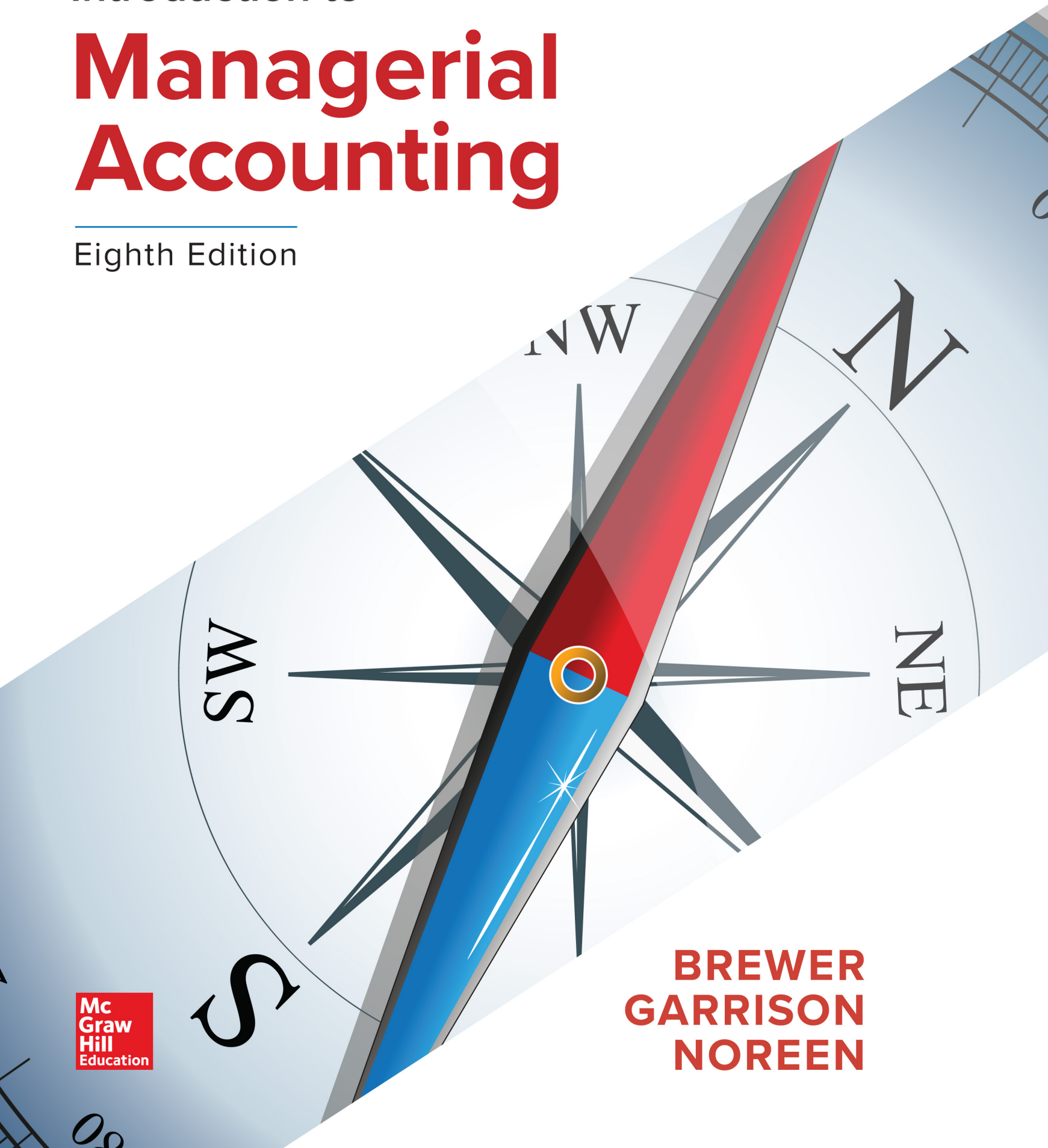


Introduction to

Managerial Accounting

Eighth Edition



Mc
Graw
Hill
Education

**BREWER
GARRISON
NOREEN**

introduction TO MANAGERIAL ACCOUNTING

8TH EDITION

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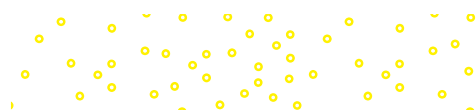
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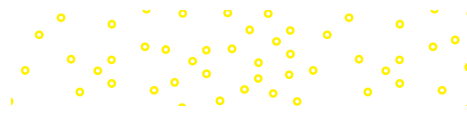
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INTRODUCTION TO MANAGERIAL ACCOUNTING, EIGHTH EDITION

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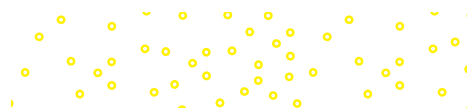
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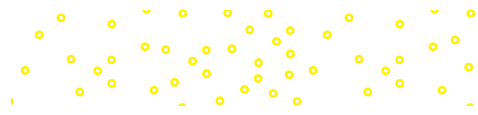
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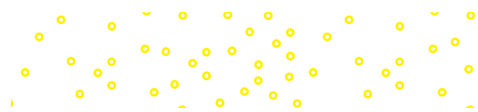
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DEDICATION

To our families and to our many colleagues who use this book.



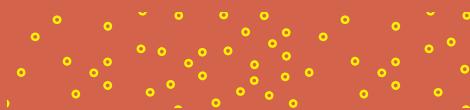
About the Authors



Peter C. Brewer is a lecturer in the Department of Accountancy at Wake Forest University. Prior to joining the faculty at Wake Forest, he was an accounting professor at Miami University for 19 years. He holds a BS degree in accounting from Penn State University, an MS degree in accounting from the University of Virginia, and a PhD from the University of Tennessee. He has published more than 40 articles in a variety of journals including: *Management Accounting Research*; the *Journal of Information Systems*; *Cost Management*; *Strategic Finance*; the *Journal of Accountancy*; *Issues in Accounting Education*; and the *Journal of Business Logistics*.

Professor Brewer has served on the editorial boards of the *Journal of Accounting Education* and *Issues in Accounting Education*. His article “Putting Strategy into the Balanced Scorecard” won the 2003 International Federation of Accountants’ Articles of Merit competition, and his articles “Using Six Sigma to Improve the Finance Function” and “Lean Accounting: What’s It All About?” were awarded the Institute of Management Accountants’ Lybrand Gold and Silver Medals in 2005 and 2006. He has received Miami University’s Richard T. Farmer School of Business Teaching Excellence Award.

