analysis has disclosed, the ROA and RONA levels of Meals do not appear to be unreasonably low.

Other Ratios

As previously noted, ratio analysis is a field developed primarily to serve for-profit organizations. Managers in public service organizations should be proactive in developing additional useful ratios. For example, the not-for-profit industry in recent years has started to actively report the *program services ratio*. That ratio divides program service expenses by total expenses. Looking at [Exhibit 14-4](#), we see that for Meals the ratio would be as follows:

		2018	2017
Program Services Ratio	$= \frac{\text{Program Service Expenses}}{\text{Total Expenses}}$	$= \frac{\$83,000}{\$194,000}$	$= \frac{\$78,400}{\$176,000}$
		$= .63 \text{ or } 63\%$	$= .65 \text{ or } 65\%$

This ratio helps the user understand what portion of Meals's spending goes directly into its program services. That does not mean that the money spent on program services is spent efficiently. It only provides some indication of the extent to which Meals spends money on program services (meals and counseling) in contrast to support services (fundraising and administration).

Care is required in interpreting financial information. Suppose that a comparable charity to Meals in another city spends less on management. Its program services ratio is 80 percent in contrast to Meals's 63 percent. However, with less spending on management, the other charity is unable to recruit as many volunteers to work in its kitchens. With fewer volunteers, it spends much more of its money on kitchen salaries. Its ratio of program services is higher, but it provides fewer meals per dollar of revenue because it does not have enough volunteer kitchen staff. Ratios can be helpful, but they cannot replace a thorough review of all available information. And any one ratio can be very misleading if taken by itself.

Assessment

At this point in the process of financial statement analysis, one will have completed the following activities:

- review of the financial statements, including the auditor's opinion letter
- review of the notes that accompany the financial statements
- calculation and review of ratios with comparisons with the organization itself over time, the industry, and other specific organizations

It is necessary next to integrate all of the information and make an assessment about the financial status of the organization being reviewed. Experience plays an important role in seeking out information and assigning appropriate implications to that information. Even the novice can make insightful evaluations, however, by being thorough and inquisitive.

If current liabilities are rising, one must wonder why. Is the organization having trouble with cash flow? If fixed assets are declining, why is that happening? Is the organization unable to replace its facilities as they wear out? Often there are benign answers to our questions. However, the questions must be considered, and the answers carefully reviewed. Only by bringing together all of the available information can the analyst get a clear picture of the overall financial situation of the organization.

Summary

The focus of this chapter is to provide a general framework for financial statement analysis to gain insight into the financial situation of an organization. The basic framework provided is to (1) carefully review the financial statements in detail, including reading the auditor's opinion letter and considering the information in that letter; (2) examine the notes that accompany the financial statements; (3) calculate a series of ratios and compare them with the organization over time, other specific similar organizations, and the industry as a whole; and (4) make a final assessment of the financial situation of the organization, taking all of the available information into account.

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Questions for Discussion

- 14-1. The primary purpose of an audit is to discover fraud. True or false? Explain.
- 14-2. Who takes primary responsibility for audited financial statements issued to the public?
- 14-3. What is covered in the three paragraphs of the typical audit opinion letter?
- 14-4. In general, what are healthy signs in the cash flow statement?
- 14-5. Why are financial statements accompanied by notes?
- 14-6. What are the major classes of ratio analysis? What can we learn from each class?
- 14-7. What are the major elements of financial statement analysis?
- 14-8. What types of comparisons should be made with ratios?
- 14-9. What are some potential problems with ratios?

Problems

14-10. Lafayette Film Center (LFC) is a not-for-profit theater that plays independent films. In addition to revenue from theater admissions, LFC relies on concession and café sales, grants and other external support, theater rental sales, and proceeds from special events and other programs that not only promote appreciation for independent films, but also generate grants and contributions. LFC's new executive director has asked you, as the director of finance, to provide an analysis of the organization's financial position.

Refer to [Exhibits 14-7](#) through [14-10](#), which present LFC's statements of financial position, statements of activities, statements of functional expenses, and statements of cash flows for the years ended December 31, 2018 and 2017.

Lafayette Film Center Statements of Financial Position as of December 31, 2018 and 2017		
Assets	2018	2017
Current Assets		
Cash and cash equivalents	\$ 75,582	\$ 174,662
Grants receivable	562,696	137,858
Inventory	50,400	59,508
Other receivables	96,172	37,624
Prepaid expenses	11,552	—
Total Current Assets	\$ 796,402	\$ 409,652
Long-Term Assets		
Conditional promises to give	\$ 264,514	\$ 488,530
Deposits	1,510	7,910
Property and equipment, net	9,336,672	9,278,616
Total Long-Term Assets	\$ 9,602,696	\$ 9,775,056
Total Assets	\$10,399,098	\$10,184,708
Liabilities and Net Assets		
Current Liabilities		
Accounts payable	\$ 108,214	\$ 113,240
Accrued expenses	109,044	111,776
Deferred revenue	31,186	—
Line of credit	960,510	100,000
Current portion of capital lease obligations	51,100	48,394
Total Current Liabilities	\$ 1,260,054	\$ 373,410
Long-Term Liabilities		
Capital lease obligations less current portion	96,506	88,638
Total Liabilities	\$ 1,296,650	\$ 462,048
Net assets		
Unrestricted	\$ 8,777,934	\$ 9,184,130
Temporarily Restricted	264,514	538,530
Total Net Assets	\$ 9,042,448	\$ 9,722,660
Total Liabilities and Net Assets	\$10,399,098	\$10,184,708

The accompanying notes are an integral part of these statements.

Lafayette Film Center Statements of Activities for the Years Ended December 31, 2018 and 2017		
	Unrestricted	
	2018	2017
Revenue and Support		
Theater admissions	\$ 414,818	\$ 78,640
Concession and café sales	1,522,426	106,288
Memberships	139,684	61,350
Theater rental sales	68,180	58,414
Special events	47,710	140,616
Other programs	62,006	45,726
Interest and investment income	-	56,656
Sale of tax credits	-	1,384,002
Grants	1,061,762	3,016,550
Contributions	360,104	1,129,112
Total Revenue and Support	<u>\$3,676,690</u>	<u>\$6,167,354</u>
Net assets released from restrictions	274,016	1,826,578
Total Revenue and Other Support	<u>\$3,950,706</u>	<u>\$7,993,932</u>
Expenses		
Program services	\$3,640,634	\$1,378,472
General administration	455,436	407,244
Fund raising	260,832	302,384
Total Expenses	<u>\$4,356,902</u>	<u>\$2,088,100</u>
Change in Net Assets	\$ (406,196)	\$5,905,832
Net assets—beginning of year	9,184,130	3,278,298
Net assets—end of year	<u>\$8,777,934</u>	<u>\$9,184,130</u>

The accompanying notes are an integral part of these statements.

Lafayette Film Center Statements of Functional Expenses for the Years Ended December 31, 2018 and 2017								
	Program Services		General Administration		Fundraising		TOTAL	
	2018	2017	2018	2017	2018	2017	2018	2017
Expenses								
Salaries and wages	\$ 1,388,176	\$ 644,896	\$ 215,536	\$ 197,140	\$ 73,028	\$ 45,474	\$ 1,676,740	\$ 887,510
Employee benefits	59,826	22,178	9,290	15,428	3,148	-	72,264	37,606
Payroll taxes	146,382	70,190	22,724	21,448	7,680	4,948	176,786	96,586
Contracted labor and services	15,100	64,640	42,980	38,872	94,430	98,868	152,510	202,380
Insurance	69,940	30,372	17,810	11,828	3,192	2,220	90,942	44,420
Equipment and maintenance	108,682	23,272	362	12,130	-	-	109,044	35,402
Supplies	100,236	45,832	26,658	29,586	4,606	2,858	131,500	78,276
Printing materials	23,426	6,550	40	5,546	12,488	17,790	35,954	29,886
Meeting and travel	10,788	19,840	7,496	19,538	2,120	8,642	20,404	48,020
Interest	59,410	17,292	19,442	11,154	-	8	78,852	28,454
Special events	-	-	-	-	37,900	104,958	37,900	104,958
Cost of goods sold	793,120	137,540	-	-	-	-	793,120	137,540
Occupancy	135,196	68,636	25,350	20,684	8,448	4,702	168,094	94,022
Membership dues	620	1,528	2,904	792	532	5,692	3,456	8,012
Computer expenses	22,150	8,128	1,818	1,546	-	196	23,968	9,870
Postage and handling	7,366	1,784	17,956	4,050	824	3,584	26,146	9,418
Uniforms	2,896	2,322	-	-	-	286	2,896	2,608
Licenses and permits	2,536	4,540	272	900	-	-	2,808	5,440
Subscriptions	148	1,634	424	492	140	210	712	2,336
Marketing	91,016	39,942	-	-	-	-	91,016	39,942
Programming	33,340	73,046	-	-	-	-	33,340	73,046
Depreciation	570,280	94,310	42,390	11,642	11,686	1,948	624,356	107,900
Other	-	-	2,584	4,468	520	-	3,104	4,468
Total Expenses	<u>\$3,640,634</u>	<u>\$1,378,472</u>	<u>\$455,436</u>	<u>\$407,244</u>	<u>\$260,832</u>	<u>\$302,384</u>	<u>\$4,356,902</u>	<u>\$2,088,100</u>

The accompanying notes are an integral part of these statements.

Lafayette Film Center Statements of Cash Flows for the Years Ended December 31, 2018 and 2017		
	2018	2017
Operating Activities		
Change in net assets	\$(680,212)	\$ 4,129,254
Adjustments to reconcile change in net assets to net cash provided by/(used in) operating activities		
Depreciation	624,356	107,900
Contributions restricted for building renovations	—	1,843,396
(Increase)/decrease in operating assets		
Grants receivable	(424,838)	292,666
Other receivables	1,452	(33,344)
Conditional promises to give	224,016	(16,818)
Prepaid expenses	(11,552)	—
Inventory	9,108	(50,510)
Deposits	6,400	(1,510)
Increase/(decrease) in operating liabilities		
Accounts payable	(5,026)	(423,404)
Accrued expenses	(2,732)	111,776
Deferred revenue	31,186	—
Net cash provided by/(used in) operating activities	<u>\$(227,842)</u>	<u>\$ 5,950,406</u>
Investing Activities		
Payments for property and equipment	\$(682,412)	\$(7,150,362)
Net cash/(used in) investing activities	<u>\$(682,412)</u>	<u>\$(7,150,362)</u>
Financing Activities		
Payments on capital leases	\$ (49,336)	\$(10,084)
Net increase in line of credit	860,510	100,000
Net cash provided by financing activities	<u>\$ 811,174</u>	<u>\$89,916</u>
Net increase/(decrease) in cash and cash equivalents	\$ (99,080)	\$(1,119,040)
Cash and cash equivalents—beginning of year	174,662	1,293,702
Cash and cash equivalents—end of year	<u>\$ 75,582</u>	<u>\$ 174,662</u>

The accompanying notes are an integral part of these statements.

1. Does LFC have an endowment? How do you know?
2. How much of LFC's temporarily restricted net assets were reclassified as unrestricted in 2018? Where can this be found in the statements of financial position and statements of activities?
3. Calculate the four profitability ratios presented in the chapter for LFC for 2018 and 2017 as well as the percent change in each from 2017 to 2018. By which measure did LFC's profitability deteriorate the most, and by how much?
4. LFC's total expenses grew by over 100 percent from 2017 to 2018, while its total revenue and other support declined by over 50 percent. Looking at the theater's statements of activities:
 1. Excluding interest/investment income and the one-time sale of tax credits, which three revenue or support categories declined by over 50 percent from 2017 to 2018?
 2. Which expense category grew by over 100 percent?
5. Calculate LFC's program services ratio for 2018 and 2017 as well as the percent change in each from 2017 to 2018. Is LFC's program services ratio for 2018 higher than the commonly accepted benchmark?
6. Given your answers to questions 4 and 5, would you recommend that LFC reallocate some of its spending from program services to fundraising in 2015? Why or why not?
7. What was LFC's depreciation expense in 2017 and 2018? Which financial statement(s) provide this information?
8. Now that receivables constitute a much larger proportion of LFC's assets than in the past, the executive director has asked you to calculate the receivables turnover ratio and average collection period for 2018.

1. Which revenue items will you exclude from the ratio? Why?
2. What is LFC's receivables turnover ratio and average collection period for 2018? Are they favorable or unfavorable? Why?
3. Would you recommend recalculating the receivables turnover ratio using the average of beginning-of-year and end-of-year receivables in the denominator? Why or why not?
9. Calculate the quick ratio and debt to equity ratio for LFC for 2018 and 2017 as well as the percent change in each from 2017 to 2018. Are these trends favorable or unfavorable? Which presents the greater area of concern for 2018, and why?
10. Given your answers to the questions above and an overall review of LFC's financial statements, would you characterize LFC's financial position as weak, neutral, or strong? Why?
- 14-11. [Exhibits 14-11](#) and [14-12](#) present the statements of financial position and statements of activities for Code 4 Change, a fictional organization that provides training in computer programming to the unemployed. For both 2017 and 2016, calculate:

Code 4 Change Statements of Financial Position as of March 31, 2017 and 2016		
Assets	2017	2016
Cash and cash equivalents	\$ 1,909,606	\$ 1,044,193
Interest and dividends receivable	61,244	52,582
Pledges receivable—net of assessment fees and allowance for uncollectible pledges of \$449,162 in 2017 and \$464,486 in 2016	373,788	358,632
Prepaid expenses and other	16,244	25,367
Investments	10,944,924	9,653,039
Total Assets	\$13,305,806	\$11,133,813
Liabilities and Net Assets		
Liabilities		
Accounts payable	\$202,631	\$172,567
Annuity payment liability	3,857,262	3,679,148
Total liabilities	\$ 4,059,893	\$ 3,851,715
Unrestricted Net Assets	9,245,913	7,282,098
Total Liabilities and Net Assets	\$13,305,806	\$11,133,813

Code 4 Change Statements of Activities for the Years Ended March 31, 2017 and 2016		
	2017	2016
Support and Revenue:		
Contributions—net of assessment fees and allowance for uncollectible pledges of \$428,587 in 2017 and \$433,252 in 2016	\$4,771,172	\$ 2,654,400
Contributions of charitable gift annuities	241,245	178,626
Bequests	2,178,924	32,436,803
Investment income—net	766,580	384,670
Total support and revenue	\$7,957,921	\$35,654,499
Expenses:		
Program services	\$6,053,675	\$34,754,236
Management and general	85,933	75,499
Fundraising	179,277	168,316
Total expenses	\$6,318,885	\$34,998,051
Change in Net Assets Before Change in		
Unrealized Appreciation of Investments	\$1,639,036	\$ 656,448
Change in Unrealized Appreciation of Investments	324,779	428,159
Change in Net Assets	\$1,963,815	\$ 1,084,607
Net Assets—Beginning of year	7,282,098	6,197,491
Net Assets—End of year	\$9,245,913	\$ 7,282,098

1. common size ratios for the statements of financial position and statements of activities
2. the current ratio
3. days of cash on hand
4. the debt to equity ratio

5. the total margin
6. the program services ratio

How do you assess Code 4 Change's overall financial position and performance? Why? In your assessment, make reference to each ratio you calculated.

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Chapter 15 Financial Condition Analysis

Learning Objectives

The learning objectives of this chapter are to:

- define and discuss financial condition analysis;
- explain how financial condition analysis differs from financial statement analysis; and
- discuss ratios appropriate for financial condition analysis.

Users of government financial reports are interested in many of the same things as those analyzing other types of organizations. The discussion of financial statement analysis in [Chapter 14](#) is largely applicable to governments as well. However, understanding the financial condition of governments requires additional types of information, and in some cases modifications to the financial statement analysis discussed in [Chapter 14](#). Those elements are the focus of this chapter.

There are many potential purposes of financial analysis. As noted in [Chapter 14](#), managers may want to understand their organization's financial position and results of operations so that they can make decisions that will maintain a satisfactory financial situation or improve an unsatisfactory one. Vendors want to understand whether their customers will be able to pay for their purchases. Lenders want to consider the likelihood of an organization being able to repay loans. State governments use financial information for oversight of local governments. The public may want to assess how its tax dollars are being used. These represent just a few of the many uses of financial information.

Financial analysis of governments relies heavily on analysis of basic financial statements (BFS) including the notes that accompany them. The notes are particularly useful for finding out about the structure of the organization, the accounting methods used, the assumptions made, and other background information that gives the reader perspective on the financial statements. Also, careful review and analysis of management's discussion and analysis (MD&A) and other required supplementary information (RSI) is essential to gaining the requisite context to evaluate a government's overall financial condition. In addition, governmental financial analysis must take into account additional factors such as debt per capita, tax rates, and resident income and wealth.

Financial condition analysis can be very complex. This chapter serves as a brief introduction to the field and to give the reader a sense of some of the issues and problems related to financial condition analysis. Readers should not expect to be competent to carry out a financial condition analysis on their own based solely on the contents of this chapter. However, it will provide a foundation for future study and an ability to appreciate some of the difficulties that are inherent in the process.

Financial Condition Analysis

It is easy to believe that charities may experience severe financial difficulties. Just a small drop in donations can upset a delicate balance between available resources and the ability to provide necessary services. With governments, however, it is sometimes harder to see the potential problem. After all, governments can just raise taxes if they need more money, right? Experience has shown, however, that state and local governments have limited ability to raise taxes. The citizens are not wealthy enough to support unlimited tax increases. Nor is such an approach politically feasible. Further, many governments—such as public authorities—may rely on user fees rather than taxes.

There have been some bankruptcies and near-bankruptcies of cities and counties. More commonly, economic downturns reduce tax receipts and user fees just when the demands for “safety net” services are rising. Therefore, an analysis of the financial status of a governmental organization is a relevant and appropriate activity for both managers of the government and interested individuals and organizations outside of the government. Such analysis is referred to as *financial condition analysis*.

Berne has defined financial condition as follows: “The probability that a government will meet both: (a) its financial obligations to creditors, consumers, employees, taxpayers, suppliers, constituents, and others as they become due; and (b) the service obligations to constituents, both currently and in the future.”¹ Granof and Wardlow note that a government’s financial condition is “directly dependent upon economic, political, social, and demographic factors within its jurisdiction ... it is also intertwined with those of other governments that provide financial aid or serve the same constituents.”²

¹ Robert Berne. *The Relationships Between Financial Reporting and the Measurement of Financial Condition*. Norwalk, Conn.: Government Accounting Standards Board, 1992, p. vii.

² Michael H. Granof and Penelope S. Wardlow. *Core Concepts of Government and Not-for-Profit Accounting*, 2nd ed. New York, N.Y.: John Wiley & Sons, 2011, p. 381.

The Comprehensive Annual Financial Report (CAFR) contains much helpful information for financial condition analysis. It contains the BFS, the MD&A, and the RSI. These elements were discussed in [Chapter 13](#). The CAFR contains the auditor’s report, which addresses the financial statements’ adherence to Generally Accepted Accounting Principles (GAAP). CAFRs often also provide information about trends in revenues and expenditures, tax rates, property values, debt, and other variables. Debt per capita and debt to assessed value are solvency ratios that can often be calculated from information in that section of the CAFR.