Prior to joining the faculty at Miami University, Professor Brewer was employed as an auditor for Touche Ross in the firm’s Philadelphia office. He also worked as an internal audit manager for the Board of Pensions of the Presbyterian Church (U.S.A.).





Ray H. Garrison is emeritus professor of accounting at Brigham Young University, Provo, Utah. He received his BS and MS degrees from Brigham Young University and his DBA degree from Indiana University.

As a certified public accountant, Professor Garrison has been involved in management consulting work with both national and regional accounting firms. He has published articles in *The Accounting Review*, *Management Accounting*, and other professional journals. Innovation in the classroom has earned Professor Garrison the Karl G. Maeser Distinguished Teaching Award from Brigham Young University.

Eric W. Noreen has taught at INSEAD in France and the Hong Kong Institute of Science and Technology and is emeritus professor of accounting at the University of Washington. Currently, he is the Accounting Circle Professor of Accounting, Fox School of Business, Temple University.

He received his BA degree from the University of Washington and MBA and PhD degrees from Stanford University. A Certified Management Accountant, he was awarded a Certificate of Distinguished Performance by the Institute of Certified Management Accountants.

Professor Noreen has served as associate editor of *The Accounting Review* and the *Journal of Accounting and Economics*. He has numerous articles in academic journals including: the *Journal of Accounting Research*; *The Accounting Review*; the *Journal of Accounting and Economics*; *Accounting Horizons*; *Accounting, Organizations and Society*; *Contemporary Accounting Research*; the *Journal of Management Accounting Research*; and the *Review of Accounting Studies*.