Financial Statement Analysis Versus Financial Condition Analysis

The primary reason that financial condition differs from financial statement analysis is that there are many external factors that become part of the evaluation of financial health for a governmental body. Economic and demographic factors, such as the wealth and skills of the citizenry, employment rate, and general economy, are critical elements in understanding the financial condition of a government.

The use of fund accounting by governments substantially increases complexity in the analysis of financial health, but it potentially provides valuable additional information. Should ratios be computed based solely on the government-wide financial statements, just on the general fund, or on an aggregate value from several different funds? These questions can only be answered in the context of the question the user is trying to address.

CAFRs must contain a statistical section that provides a wealth of information for financial condition analysis. The Governmental Accounting Standards Board (GASB) Statement No. 44 requires that the statistical section present detailed data on the government's financial trends, revenue capacity, debt capacity, demographic and economic characteristics, and operations. Generally, these data must show 10-year trends in the variables.³ The statistical section is not audited. However, it provides valuable insight into the government's ability to meet its financial needs and service commitments. The data include such key variables as general revenues by source, property tax levies and collections, special assessment billings and collections, general governmental expenditures by function, estimated and assessed actual value of taxable property, property tax rates, bonded debt per capita and relative to property assessed value, ratio of annual debt service to total general expenditures, revenue bond coverage, and property values and bank deposits. In addition, the GASB also requires the computation of the *legal debt margin* and *overlapping debt*, demographic statistics, information about principal taxpayers, and other miscellaneous statistics.

[³](#) Statement No. 44 of the Governmental Accounting Standards Board, Economic Condition Reporting: The Statistical Section, May 2004.

The BFS include some statements prepared on the accrual basis and some statements prepared on the modified accrual basis. Also, the RSI presents the budgetary comparison schedule on the budgetary basis of accounting. The use of up to three bases of accounting (which occurs if budgets are prepared on a cash basis) in one financial report not only may create confusion, but also presents the user with an array of opportunities. Clearly, the user must be aware of the basis of accounting used for each statement. However, the user can decide whether the focus of a particular analysis can best be addressed with accrual, modified accrual, or possibly cash basis information, and then use that information.

Nevertheless, analysis is cumbersome because of the large number of statements in the BFS, schedules in the RSI, and statistical sections of the CAFR. And governments that are not required to issue a CAFR may decide not to because of the complexity and expense involved in preparing all of the required information.

In performing an analysis, one should take a reasoned approach. For example, if a ratio based on the

government-wide financial statements provides adequate information to answer a question, the fund financial statements would not have to be used. In other cases, the fund financial statements may be more helpful, and the government-wide statements can be ignored.

Although it is important in financial statement analysis, it is even more critical in financial condition analysis to clearly state definitions used (e.g., for ratios) and be consistent in the use of those definitions over time and across organizations.

For financial condition analysis, some ratios need to be modified, others eliminated, and yet others added to create a solid analysis. However, the fundamentals of financial statement analysis still apply. The financial statements should be carefully reviewed. The audit letter should be examined. The notes that accompany the financial statements should be evaluated. Ratios should be calculated. Comparisons should be done both over time and across similar governmental organizations.

Berne indicates the following with respect to financial condition analysis:

There is considerable agreement over its major components, including the economy and demographics, revenue base, revenues, current and capital expenditures, debt, pensions, internal resources, management capabilities, infrastructure, willingness to raise revenues to provide necessary public services, and idiosyncratic factors. Comparative analysis is the dominant measurement methodology, which includes time series analyses, comparisons with other jurisdictions, and occasionally, comparisons with industry standards.⁴

⁴ Berne, p. xvi.

Granof and Wardlow have compiled a listing of the factors to be considered in a financial condition analysis. They are shown in [Exhibit 15-1](#). How can we obtain this information? Unfortunately, often not easily. At a minimum, a fair degree of creativity in data collection is required, even though some of the data are available from public sources. Netzer notes the following:

Exhibit 15-1

I.	General Approach
A.	Review the current economic, political, and social environment in which the city operates.
B.	Identify and assess the impact of key factors likely to affect the city's economic, political, and social environment in the future (e.g., the next five years).
C.	Assess the city's current status as revealed in its comprehensive annual financial report (taking into account the city's reporting practices and policies).
D.	Forecast the city's fiscal status for the next five years taking into account the previously identified environmental changes and the city's likely response to them.
II.	Current state of, and trends in, the government's operating environment
A.	Population
1.	Age of population
2.	Income level
3.	Educational and skill level
4.	Other relevant demographic factors
B.	Economic environment
1.	Wealth and income of citizenry (e.g., per capita net worth and income)
2.	Major industries (and stability)
3.	Unemployment rates
4.	Value of property per capita
5.	Sales tax base
6.	Elasticity of revenues
C.	Political climate
1.	Formal structure of government
2.	Extent of political competition
3.	Competence of government officials
4.	Overall citizen satisfaction with the expectations of government
5.	"Liberal" or "conservative" citizen view as to role of government
6.	Relations with state government and other local governments (e.g., those of surrounding and overlapping entities)
D.	Social conditions
1.	Crime rates
2.	Other measures of social well-being
III.	Changes likely to affect the government's operating environment and its finances
A.	Demographics and geographical boundaries
1.	Impact on infrastructure
a.	Highways and streets
b.	Utilities
2.	Impact on operating revenues
3.	Impact on operating expenses
B.	Nature and scope of government services to be performed
C.	Nature and scope of enterprise activities carried out (e.g., future of electric utility)
D.	Political climate (e.g., pro- or anti-growth; pro- or anti-business)
E.	Form and organization of government (e.g., possibility of single-member election districts)
F.	Political attitudes and intergovernmental relationships
1.	Changing views toward the role of government
2.	Relations with legislature
3.	Extent of state and federal assistance
4.	Additional costs imposed by overlapping governments (e.g., school districts)
G.	Technological changes, such as increased use of computers and new means of transmitting electricity
H.	Social changes (e.g., changes in family structure, resulting in need for more government facilities to provide care for elderly)
I.	Commerce and industry
1.	Major employers (including stability and likelihood of relocating)
2.	Impact on revenues (e.g., property taxes) and expenditures (e.g., infrastructure improvements)
J.	Wealth and income of population
K.	Other economic changes (e.g., those affecting the electric power and health care industries)
IV.	Insight into city's financial position, as revealed by accounting and reporting practices
A.	Overall quality of disclosure
B.	Auditor's opinion
C.	Certificate of Achievement of the Government Financial Officers Association (GFOA)
D.	Letter of transmittal
E.	Key accounting policies
1.	Reporting entity
2.	Number, type, and character of (reason for) funds
3.	Revenue and expenditure or expense recognition
4.	Accounting changes
F.	Budget-related and accounting-related practices
1.	One-shot additions to revenues or reductions in expenditures
2.	Unusual budget-balancing transactions (e.g., interfund transfers)
3.	Changes in budget-related practices (such as delaying payments or speeding up tax collections)
4.	Use of off-the-balance-sheet debt (e.g., leases, long-term contracts) and of revenue debt
5.	Use of long-term debt to finance operating expenditures
6.	Increased use of short-term debt to cover temporary cash shortages
V.	Calculating and interpreting financial and economic indicators
A.	Fiscal capacity and effort
1.	Per capita revenues from own sources/median family income
2.	Revenue from own sources/total appraised value of property
3.	Total sales subject to tax/total retail sales
4.	Sales and property tax rates
B.	Trends in fund balance
C.	Trends in mix of revenues and expenditures and reasons for trends
D.	Trends in stability of revenues
1.	Total revenues/total expenditures
2.	Intergovernmental revenues/total operating revenues
3.	Property tax revenues/total operating revenues
4.	Restricted revenues/total operating revenues
5.	One-time revenues/total operating revenues
6.	Uncollected property taxes
E.	Trends in spending patterns
1.	Number of employees per capita
2.	Non discretionary expenditures/total expenditures
3.	Percentage breakdown of total expenditures by function
F.	Trends in liquidity
1.	Adequacy of fund balance—unreserved fund balance/operating revenues
2.	Adequacy of working capital—cash, short-term investments, and receivables/current liabilities
G.	Trends in burden of debt
1.	Debt margin
2.	Debt service as a percentage of total general fund and debt service expenditures
3.	Debt per capita
4.	Debt as a percentage of taxable property
5.	Maturity structure
H.	Trends in pension and other postemployment benefits
1.	Unfunded actuarial accrued liabilities
a.	Pension assets compared to actuarial liabilities
b.	Unfunded liabilities compared to value of property, annual payroll
2.	Percent of annual pension costs actually contributed
I.	Bond ratings
J.	Trends in amounts of new borrowing
K.	Overlapping debt
L.	Trends in capital expenditures
1.	By type
2.	By geographic area
3.	Reasons behind trends
4.	Commitments and planned expenditures per the capital improvements plan
VI.	Fiscal forecasts
A.	Overview of how trends and exogenous variables will affect key fiscal indicators in the next five years (taking into account how city will likely respond to them)
B.	Pro forma financial statements of general and other key funds
VII.	Summary and conclusion
A.	Does the city have the financial wherewithal to provide the services expected of it in the next years?
B.	What are the key risks and uncertainties facing the city that might impair its ability to provide these services?
1.	How can the city best manage these risks?
2.	What should be the key concerns of city managers, especially those directly concerned with finance?

Source: Michael H. Granof and Penelope S. Wardlow. *Core Concepts of Government and Not-for-Profit Accounting*, 2nd ed. New York, N.Y.: John Wiley & Sons, 2011, [Table 15-1](#), pp. 382–384. This material is used by permission of John Wiley & Sons, Inc.

Federal government statistical agencies regularly provide some of the needed data: the U.S. Census Bureau provides annual data on population and retail trade and finances of states and large cities and counties and, every five years, much more extensive and detailed economic and financial data for counties and cities (even small cities); the Bureau of Economic Analysis of the U.S. Department of Commerce provides annual data on personal income and employment by detailed industry for counties; the Bureau of Labor Statistics of the U.S. Department of Labor provides monthly data on employment and the consumer price index; and some other federal agencies, like the Federal Reserve System, provide more specialized economic data. Much of this information can be downloaded from the agencies' websites.⁵

⁵ Dick Netzer, personal communication, September 11, 1999.

Often, however, data are at least several years old before they become available on the Internet.

Some state governments regularly publish data on the finances of individual local governments within the state, in printed form, on websites, or both. For example, the New York State Comptroller's Office maintains Open Book New York (www2.osc.state.ny.us/transparency/LocalGov/LocalGovIntro.cfm), a website with data on the state's local governments' revenues, expenditures, and balance sheet. However, in some states, there is a considerable time lag in the provision of such data. Sometimes the state reports use classifications that are not consistent with the categories used in the CAFRs of the local governments, limiting the usefulness of the state government-issued data. Comparability with other states is even less reliable.

Some data may be available for large jurisdictions. For example, the Municipal Securities Rulemaking Board (MSRB) maintains the Electronic Municipal Market Access (EMMA) system. This is an online centralized source of free information on municipal market disclosures. The website, <http://emma.msrb.org>, contains official statements and continuing disclosures for public debt issues. Those statements contain a wealth of economic, demographic, and financial information on the governmental body issuing the debt. However, for smaller jurisdictions (smaller cities, towns, villages), it may not be possible to get much of the desired economic or demographic data at all. When data are obtained, they often do not conform to GAAP.

Nevertheless, analysts should attempt to compare financial data. One approach is to review trends over time for the government being analyzed. For example, a great deal of data can be obtained from the CAFR and tracked over time. This includes not only financial statement data but also information contained in the statistical section of the CAFR. Another approach is to determine several governments that are as comparable as possible with the government being analyzed and, if available, obtain their CAFR each year and use it for comparison. Such comparisons may still be complicated by differing year-ends, accounting methods, and government structure, but they can provide useful information.

Awareness of community unemployment rates provides some insight into the government's capacity to repay debt. Unemployment information may also indicate a need for the government to spend money on

unemployment compensation, income support, job training, food assistance, and temporary shelter. Assessing economic conditions and understanding outside influences on the government are critical for understanding the context of the government's financial performance. They are not, however, a substitute for a thorough analysis of the financial statements themselves. The financial statements of governmental bodies provide a great deal of information that can be used to assess financial condition.

Governments need to provide services while not outspending their ability to raise resources. Competent management is essential. To the extent the analyst can assess the absolute or relative competence of the management of a government, it should be included in the analysis. Governments are also subject to unique political influences on both the spending side and the taxing side of the equation.

Bowman and Calia argue that it makes sense to employ five tests to evaluate the quality of a government's financial reporting: (1) use of GAAP for financial statements, (2) use of GAAP for budgeting, (3) use of a CAFR format, (4) receipt of an unqualified⁶ CPA audit opinion, and (5) timeliness of information (issuance of CAFR within 6 months of fiscal year-end).⁷

⁶. As opposed to a qualified opinion. A qualified opinion expresses some concern that requires particular attention by the reader.

⁷. Woods Bowman and Roland Calia. *Evaluating Local Government Financial Health: Executive Summary*. Chicago, Ill.: Civic Federation, 1997, p. 3.

None of those five factors directly relate to the financial status and results of operations of the organization, but they do have a direct bearing on the ability of individuals to assess financial health. For many years, governments employed a wide variety of reporting techniques. Often failure to employ GAAP or delays in reporting information were techniques employed by governments in financial trouble. Compliance with the five factors may give outsiders a level of comfort about the government that could lead to higher bond ratings and lower interest costs on borrowed money.

Use of GAAP does not guarantee that a government will not encounter financial difficulty. Fundamental problems are sometimes treated with temporary patches, such as one-shot revenue enhancements and other gimmicks. For example, a government may sell a fixed asset. One year New Jersey sold a piece of highway to its Turnpike Authority. Although the turnpike did not necessarily want to buy the road, it did want the governor's approval of a rate increase. And the money from the sale allowed the state to balance its budget that year. But such one-shot revenue enhancements do not usually provide long-term solutions to imbalances between receipts and disbursements. Fortunately, under current GASB rules special items such as this must be clearly shown in the financial statements.

So adherence to the factors cited by Bowman and Calia may not imply financial health, but failure to do so certainly raises red flags that there may be problems with the financial status of the government.

Ratio Analysis

Calculation of ratios presents a challenge in government financial condition analysis. One problem that must be addressed is determination of which information to use in calculating ratios. For example, consider the government-wide statement of net position presented in [Exhibit 15-2](#). Which column should be used?

Jump City Statement of Net Position September 30, 2018				
Primary Government				
	Governmental Activities	Business-Type Activities	Total	Component Units
Assets				
Cash and cash equivalents	\$ 290,050	\$ 294,344	\$ 524,394	\$ 450,000
Receivables, net	743,343	20,806	764,149	199,456
Internal balances	85,000	(85,000)	—	—
Inventories	120,872	83,280	204,152	23,958
Capital assets, net	8,750,000	4,326,876	13,076,876	34,345,769
Total Assets	\$9,989,265	\$4,580,306	\$14,569,571	\$35,019,183
Deferred Outflows of Resources				
Accumulated decrease in fair value of hedging instruments	\$ —	\$ 4,312	\$ 4,312	\$ —
Liabilities				
Current liabilities:				
Accounts payable	\$ 825,443	\$ 75,431	\$900,874	\$ 387,158
Advances from grantors	281,253	18,500	299,753	34,946
Noncurrent liabilities:				
Due within one year	650,000	70,000	720,000	2,945,699
Due in more than one year	7,300,000	3,600,000	10,900,000	25,145,348
Total Liabilities	\$9,056,696	\$3,763,931	\$12,820,627	\$28,513,001
Deferred Inflows of Resources				
Accumulated increase in fair value of hedging instruments	\$ 98,747	\$ —	\$ 98,747	\$ —
Net Position				
Net investment in capital assets	800,000	656,876	1,456,876	6,148,390
Restricted for:				
Capital projects	15,000	—	15,000	—
Debt service	18,000	—	5,147,502	—
Unrestricted	822	163,811	164,633	357,702
Total Net Position	\$ 833,822	\$ 820,687	\$ 1,654,509	\$ 6,506,092

Exhibit 15-2

One might assume that it would make sense to use the numbers from the Total column. However, it is extremely critical to consider why the analysis is being performed. If a user is concerned about potential obligations to pay for debt of the component units, analyses may focus on the information in the Component Units column.

If an analysis is being performed to determine the financial health of the enterprise funds, then the focus might be on the Business-Type Activities column. However, since proprietary fund financial statements are also prepared on an accrual basis and may provide more detailed information about different business-type activities, the analyst may be less likely to use the government-wide statements for that information. An advantage of the proprietary fund financial statements is that they also provide a statement of cash flows.

One problem with using the Total column is that governments in distress may not really have access to all of the resources in the Total column. The business-type activities may be legally structured in such a way that their resources are dedicated only to their activity. If one is concerned about the ability of the governmental funds to repay long-term debt, the analysis might have to focus on the Governmental Activities column of the government-wide statements. The notes that accompany the financial statements provide critical information that can help the analyst make such decisions based on the specifics of the government being analyzed.

Why not use the governmental fund financial statements for such an analysis? Because the governmental fund financial statements are prepared on a modified accrual basis and include only current financial resources. This may be helpful for liquidity ratios, but not for solvency analysis. By contrast, the government-wide financial statements use accrual accounting and show both current and long-term liabilities. The analyst must carefully consider the question at hand and which statements and which columns in the statements provide the best information to address that question.

Common Size Ratios

Common size ratios should be prepared for all financial statements in a manner similar to that described in [Chapter 14](#). Such analysis should be done for all columns in the statements (e.g., Governmental Activities, Business-Type Activities) unless the analysis is being targeted to some specific questions that require more limited data.

Note that government financial statements generally do not provide information for more than 1 year, probably due to the amount of information already being displayed on one page. MD&A provides 2 years of information for some numbers. CAFRs often provide 2 years of statements. In performing an analysis, an understanding of financial trends is critical, and the analyst should always attempt to obtain information for one or more earlier years as well as the current year.

Liquidity

Liquidity ratios are based on information from the balance sheet or statement of net position. The statement of net position in [Exhibit 15-2](#) does not segregate current assets from long-term assets. However, current and quick ratios can still be calculated. Looking at the statement in [Exhibit 15-2](#), it is reasonably clear which items are current and which are long term. For instance, the current ratio using numbers from the Total column of that exhibit would be as follows:

$$\text{Current Ratio} = \frac{\text{Cash + Receivables + Inventories}}{\text{Accounts Payable + Advances from Grantors} + \text{Noncurrent Liabilities Due Within One Year} + \text{Deferred Inflows of Resources}} = \frac{524,394 + 764,149 + 204,152}{900,874 + 299,753 + 720,000 + 98,747} = 0.74$$

What items were excluded from the ratio? The internal balances can be ignored because the governmental and business-type activities offset each other. Clearly, the capital assets are long-term assets and would not be included in the preceding ratio. Similarly, noncurrent liabilities due in more than 1 year would not be current, so they are not included. Noncurrent liabilities due within 1 year would be current. What about advances from grantors? Advances might occur if the government has received payment in advance under a grant, but is only entitled to record revenue as it carries out the grant activities. This could be either a short- or long-term liability, but it was clearly indicated as short-term on the statement of net position.