Professor Noreen has won a number of awards from students for his teaching.



Pointing Students in the Right Direction

“Why do I need to learn Managerial Accounting?”

Brewer’s Introduction to Managerial Accounting has earned a reputation as the most accessible and readable book on the market. Its manageable chapters and clear presentation point students toward understanding just as the needle of a compass provides direction to travelers.

However, the book’s authors also understand that everyone’s destinations are different. Some students will become accountants, while others are destined for careers in management, marketing, or finance. Not only does the Brewer text teach students managerial accounting concepts in a clear and concise way, but it also asks students to consider how the concepts they’re learning will apply to the real world situations they will eventually confront in their careers. This combination of conceptual understanding and the ability to apply that knowledge directs students toward success, whatever their final destination happens to be.

Here’s how your colleagues have described *Brewer’s Introduction to Managerial Accounting*:

Great, readable text with streamlined coverage. the number of chapters combined with the readability make this a lean, up-to-date product.

Timothy Griffin, Hillsborough Community College

A simplified managerial accounting book.

Dan O’Brien, Madison College

A book with an appropriate level of coverage for students who may not all be majoring in accounting. This book has enough detail for accounting majors, with coverage that still keeps the interest and understanding of non-majors.

Dawn McKinley, Harper Community College

This is a thorough text that offers many well-structured exercises throughout.

Eric Weinstein, Suffolk Community College

The textbook is very good, with the Foundational 15 being my favorite feature. The Review Problems are also very thorough and serves as an outstanding study tool for students to use independently. The writing flows very well. If a student takes the time to read each chapter thoroughly, there is no excuse not to do well in the Managerial Accounting Course.

Randall Williams, Catawba Valley Community College

I really like the content and think it will be beneficial for all students. I especially like the highlighting of important concepts in the text, and the Guided examples that explain how to solve problems.

Diane Tanner, University of Northern Florida

CONFIDENCE AT THE CORE

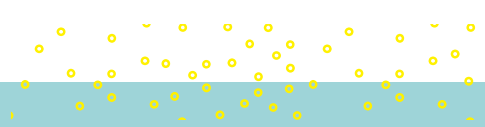
Your students want a text that is concise and that presents material in a clear and readable manner. Introduction to Managerial Accounting keeps the material accessible while avoiding advanced topics related to cost accounting. Students' biggest concern is whether they can solve the end-of-chapter problems after reading the chapter. Market research indicates that Brewer/Garrison/Noreen helps students apply what they've learned better than any other managerial accounting text on the market. Additionally, the key supplements are written and continually revised to ensure that students and instructors will work with clear, well-written supplements that employ consistent terminology. Author Pete Brewer examined each and every end of chapter question in Connect to guarantee accuracy and consistency.

RELEVANCE AND DECISION MAKING

All students who pass through your class need to know how accounting information is used to make business decisions, especially if they plan to be future managers. That's why Brewer, Garrison, and Noreen make decision making a pivotal component of Introduction to Managerial Accounting. In every chapter you'll find the following key features that are designed to teach your students how to use accounting information: Each chapter opens with a Decision Feature vignette that uses real-world examples to show how accounting information is used to make everyday business decisions; Decision Point boxes within the chapters help students to develop analytical, critical thinking, and problem-solving skills; and end-of-chapter Building Your Skills cases challenge students' decision-making skills.

A CONTEMPORARY APPROACH TO LEARNING

Today's students rely on technology more than ever as a learning tool, and Introduction to Managerial Accounting offers the finest technology package of any text on the market. From study aids like narrated, animated Guided Examples to online grading and course management, our technology assets have one thing in common: they make your class time more productive, more stimulating, and more rewarding for you and your students. McGraw-Hill Connect is an online assignment and assessment solution that connects students with the tools and resources they'll need to be successful. These resources include an online, media-rich, searchable version of the text in addition to access to Connect, giving students a convenient way to access everything they need to succeed in their course.



BREWER / GARRISON / NOREEN'S

Introduction to Managerial Accounting is full of pedagogy designed to make studying productive and hassle-free. On the following pages, you'll see the kind of engaging, helpful pedagogical features that have made Brewer one of the best-selling Managerial Accounting texts on the market.

NEW* INTEGRATION EXERCISES

We have added 12 new exercises located in the back of the text and in Connect that integrate learning objectives across chapters. These exercises will increase the students' level of interest in the course because they forge the connections across chapters. Rather than seeing each chapter as an isolated set of learning objectives, students begin to see how it all fits together to provide greater managerial insight and more effective planning, controlling, and decision making. The integration exercises are also tailor-made for flipping the classroom because they offer challenging questions that require students to work in teams to derive solutions that synthesize what they have learned throughout the semester.

NEW* CONCEPT OVERVIEW VIDEOS

New for the 8th edition of Brewer, the Concept Overview Videos cover each learning objective through narrated, animated presentations. Formerly called Interactive Presentations, each Concept Overview Video has been enhanced for improved accessibility, and includes both the visual animations and transcripts to accommodate all types of learners. The Concept Overview Videos also pause frequently to check for comprehension with assignable, auto-graded Knowledge Check questions.

HELPFUL HINT

When students prepare variable costing income statements they often mistakenly assume that variable selling and administrative expense is a product cost. The confusion arises because variable selling and administrative expense is included in the calculation of contribution margin; however, it is not a product cost. Variable selling and administrative expense is always a period cost and the total amount of this expense included in the income statement is always derived by multiplying the variable selling and administrative expense per unit by the number of units sold—not the number of units produced.

HELPFUL HINT

Helpful Hint boxes are found several times throughout each chapter and highlight a variety of common mistakes, key points, and “pulling it all together” insights for students.

DECISION POINT

The Pricing Decision

Each year Webb Company produces and sells 20,000 units of its only product. The selling price for this product is \$100 per unit and its direct materials, direct labor, and variable manufacturing overhead costs per unit are \$25, \$15, and \$10, respectively. Webb's annual fixed manufacturing overhead expenses and fixed selling and administrative expenses are \$400,000 and \$150,000, respectively. It does not have any variable selling and administrative expenses.

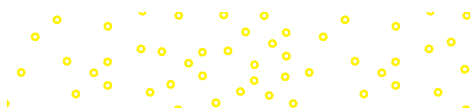
The company's marketing manager believes a 10% price increase would lead to a 20% decline in the number of units sold. He claims that if the level of production stays at 20,000 units his price hike will increase gross margins and net operating income by \$40,000. Would you support the price increase? Do you think it will increase profits?

DECISION POINT

The Decision Point feature fosters critical thinking and decision-making skills by providing real-world business scenarios that require the resolution of a business issue. The suggested solution is located at the end of the chapter.

“Very good conversation starters in a classroom or discussion board setting.”

Randall Williams, Catawba Community College



POWERFUL PEDAGOGY

THE FOUNDATIONAL 15

Each chapter contains one Foundational 15 exercise that includes 15 “building-block” questions related to one concise set of data. These exercises can be used for in-class discussion or as homework assignments. They are found before the Exercises and are available in **Connect**.

 **THE FOUNDATIONAL 15**

Greenwood Company manufactures two products—14,000 units of Product Y and 6,000 units of Product Z. The company uses a plantwide overhead rate based on direct labor-hours. It is considering implementing an activity-based costing (ABC) system that allocates all of its manufacturing overhead to four cost pools. The following additional information is available for the company as a whole and for Products Y and Z:

LO4-1, LO4-2,
LO4-3, LO4-4

Activity Cost Pool	Activity Measure	Estimated Overhead Cost	Expected	Activity
Machining	Machine-hours	\$200,000	10,000	MHs
Machine setups	Number of setups	\$100,000	200	setups
Production design	Number of products	\$84,000	2	products
General factory	Direct labor-hours	\$300,000	12,000	DLHs

Activity Measure	Product Y	Product Z
Machining	8,000	2,000
Number of setups	40	160
Number of products	1	1
Direct labor-hours	9,000	3,000

1. What is the company's plantwide overhead rate?
2. Using the plantwide overhead rate, how much manufacturing overhead cost is allocated to Product Y? How much is allocated to Product Z?
3. What is the activity rate for the Machining activity cost pool?
4. What is the activity rate for the Machine Setups activity cost pool?
5. What is the activity rate for the Product Design activity cost pool?
6. What is the activity rate for the General Factory activity cost pool?