Should deferred outflows of resources and deferred inflows of resources be included in this ratio? The timing

for these deferred inflows and outflows is often unclear from the financial statements. However, a conservative approach would be to exclude deferred outflows from the numerator of the current ratio and to include deferred inflows in the denominator. Since this is a ratio designed to indicate if there are adequate short-term resources to cover short-term obligations, it might be a serious error to underestimate obligations in the calculation. Analysts must search for any clues regarding which numbers to include or exclude and then must consider the ramifications of the decisions. Ratio analysis is often an art, rather than a science.

The governmental fund financial statements are useful for liquidity analysis. Since the governmental fund financial statements are based on current financial resources, there is less guesswork involved in determining what is or is not a current asset or liability.

Consider another problem with using the Government Activities column of the government-wide statement of net position for liquidity ratio analysis. Examine the balance sheet for Robbins Township in [Exhibit 15-3](#). From this exhibit, we see that the town is accumulating liquid resources in the New Town Hall Project fund. The government-wide statement of net position would include all current assets in the Governmental Activities column. However, some of those assets might be legally restricted to be used only for the new town hall building. Therefore, the liquid assets in the government-wide statements might overestimate short-term resources available to meet short-term obligations. We might be better off going directly to the governmental fund financial statements and calculating the current ratio using numbers from the General column.

Robbins Township Balance Sheet Governmental Funds June 30, 2018				
	General	New Town Hall Project	Other Governmental Funds	Total Governmental Funds
Assets				
Cash	\$ 43,978	\$ 5,000	\$ 23,965	\$ 72,943
Investment	832,190	128,345	67,000	1,027,535
Receivables, net	746,330	—	32,548	778,878
Due from other funds	186,000	50,000	25,000	261,000
Receivables from other governments	458,400	—	72,000	530,400
Total Assets	\$2,266,898	\$183,345	\$220,513	\$2,670,756
Liabilities				
Accounts payable	\$28,988	\$ —	\$ 42,385	\$ 71,373
Due to other funds	75,000	—	—	75,000
Payable to other governments and agencies	12,000	—	35,089	47,089
Total Liabilities	\$ 115,988	\$ —	\$77,474	\$193,462
Fund Balances				
Nonspendable: Inventories	\$ 236,000	\$ —	\$ —	\$ 236,000
Restricted for:	—	—	—	—
Housing and community development	760,000	—	—	760,000
Transportation	—	—	122,500	122,500
Debt service	400,000	—	—	400,000
Assigned to:	—	—	—	—
Education	450,000	—	—	450,000
Public Works	—	183,345	—	183,345
Unassigned	304,910	—	20,539	325,449
Total Fund Balances	\$2,150,910	\$183,345	\$143,039	\$2,477,294
Total Liabilities and Fund Balances	\$2,266,898	\$183,345	\$220,513	\$2,670,756

Exhibit 15-3

In addition to the current ratio, liquidity is often measured by the acid test ratio. The acid test's purpose is to compare assets that are cash or quickly convertible to cash with current liabilities. The acid test ratio could be calculated for [Exhibit 15-3](#) by dividing the total of the general fund's cash plus investments and receivables by current liabilities plus any deferred inflows of resources that might be current.

The truth is that there are no formal rules for financial condition analysis. There is no unique set of indicators that should always be used for performing such an analysis. We do not even have definitive guidance on which columns or even which statements to use. However, it is important that the analyst calculate ratios consistently over time to develop trends and consistently across organizations to develop a basis for comparisons.

Solvency

Do the traditional leverage and coverage ratios, discussed in [Chapter 14](#), provide the information needed to assess governmental solvency? The ratios discussed are debt, debt to equity, times-interest-earned, and cash flow coverage. Debt ratios have been used in government financial condition analysis. However, evaluation of debt ratios is complicated because governments tend to operate with fairly low levels of equity. Their focus is more on current-year receipts and disbursements than on accumulation of ownership of assets.

Solvency analysis focuses on the ability to meet debt payments. Therefore, solvency ratios should be calculated using the government-wide statements and the proprietary fund financial statements rather than the governmental fund financial statements, which do not report long-term assets or liabilities.

There is an important role for coverage ratios in financial condition analysis. Revenues may be compared with debt service requirements to assess the government's ability to meet required debt payments. In the case of debt service that is paid from only specific revenue sources, those revenues should be segregated and used in the coverage calculations. One might argue that the government's ability to repay debt rests less in its assets and more in its ability to tax and borrow resources to pay obligations as they come due.

Clearly, one of the problems that some governments encounter is a heavy debt load. CAFRs tend to contain very detailed debt information, including amounts of debt, maturity of debt, and timing of required debt service payments.

Often the debt is repaid as it comes due by simply "rolling it over"—that is, old debt is repaid by taking on new debt. This works only so long as lenders are willing to lend to the government. If its financial status becomes weak, lenders may not be willing to make new loans. A reasonable indicator of short-term solvency (the ability to roll over debt) would be the liquidity and amount of net position as measured on the government-wide statement of net position.

To focus on longer-term solvency of governments, analysts frequently consider per capita debt, debt as a percentage of full value of property, or debt service expenditures as a percentage of total expenditures or revenues. These are sometimes referred to as debt burden measures. For example, these ratios might be calculated as:

$$\text{Debt Burden} = \frac{\text{Total Long - Term Debt}}{\text{Population}}$$

$$\text{Debt Service Burden} = \frac{\text{Total Debt Service}}{\text{Total Revenues}}$$

The total long-term debt for Jump City would be \$10,900,000 (see [Exhibit 15-2](#)). By dividing the debt by the population, we find the amount of debt per capita, or per person.

This provides a number that makes comparisons with other governments more meaningful than simply the total dollars of debt. Debt service refers to long-term debt principal payments and interest on both short-term and long-term debt. The debt service burden indicates how much of each dollar of the government's revenues are spent on debt service. Ives et al. note that

the greater the portion of an entity's revenues that is consumed by debt service requirements, the less flexibility it has to issue additional debt, to meet operating expenditure needs, and to weather the effects of an economic downturn. Credit-rating agencies generally consider a debt service burden of more than 10 percent to be the "level at which budgetary competition is a significant consideration."⁸

⁸. Martin Ives, Laurence Johnson, Joseph R. Razek, and Gordon A. Hirsch. *Introduction to Governmental and Not-for-Profit Accounting*, 6th ed. Upper Saddle River, N.J.: Pearson/Prentice Hall: 2009, p. 566.

Berne and Schramm note that debt burden measures can focus on financial flows or stock. Flows compare the annual debt service with the inflow of resources, such as total revenues or property tax revenues, that are available to pay the debt service. Stock measures would compare outstanding debt with the value of taxable property, personal income, or *fiscal capacity*⁹:

⁹. Robert Berne and Richard Schramm. *The Financial Analysis of Governments*. Upper Saddle River, N.J.: Prentice Hall, 1986, p. 380.

All governments face political, legal, and economic realities which constrain their efforts to draw resources from their communities. The extent to which the economic base can be tapped by a government within these constraints is the organization's revenue capacity, often referred to as fiscal capacity.¹⁰

¹⁰. Ibid., p. 134.

Debt burden measures are tracked over time, compared with a group of comparable governments and assessed in relation to other debt, financial, and economic factors by municipal bond analysts at organizations such as Moody's Investors Service (Moody's) or Standard and Poor Rating Services (S&P). Unfortunately, these data are not generally available to the public. Independent analysts are put in the difficult position of creating their own databases.

What debt should be considered in the analysis?

As a general rule, all government long-term debt except self-supporting long-term debt should be included in the analysis. In most cases, the debt to be included in the analysis will be general obligation debt, and the excluded self-supporting debt will be revenue or limited obligation debt.... Similar criteria are used to identify the debt service included in the debt analysis. Debt service includes the principal and interest payments on the long-term debt included above.¹¹

¹¹ Ibid., p. 380.

Some might argue that self-supporting debt should also be included in the analysis even though it is repaid from revenues generated from a particular activity and not directly from government. In many cases, the resources paying for such debt (e.g., in the form of user fees) still come from the local economy. If one believes that fiscal capacity is finite, then the money going to support that debt is no longer available to support other general obligations.

The property tax is one of the primary sources of revenue for local governments. Therefore, a comparison of debt to the market value of property provides a reasonable measure for comparing the debt burden from one locality to another. Such comparisons might be best made from municipality to municipality within one state to minimize external factors that can cause variations in a reasonable ratio level. Many states set limits on municipality debt to property value or limits on property taxing power. In such cases, this debt ratio is particularly important.

By dividing debt by the population, we can calculate the debt per capita. This is a widely used measure. It does not require an estimate of property values, so it is easier to calculate. However, population per se may not be a good indicator of ability to pay. Comparing the debt to the population's personal income is likely to be a better measure of the ability of the government to raise revenues.

Debt service to annual revenues is one of the more widely used measures of debt burden. However, care should be exercised in using this ratio for comparison, as a number of different measures of revenue may be used in the calculation.

Other Long-Term Liabilities

While the discussion of solvency has traditionally focused on the ability of governments to meet financial debt requirements, we can also analyze how other long-term liabilities might affect financial condition. The two most significant of these liabilities relate to employee benefits: pensions and other post-employment benefits (OPEB).

Even well-funded defined benefit pension plans can have a significant effect on a government's financial condition. For example, required contributions may continuously increase. This might happen because the pension plan's benefit assumptions are not met. For example, most pension systems assume that plan assets will earn an average return of 8 percent per year.¹² If the financial markets have one or several bad years, that targeted average return might not be achieved. Or perhaps cost of living adjustments increase pension costs to

the government more than expected because of higher-than-expected inflation. The government might find itself with the unpleasant choice of cutting other spending or increasing taxes to make its required pension contribution.

[12.](#) The average assumed rate of return based on the 2008 Public Fund Survey by the National Association of State Retirement Administrators (NASRA) is 8 percent. The minimum investment rate assumption was 7 percent, and the maximum was 8.5 percent. See www.publicfundssurvey.org.

A pension plan's funded ratio measures the extent to which a government has set aside and invested assets to fund pension benefits earned by current and past employees. The ratio is defined as:

$$\text{Funded Ratio} = \frac{\text{Actuarial Value of Assets}}{\text{Actuarial Accrued Liability}}$$

A ratio of 1.0 implies that the pension fund is fully funded, while lower ratios mean that the system is underfunded (either because of performance below expectations or because of failure to fund required contributions, or some combination of both). Many pension experts suggest that 0.8 (i.e., a funded ratio of 80 percent) is the minimum threshold for considering a pension system financially healthy. Because unfunded liabilities are generally amortized into required annual required contributions, underfunded pensions may erode the financial condition of governments as contributions in the future increase to compensate for underfunded amounts.

While the pension funded ratio is familiar to municipal analysts and its use is likely to continue in the near future, recent amendments to GASB standards have rendered it ultimately defunct. Prior to GASB Statement Nos. 67 and 68, a government accrued a pension liability only to the extent that it failed to make a contribution to its pension trust(s) that was sufficient to cover newly accrued benefits plus prior unfunded liabilities. Also, the data that are required to calculate the funded status of a pension plan(s) were found only in the notes to the financial statements. Now, governments must report their plans' *net pension liability* (NPL) on the government-wide statement of net position. The NPL is the government plans' *total pension liability*, which grows as employees accrue benefits, net of the plans' net position (as shown on the pension trusts' statement of fiduciary net position). The NPL provides analysts with a number they can apply to whatever common denominator they see fit. The impact of this change to pension accounting can be dramatic. In the case of New York City, its pre-GASB 67/68 pension liability in FY 2013 was just over \$568 million. Post-GASB 67/68, its NPL for the same fiscal year was nearly \$60 billion.^{[13](#)}

[13.](#) Statement No. 67 of the Governmental Accounting Standards Board, Financial Reporting for Pension Plans, June 2012; Statement No. 68 of the Governmental Accounting Standards Board, Accounting and Financial Reporting for Pensions, June 2012.

The benefits coverage ratio is another useful tool to assess a government's pension fund. This ratio is defined as:

$$\text{Benefits Coverage Ratio} = \frac{\text{Net Assets Held in Trust for Pension Benefits}}{\text{Total Benefits and Refunds}}$$

The numerator measures the amount of resources held by the pension fund that are available to pay benefits to members, while the denominator represents the total amount paid out in pension benefits during the year. This ratio measures the number of times current benefits could be paid with accumulated and available assets of the pension fund. These data are available directly from the financial statements—pension systems (fiduciary funds) report, statements of plan net position, as well as statements of changes in plan net position. However, if the government has a lot of employees near retirement age, and the total annual benefits are likely to rise sharply in the near future, this ratio does not capture that fact. Nor does it take into account the increasing life span of retirees. Many government plans were established when the average life expectancy was much shorter. People now are drawing pension benefits for many more years than anticipated when these plans were established.

Another indicator of pension funding is the ratio of investment earnings to benefits paid.

$$\text{Investment Earnings to Benefits} = \frac{\text{Investment Income}}{\text{Total Benefits and Refunds}}$$

This ratio assesses the percentage of benefits being paid out that is generated through investment earnings of the pension fund rather than through direct contributions from the sponsoring government. Pension funds that have better funded positions are more likely to generate a higher percentage of assets for funding benefits from investments and therefore have less effect on a government's financial condition than a poorly funded system. Like the benefits coverage ratio, this ratio can be constructed using data from the financial statements (specifically, from the statement of changes in net position of the pension plan). However, care must be taken to distinguish between realized and unrealized gains on investments when using this ratio. Only realized gains are actually available to fund benefits and refunds.

An important consideration is whether a government is making an effort to prefund these liabilities rather than finance them on a pay-as-you-go basis, which was the norm until recently. Pay-as-you-go (PAYGO) means that the citizens who live in a town or state currently pay the current year OPEB distributions for the government's retired workers even though this benefit was earned for work provided by employees to previous taxpayers. Opponents of PAYGO argue that OPEB should have been the responsibility of the citizens who benefitted when the government workers were working and providing service. They argue that each year that a worker works, the government should not only pay their salary, but also put aside money that will be used to pay OPEB when those employees later retire. This way, a government would tax those who received the benefit of the employees' work for their OPEB, rather than waiting until years later and making citizens who did not receive any benefit from those employees pay for their OPEB. Prefunding means the government would put money aside each year as the worker works to pay for the benefits they will draw later when they retire.

Unlike OPEB, governments have generally financed pensions through prefunding, although some governments have not funded their employee pension systems as much as they should have. But the prefunding issues apply to pensions in the same way they apply to OPEB.

Information on OPEB liability financing is found in the financial statement notes. Governments that prefund

these liabilities are likely to have better financial condition in the future because the money put aside while the worker is still active can be invested, and investment earnings can pay a substantial part of the benefits. At the very least, one can calculate the OPEB expenditure as a percentage of total spending over time to assess how this employee benefit may or may not affect a government's financial condition. Beginning in 2016 or 2017, new GASB standards (Statement Nos. 74 and 75) will require governments to report net OPEB liabilities on the balance sheet and disclose additional data in the notes, similar to pensions.

Efficiency

Part of the assessment of the financial condition of a government should include efficiency. Therefore, the asset turnover ratios discussed in [Chapter 14](#) are relevant to some extent. Receivables and inventory turnover ratios both have useful implications for government. Receivables turnover ratios are directly calculable. Governments with relatively long average collection periods are likely over-reporting the true value of their receivables or are doing a poor job of managing the collection of receivables. Either of those situations requires specific management attention. Alternatively, it could indicate an inability of the populace to make required tax payments on a timely basis. That also provides important information about the continued financial stability of the entity. Property tax collection information is ordinarily provided in the statistical section of CAFRs. An efficiency ratio commonly calculated for governments is the property tax collection ratio. That ratio is defined as:

$$\text{Property Tax Collection Rate} = \frac{\text{Current Year Property Tax Collected}}{\text{Current Year Property Taxes Levy}}$$

The higher the percentage of this year's property taxes that are collected this year, the stronger the financial condition of the government, other things being equal.

[Exhibits 15-4](#) and [15-5](#) present examples of a government-wide statement of activities and a statement of revenues, expenditures, and changes in fund balances for the governmental funds, respectively. As with other elements of government financial analysis, a considerable amount of care is required in assessing efficiency ratios. While traditional efficiency analysis will likely work well for government-wide or proprietary fund financial statements, it is more complicated when applied to governmental funds. For example, comparisons among governments with different tax calendars might create problems. However, if all municipal governments in one state must use the same fiscal year and the same tax calendar, then the information may be quite useful.

Exhibit 15-4

Jump City Statement of Activities September 30, 2018								
Functions	Expenses (A)	Program Revenues			Net (Expense) Revenue and Changes in Net Position			
		Charges for Services (B)	Operating Grants and Contributions (C)	Capital Grants and Contributions (D)	Primary Government			Component Unit (H)
					Governmental Activities (E)	Business- Type Activities (F)	Total (G)	
Primary Government								
Governmental activities:								
Police and fire	\$12,735,027	\$ 485,554	\$384,910	\$ 43,448	\$(11,821,115)		\$(11,821,115)	
Education	34,834,119	—	—	—	(34,834,119)		(34,834,119)	
Sanitation	5,275,923	505,333	—	125,000	(4,645,590)		(4,645,590)	
Total governmental activities	<u>\$52,845,069</u>	<u>\$ 990,887</u>	<u>\$384,910</u>	<u>\$168,448</u>	<u>\$(51,300,824)</u>		<u>\$(51,300,824)</u>	
Business-type activities:								
Golf course	\$ 3,154,934	\$ 4,834,884	\$ —	\$ —		\$1,679,950	\$ 1,679,950	
Parking facility	2,694,334	1,834,909	—	250,000		(609,425)	(609,425)	
Total business-type activities	<u>\$ 5,849,268</u>	<u>\$ 6,669,793</u>	<u>\$ —</u>	<u>\$250,000</u>		<u>\$1,070,525</u>	<u>\$ 1,070,525</u>	
Total primary government	<u>\$58,694,337</u>	<u>\$ 7,660,680</u>	<u>\$384,910</u>	<u>\$418,448</u>	<u>\$(51,300,824)</u>	<u>\$1,070,525</u>	<u>\$(50,230,299)</u>	
Component Unit								
Airport	<u>\$28,132,639</u>	<u>\$27,492,738</u>	<u>\$ —</u>	<u>\$750,000</u>				<u>\$ 110,099</u>
			General Revenues—property taxes		\$ 50,243,270	\$ —	\$ 50,243,270	\$ —
			Contributions not restricted		350,000	—	350,000	—
			Special Items—gain on sale of building		482,000	—	482,000	—
			Transfers		645,000	(645,000)	—	—
			Total General Revenues, Contributions, Special Items, and Transfers		<u>\$ 51,720,270</u>	<u>\$ (645,000)</u>	<u>\$ 51,075,270</u>	<u>\$ —</u>
			Change in net position		\$ 419,446	\$ 425,525	\$ 844,971	\$ 110,099
			Net position—beginning		414,376	395,162	809,538	6,395,993
			Net position—ending		<u>\$ 833,822</u>	<u>\$ 820,687</u>	<u>\$ 1,654,509</u>	<u>\$6,506,092</u>

Robbins Township Statement of Revenues, Expenditures, and Changes in Fund Balances Governmental Funds for the Year Ended June 30, 2018				
	General	New Town Hall Project	Other Governmental Funds	Total Governmental Funds
Revenues				
Property taxes	\$ 8,435,674	\$ —	\$1,232,476	\$ 9,668,150
Fees	1,234,746	—	343,321	1,578,067
Permits	894,035	—	43,984	938,019
Intergovernmental	2,089,994	—	434,598	2,524,592
Charges for services	1,542,959	—	2,324,659	3,867,618
Investment earnings	354,222	—	390,712	744,934
Total Revenues	\$14,551,630	\$ —	\$4,760,750	\$19,312,380
Expenditures				
Current:				
General government	\$ 7,535,980	\$ —	\$ 340,576	\$ 7,876,556
Public safety	3,999,745	—	1,239,435	5,239,180
Sanitation	2,453,909	—	784,445	3,238,354
Debt service:				
Principal	250,000	—	2,000,000	2,250,000
Interest and other charges	15,000	—	120,000	135,000
Capital outlay	2,150,000	—	270,395	2,420,395
Total Expenditures	\$16,404,634	\$ —	\$4,754,851	\$21,159,485
Excess (deficiency) of revenues over (under) expenditures	\$(1,853,004)	\$ —	\$ 14,899	\$(1,838,105)
Other Financing Sources (Uses)				
Proceeds from long-term capital related debt	\$ 2,000,000	\$ —	\$ —	\$ 2,000,000
Transfers in	200,000	—	10,000	210,000
Transfers out	(85,000)	45,000	(25,000)	(65,000)
Total Other Financing Sources (Uses)	\$ 2,115,000	\$ 45,000	\$ (15,000)	\$ 2,145,000
Net Change in Fund Balances	\$ 261,996	\$ 45,000	\$ (101)	\$ 306,895
Fund balances—beginning	2,004,902	138,345	220,614	2,363,861
Fund balances—ending	\$ 2,266,898	\$183,345	\$ 220,513	\$ 2,670,756

Exhibit 15-5

Furthermore, care must be exercised in assessing receivables turnover because some receivables are more

within the control of the government than others. For example, the collection of taxes or fees is often subject to management control. By contrast, the collection of grants and reimbursements owed by other governments is much less controllable. This complicates analysis if the user of the financial statements is not able to divide receivables into major categories by source.