CHAPTER OUTLINE

Each chapter opens with an **outline** that provides direction to the student about the road they can expect to traverse throughout the chapter. The **A Look Back/A Look at This Chapter/A Look Ahead** feature reminds students what they have learned in previous chapters, what they can expect to learn in the current chapter, and how the topics will build on each other in chapters to come.



A LOOK BACK

Chapter 1 defined many of the terms that are used to classify costs in an organization. Its central theme was that organizations should classify their costs differently depending on the needs of management.

A LOOK AT THIS CHAPTER

This chapter explains how job-order costing systems can be used to assign manufacturing costs to individual jobs. It illustrates how one plantwide predetermined overhead rate or multiple predetermined overhead rates can be used to apply overhead costs to jobs.

A LOOK AHEAD

Chapter 3 explains how job-order costing systems can be used to determine the value of ending inventories and cost of goods sold for external reporting purposes.

2

Job-Order Costing: Calculating Unit Product Costs

CHAPTER OUTLINE

Job-Order Costing—An Overview

Job-Order Costing—An Example

- Measuring Direct Materials Cost
- Job Cost Sheet
- Measuring Direct Labor Cost
- Computing Predetermined Overhead Rates
- Applying Manufacturing Overhead
- Manufacturing Overhead—A Closer Look
- The Need for a Predetermined Rate
- Computation of Total Job Costs and Unit Product Costs

Job-Order Costing—A Managerial Perspective

- Choosing an Allocation Base—A Key to Job Cost Accuracy

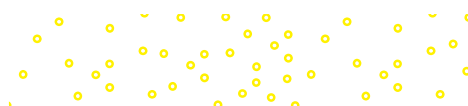
Job-Order Costing Using Multiple Predetermined Overhead Rates

- Multiple Predetermined Overhead Rates—A Departmental Approach
- Multiple Predetermined Overhead Rates—An Activity-Based Approach

Job-Order Costing—An External Reporting Perspective

- Overhead Application and the Income Statement
- Job Cost Sheets: A Subsidiary Ledger

Job-Order Costing in Service Companies



DECISION FEATURE



Courtesy of University Tees, Inc.

University Tees: Serving Over 150 Campuses Nationwide

University Tees was founded in 2003 by two Miami University college students to provide screen-printing, embroidery, and promotional products for fraternities, sororities, and student organizations. Today, the company, which is headquartered in Cleveland, Ohio, employs as many as four Campus Managers on each of over 150 college campuses across America.

Accurately calculating the cost of each potential customer order is critically important to University Tees because the company needs to be sure that the sales price exceeds the cost associated with satisfying the order. The costs include the cost of the blank T-shirts themselves, printing costs (which vary depending on the quantity of shirts produced and the number of colors per shirt), screen costs (which also vary depending on the number of colors included in a design), shipping costs, and the artwork needed to create a design. The company also takes into account its competitors' pricing strategies when developing its own prices.

Given its success on college campuses, University Tees has introduced a sister company called On Point Promos to serve for-profit companies and nonprofit organizations.

Source: Conversation with Joe Haddad, cofounder of University Tees.

LEARNING OBJECTIVES

After studying Chapter 2, you should be able to:

LO2-1 Compute a predetermined overhead rate.

LO2-2 Apply overhead cost to jobs using a predetermined overhead rate.

LO2-3 Compute the total cost and the unit product cost of a job using a plantwide predetermined overhead rate.

LO2-4 Compute the total cost and the unit product cost of a job using multiple predetermined overhead rates.