Inventory measures would be similarly useful. Is the organization holding excessive amounts of inventory? Does it order too much at a time, or is there a lot of obsolete, useless inventory stored in government warehouses?

Government condition analysis does not lend itself easily to the use of fixed and total asset turnover ratios. These ratios can be calculated. For example, for Jump City, using numbers from the Total columns in [Exhibits 15-2](#) and [15-4](#), one measure of these ratios would be the following:

$$\begin{aligned} \text{Fixed Asset Turnover} &= \frac{\begin{array}{c} \text{Total General Revenues, Contributions,} \\ \text{Special Items, and Transfers} \end{array}}{\text{Capital Assets, Net}} = \frac{\$51,075,270}{\$13,076,876} \\ &= 3.9 \\ \text{Total Asset Turnover} &= \frac{\begin{array}{c} \text{Total General Revenues, Contributions,} \\ \text{Special Items, and Transfers} \end{array}}{\text{Total Assets}} = \frac{\$51,075,270}{\$14,569,571} \\ &= 3.5 \end{aligned}$$

However, interpretation is problematic. Does a fixed asset turnover ratio of 3.9 indicate efficient or inefficient use of assets? The general rule regarding asset turnover ratios is that a higher ratio implies greater efficiency. Does one city rent all buildings that it uses to provide social services, while another city owns them?

Even more critical is the fact that charging high taxes and generating large amounts of revenue while providing inadequate infrastructure may result in a high fixed asset turnover ratio. However, that ratio would not necessarily be a sign of efficiency. The fixed asset turnover will not be meaningful unless considered together with RSI infrastructure information, and even then it may turn out to be of limited value.

Analysts might also differ on what to include in these turnover ratios. Some would argue that the assets of the government are used to support all of its functions. Therefore, the revenues directly associated with those functions should be included. The ratio could include not only the total general revenues, contributions, special items, and transfers subtotal from the bottom part of the statement of activities in the numerator, but also the charges for services and operating and capital grant and contribution revenues from the top part of the statement. Others might argue that special items are often unusual and cannot be expected to recur; therefore, they should be excluded from the numerator. These create reasonable alternatives to the ratios as defined previously.

The governmental fund financial statements do not record long-term assets. Therefore, there would not be a parallel set of ratios based on those statements. The proprietary fund financial statements, however, would be subject to all of the financial analyses common to other types of organizations that use accrual accounting. Therefore, asset turnover ratios would often be applied to them.

Profitability and Intergenerational Equity

Profitability ratios are not as prominent in financial condition analysis as they are in financial statement analysis of for-profit organizations. This is largely because profit maximization is not a goal of governments. However, profitability analysis still plays an important role in financial condition analysis.

Although governments may not seek to maximize profits, evaluation of annual surpluses or deficits should be undertaken. To protect itself against a crisis if a deficit occurs, a government should accumulate modest reserves. The exact amount that any specific government should accumulate would depend largely on how severely its revenues and expenses or expenditures vary during good and bad economic times. If a series of large deficits is viewed as being inevitable during economic downturns, then it might be reasonable for the government to run considerable surpluses during economic booms.

Another factor related to profitability analysis relates to intergenerational equity. If a government persistently runs large surpluses, one could argue that it is overtaxing its current citizens. To what end? Eventually, the government will likely spend the surpluses to provide services. However, those services will be provided to future populations, rather than to the individuals who paid for them.

Conversely, if a government runs deficits for a number of years and finances those deficits by issuing long-term debt, what does that imply? It indicates that the current population is not paying the full cost of services currently provided by the government. Eventually, a future population that did not benefit from the services will pay for them. This problem raises considerations about equity between the present and either past or future generations of taxpayers. For this reason, one might argue against large annual surpluses or deficits. Ratios such as the profit margin can be helpful in analysis of the existence or extent of intergenerational equity or inequity.

Risk and Capacity

Financial stability and risk are additional factors that must be considered in evaluating government financial condition. We can assess the extent to which the government relies on steady, dependable resources. We can also consider the government's capacity to increase resources if some expected source falls short.

Bowman and Calia present two ratios that are helpful in this area: the *risk exposure factor* and the *tax leverage factor*.¹⁴ These ratios can be stated as follows:

$$\begin{aligned} \text{Risk Exposure Factor} &= \frac{\text{Investment Revenue} + \text{Intergovernmental Revenue} + \text{Transfers In}}{\text{Own Revenue Sources}} \\ \text{Tax Leverage Factor} &= \frac{\text{Total Operating Expenditures}}{\text{Own Revenue Sources}} \end{aligned}$$

The numerator of the risk exposure factor ratio is intended to capture the revenues that might decline due to factors totally outside of the control of the government. A reduction in interest rates or decline in the stock market could lower the collections from investments. Budget difficulties at the state or federal level could result in declining aid to local governments (intergovernmental revenues and transfers in). The denominator represents the revenue source that the government directly controls. For local governments, that can often be

represented by property taxes. In some cases, sales taxes and income taxes and other sources could also be included in the denominator. If outside, uncontrollable sources decline, what impact would that have on the government and its own tax rates?

For example, suppose we start with the following value for the ratio:

$$\text{Risk Exposure Factor} = \frac{\$2,000,000}{\$10,000,000} = 0.2$$

This would imply that if uncontrollable money (the numerator) fell 10 percent from \$2,000,000 to \$1,800,000, own source revenues (the denominator) would have to rise 2 percent to make up the difference (i.e., $0.2 \times 10\% = 2\%$). This government does not rely heavily on intergovernmental aid and would not suffer greatly if that aid were cut.

Alternatively, suppose that the risk exposure ratio were as follows:

$$\text{Risk Exposure Factor} = \frac{\$20,000,000}{\$10,000,000} = 2$$

This would imply that if the numerator fell 10 percent, own revenue sources such as property taxes would have to rise 20 percent to make up the difference ($2 \times 10\% = 20\%$). This heavy reliance on revenues outside the direct and full control of the government is a further concern because the factors that cause declines in those revenues, such as a weak economy, often make it difficult for local governments to raise tax rates. A government with heavy reliance on such revenues should have surpluses and build reserves in good times that can be used in times of intergovernmental aid decreases, thus avoiding significant local tax increases.

The tax leverage factor, defined previously, indicates the amount taxes must increase in response to expenditure increases. For example, if the government spends \$30,000,000 a year and has just \$10,000,000 of its own revenue sources, then a 1 percent increase in spending, with no other revenue increases, would require a 3 percent increase in the local tax collections:

$$\text{Tax Leverage Factor} = \frac{\text{Total Operating Expenditures}}{\text{Own Revenue Sources}} = \frac{\$30,000,000}{\$10,000,000} = 3$$

That is, if spending goes up 1 percent, or \$300,000, there would have to be a 3 percent increase in controllable government revenues ($3 \times 1\% = 3\%$).

In addition to risk factors such as these, the capacity of the region to bear such increases must be considered. Understanding the capacity of the populace to bear tax increases and the capacity of the government to increase debt levels is critical in understanding the financial condition of the government.

Much of the capacity analysis revolves around the demographics of the region. For example, if the population base is very mobile and highly sensitive to tax increases, the government has less stability than it would otherwise. Suppose that the top 10 percent of the population in a state currently provides half of all income taxes. If a state income tax increase causes a substantial number of those individuals to move from the state, the tax increase could actually result in a net decrease in revenues. Governments actually do not have an unlimited ability to increase taxes.

We can, however, start to assess the government's ability to increase its resources by comparing factors such as total population, population growth, employment, tax rates, property values, debt per capita, and average income per capita. A city with a growing population and growing property values, low tax rates, and relatively low debt per capita has room for resource growth. When times are hard, it can borrow money, raise taxes, or both.

But if the population is declining, there are fewer people to tax. Expenditure decreases will be necessary to avoid higher taxes per capita. If property values are declining as well, the tax rate per \$100 of property value will have to increase just to keep property tax revenues constant.

A key issue is that we do not really care about the value of any ratio we can already calculate because that is historical information. What we really want to know is, "What will be the value of these ratios in the future?" It is necessary to track ratios over time to see trends, compare ratios with that of other organizations, and get a sense of underlying trends in demographics and other factors, because all of this analysis is focused on assessing what is likely to happen in the future.

Other Ratios and Financial Indicators

Many additional ratios could be calculated beyond those discussed here. A handbook published by the International City/County Management Association (ICMA) contains a total of 36 financial indicators.¹⁵ Among the ratios in the ICMA handbook were measures of revenue, expenditure, liquidity, debt structure, and unfunded liabilities. These are some of the ratios suggested:

¹⁵ Sanford M. Groves and Maureen G. Valente. *Evaluating Financial Condition: A Handbook for Local Government*, 3rd ed. Washington, D.C.: ICMA, 1994.

- total revenues/population
- total expenditures/population
- operating expenditures/total expenditures
- total revenues/total expenditures
- current liabilities/operating revenues
- unfunded pension liability/net assessed value

The ratios suggested in the ICMA handbook may not be an adequate tool for many users. Honadle and Lloyd-Jones note that the ICMA indicators "are much more complicated because much of the information cannot be found in the regular financial statements. When it can be found, it may not be organized in a compatible way."¹⁶

¹⁶ Beth Walter Honadle and Mary Lloyd-Jones. "Analyzing Rural Local Governments' Financial Condition: An Exploratory Application of Three Tools." *Public Budgeting and Finance*, Summer 1998, p. 75.

Fiscal Monitoring Systems

State governments have begun treating financial condition analysis as an ongoing management function—not merely something to be done periodically. For instance, New York State’s Fiscal Stress Monitoring System,¹⁷ shown in [Exhibit 15-6](#), focuses on identifying early warning signs of fiscal problems in local governments and school districts. An overall fiscal score can be calculated for any jurisdiction, using indicators discussed in this chapter and others that are very similar. Jurisdictions can complete a self-assessment, and the state provides training in interpreting fiscal scores.

¹⁷ Fiscal Stress Monitoring System: <http://www.osc.state.ny.us/localgov/fiscalmonitoring>.



Exhibit 15-6

New York’s fiscal monitoring system is not unique. North Carolina offers a benchmarking tool for municipalities and counties that “helps local governments in North Carolina analyze and communicate their financial condition.”¹⁸ In Ohio, a Fiscal Distress system places local governments and school systems “in fiscal caution, fiscal watch or fiscal emergency status” as needed.¹⁹ There are similar systems in other states as well. What is common among them is their use of the types of information discussed in this chapter to determine whether a jurisdiction is experiencing difficulty meeting both its short- and long-term financial and service obligations.

¹⁸ County and Municipal Fiscal Analysis: <https://www.nctreasurer.com/slg/lfm/financial-analysis/Pages/Financial-Statistics-Tool.aspx>.

¹⁹ Fiscal Distress: <https://ohioauditor.gov/fiscaldistress.html>.

Summary

The discussion of financial statement analysis in [Chapter 14](#) is largely applicable to governments as well. However, as the discussion in this chapter has shown, understanding the financial condition of governments requires additional types of information and, in some cases, modifications to the financial statement analysis discussed in [Chapter 14](#).

Financial analysis of governments relies heavily on analysis of basic financial statements (BFS), including the notes that accompany them. The notes are particularly useful for finding out about the structure of the organization, the accounting methods used, assumptions made, and other background information that gives the reader a perspective as the financial statements are reviewed. Also, careful review and analysis of management's discussion and analysis (MD&A) and other required supplementary information (RSI) is essential. In addition, governmental financial analysis must take into account additional external factors such as debt per capita, tax rates, and citizen income and wealth. The use of ratio analysis is also appropriate.

In the real world, complex scenarios arise. The population might be growing, but property values may be stagnant. There may be not only high property values but also high debt per capita. In any financial condition analysis, comparison with a relevant group should be made, and strengths and weaknesses should be considered as a whole in making a reasoned assessment about financial condition.

Financial condition analysis often raises questions rather than providing simple answers. Further, the data contained in the financial statements, notes, and ratios might not provide answers to all of the questions raised. It is often necessary to develop specific cost, operations, or other management data.

Financial analysis crosses the line between managerial accounting, discussed in [Chapters 1–8](#), and financial accounting, discussed in [Chapters 9–13](#). Financial analysis, discussed in [Chapter 14](#) and this chapter, takes the financial accounting data that conform to GAAP and analyzes these data to generate useful management information. The analysis is limited only by the availability of data and the creativity of the analyst in using these data.

Key Terms from This Chapter

financial condition analysis, 560

fiscal capacity, 572

legal debt margin, 561

net pension liability, 573

overlapping debt, 561

risk exposure factor, 579

tax leverage factor, 579

total pension liability, 573

Questions for Discussion

- 15-1. What is government financial condition? What is the major source for information about financial condition?
- 15-2. How does financial condition analysis differ from financial statement analysis?
- 15-3. How can we obtain information for financial condition analysis?
- 15-4. How could one assess the quality of a government's financial reporting?
- 15-5. What general problem must be addressed in doing ratio analysis for governmental financial condition analysis?
- 15-6. Are liquidity ratios appropriate for financial condition analysis?
- 15-7. Do traditional solvency ratios adequately address financial condition analysis concerns?
- 15-8. What are some examples of debt burden measures?
- 15-9. What are several alternative definitions for the total asset turnover ratios for governments?

Problems²⁰

²⁰Problems 15-11 through 15-14 require use of the exhibits from [Chapter 13](#).

15-10. The municipality of Lossburgh reported the following information about its pension fund in its CAFR, for the year ended June 30, 2015, prior to recent GASB changes:

Net Assets Held in Trust for Pension Benefits	\$445,802,812
Total Benefits and Refunds	50,376,321
Total Investment Income	43,969,115
Actuarial Value of Assets	46,092,308
Actuarial Accrued Liability	62,248,749
For the prior year, Lossburgh reported the following information:	
Net Assets Held in Trust for Pension Benefits	\$429,907,304
Total Benefits and Refunds	39,900,575
Total Investment Income	20,964,785
Actuarial Value of Assets	43,466,117
Actuarial Accrued Liability	63,487,932

Calculate the funded ratio, the benefits coverage ratio, and the ratio of investment earnings to benefits for both years. Assume that an 80 percent funded ratio was considered the rule of thumb for adequate funding, that holding 15 times net assets to benefits paid was the standard for benefits coverage and that the ratio of investments to benefits should always be over 1.0.

How did Lossburgh's pension fund compare to these benchmarks? What trends do you observe?

15-11. Using [Exhibit 13-1](#), prepare common size ratios for Smith City for its governmental activities.

15-12. Using [Exhibit 13-1](#), calculate current ratios for Smith City for governmental activities, business-type activities, total, and component units.

15-13. Using [Exhibit 13-1](#), calculate the solvency ratio of long-term debt to total net position for the governmental activities.

15-14. Using [Exhibit 13-2](#) for the governmental activities of the primary government, calculate the interest coverage ratio, that is the change in net position + interest ÷ interest.

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Appendix 15-A: Bond Ratings

Bonds are discussed in [Chapter 6](#). When people consider buying a bond, one of the key factors in their decision is whether the bond issuer will be able to make the required debt service (interest and principal) payments. Bond buyers (lenders) are also concerned about whether the interest rate they will earn on the bond is sufficient to reimburse them for the risks they take when they buy the bond. Bond ratings are a system of providing information about the financial stability of bond issuers, and therefore about the risk of buying a bond. The more financially stable the borrower, the better the rating and the lower the interest rate the borrower must pay to attract lenders. The financial condition analysis principles discussed in [Chapter 15](#) are critical to assessing a government and assigning a rating to its bonds.

Factors Affecting Interest Rates

A number of factors influence bond interest rates: general economic conditions, the duration of the loan, and the financial condition of the borrower. Interest rates on a bond issue are also influenced by other factors, such as whether the bond has call provisions and, if so, what they are, whether there is bond insurance or not, whether tax or other revenue streams are pledged to repayment versus just the general credit of the borrower, and many other technical factors that are beyond the scope of this book.

When the economy is booming, interest rates tend to be high, since there are many potential borrowers competing for money. Businesses want to borrow money to finance major expansions. When the economy is in recession, few businesses are borrowing money to expand their businesses. The lower demand for loans, combined with federal monetary policy intended to stimulate the economy, tends to result in lower interest rates during recessions.

The longer the duration of a bond, generally the higher the interest rate it commands. There are several reasons for this higher rate. First, investors sacrifice liquidity when they buy a bond, and the longer the term of the bond, the riskier it is for them. They may need cash at a time when interest rates have risen and the value of the bond has fallen. That might cause them to have to sell the bonds at a loss. Next, the longer the duration, the harder it is to accurately anticipate inflation rates over the life of the loan. Unexpectedly high inflation may raise overall interest rates, and therefore lower the present value of the future principal payment. Investors may demand a premium to cover that risk. Finally, some argue that it is partly a case of supply and demand. More people have money available to lend for short periods than for long periods. Therefore the price (interest rate) for a long-term loan will be higher.