DECISION FEATURE

Each chapter opens with a **Decision Feature** feature that provides a real-world example for students, enabling them to see how the chapter's information and insights apply to the world outside the classroom. **Learning Objectives** alert students to what they should expect as they progress through the chapter.

A Look at Bangladesh's \$20 Billion Garment Industry

In Bangladesh, the minimum wage is \$38 per month. A highly-skilled sewing machine operator may earn as much as \$100 per month before considering overtime. Companies such as **Fakir Apparels**, a T-shirt manufacturer in Bangladesh, can readily attract customers such as **Walmart**, **Gap**, and **Primark**, due to these low labor costs. However, in addition to serving mass market retailers, **Fakir Apparels** also makes T-shirts for premium brands such as **Tommy Hilfiger**, **Giorgio Armani**, **Hugo Boss**, and **G-Star Raw**. While the manufacturing cost for one of **Fakir Apparels** T-shirts ranges from \$1.60 to \$6.00, the retail selling prices for these T-shirts can vary from \$6.00 (at Walmart) to as much as \$91.00 (at G-Star Raw).

Source: Passariello, Christina et al., "Bangladesh's Tale of the T-Shirts," *The Wall Street Journal*, July 1, 2013, pp. B1 and B8.

IN BUSINESS



©Joerg Boethling/Alamy Stock Photo

IN BUSINESS BOXES

These helpful boxed features appear in every chapter and they demonstrate how selected managerial accounting topics apply to real organizations and contexts.

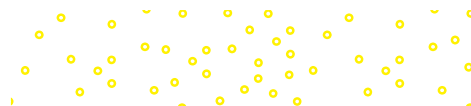
3. Which of the following statements is false with respect to the schedule of cost of goods manufactured? (You may select more than one answer.)
- The beginning raw materials inventory plus raw materials purchases minus ending raw materials inventory equals the raw materials used in production.
 - Direct labor costs and actual manufacturing overhead costs are included in the schedule of cost of goods manufactured.
 - The cost of goods manufactured represents the amount that will be debited to Cost of Goods Sold during an accounting period.
 - If the finished goods inventory increases during an accounting period, it will decrease the cost of goods manufactured.



CONCEPT CHECK

CONCEPT CHECK

Concept Checks allow students to test their comprehension of topics and concepts covered at meaningful points throughout each chapter.



END-OF-CHAPTER MATERIAL

Introduction to Managerial Accounting has earned a reputation for the best end-of-chapter review and discussion material of any text on the market. Our exercises and problems conform to AICPA, AACSB, and Bloom's Taxonomy categories, and they make a great starting point for class discussions and group projects. With review problems, discussion questions, Excel problems, the Foundational 15 set, exercises, problems, and Building Your Skills, Brewer offers students practice material of varying complexity and depth.

I think this text is more comprehensive in coverage and has excellent homework problems.

Robert Holtfreter, Central Washington University

APPLYING EXCEL

LO3-1, LO3-4 The Excel worksheet form that appears below is to be used to recreate part of the example relating to Turbo Crafters that appears earlier in the chapter. Download the workbook containing this form from Connect, where you will also receive instructions about how to use this worksheet form.

	A	B	C	D
1	Chapter 3: Applying Excel			
2				
3	Date			
4	Allocation base	Machine-Hours		
5	Estimated manufacturing overhead cost	\$300,000		
6	Estimated total amount of the allocation base	70,000 machine-hours		
7	Actual manufacturing overhead cost	\$290,000		
8	Actual total amount of the allocation base	68,000 machine-hours		
9				
10	Enter a formula into each of the cells marked with a ? below:			
11				
12	Computation of the predetermined overhead rate			
13	Estimated manufacturing overhead cost		?	
14	Estimated total amount of the allocation base		7 machine-hours	
15	Predetermined overhead rate		?	per machine-hour
16				
17	Computation of underapplied or overapplied manufacturing overhead			
18	Actual manufacturing overhead cost			
19	Manufacturing overhead cost applied to Work in Process during the period			
20	Predetermined overhead rate			
21	Actual total amount of the allocation base			
22	Manufacturing overhead applied			
23	Underapplied (overapplied) manufacturing overhead			
24				
25				

You should proceed to the requirements below only after you have completed the worksheet.