Another key factor in determining interest rates is the credit-worthiness of the borrower. Lenders want some assurance that they will be repaid. The greater the chance that the borrower will not be able to repay, the higher the interest rate demanded by the lender to reward them for taking the risk. The elements of financial condition that were discussed in this chapter are critical to how likely a government is to be able to pay its debt service. But how are individual lenders supposed to assess the likelihood that a borrower will be able to make its required debt service payments? Do they each have to perform an assessment of a government's

financial condition? No. “Bond rating” organizations perform analyses and convey their assessments to the public via ratings that they assign to bond issues.

Rating Organizations

Three major organizations rate bonds: Moody’s Investors Services, Standard & Poor’s, and Fitch Ratings. These private firms issue a credit-worthiness report in exchange for a fee paid by the issuer. Part of the report is a letter rating for the bond issue. Moody’s uses a scale of Aaa, Aa, A, Baa, and so forth, with Aaa being the best possible rating. Standard & Poor’s and Fitch use a similar scale of AAA, AA, A, BBB, and so forth. A rating of Aaa or AAA (“triple A”) is the best rating issued and is generally indicative of an organization that is financially extremely strong. Beginning in 2010, the three major bond raters began overhauling the bond ratings of municipal issuers. Because municipality defaults on debt are less common than defaults in the corporate sector, bond raters recalibrated their ratings so that it would be easier to compare municipal bond ratings with other sectors of the economy.

Prior to the financial crisis of 2007, four major organizations insured tax-exempt bonds: MBIA, AMBAC, Financial Guaranty Insurance Corporation (FGIC), and Financial Security Assurance (FSA). The insurance guarantees payment of principal and interest if the bond issuer defaults. Bond issuers pay a premium to acquire such insurance. Since the insurance company guarantees payment, the bond issue gets a rating based on the financial strength of the insurer. Although the premiums are costly, the issuer will typically have a better bond rating with the insurance. As of the writing of this text, only one significant bond insurer (Assured Guaranty Corporation—formerly FSA) remained in the municipal bond insurance industry. Many of the other companies insured collateralized debt issues and found themselves exposed financially as defaults began to increase significantly beginning in 2007. As a result, some bond insurance companies went out of business, some were acquired, and all lost their AAA bond ratings, rendering the value of their insurance nearly worthless to municipal issuers.

Rating agencies base their ratings on a number of factors, generally broken down into four categories: financial operations, debt profile, economic indicators, and managerial ability. First is a financial analysis of the issuer. Such analysis will focus on issues such as existing outstanding debt, the revenue base, current tax levels (for governments), and many other factors related directly to the finances of the issuer. In addition, the general economy is evaluated. A city with a healthy economy and growing population base might receive a better credit rating than one with urban blight and declining population and industry. The quality of the issuer’s management is also considered. Issues specifically related to the bond, such as its maturity, are also considered.

Some issuers receive poor ratings. Typically a rating below BBB is not considered to be good enough to be *investment grade*. That means that the bonds, often called *junk bonds* or *high-yield bonds*, are speculative investments. Many organizations have rules that prevent them from acquiring bonds that are not considered investment grade. As a result, the demand for such bonds tends to be limited. Such bonds have to pay substantially higher interest rates in order to attract investors.

Guarantees and Letters of Credit

As noted, sometimes credit ratings are enhanced by the presence of bond insurance. Bond ratings may also be improved if state guarantees or bank *letters of credit* (LOCs) support the bond issuance.

A state guarantee exists if the state officially takes on the burden of making required bond payments if there would otherwise be a default. For example, a housing authority might issue bonds that would normally be revenue bonds, paid off by tenants' rents or homeowners' mortgage payments. Therefore, if the authority's revenues fall short, it might not be able to make required bond payments. The state might have a fund from which it guarantees to make up any shortfall in the housing authority revenues. This would raise the bond rating, although not to a triple A level, unless the state has a triple A level itself. Another common form of state enhancement is the moral obligation, in which the state obligates itself to provide funds in the event of a revenue shortfall. Moral obligations can take many forms and consequently vary in the level of actual credit enhancement they provide.

Another potential way of improving a bond rating is to secure an LOC from a bank. Such a letter is a guarantee from the bank to make agreed-upon payments. LOCs are often used by issuers who have issued variable rate debt to offset the exposure posed by fluctuating interest rates. This tends to be a limited way to improve bond ratings because bonds may be issued for longer time periods and larger amounts of money than a bank will be willing to secure with an LOC.

Key Terms from This Appendix

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Glossary

A

accelerated depreciation.

Technique that allocates a larger portion of a *long-term asset's* cost as an *expense* in the earlier years of its useful lifetime and a smaller portion in the later years.

accounting.

System for keeping track of the financial status of an organization and the financial results of its activities.

accounting controls.

Methods and procedures for the authorization of transactions, safeguarding of *assets*, and accuracy of accounting records.

accounting cost.

A measure of *cost* based on a number of simplifications, such as an assumed useful life for a piece of equipment.

accounting cycle.

Period of time from when *cash* is spent to acquire resources to provide services until cash is received in payment for the services provided.

accounting rate of return (ARR).

The profitability of an *investment* calculated by considering the *profits* it generates, as compared with the amount of money invested.

accounts payable.

Amounts owed to suppliers.

accounts receivable.

Money owed to the organization or individual in exchange for goods and services it has provided.

accrual accounting.

See *accrual basis*.

accrual basis.

An accounting system that *recognizes revenues* in the year in which they are earned (whether received or not) and the *expenses* in the year that resources are used.

accumulated depreciation.

Total amount of *depreciation* related to a *fixed asset* that has been accounted for over the years the organization has owned that asset.

acid test.

See *quick ratio*.

activity-based costing (ABC).

Cost measurement system that focuses on the activities of the organization that drive its costs.

activity statement.

Financial statement that reports the results of operations over a period of time (*revenues* and *expenses*) as well as other changes in the *net assets* of the organization.

ad valorem tax.

A tax based on value—typically property tax.

administrative controls.

Plan of organization (e.g., the formal organization chart indicating who reports to whom) and all methods and procedures that help management planning and control of operations.

agency funds.

Funds that account for money the government holds as an agent for some other organization in a temporary, purely custodial capacity.

aging schedule.

Management report that shows how long *receivables* have been outstanding since an invoice was issued.

allocations.

Subdivisions of an *appropriation* into more detailed categories, such as *responsibility centers*, programs, or *objects of expenditure*. Sometimes, spending is further broken down into *allotments*.

allotments.

A system that allocates *budget* resources to specific time periods or for use only after a certain event occurs.

allowance for bad debts.

See *allowance for uncollectible accounts*.

allowance for uncollectible accounts.

Estimated portion of total *accounts receivable* that is expected not to be collected because of *bad debts*; sometimes called *allowance for bad debts*.

allowances.

Discounts from the amount normally charged for services. These discounts are sometimes negotiated (e.g., with health maintenance organizations) and other times mandated by law (e.g., Medicare and Medicaid).

amortization.

Allocation of the cost of a *tangible* or *intangible asset* over its lifetime.

annualized cost method.

Approach used to compare *capital assets* with differing lifetimes. The *net present cost* for each alternative is determined and then translated into a periodic payment for each year of the asset's life to find the cost per year.

annuity.

Series of payments or receipts each in the same amount and spaced at even time periods (e.g., \$127.48 paid monthly for 3 years).

annuity in advance.

An *annuity* with the payment at the beginning of the period.

annuity in arrears.

An *annuity* with the payment at the end of the period.

annuity payments (PMT).

See *annuity*.

appropriation.

Approval by the legislative body—be it a senate, assembly, town committee, or council—of spending for a specific line item. Appropriations create the authorization for spending the amount in the *budget*.

ARR.

See *accounting rate of return*.

asset turnover ratios.

Ratios that examine the *efficiency* with which the organization uses its resources. Examples are *receivables turnover*, *days of inventory on hand*, and *fixed asset turnover* ratios; sometimes called *efficiency ratios*.

assets.

Valuable resources. They may be either physical, having substance and form such as a table or building, or *intangible*, such as the reputation the organization has gained for providing high-quality services.

assigned amounts.

Resources that may be used only for the specific purposes named by an authorized decision maker (e.g., department head).

audit.

An examination of records or procedures. A financial audit seeks to determine whether an organization has complied with relevant accounting standards, internal procedures, and externally imposed laws and regulations, while a performance audit seeks to determine whether an organization is efficient in its use of resources to provide goods and services.

audit trail.

A set of references that allows a person to trace back through accounting documents to the source of any number.

audited financial statements.

Financial statements that have been examined by a Certified Public Accountant, who issues an opinion letter, called the *auditor's report*.

auditor.

Person who performs an audit.

auditor's report.

Letter from a Certified Public Accountant providing an expert opinion about whether the *financial statements* provide a fair representation of the organization's financial position and the results of its operations, in accordance with *GAAP*.

available-for-sale securities.

All debt and equity securities other than *trading securities* and *held-to-maturity securities*. Reported at fair value by all organizations.

average collection period.

365 divided by the *receivables turnover* ratio; this *asset turnover ratio* indicates the average number of days from the issuance of an invoice until a receivable is collected. The lower this *ratio*, the more efficient the organization is, other things being equal.

average cost.

Full cost divided by the volume of *service units*.

axiom.

Unproven but accepted assertion that either is self-evident or is a mutually accepted principle.

B

bad debts.

Amounts that are owed to the organization that are never collected.

balance sheet.

Financial report that indicates the financial position of the organization at a specific point in time; officially referred to as the *statement of financial position*.

balanced scorecard.

A set of measures used by an organization to assess performance; financial measures are included in addition to other relevant measures.

basic financial statements.

Financial statements that must be included in a government annual report to comply with *GAAP*. The required statements are a government-wide *statement of net position*, a government-wide *statement of activities*, and *fund* financial statements for the governmental, proprietary, and fiduciary funds.

bearer bonds.

See *unregistered bonds*.

board-designated funds.

Resources that the board has decided to devote to a specific purpose. If board-designated resources are needed for other purposes, the board can remove the restriction. Treated as unrestricted for external reporting; sometimes called *board-restricted*.

board of directors.

See *board of trustees*.

board of trustees.

Governing body that has the ultimate responsibility for the decisions made by the organization.

board-restricted.

See *board-designated funds*.

bond.

Formal borrowing arrangement in which a transferable certificate represents the debt. The holder of the bond may sell it, in which case the liability is owed to the new owner.

bond issue.

The total *face value* of bonds offered by a single borrower and governed by a set of terms and conditions.

bond payable.

Formal borrowing arrangement in which a transferable certificate represents the *debt*. The holder of the bond may sell it, in which case the *liability* is owed to the new owner.

bond year dollars.

The sum of the amount of money that is outstanding for each year of a *bond issue*. If a *term bond* issue is \$2,000 for 5 years, then the bond year dollars would be \$10,000 ($\$2,000 \times 5$).

bondholder.

Creditor of the organization who owns one or more of the organization's outstanding *bonds payable*.

bonding.

Insurance policy protecting the organization against embezzlement and fraud by employees.

bonus system.

A financial incentive system that rewards employees for achieving performance targets.

bottom-up budget.

Budget prepared by *responsibility center* managers, who inform the top management of their spending plans.

break-even analysis.

Technique for determining the minimum volume of services or goods that a program or service must provide to be financially self-sufficient.

break-even point.

See *break-even volume*.

break-even volume.

The volume needed for revenues to equal expenses. Losses would generally be incurred at lower volumes and *profits* at higher volumes.

budget.

A plan that provides a formal, quantitative expression of management's plans and intentions or expectations.

budget guidance memorandum.

Document that provides policies, *goals*, and performance expectations.

budget reserves.

Amounts in a budget that are to be used for unanticipated expenses.

budgetary basis of accounting.

The basis of accounting (e.g., *cash*, *accrual*, *modified accrual*) that is used in preparing the budget.

budgetary comparison schedule.

See *budgetary comparison statement*.

budgetary comparison statement.

A *financial statement* that compares the budgeted and actual results for *revenues* and *expenditures*.

budgeting.

Process whereby plans are made and then an effort is made to meet or exceed the *goals* of the plans.

building fund.

Restricted *fund* containing *assets* that can be used only to acquire buildings and equipment.

building replacement fund.

Restricted *fund* whose donated *assets* can be used only for replacement of buildings.

business plan.

Detailed plan for a proposed program, project, or service, including information to be used to assess the venture's financial feasibility.

C

CAFR.

See *Comprehensive Annual Financial Report*.

call provision.

An element of a *bond* contract between the bond issuer (borrower) and the lender that allows the borrower to repay the bond before its *maturity* date, usually at a premium.

capital acquisitions.

See *capital assets*.

capital assets.

Buildings or equipment with useful lives extending beyond the year in which they are purchased or put into service; also referred to as long-term investments, capital items, *capital investments*, or *capital acquisitions*.

capital budget.

Plan for the acquisition of buildings and equipment that will be used by the organization in one or more years beyond the year of acquisition. A minimum dollar cutoff must be exceeded for an item to be included in the capital budget.

capital budgeting.

Process of proposing the purchase of *capital assets*, analyzing the proposed purchases for economic or other justification, and encompassing the financial implications of accepted capital items into the *master budget*.

capital campaign.

A fundraising effort aimed at attracting donations to be used to acquire long-term resources such as buildings and equipment.

capital equipment.

Equipment with an expected life beyond the year of purchase. Such equipment must generally be included in the *capital budget*.

capital investments.

See *capital assets*.

capital lease.

A form of long-term financing in which a long-term, noncancellable contractual arrangement is made to lease a *capital asset*.

capital projects fund.

Fund used to account for major acquisitions of plant or equipment.

capitation.

A method of payment for health services in which an individual or institutional provider is paid a fixed amount for each person served for a period of time, without regard to the actual number or nature of services provided to each person.

carrying costs.

Capital costs and out-of-pocket costs related to holding inventory. Capital costs represent the lost interest because money is tied up in inventory. Out-of-pocket costs include such expenses as insurance on the value of inventory, annual inspections, and obsolescence of inventory.

case-mix variance.

Variance caused because the relative proportions of the amount of each product produced or sold differs from the expected proportions.

cash.

Money on hand.

cash basis.

Accounting system under which *revenues* are recognized when cash is received and *expenses* are recognized when cash is paid.

cash budget.

Plan for the cash receipts and *cash disbursements* of the organization.

cash budgeting.

Process of planning the *cash budget*.

cash disbursement.

Outflow of cash from the organization.

cash equivalents.

Savings and checking accounts and short-term *certificates of deposit*; items that are quickly and easily convertible into cash.

cash flow.

Measure of the amount of cash received or disbursed over a given time period, as opposed to *revenues* or *expenses*, which frequently is recognized at a time other than when the actual cash receipt or payment occurs.

cash flow coverage ratio.

Coverage ratio that compares cash from operations with required cash payments such as interest and debt payments to assess the ability of the organization to meet those required cash payments.

cash flow statement.

Statement that examines the organization's sources and uses of cash.

cash management.

Active process of planning for borrowing and repayment of cash or investing excess cash on hand.

cash payment.

See *cash disbursement*.

cash receipt.

Inflow of cash into the organization.

causal analysis.

Analysis in which we theorize that variations in the *independent variable(s)* cause the changes in the *dependent variable*.

causal models.

Forecasting approach based on the relationship between two or more variables. Changes in one or more

variables, called *independent variables*, are used as predictors of the likely change in another variable, called the *dependent variable*.

cell reference formula.

An Excel formula that uses the cell addresses where the raw data are located.

centralized budgeting.

See *top-down budget*.

certificate of deposit (CD).

Bank deposit with a fixed maturity term.

certificates of participation (COPs).

Debt securities similar to *bonds payable* that represent participation in a portion of a *capital lease* similar to the purchase of a *bond*.

ceteris paribus.

All other things being equal.

CFO.

See *chief financial officer*.

charitable remainder trust.

A trust from which a donor gets income that is earned on the resources in the trust. At the donor's death, the charity receives the money remaining in the trust.

charity care.

Care given for free to low-income patients. The provider cannot attempt to collect payment from the patients for charity care, and it is not recorded as revenue, a reduction from *revenue*, or *bad debt*.

chart of accounts.

Accounting document that defines an identifying number for each possible element of a financial transaction. The identifying number would include the account, such as cash or patient revenue, and could also include specific coding to allow each item to be associated with a specific *cost center* or program.

chief financial officer (CFO).

Manager responsible for all the financial functions in the organization.

coefficient of determination.

A measure of the goodness of fit of a regression, generally referred to as the *R-squared*.

collateral.

Specific *asset* pledged to a lender as security for a loan.

collection period.

Amount of time from when a patient bill is issued until cash is collected.

commercial paper.

Form of short-term borrowing in which the borrower issues an unsecured promissory note that can be sold by the lender to someone else.

commingled.

Mixed together.

commitments.

Future obligations the organization has that do not appear on the *balance sheet*, such as obligations under an *operating lease*.

committed amounts.

Resources that may be used only for the specific purposes named by the formal action of the government's highest decision-making authority (e.g., city council, state legislature).

common size ratios.

Class of ratios that evaluates each number on a *financial statement* relative to the size of the organization. This is accomplished by dividing each financial statement number by a key number from that statement, such as total *assets* or total *revenues*.

comparative financial statements.

Financial statements that present financial information from more than one *fiscal* period.

compilation of financial statements.

In a compilation engagement, the *auditor* is hired to develop a set of financial statements from information that has been recorded by the organization during the year; the auditor does not perform the extensive testing of records and detailed review that are part of an *audit*.

component units.

Government bodies that are legally separate from the *primary government* but for which there is some close financial or governance relationship.

compound interest.

Method of calculating interest in which interest is earned not only on the amount of the original investment, but also in interim periods.

Comprehensive Annual Financial Report (CAFR).

Official annual financial report prepared by many governments.

concentration bank.

Bank where an organization maintains a significant presence.

congruent goals.

See *goal congruence*.

conservatism principle.

Financial statements must adequately consider the risks faced by the organization.

constant dollars.

Dollar amounts that have been adjusted for the impact of inflation.

constant variance.

Uniformity in the scatter of actual historical data points around an estimated line.

contingency.

Event that may or may not occur.

contingent liabilities.

Obligations that will exist in the future if certain events occur, such as if the organization loses a lawsuit.

continuous budgeting.

System in which a budget is prepared each month for a month 1 year in the future. For example, when the actual results for this January are known, a budget for January of the next year is prepared; also called

a *rolling budget*.

contra asset.

An asset that is used to offset or reduce another asset.

contractual allowances.

See *allowances*.

contributed capital.

Amounts that individuals have paid directly to the firm in exchange for shares of ownership such as common or preferred stock; also called *paid-in-capital*.

contribution from operations.

Contribution margin from the routine annual operations of the organization.

contribution margin.

Amount by which the price exceeds the *variable cost*. If the contribution margin is positive, it means that each extra unit of activity makes the organization better off by that amount.

control.

Attempt to ensure that actual results come as close to planned results as possible.

controllable.

Those items over which a manager can exercise a degree of control.

COPs.

See *certificates of participation*.

corporation.

Business owned by a group of individuals (shareholders or stockholders) that has limited liability; the owners are not liable for more than the amount invested in the firm.

cost.

Amount spent on something. Costs have two stages: acquisition or unexpired cost and expired cost.

When some asset or service is purchased, the price is considered to be the *acquisition cost*. If the item is an *asset*, the portion that has not been consumed will appear on the *balance sheet* at its unexpired cost. As the asset is used up, it becomes an *expired cost*, or an *expense*.

cost accounting.

A subset of accounting related to measuring costs for reporting and making management decisions.

cost accounting system.

Any coherent system designed to gather and report cost information.

cost allocation.

The process of taking costs from one area or *cost objective* and allocating them to others.

cost base.

The statistic used as a basis for allocation of overhead—for example, patient days or labor hours.

cost behavior.

Way that costs change to events such as changes in volume or price.

cost-benefit analysis.

Measurement of the relative costs and benefits associated with a particular project or task.

cost center.

Unit or department in an organization for which a manager is assigned responsibility for costs.

cost convention principle.

GAAP that requires *assets* to be valued at their cost at the time of acquisition.

cost driver.

An activity that causes costs to be incurred.

cost-effective.

Approach that provides results at least as good as any other approach but at a lower cost, or an approach that provides the best possible results for a given level of cost.

cost-effectiveness.

A measure of whether costs are minimized for the desired *outcome*.

cost-effectiveness analysis.

A technique that measures the cost of alternatives that generate the same *outcome*. See *cost-effective*.

cost-finding.

Process that finds the costs of units of service (e.g., lab tests, X-rays, routine patient days) based on an allocation of *nonrevenue* center costs to *revenue centers*.

cost measurement.

The process of assessing resources consumed and assigning a value to those resources.

cost objective.

Any particular item, program, or organizational unit for which we wish to know the cost.

cost of capital.

The cost to the organization of its *long-term* debt and financing. Often represented by the interest rate that the organization pays on borrowed money.

cost of the product.

What the organization must pay for the product; can be affected by quantity discounts.

cost pass-through.

Payment that reimburses the organization for the costs it incurs in providing goods or services.

cost pool.

Any grouping of costs to be allocated.

cost reimbursement.

Revenue based on receiving a *cost pass-through*.

cost reporting.

The process of conveying information about the cost of resources consumed as related to a specific *cost objective*.

cost-volume-profit relationship.

The impact of changing volume on costs, and therefore on *profits*.

coupon rate.

The rate of interest that a bond issuer agrees to pay each year. It is always expressed as an annual percentage of the *maturity value* of the bond; also referred to as the *stated interest rate*.

coverage ratios.

Ratios that examine the ability of the organization to make required interest and *principal* payments on

debt; examples are the *times-interest-earned ratio* and *cash flow coverage ratio*.

Cr.

See *credit*.

credit (cr.).

Bookkeeping term for an increase in an item on the right side of the fundamental equation of accounting or a decrease in an item on the left side.

creditors.

People or organizations to whom the organization owes money.

current.

Within 1 year; *short term* or *near term*.

current assets.

Resources the organization has that either are *cash* or can be converted to *cash* within 1 year or will be used up within 1 year. Current assets are often referred to as *short-term* or *near-term* assets.

current liabilities.

Those obligations that are expected to be paid within 1 year.

current portion of long-term debt.

The portion of *long-term* debt that is due for payment during the coming year.

current ratio.

Current assets divided by *current liabilities*; this *liquidity ratio* assesses the ability of the organization to meet its current obligations as they come due for payment.

current restricted funds.

Resources that are available for general operations within a 1-year period but must be used for particular restricted purposes.

current unrestricted fund.

See *operating fund*.

curvilinear.

A curved line.

custodial funds.

Funds that contain assets that the organization is holding for someone else.

D

days of cash on hand.

Ratio that compares *cash* and *marketable securities* to daily *operating expenses* to assess the ability of the organization to meet its obligations in the event of a delay in collecting cash owed to the organization.

days of inventory on hand.

365 divided by the *inventory turnover* ratio; this *asset turnover ratio* assesses how many days' supply of inventory is kept on hand. In general, the greater this number, the less efficient the organization is perceived as being.

days receivable ratio.

Accounts receivable divided by patient revenue per day; a measure of how long it takes on average until *revenues* are collected after an invoice is issued.

debit (dr.).

Bookkeeping term for an increase in an item on the left side of the *fundamental equation of accounting* or a decrease in an item on the right side.

debt.

Liability; an amount owed by one individual or organization to another.

debt ratio.

Debt divided by *assets*; this *leverage ratio* assesses the amount of debt relative to the total size of the organization as measured by its assets.

debt service.

Required interest and principal payments on money owed.

debt service coverage ratio.

Cash available to pay interest and *principal* payments divided by required interest and principal payments; a measure of the ability of the organization to meet required debt service.

debt service fund.

Fund used to account for the accumulation of resources to pay *principal* and interest on *long-term* debt.

debt to equity ratio.

Debt divided by *net assets* or *fund balance*; this *leverage ratio* considers the relative magnitudes of debt to equity of the organization to assess the risk created by the use of *leverage*; also see *total debt to equity ratio*.

decentralization.

Delegation of decision-making autonomy downward within the organization.

decentralized budgeting.

See *bottom-up budget*.

decision package.

The information related to and analysis of a program or department being evaluated in a *zero-based budgeting* review.

decreasing returns to scale.

Extremely large volume may lead to increasing cost per unit produced due to capacity constraints or shortages of labor or supplies.

decremental budgeting.

Refers to budget reductions.

deferred charges.

Assets that have been paid for and have not yet been used but that will be consumed more than 1 year from now.

deferred inflow of resources.

The acquisition of resources by the government that is applicable to a future reporting period. For example, property taxes collected prior to their due date.

deferred outflow of resources.

The consumption of resources by the government that is applicable to a future reporting period. For example, prepaid expenditures, where we have paid now for a benefit to be realized in the future.

deferred revenues.

Items that will become revenue in the future when the organization provides goods or services. These are *liabilities* until the goods or services are provided.

deficit.

The excess of spending over receipts; excess of *expenses* over *revenues*. This term sometimes is used to refer to the current year or budgeted year and sometimes to an amount that has been accumulated over a period of years.

defined benefit plan.

Pension plan in which the organization is required to make specific defined payments to participants upon retirement. The risk or benefit of investment results falls on the organization rather than the participants.

defined contribution plan.

Pension plan in which the amount required to be put aside by the organization is determined each year. Depending on investment results, the participants will receive larger or smaller amounts upon retirement.

dependent variable.

The item whose value is being predicted.

depletion.

The process of allocating a portion of the value of natural resources to *expense* as units of the resource are extracted.

depreciate.

Decline in value or productive capability.

depreciation.

See *depreciation expense*.

depreciation expense.

Amount of the original cost of a *fixed asset* allocated as an *expense* each year.

derivatives.

Securities whose value is derived from the value of something else.

derived tax revenues.

Taxes the government earns on *exchange transactions*—for example, sales taxes.

devolution.

The decentralization process of shifting money and authority to lower levels of government.

diagnosis-related groups (DRGs).

A system that categorizes patients into specific groups based on their medical diagnosis and other characteristics, such as age and type of surgery, if any. Currently used by Medicare and some other hospital payers as a basis for payment.

direct costs.

(a) Costs incurred within the organizational unit for which the manager has responsibility are referred to as direct costs of the unit. (b) Costs of resources used for direct provision of goods or services are referred to as the direct costs of those goods or services.

direct distribution.

Approach to allocating *support center* costs to *mission centers* in which costs are allocated only to mission centers.

direct expenses.

Those expenses that can be specifically and exclusively related to the *cost objective*; see also *direct costs*.

direct labor.

Labor that is a direct cost element.

disbursement.

Cash payment.

discount.

The amount a lender receives for a *bond* below the *face value*, *par value*, or *maturity value* of the bond. Discounts are the result of market interest rates that are above the *coupon rate* or *stated interest rate* for that bond.

discount rate.

Interest rate used in *time value of money* analysis.

discounted cash flow.

Method that allows comparisons of amounts of money paid at different points of time by *discounting* all amounts to the present.

discounting.

Reverse of *compound interest*; a process in which interest that could be earned over time is deducted from a future payment to determine how much the future payment is worth at the present time.

dis-intermediate.

Remove an intermediary party. For example, an organization borrows directly from investors to remove the bank from the middle of the transaction.

dividend.

Distribution of *profits* to owners of the organization.

domain.

The scope of an organization's operations in terms of what it does, where it does it, and the population it serves.

donor-restricted funds.

General class of *funds* that must comply with various requirements donors have placed at the time of the donation on how the donations can be used. Examples of such funds include *building replacement funds*, building expansion funds, *endowment funds*, *custodial funds*, and strike funds.

double-entry accounting.

Refers to the fact that whenever a change is made to the *fundamental accounting equation*, at least one other change must be made as well to keep the equation in balance.

Dr.

See *debit*.

DRGs.

See *diagnosis-related groups*.

E

economies of scale.

Theory that the cost of providing a good or service falls as quantity increases because *fixed costs* are shared by the larger volume.

economic order quantity (EOQ).

Inventory optimization approach to determine the balance between *ordering costs* and *carrying costs*, and to minimize overall costs related to ordering and carrying inventory.

economy and efficiency audits.

Reviews that determine if the organization is acquiring, protecting, and using its resources efficiently.

effectiveness.

A measure of the degree to which the organization accomplishes its desired goals.

efficiency.

A measure of how close an organization comes to minimizing the amount of resources used for the result attained.

efficiency ratios.

See *asset turnover ratios*.

efficiency variance.

See *quantity variance*.

employee benefits.

Compensation provided to employees in addition to their base salary; for example, health insurance, life insurance, vacation, and holidays.

encumbrance.

An indication that a certain amount of money has been earmarked for a particular purpose and is no longer available for other uses.

endowment fund.

Restricted *fund* that contains permanent assets that belong to the organization and that may not be spent; only earnings may be removed from this fund under normal conditions.

enterprise fund.

Fund used to account for government services provided in a business-like fashion, charging the public for services consumed, such as a golf course fund.

entitlements.

Benefits that must be given to any individuals who meet eligibility criteria specified in the law creating the entitlement.

entity.

Specific individual, organization, or part of an organization that is the focus of attention; accounting must be done from the perspective of the relevant entity.

EOQ.

See *economic order quantity*.

equity.

Ownership; for example, the share of a house that is owned by the homeowner free and clear of any mortgage obligations is the homeowner's equity in the house.

evaluative budgeting.

An approach to allocating resources based on the idea that each element of *expenditure* for each unit or department is explained and justified.

exception report.

A list of only those individual items, such as *variances*, that exceed a specified limit.

exchange transaction.

A transaction in which the organization provides something that is relatively equal in value to the revenues generated.

expendable trust funds.

Those trust funds for which all of the money in the *fund* may be spent, such as an unemployment compensation fund.

expenditure.

Term used instead of *expense* in *modified accrual* systems to contrast timing of recognition from when the item is used (expense under *accrual*) to when an obligation is incurred to pay for the item using current financial resources (expenditure under *modified accrual*).

expense.

The cost of services provided; *expired cost*.

expense accrual.

Term used to distinguish the *accrual basis* of accounting from the governmental *modified accrual* basis of accounting.

expense center.

See *cost center*.

expired cost.

See *cost*.

external accountant.

Accountant who is not an employee of the organization; often hired to perform an *audit* of the organization's financial records.

externality.

An impact (either negative or positive) that one individual or organization's actions have on others. A product or service may be over- or under-produced because of a failure of the free market to consider such impacts in the absence of government intervention.

extraordinary items.

Items appearing on the *statement of activities* that are both unusual and infrequent.

F

face value.

See *maturity value*.

factoring.

Selling the organization's *accounts receivable*, usually for less than their *face value*.

favorable variance.

Variance in which less was spent than the budgeted amount or revenues were greater than the budgeted amount.

fee-for-service.

System in which there is an additional charge for each additional service provided (as opposed to a prepaid system, in which all services are included in exchange for one flat payment).

feedback.

Using information about actual results to avoid past mistakes and improve future plans.

fiduciary.

Relating to holding something in trust; a trustee maintaining assets in trust.

fiduciary funds.

Trust or *agency funds* used to account for resources held by a trustee or agent.

FIFO.

See *first-in, first-out*.

finance.

Field that focuses on the alternative sources and uses of the organization's financial resources such as *cash*, *marketable securities*, and *debt*.

financial accounting.

System that records historical financial information, summarizes it, and provides reports of what financial events have occurred and of what the financial impact of those events has been.

financial audit.

See *audit*.

financial budget.

The *cash budget* and the *capital budget* together.

financial condition analysis.

An analysis of the financial status of a governmental organization based on a *financial statement analysis* as well as an evaluation of external factors that affect the financial condition of the government, such as the wealth of the citizenry, employment rate, and general economy.

financial management.

The subset of management that focuses on generating financial information that can be used to improve decision making.

financial statement analysis.

Analysis of the profitability and viability of an organization by reviewing financial statements, including

their accompanying notes and the *auditor's report*; performing *ratio analysis*; and using comparative data.

financial statements.

Reports that convey information about the organization's financial position and the results of its activities.

financing accounts receivable.

Borrowing money and using the organization's *accounts receivable* as security or *collateral* for the loan.

first-in, first-out (FIFO).

Inventory costing method that assumes the oldest inventory is used first.

fiscal.

Financial.

fiscal capacity.

The extent to which a government can raise money to provide goods and services to its populace, within its economic, legal, and political constraints.

fiscal year.

One-year period defined for financial purposes. A fiscal year may start at any point during the calendar year and finishes one year later. For example, "fiscal year 2014 with a June 30 year-end" refers to the period from July 1, 2013, through June 30, 2014.

fixed asset turnover.

Revenues and support divided by fixed assets; this *asset turnover ratio* assesses the number of dollars of revenue and support generated for each dollar invested in fixed assets. The more revenue and support per dollar of fixed assets, the more efficiently the organization is using its investment in fixed assets, all other things being equal.

fixed assets.

Those assets that will not be used up or converted to cash within 1 year; sometimes referred to as *long-term assets*.

fixed costs.

Costs that do not change in total as volume changes within the *relevant range*.

flexible budget.

Budget that is adjusted for volume of output.

flexible budget variance.

Difference between actual results and the *flexible budget*.

flexible budget variance analysis.

Method of analysis that incorporates the fact that at least part of the total variance for any line item is often the result of changes in the level of activity.

flexible budgeting.

Process of developing a *budget* based on different workload levels. Often used after the fact to calculate the amount that would have been budgeted for the actual workload levels attained.

float.

The interim period from when a check is written until the check is cashed and clears the bank; movement of staff from one unit or department to another.

forecast.

Prediction of some future value such as unemployment claims, police arrests, or the number of children enrolled in the school system.

for-profit.

Organization whose mission includes earning a profit that may be distributed to its owners.

fringe benefits.

See *employee benefits*.

FTE.

See *full-time equivalent*.

full accrual.

Accrual basis of accounting; term used to distinguish *accrual basis* accounting from the governmental *modified accrual* basis of accounting.

full cost.

Total of all costs associated with an organizational unit or activity, including both *direct* and *indirect costs*.

full disclosure.

GAAP that requires that notes convey *material* financial information that the *financial statements* do not adequately disclose.

full faith and credit.

Guarantee by a governmental body issuing *debt* that the obligation's interest and *principal* payments are backed by the full taxing power of the government.

full-time equivalent (FTE).

Equivalent of one full-time employee working for 1 year. This is generally calculated as 40 hours per week for 52 weeks, or a total of 2,080 paid hours. This includes both productive and nonproductive (e.g., vacation, sick, holiday, education) time. Two employees each working half-time for 1 year would be the same as one FTE.

functional.

Referring to the primary functions of the organization, such as providing meals, counseling, fundraising, and administrative activities.

fund.

An accounting entity with its own separate set of financial records for recording and reporting *assets*, *liabilities*, *fund balance* (*owners' equity*), and changes in fund balance.

fund accounting.

System of separate financial records and controls; the *assets* of the organization are divided into distinct *funds* with separate sets of financial records.

fund balance.

The equivalent of *owners' equity* or *net position* in a fund accounting system; *assets* less *liabilities*.

fundamental equation of accounting.

Assets equal *liabilities* plus *owners' equity* (or *net assets* or *net position*).

fungible.

Interchangeable.

future value (FV).

The amount a present amount of money will grow to be worth at some point in the future.

FV.

See *future value*.

G

GAAP.

See *Generally Accepted Accounting Principles*.

GASB.

See *Governmental Accounting Standards Board*.

general authorization.

A standing approval of spending. Items under a certain dollar limit or for certain purposes may fall under that general authorization.

general fund.

Fund that is used for the routine, ordinary activities of government; see *operating fund*.

general journal.

First place that financial transactions are entered into the accounting records; chronological listing of all financial transactions.

general ledger.

Book of *accounts*; listing of the balances and all changes in each of the organization's accounts.

general obligation bonds.

Bonds backed by the *full faith and credit* of the governmental body issuing them.

general operating fund.

Unrestricted *fund* used for the day-in and day-out operations of the organization.

Generally Accepted Accounting Principles (GAAP).

Set of rules that must be followed for the organization's *financial statements* to be deemed a fair presentation of the organization's financial position and results of operations.

goal congruence.

Bringing together the goals, desires, and wants of the organization with those of its employees.

goal divergence.

Natural differences between the goals, desires, and needs of the organization and those of its employees.

goals.

Broad, timeless ends of the organization meant to aid the organization in accomplishing its *mission*.

going concern principle.

Principle that involves assuming that the numbers reported on an *audited financial statement* are those of an organization that will continue in business for the foreseeable future. If the organization is not a going concern, *GAAP* require that fact to be noted in the *auditor's report*.

goodness of fit.

The ability of one variable to explain the variations in another.

goodwill.

Intangible asset that represents a measure of the value of the organization that goes beyond its specific physical assets.

government.

Citizens' direction of the affairs of state.

government-mandated nonexchange transactions.

A situation in which one government receives *revenues* from another but must use the revenues in a specified way. For example, the federal government gives states money that must be used for Medicaid.

Governmental Accounting Standards Board (GASB).

Authoritative body that develops governmental *GAAP*.

governmental funds.

Funds used by governments to track the sources, uses and balances of resources that are not tracked separately in *proprietary* or *fiduciary* funds. Governmental funds include the *general fund*, *special revenue funds*, *capital projects fund*, and *debt service fund*.

H

held-to-maturity securities.

Investments in *debt* securities that the organization intends to hold to maturity. For-profits report at amortized cost; governments and not-for-profits report at fair market value.

heteroscedasticity.

A situation in which the scatter of historical points around the estimated line is consistently near the regression line in some areas and systematically further away in other areas.

high-yield bonds.

See *junk bonds*.

holding costs.

See *carrying costs*.

homoscedasticity.

A situation in which the scatter of historical points around the estimated line is fairly uniform.

hurdle rate.

See *required rate of return*.