EXERCISES

connect

EXERCISE 3-1 Prepare Journal Entries LO3-1

- Larson Corporation recorded the following transactions for the just completed month.
- \$80,000 in raw materials were purchased on account.
 - \$71,000 in raw materials were used in production. Of this amount, \$62,000 was for direct materials and the remainder was for indirect materials.
 - Total labor wages of \$112,000 were paid in cash. Of this amount, \$101,000 was for direct labor and the remainder was for indirect labor.
 - Depreciation of \$175,000 was incurred on factory equipment.

EXERCISE 3-2 Prepare T-Accounts LO3-2, LO3-4

Jay's Enterprises recorded the following transactions for the just completed month. The company had no beginning inventories.

- \$94,000 in raw materials were purchased for cash, used in production. Of this amount, \$78,000 was for direct materials and \$16,000 was for indirect materials. The indirect materials were incurred and paid. Of this amount, \$112,000 was for direct labor and \$143,000 were incurred and paid. \$2,000 was applied to production using the company's predetermined overhead for the period was closed to Cost of Goods Sold.

Factory Wages Payable

Cost of Goods Manufactured and Cost of Goods Sold LO3-3

	Debits	Credits
Raw Materials	15,000	
Debits	120,000	
Bal. 12/31	25,000	
Work in Process	20,000	470,000
Direct materials	90,000	
Direct labor	150,000	
Overhead	240,000	
Bal. 12/31		
Finished Goods	40,000	
Debits	?	?
Bal. 12/31	60,000	
Cost of Goods Sold		
Debits		?
Bal. 12/31		

PROBLEMS

connect

PROBLEM 3-11 Account Analysis of Cost Flows LO3-2, LO3-3, LO3-4

Selected T-accounts of Moore Company are given below for the just completed year:

Raw Materials		Manufacturing Overhead	
Debits	Credits	Debits	Credits
Bal. 1/1	15,000		230,000
Debits	120,000		
Bal. 12/31	25,000		
Work in Process		Factory Wages Payable	
Debits	Credits	Debits	Credits
Bal. 1/1	20,000	185,000	9,000
Direct materials	90,000		180,000
Direct labor	150,000		
Overhead	240,000		
Bal. 12/31			4,000
Finished Goods		Cost of Goods Sold	
Debits	Credits	Debits	Credits
Bal. 1/1	40,000		
Debits	?		
Bal. 12/31	60,000		

Required:

- What was the cost of raw materials used in production?
- How much of the materials in (1) above were used in production?
- How much of the factory labor cost in (1) above was used in production?
- What was the cost of goods manufactured?
- What was the unadjusted cost of goods manufactured?
- If overhead is applied to production at a rate of 150% of the direct labor cost, what was the overapplied overhead in your answer to (4)?
- Was manufacturing overhead underapplied or overapplied?
- Compute the ending balance in Work in Process at the end of the year. If \$8,000 of it is in the form of applied overhead cost?

CASES

connect

ANALYTICAL THINKING LO3-1

Tom Emory and Jim Morris strolled back to their plant from the administrative offices of Ferguson & Son Manufacturing Company. Tom is manager of the machine shop in the company's factory. Jim is manager of the equipment maintenance department.

The men had just attended the monthly performance evaluation meeting for plant department heads. These meetings had been held on the third Tuesday of each month since Robert Ferguson, Jr., the president's son, had become plant manager a year earlier.

As they were walking, Tom Emory spoke: "Boy, I hate those meetings! I never know whether my department's accounting reports will show good or bad performance. I'm beginning to expect the worst. If the accountants say I saved the company a dollar, I'm called 'Sir,' but if I spend even a little too much—boy, do I get in trouble. I don't know if I can hold on until I retire."