I

IBNR.

See *incurred but not recorded*.

imposed tax revenues.

Tax revenues that come from assessments directly on entities. For example, property taxes or fines.

income.

Excess of *revenues* over *expenses* for a specific period of time. Also called the change in *net assets*.

income determination.

The measurement of income, generally by subtracting *expenses (expired costs)* from *revenues*.

increasing returns to scale.

See *economies of scale*.

incremental analysis.

See *marginal cost analysis*.

incremental budgeting.

An approach to resource allocation that simply adds a set percentage or amount onto the prior year's budget allocation, without investigation of whether the continuation of the amounts authorized in the prior-year budget are warranted.

incremental costs.

Additional costs that will be incurred if a decision is made that would not otherwise be incurred.

incurred but not recorded (IBNR).

Liability resulting from healthcare services that have been provided to patients, for which bills have not yet been received by the third-party payer at the time its *financial statements* are prepared.

independence.

With respect to specification analysis, a condition where each of the residuals is not related to the value of any of the others. The residuals are a measure of the distance from the regression line to each of the actual historical data points.

independent variable.

The variable used to predict the *dependent variable*. The causal variable that is responsible for changes in the dependent variable.

indirect costs.

(a) Costs assigned to an organizational unit from elsewhere in the organization are indirect costs for the unit. (b) Costs within a unit that are not incurred for direct provision of goods or services are indirect costs of those goods or services.

indirect expenses.

See *indirect costs*.

indirect method.

Method for measuring cash flows that starts with *net income* or change in *net assets* and reconciles to actual cash flows.

infrastructure.

Stationary *assets* with extremely long lifetimes, including bridges, tunnels, dams, roads, and similar assets.

inputs.

Resources used for producing the organization's *output*. Examples of inputs include labor and supplies.

intangible asset.

Asset without physical substance or form.

interest coverage ratio.

Cash available to pay interest divided by interest; a measure of the organization's ability to meet its required interest payments.

intergenerational equity.

See *interperiod equity*.

interim statements.

Financial statements covering a period of less than 1 year.

internal accountant.

Accountant who works as an employee of the organization.

internal balances.

Amounts that one part of the government owes to another part.

internal control.

A system of accounting checks and balances designed to minimize both clerical errors and the possibility of fraud or embezzlement; the process and systems that ensure that decisions made in the organization are appropriate and receive appropriate authorization. Requires a system of *accounting* and *administrative controls*.

internal rate of return (IRR).

Discounted cash-flow technique that calculates the rate of return earned on a specific project or program.

internal service funds.

Funds established for elements of government that provide specific services to other government units.

For example, a government might have a car pool department.

interperiod equity.

Refers to the extent to which the government uses only *revenues* from the current period to pay for only services provided in the current period. A *surplus* for this year implies that a government is taking resources from the current taxpayers to provide benefits for future taxpayers. A *deficit* implies that current taxpayers are consuming resources that will have to be paid for by future taxpayers. Thus, a surplus or deficit might be considered to create interperiod inequity.

inventory.

Materials and supplies held for use in providing services or making a product.

inventory carrying costs.

See *carrying costs*.

inventory costing.

The process of determining the cost to be assigned to each unit of inventory, generally for *financial statement* purposes.

inventory management.

Refers to the appropriate ordering and storage of supplies.

inventory ordering costs.

See *ordering costs*.

inventory turnover.

The cost of *inventory* consumed for the entire period divided by the amount of inventory on hand; this *asset turnover ratio* evaluates the relative number of times that the organization's inventory has been consumed and replaced during the year. A higher number is generally indicative of greater *efficiency*, other things being equal.

inventory valuation.

The process of determining the cost of *inventory* used and the value of inventory assets.

investment grade.

A bond with a rating high enough (usually above BBB) that it is not considered to be a speculative investment. Many organizations have rules that prevent them from acquiring bonds that are not considered to be investment grade.

investments.

Primarily stocks and *bonds* that the organization does not intend to sell within one year; as used in the *theory of constraints*, represents the costs of buildings, equipment, and materials.

IRR.

See *internal rate of return*.

J

JIT.

See *just-in-time inventory*.

joint costs.

Fixed costs that are required for the production of a number of different products or services. Elimination of any one of those types of products or services would have no impact on these costs.

journal entry.

Entry into the *general journal* or a *subsidiary journal*.

junk bonds.

A bond that has a rating below that required to be *investment grade*. Such bonds are considered to be speculative investments and generally must pay a higher interest rate to attract investors.

just-in-time (JIT) inventory.

An approach to *inventory* management that calls for the arrival of inventory just as it is needed, resulting in zero inventory levels.

justification.

Explanation used in defending a proposed *budget* or in explaining *variances* that have occurred.

K

key performance indicators (KPI).

Measures used in a *balanced scorecard* to assess how well the organization is achieving its *goals* and *objectives*.

L

last-in, first-out (LIFO).

Inventory valuation method that accounts for inventory as if the very most recent acquisitions are always used prior to inventory acquired at an earlier date and still on hand.

lease.

Agreement providing for the use of an *asset* in exchange for rental payments.

leasehold asset.

The *balance sheet* title for the asset on a *capital lease*.

leasehold liability.

The *balance sheet* title for the liability on a *capital lease*.

ledger.

Accounting book that keeps track of increases, decreases, and the balance in each *asset*, *liability*, *revenue*, *expense*, and *fund balance*, *net position*, or *net asset* account.

legal debt margin.

The difference between the maximum amount that a government is legally allowed to borrow and the total amount of bonded debt, *capital leases*, and any other outstanding debt applicable to debt limitations.

letter of credit (LOC).

A guarantee from a bank to make agreed-upon payments.

leverage.

The use of debt as a source of financing. Increased amounts of *debt* increase the risk of the organization because of the requirement to make interest payments and repay the principal.

leverage ratios.

Ratios that examine the relative amount of debt the organization has; sometimes referred to as *solvency* ratios; examples include the *debt ratio* and the *debt to equity ratio*.

liabilities.

Legal financial obligations the organization has to outsiders.

LIFO.

See *last-in, first-out*.

line function.

Element of running an organization that implies direct authority, in contrast with the staff function, which is consultative and without direct authority.

line item.

Any resource that is listed separately on a *budget*. For example, salaries or supplies.

line-item expense.

Specific individual expenses such as labor or materials.

line of credit.

Prearranged loan to be made when and if needed by the organization in an amount up to an agreed-

upon limit.

linearity.

A straight-line relationship.

liquid.

Refers to how quickly an *asset* can be converted to *cash*. The more quickly an asset can become cash, the more liquid it is.

liquid assets.

Cash or other assets that can quickly be converted to cash to meet the short-term *liabilities* of the organization.

liquidate.

Convert into *cash*.

liquidity ratios.

Class of *ratio* that examines the ability of the organization to meet its obligations in the coming year.

lockbox.

Post-office box that is emptied directly by the bank. The bank removes the receipts and credits them directly to the organization's account.

long-range budget.

Plan that covers a period of time longer than 1 year and is typically 3, 5, or 10 years.

long-range plan.

See *long-range budget*.

long run.

See *long term*.

long term.

Period longer than 1 year.

long-term assets.

See *capital assets*.

long-term financing.

The various alternatives available to the organization to get the money needed to acquire *capital assets*.

long-term investment.

See *capital assets*.

long-term liabilities.

Obligations that are not expected to be paid until more than 1 year has passed.

long-term restricted funds.

Funds that contain resources with restrictions preventing them from being used for current operations.

loss leader.

Product with a negative *contribution margin*.

M

major funds.

The general fund and any other funds that represent a substantial portion of the *assets*, *liabilities*, *revenues*, or *expenditures* or *expenses* of their class or type of fund.

make or buy.

The decision to produce goods or services versus purchasing them from an outside provider.

management by objectives (MBO).

Technique in which a supervising manager and the subordinate manager agree on a common set of objectives on which performance will be measured.

management control system (MCS).

Complete set of policies and procedures designed to keep operations going according to plan.

management letter.

Letter from a Certified Public Accountant to the management of the organization discussing weaknesses in the internal control system that were revealed as part of an *audit*.

management's discussion.

Section of an annual report in which the organization's managers discuss the organization's performance.

management's discussion and analysis (MD&A).

An objective and easily readable analysis of the government's financial activities prepared by the government and based on currently known facts, decisions, or conditions.

managerial accounting.

Generation of any financial information that improves management.

managerial hierarchy.

Structure that establishes the authority and responsibility of different individuals within the organization.

managerial reports.

Reports that provide information to help managers run the organization more efficiently.

mandates.

A requirement by one government for another government to provide services. For example, the federal government can require a state government to provide social services, even if it does not provide the money needed by the state to provide those services.

margin.

At the edge; usually refers to the impact of adding one more unit of service.

margin of safety.

The amount by which expected volume or *revenues* exceed the volume level or revenues required to break even.

marginal cost analysis.

Process for making decisions about changes based on the *marginal costs* of the change rather than on the

full or average costs.

marginal costs.

The change in cost related to a change in activity. Includes *variable costs* and any additional *fixed costs* incurred because the volume change exceeds the *relevant range* for existing fixed costs.

mark-to-market.

A system of valuing an asset or liability by its most recent fair value or market price.

marketable investments.

Investments that are bought and sold in financial markets, making them readily convertible to *cash*.

marketable securities.

Investments in stocks and *bonds* that the organization intends to sell within 1 year.

master budget.

Set of all the major budgets in the organization; generally includes the *operating budget*, *long-range budget*, *program budgets*, *capital budget*, and *cash budget*.

matching.

For a given unit of service provided, the *revenues* arising from providing that service and the *expenses* incurred in providing that service are both recorded in the same *fiscal* period.

material.

Amount substantial enough that an error of that magnitude in the *financial statements* would cause a user of the statements to make a different decision than would be made if the user had known the correct information.

maturity date.

The date when the *principal* amount of a *bond*, note, or other *debt* instrument must be repaid.

maturity value.

The *principal* amount of a loan to be repaid at the ending date or *maturity* date of the loan; also referred to as the *par value* or *face value*.

MBO.

See *management by objectives*.

mill rate.

The rate of taxation that a property owner must pay for each thousand dollars of the assessed valuation of a property; also known as the millage rate or mill levy.

mission.

Organization's set of primary goals that justify its existence.

mission center.

A cost center that produces the final product or service provided by the organization.

mission statement.

Statement of the purpose or reason for existence of an organization, department, or unit. This statement provides direction regarding the types of activities that the organization should undertake.

mix variance.

See *case-mix variance*.

mixed costs.

Costs that contain an element of *fixed costs* and an element of *variable costs*, such as electricity.

modified accrual accounting.

Accounting basis widely employed by governments for recording purposes for governmental funds.

Under this basis of accounting, the primary focus is on current financial resources. Typical current financial resources are *cash*, *investments*, and *receivables*.

modified cash basis.

Basis for accounting under which routine *revenues* and *expenses* are recognized on a *cash basis* but *capital assets* are recognized as expenses gradually over the years they are used rather than all in the year the organization pays for them.

monetary denominator principle.

GAAP that requires resources on the *financial statement* to be stated in terms of an amount of money.

money market.

The market for short-term *marketable securities* or the market for *short-term debt* instruments.

mortgage.

A loan that is secured by specific property.

multiple distribution.

Cost allocation approach in which all *support centers* are allocated to all other support and *mission centers* in a first distribution and then the remaining costs in the support centers are allocated through one or more additional distributions.

N

national debt.

The total cumulative amount that the federal government has borrowed and not repaid, because its spending has exceeded its receipts.

near term.

Within 1 year; *current* or *short term*.

negotiable certificate of deposit.

Certificate of deposit that can be transferred from one party to another.

net assets.

The equivalent of *owners' equity* in a not-for-profit organization; *assets* less *liabilities*.

net book value.

The original cost of the *asset* less the total *accumulated depreciation* for that asset.

net cash flow.

Net difference between *cash receipts* and *cash payments*.

net income.

Revenue less *expense*; *profit*.

net interest cost (NIC).

The yearly debt cost of a *serial bond* issue, calculated as a percentage. This approach does not take the *time value of money* into account. See *true interest cost*.

net patient revenues.

Gross revenues less contractual allowances and *bad debts*.

net pension liability.

A plan's *total pension liability* net of the plan's accumulated assets.

net position.

The amount left over after *assets* have been used to pay for *liabilities*; used exclusively in government financial reporting.

net present cost (NPC).

Aggregate present value of a series of payments to be made in the future.

net present value (NPV).

Present value of a series of receipts less the present value of a series of payments.

net working capital.

Current assets less *current liabilities*.

net worth.

See *owners' equity*.

NFP.

See *not-for-profit organization*.

NIC.

See *net interest cost*.

nonappropriation clause.

A clause governments often include in *capital leases* that states that the lease can be canceled if it is not renewed annually by the legislature.

noncontrollable.

Those items over which a manager does not have the authority or ability to control.

nonexchange transactions.

A transaction in which the organization does not provide something that is relatively equal to the *revenues* generated—often the result of taxes, fines, or fees.

nonoperating revenue.

Categorization that no longer appears on the statement of revenues and expenses. All revenues are operating, unless they are incidental and peripheral to the organization, in which case they are shown as gains.

nonrevenue center.

See *support center*.

nonroutine decisions.

Management decisions that are not made on a routine, regularly scheduled basis.

nonspendable.

Assets that are not in spendable form (e.g., inventories) or are required to be maintained intact (e.g., *permanent funds*).

normality.

An element of specification analysis that requires that there be a normal distribution of historical points around the regression.

not-for-profit (NFP) organization.

An entity that (a) receives contributions from providers who do not expect an equal return, (b) has goals other than providing goods and services for a profit, and (c) has an absence of ownership interest.¹ notes payable. Written document representing a loan.

NPV.

See *net present value*.

numeric value formula.

An Excel formula that contains the actual raw data values.

¹ Financial Accounting Standards Board. FAS 117: *Financial Statements of Not-for-Profit Organizations*. Norwalk, Conn.: FASB, 1993, p. 78.

O

objective evidence principle.

GAAP that requires *assets* to be valued based on objective, rather than subjective, information.

objectives.

Specific targets to be achieved to attain *goals*.

objects of expenditure.

Items required to provide goods and services, including salaries, inventory, rent, equipment, and other resources.

off-budget.

Items that are not included in the normal federal government budget process.

on-budget.

Items that are included in the normal federal government budget process.

one-shot.

Budget element that does not recur from year to year.

operating.

Related to the normal routine activities of the organization in providing its goods or services.

operating budget.

Plan for the day-in and day-out operating *revenues* and *expenses* of the organization. It is generally prepared for 1 year.

operating costs.

As used in the *theory of constraints*, represents costs other than materials (e.g., labor, rent, utilities).

operating expenses.

Costs of the organization related to its general operations.

operating fund.

Fund used to account for the day-to-day operations of the organization and all of its resources that are not subject to donor restrictions; also called the *general fund* or *current unrestricted fund*.

operating lease.

Lease that is either *short term* or cancellable.

operating margin.

Profitability ratio that compares the operating *profit* (operating *revenue* less operating *expenses*) with operating revenue. It assesses the profitability of each dollar of revenues generated by the routine ongoing activities of the organization. For example, if revenues are \$100 and operating profits are \$3, then operating profits compared with revenues are 3 percent.

operating revenues.

Revenues earned in the normal course of providing the organization's goods or services.

operating statement.

Compares the entity's *revenues* and other *support* with its *expenses* for a period of time, such as a year. Often referred to as the *income statement*, *activity statement*, *profit and loss (P&L) statement*, earnings

report, statement of revenues and expenses, and statement of revenues and expenditures.

operations.

Routine activities of the organization related to its *mission* and the provision of goods or services.

opinion letter.

Letter from a Certified Public Accountant to users of the organization's *audited financial statements* providing the accountant's expert opinion as to whether the financial statements are a fair presentation of the financial position and results of operations of the organization, in accordance with *GAAP*.

opportunity cost.

A measure of cost based on the value of the alternatives that are given up to use a resource.

opportunity costs of inventory.

Carrying costs or costs of having money tied up in *inventory* rather than in a revenue-producing endeavor such as an interest-bearing bank account.

ordering costs.

Those costs associated with placing an order for *inventory*, such as clerk time for preparation of a purchase order.

orderly market.

A market with stable and competitive prices that reasonably reflect the true value of a financial instrument.

ordinary annuity.

An *annuity in arrears*.

out-of-pocket analysis.

See *marginal cost analysis*.

outcomes.

The results that the organization is trying to achieve.

output.

The number of units of service provided, for example, the number of meals served.

outsourcing.

Purchasing goods or services from an outside provider rather than producing them within the organization.

overhead.

Indirect costs allocated to a unit or department from elsewhere in the organization.

overhead rate.

The *cost base* divided into the *cost pool*.

overlapping debt.

The outstanding debt owed by a governmental unit that has a tax base that overlaps with another governmental unit, as is the case with a state and a city or county within that state.

owners' equity.

Residual value after the *liabilities* of an organization are subtracted from the *assets*. This represents the portion of the assets owned by the organization itself or its owners.

P

paid-in capital.

See *contributed capital*.

par value.

See *maturity value*.

partnership.

Business owned by a group of people (partners) who have unlimited liability; the partners may be sued for all liabilities of the firm; see also *corporation*.

payables.

Amounts owed to suppliers and vendors.

payback.

Capital budgeting approach that calculates how many years it takes for a project's cash inflows to equal or exceed its cash outflows.

payroll payable. Amounts owed to employees.

performance audits. Review of the organization's operations, consisting of *economy and efficiency audits* and *program audits*.

performance budget.

Plan that relates the various objectives of a *cost center* with the planned costs of accomplishing those activities.

period costs.

Costs that are treated as an *expense* in the accounting period that they are incurred, regardless of when the organization's goods or services are sold.

periodic inventory.

Inventory method under which the organization records only purchases and uses a count of inventory to determine how much has been sold and how much is left on hand.

permanent accounts.

Accounts where ending balances in one *fiscal* period carry over and become beginning balances in the next fiscal period.

permanent funds.

Funds that cannot be expended, similar to *endowment funds*.

permanently restricted net assets.

Net assets that must be maintained in perpetuity due to donor-imposed restrictions.

perpetual inventory.

Inventory method under which the organization keeps a record of each inventory acquisition and sale.

personnel.

Persons employed in the organization.

planning.

Deciding on goals and objectives, considering alternative options for achieving those *goals* and *objectives*,

and selecting a course of action from the range of possible alternatives.

plant.

Building.

plant-age ratio.

Accumulated depreciation of buildings and equipment divided by annual *depreciation expense*; an approximation for the average age of physical facilities.

PMT.

See *annuity payments*.

post.

Transfer all parts of a *journal entry* to the specific *ledger* accounts that are affected by the entry.

premium.

The amount a lender receives for a *bond* in excess of the *face value*, *par value*, or *maturity value* of the bond. Premiums are the result of market interest rates that are below the *coupon rate* or *stated interest rate* for that bond.

prepaid expenses.

Assets that have been paid for and have not yet been used but that will be used within 1 year. These include items such as fire insurance premiums and rent paid in advance.

present costs.

See *net present cost*.

present value.

Value of future receipts or payments *discounted* to the present.

preventive controls.

See *accounting controls*.

price variance.

Portion of the total *variance* for any line item that is caused by spending a different amount per unit of resource than had been anticipated, for example, higher or lower salary rates or higher or lower supply prices.

primary government.

A state or local governmental body that has a separately elected governing body and is legally and financially separate from other governments.

primary market.

The part of the capital market that deals with the original issuance of a security like a stock or a *bond*.

The principal participants in a primary-market transaction are an issuer who offers the securities for sale and an investor who buys the securities from the issuer. In primary-market transactions, the proceeds from the initial offering, net of any *offering costs*, are paid to the issuer.

principal.

The amount of money borrowed on a loan.

product costs.

Expenses that are directly related to the production of goods and services.

profit.

Amount by which an organization's *revenues* exceed its *expenses*.

profit center.

A responsibility unit that is responsible for both *revenues* and *expenses*. Healthcare organizations often refer to profit centers as *revenue centers*, emphasizing the fact that a specific charge for such centers will appear on patient bills.

profit margin.

Excess of *revenue* over *expense* divided by total revenue; an indication of the amount of profits generated by each dollar of revenue.

profit-sharing plan.

An incentive arrangement under which executives receive a portion of an organization's profits that exceed a certain threshold.

profitability ratios.

Ratios that assess the profitability of the organization; examples are the *operating margin* and *total margin* ratios.

proforma financial statements.

Financial statements that present a prediction of what the financial statements for a project, program, or organization will look like at some point in the future.

program audits.

Reviews of the organization's operations to check for *effectiveness*. They determine whether the organization's programs are accomplishing their objectives.

program budget.

A plan for a specific portion of the organization's operations, such as a type of service offered or a special project.

program services.

An organization's programs that provide services to its clients—for example, a heart surgery program or a meals on wheels program. Any program may consume resources from a number of different *line items* or *responsibility centers*.

program services ratio.

Program service expenses divided by total expenses; this *ratio* helps the user understand what portion of spending is going directly to program services in contrast to support services.

property, plant, and equipment.

Land, buildings, and pieces of equipment owned by the organization.

proprietary.

See *for-profit*.

proprietary fund.

Fund that is used to account for the business- type activities of a government.

proprietorship.

Business owned by one individual.

p-value.

The likelihood that there is really no relationship among the dependent and independent variables.

Q

quantity variance.

Portion of the total variance for any line item that is caused by using more *input* per unit of *output* than had been budgeted.

quick ratio.

Cash plus *marketable securities* plus *accounts receivable*, all divided by *current liabilities*; this *liquidity ratio* is a more stringent test of the ability to meet current obligations as they come due than the widely used *current ratio*. Sometimes called the *acid test*.

R

rainy day funds.

See *budget reserves*.

rate variance.

Price variance that relates to labor resources. In such cases it is typically the hourly rate that has varied from expectations.

ratio.

One number divided by another.

ratio analysis.

Comparison of one number to another in order to gain insight from the relationship between the numbers.

receivables.

See *accounts receivable*.

receivables turnover.

Revenues and support divided by *accounts receivable*; see also *average collection period*.

recognition.

The point at which a financial event is considered to have occurred and can be recorded in the financial records of the entity. The time of recognition differs under the cash and accrual bases of accounting.

registered bonds.

Bonds whose ownership is tracked by the borrower. Taxable interest on registered bonds is reported to the Internal Revenue Service.

relevant costing.

See *marginal cost analysis*.

relevant costs.

Only those costs that are subject to change as a result of a decision.

relevant range.

The range of activity that might reasonably be expected to occur in the budget period.

repo.

See *repurchase agreements*.

repo rate.

The difference between the original sale price and the agreed repurchase price in a *repurchase agreement*.

repurchase agreements.

A collateralized loan agreement involving the purchase of *marketable securities* at a discount with an agreement by the seller to buy them back at a specified date for an agreed price. Sometimes called a *repo*.

required rate of return.

The interest rate that must be achieved for a capital project to be considered financially worthwhile.

Also called the *hurdle rate*.

required supplementary information (RSI).

Information that must be included along with the *basic financial statements* to present a fair representation of a government's finances in accordance with *GAAP*.

rescission.

A rescinding or reversal of the authorization to spend money.

residual.

Portion left over; when *liabilities* are subtracted from *assets*, the leftover or residual value is called *fund balance*, *net assets*, *net position*, or *owners' equity*.

residual value.

The amount a *fixed asset* is expected to be worth at the end of its *lease* or its useful life. It is also sometimes referred to as the *salvage value*.

responsibility accounting.

Attempt to measure financial outcomes and assign those outcomes to the individual or department responsible for them.

responsibility center.

Part of the organization, such as a department or a unit, for which a manager is assigned responsibility.

restricted amounts.

Resources that may be used only for the specific purposes named by (1) external donors, grantors, *creditors*, or other governments; or (2) law.

restricted funds.

Funds whose *assets* are limited as to their use; if the restriction is placed by the donor, it can be removed only by the donor. However, if the assets were restricted by the board, then the restriction may be removed by the board.

retained earnings.

The portion of the *profits* of a for-profit corporation that have been earned over the years and have not been distributed to the owners in the form of *dividends*.

return on assets (ROA).

Profit divided by total assets; a measure of the amount of profit earned for each dollar invested in the organization's assets; increase in *net assets* divided by total assets.

return on equity.

Profitability ratio that assesses the amount of *profit* earned on each dollar of *equity*.

return-on-fund-balance ratio.

Profitability ratio that measures the percentage profit earned on *fund balance*; excess of *revenues* over *expenses* divided by fund balance.

return on investment (ROI).

A *ratio* that divides the amount of *profit* by the amount of the investment. Just as an individual would measure the success of a personal investment, so an organization would use ROI to measure the yield received relative to an amount of money invested.

return on net assets (RONA).

Increase in *net assets* divided by net assets; *profitability ratio* that measures the relative increase in net assets.

revenue.

Amounts of money that the organization has received or is entitled to receive in exchange for goods or services that it has provided.

revenue bonds.

Bonds that are backed by the revenues from a specific, limited source. The full taxing power of the government is not pledged in support of revenue bonds.

revenue center.

Unit or department that is responsible and accountable not only for costs of providing services, but also for the revenues generated by those services.

revenue-to-assets ratio.

Total revenues divided by total assets; a measure of the amount of revenue generated per dollar of assets used by the organization.

revenue variances.

Assessment of how much of the variance between expected and actual revenues results from changes in the total demand in a given geographic region, an organization's share of that total demand, its mix of products or services, and the prices for each class of product or service.

reverse repurchase agreement.

Repurchase agreement in which the typical lending party acts as the borrower; also called reverse repo.

review of financial statements.

Auditor review for form and accuracy; in a review, the auditor does not perform the extensive testing of records and detailed review that are part of an *audit*.

risk exposure factor.

Investment revenue, intergovernmental revenue, and transfers-in all divided by controllable tax revenue; this *ratio* assesses the relative share of a government's resources that come from sources it does not control, as compared with the share that comes from a tax base it controls.

ROA.

See *return on assets*.

ROI.

See *return on investment*.

rolling budget.

See *continuous budgeting*.

RONA.

See *return on net assets*.

R-squared (r^2).

A regression analysis statistic that can range from a low of zero to a high of 1.0. The closer it is to 1.0, the more of the variability in the *dependent variable* that has been explained by the *independent variable*.

S

safety stock.

Minimum level of inventory that an organization would always attempt to maintain on hand. Would be used only when an event arises that would, in the absence of a safety stock, have resulted in running out of inventory.

salvage value.

The estimated value an *asset* is expected to be worth when it is sold at the end of its useful life. It is also sometimes referred to as *residual value*.

secondary market.

The part of the capital market where previously issued securities are bought and sold. It is also called the aftermarket. In secondary- market transactions, the proceeds from the sale of a security, net of any transaction costs, are paid to the seller.

semi-fixed cost.

See *step-fixed*.

semi-variable cost.

See *mixed costs*.

sensitivity analysis.

Process whereby the financial results are recalculated under a series of varying assumptions and predictions. This is often referred to as “what-if” analysis.

sequestration.

In the context of the federal budget, sequestration entails across-the-board cuts to discretionary spending.

serial bonds.

A *bond issue* that has a number of different *maturity* dates, with part of the total bond issue being repaid at each of the maturity dates.

serial correlation.

A situation in which the residuals in a regression line are not independent of each other. The residuals are a measure of the distance from the regression line to each of the actual historical data points.

service unit.

Basic measure of the product or service being produced by the organization.

short run.

See *short term*.

short term.

Within 1 year; *current* or *near term*; period of time shorter than the long term. See *long term*.

short-term assets.

See *current assets*.

simple interest.

Interest that is earned on an investment without any interest being earned on interest that has been

earned in prior compounding periods.

sinking fund.

(a) An account that is used to accumulate money to be used for the eventual repayment of *debt*, such as a *bond*, or for the future acquisition of a *capital asset*. (b) Segregated *assets* to be used for replacement of plant and equipment, or the repayment of a *long-term liability* such as a *bond*.

solvency.

Ability to meet *current* and future obligations.

solvency ratios.

Class of *ratios* that evaluates the organization's ability to meet its obligations as they come due over a time frame longer than 1 year.

special purpose budget.

A plan for a specific project, program, or activity not covered by another budget.

special-purpose funds.

Funds whose *assets* are restricted to a particular purpose, such as government grant-funded research projects, student loans, or establishment of a new burn care unit.

special revenue funds.

Funds used for specific identifiable purposes; similar to *restricted funds* for not-for-profit organizations.

specific authorization.

Requirement that a person get written permission to override general authorization policies.

specific identification.

Inventory valuation method that identifies each unit of inventory and tracks which specific units are on hand and which have been sold.

spending variance.

The equivalent of the *price* or *rate variance* for *fixed* and *variable overhead* costs.

spread.

The difference between the underwriter's buying and selling price for a *bond issue*.

spreadsheet.

Large ledger sheets often used by accountants for financial calculations.

stated interest rate.

Bond interest rate that is multiplied by the *maturity value* of the *bond* to determine annual amount of interest paid; also referred to as the *coupon rate*.

stated value.

See *maturity value*.

statement of activities.

Statement that provides information about the *revenues* and *expenses* of the government as a whole as well as other changes in *net position*.

statement of financial position.

Financial report that indicates the financial position of the organization at a specific point in time; often referred to as the *balance sheet*.

statement of functional expenses.

Detailed statement reporting expenses by functional class (e.g., major groupings of program services and support services) and by nature (e.g., salaries, rent, gas) in a matrix format.

statement of net position.

Balance sheet presented in a format of *assets* plus deferred outflows of resources less *liabilities* and deferred inflows of resources equal *net position*.

step-down method.

Approach to allocating *support center* costs in which each support center is allocated to every other center (both support and *mission center*) that has not yet allocated its costs.

step-fixed cost.

Cost that is fixed over short ranges of volume but varies within the *relevant range* (sometimes referred to as *step-variable cost*).

step-variable cost.

See *step-fixed cost*.

stockout costs.

Costs incurred when the supply is not available but is needed.

straight-line depreciation.

Technique that allocates an equal portion of a *long-term asset's* cost as an *expense* each year.

strategic budget.

See *long-range budget*.

strategic plan.

Plan that defines a broad set of *goals* for the organization and selects the primary approaches that the organization will take to achieve those goals.

strategic planning.

Process of setting *long-term goals* and designing a plan to achieve those goals; often referred to as long-term planning.

strategy.

A broad plan for the attainment of *goals*.

subsidiary journal.

Detailed journals where original entries are first made, with only a summary total entry being made to the *general journal*; for example, a sales journal would list each customer bill, with only a summary of total revenue recorded in the general journal.

subsidiary ledger.

Ledgers where detailed information is recorded, with only a summary being posted to the *general ledger*; for example, a subsidiary *accounts receivable* ledger would keep track of each customer's receivable separately, while the *general ledger* would show only the total increase or decrease in *receivables*.

sunk costs.

Costs that already have been incurred and will not be affected by future actions.

support.

Funding that consists of contributions or grants.

support center.

Cost centers that are not *mission centers*.

supporting activities.

Those activities an organization carries out in order to allow it to provide its program services.

surplus.

An excess of receipts over spending; also see *profit*.

sweep.

Arrangement to transfer money into and out of bank accounts automatically.

T

tangible asset.

Asset having physical substance or form.

tax-exempt.

Organizations that are exempt from federal income taxes.

tax leverage factor.

Total operating *expenditures* divided by controllable local source tax revenue; this *ratio* assesses the amount taxes must increase in response to expenditure increases. For example, if the government spends \$30,000,000 a year and has just \$10,000,000 of local revenue sources, then a 1 percent increase in spending, with no other revenue increases, would require a 3 percent increase in the local tax rate.

taxes payable.

Taxes owed to a local, state, or federal government.

temporarily restricted net assets.

Donated amounts that have donor-imposed restrictions as to when or how they are to be used.

temporary accounts.

Accounts in which a single period's activity is recorded, and that are emptied at the end of each period.

term bonds.

A *bond issue* with one *maturity* date, with all bonds due for repayment on that date.

terms.

Refers to payment terms—that is when an *account payable* is due and what discount is available for early payment.

theory of constraints.

A method for addressing bottlenecks that attempts to increase *throughput contribution* while decreasing *investment* and *operating costs*.

third-party payer.

Any organization, public or private, that pays or insures health or medical expenses on behalf of beneficiaries or recipients of the healthcare services.

throughput contribution.

Revenues less the costs of direct materials related to output.

time-series model.

Forecasting approach that uses trends and seasonal patterns for a variable in the past as a predictor for the future values of that variable.

time value of money (TVM).

Recognition that money can earn interest and therefore dollars are not equally valuable at all points in time; the further into the future an amount is paid, the less valuable it is.

times-interest-earned ratio.

Income before interest expense divided by interest expense; this *coverage ratio* assesses the ability of the organization to make its required annual interest payments.

top-down budget.

Budget prepared in a central fashion by the organization's top management. *Responsibility center* managers are told the budgeted amount and are expected to achieve the budgeted result.

total asset turnover.

Total unrestricted *revenues* and *support* divided by total assets; this asset turnover *ratio* assesses the number of dollars of revenue and support generated for each dollar invested in assets. The more revenue and support per dollar of assets, the more efficiently the organization is using its investment in assets, other things being equal.

total debt to equity ratio.

Total *liabilities* divided by *net assets*. The higher this *ratio*, the less borrowing capacity the organization has left.

total margin ratio.

Profitability ratio that compares the excess of *revenues* over *expenses* with total revenues to determine the overall profits earned, including all sources of revenues and expenses, per dollar of revenues.

total pension liability.

The actuarial present value of projected benefit payments to be provided through a pension plan to current and active members of that plan.

total variance.

Sum of the price, quantity, and volume *variances*; the difference between the actual results and the original budgeted amount.

trade credit.

An agreement where a customer can purchase goods and pay the supplier at a later date. Trade credits result in *accounts payable* and are generally interest free.

trading securities.

Debt and *equity* securities that are bought principally for the purpose of selling them in the near term. Reported at fair value (the price reported for the security on the last day of the period covered by the *financial statement*) by all organizations.

transfer prices.

The amounts charged to one *responsibility center* for goods or services acquired from another responsibility center in the same organization.

Treasury bill (T-bill).

A *debt* security issued by the U.S. government with a maturity of 3 months to 1 year.

trend.

Patterns related to the passage of time.

triple bottom line accounting.

Framework in which performance is measured in financial, environmental, and social terms.

true interest cost (TIC).

The interest rate cost of a *serial bond* to a *bond issuer*, calculated using *time value of money* methodology. See net interest cost.

trust funds.

Funds established when money is given to the government under the legal terms of a trust. Trusts require that the money be used in a specific manner or for specific purposes.

t-test.

A statistical test performed to ascertain that the value for the slope is indeed significantly different from zero. If the t-value is greater than 2.00, then the slope is assumed to be statistically different from zero.

TVM.

See *time value of money*.

U

unassigned amounts.

Resources that may be used for any purpose.

uncollectibles.

See *allowance for uncollectible accounts*.

uncontrollable.

See *noncontrollable*.

underwrite.

To raise funds from investors on behalf of an organization by selling *debt* or *equity* securities.

Underwriters are typically investment banks.

unexpired cost.

Cost of *asset* that has not yet been used up.

unfavorable variance.

Variance in which more was spent than the budgeted amount or *revenues* were less than the budgeted amount.

unit of service.

See *service unit*.

unregistered bonds.

Bonds for which the borrowing organization does not have a record of whom the lenders or bond owners are. Often called *bearer bonds* because interest is paid to the current holder of the bond upon the presentation of a coupon cut off of the bond.

unrestricted funds.

Funds whose *assets* may be used for any normal purpose; usually only the general operating fund is unrestricted.

unrestricted net assets.

Net assets whose use have not been restricted by donors.

unsecured notes.

Loans that do not have any *collateral*.

use variance.

Another name for the quantity variance, so called because the quantity variance focuses on how much of a resource has been used; see also *quantity variance*.

V

value-added.

Costs that directly affect the quality of the ultimate product or service provided. Many process improvement initiatives focus on identifying value-added costs as opposed to non-value-added costs.

variable costs.

Costs that vary in total as volume changes.

variance.

Difference between the budget and the actual results.

variance analysis.

Actual results compared with the *budget*, followed by investigation to determine why the variances occurred.

vendor.

Supplier who sells to an organization.

VHWOS.

See *voluntary health and welfare organizations*.

viability.

Ability to continue in existence.

volume and quantity adjusted budget.

A *budget* that indicates the spending that would have been anticipated if one had known the actual volume of output and quantity of input that would occur.

volume variance.

Amount of the *variance* in any line item that is caused simply by the fact that the workload level has changed.

voluntary health and welfare organizations (VHWOs).

Not-for-profit organizations “that provide voluntary services, supported by the public, usually trying to solve health and welfare problems, generally getting *revenue* from voluntary contributions rather than from the sale of goods or services.”²

voluntary nonexchange transactions.

Unrestricted grants or contributions.

² Ibid, p. 79.

W

wages payable.

Amounts owed to employees.

wealth.

Value of all the resources the consumer currently owns.

weighted average method.

Inventory valuation method that accounts for inventory as if the inventory all gets mixed together and each unit is unidentifiable.

working capital.

Organization's *current assets* minus *current liabilities*.

working capital management.

Management of the *current assets* and *current liabilities* of the organization.

workload.

The volume of goods or services that the organization or a subdivision of the organization provides.

write off.

Elimination of an asset from the accounting records and the recording of an *expense*.

Z

ZBB.

See *zero-based budgeting*.

zero-balance accounts.

A system in which separate accounts are maintained at a bank for each major source of cash receipt and for major types of payments. At the close of each day, the bank automatically transfers all balances into one master concentration account. Any borrowing or investing of cash can then be done against that one account.

zero-based budgeting (ZBB).

Budgeting approach that requires an examination and justification of all costs rather than just the *incremental costs* and that requires examination of alternatives rather than just one approach.

zero coupon bonds.

Bonds that do not pay interest until the *maturity date*, when all accumulated interest and *principal* is paid.

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