Tom had just been given the worst evaluation he had ever received in his long career with Ferguson & Son. He was the most respected of the experienced machinists in the company. He had been with Ferguson & Son for many years and was promoted to supervisor of the machine shop when the company expanded and moved to its present location. The president (Robert Ferguson, Sr.) had often stated that the company's success was due to the high-quality work of machinists like Tom. As a supervisor, Tom stressed the importance of craftsmanship and told his workers that he wanted no sloppy work coming from his department.

When Robert Ferguson, Jr., became the plant manager, he directed that monthly performance comparisons be made between actual and budgeted costs for each department. The departmental budgets were intended to encourage the supervisors to reduce inefficiencies and to seek cost reduction opportunities. The company controller was instructed to have his staff "tighten" the budget slightly whenever a department attained its budget in a given month; this was done to reinforce the plant manager's desire to reduce costs. The young plant manager often stressed the importance of continued progress toward attaining the budget; he also made it known that he kept a file of these performance reports for future reference when he succeeded his father.

Tom Emory's conversation with Jim Morris continued as follows:

Emory: I really don't understand. We've worked so hard to meet the budget, and the minute we do so they tighten it on us. We can't work any faster and still maintain quality. I think my men are ready to quit trying. Besides, those reports don't tell the whole story. We always seem to be interrupting the big jobs for all those small rush orders. All that setup and machine adjustment time is killing us. And quite frankly, Jim, you were no help. When our hydraulic press broke down last month, your people were nowhere to be found. We had to take it apart ourselves and get stuck with all that idle time.

UTILIZING THE ICONS



To reflect our service-based economy, the text is replete with examples from service-based businesses. A helpful icon distinguishes service-related examples in the text.



The IFRS icon highlights content that may be affected by the impending change to IFRS and possible convergence between U.S. GAAP and IFRS.



Ethics assignments and examples serve as a reminder that good conduct is vital in business. Icons call out content that relates to ethical behavior for students.



The writing icon denotes problems that require students to use critical thinking as well as writing skills to explain their decisions.

AUTHOR-WRITTEN SUPPLEMENTS

Unlike other managerial accounting texts, the book's authors write the major supplements such as the test bank and solution files, ensuring a perfect fit between text and supplements.

ASSURANCE OF LEARNING READY

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New in the Eighth Edition

Faculty feedback helps us continue to improve *Introduction to Managerial Accounting*. In response to reviewer suggestions, the authors have made the following changes to the text:

- We split the job-order costing chapter into two chapters to improve the students' ability to understand the material and to give professors greater flexibility in choosing how to cover the material.
- We reviewed all end-of-chapter exercises and problems and revised them as appropriate to better function within Connect.
- We added 12 Integration Exercises in the back of the book to help students connect the concepts. These exercises are suitable for both a flipped classroom model and an in-class active learning environment as they engage students and encourage critical thinking.
- In-Business boxes are updated throughout to provide relevant and current real-world examples for use in classroom discussion and to support student understanding of key concepts as they read through a chapter.

Prologue

The Prologue has added coverage of the CGMA exam and an updated summary of the CMA exam content specifications.

Chapter 1

The high-low method has been removed from this chapter. We added an exhibit to visually depict product and period cost flows. We also made various changes to further emphasize the chapter's unifying theme of *different cost classifications for different purposes*. We have created 11 new end-of-chapter exercises/problems.

Chapter 2

This is a new chapter that explains how to use a job-order costing system to calculate unit product costs. It describes how to use plantwide and multiple overhead rates to apply overhead costs to individual jobs. The chapter has a strong managerial accounting orientation because it looks at how job-order costing systems serve the needs of internal managers.

Chapter 3

This is a new chapter that explains how job-order costing systems can be used to determine the value of ending inventories and cost of goods sold for external reporting purposes. The chapter has a strong financial accounting orientation because it uses journal entries and T-accounts to explain the flow of costs in a job-order costing system. The chapter also has a new appendix that uses Microsoft Excel[®] to explain the flow of costs in a job-order costing system.

Chapter 5

We revised the text in the main body of the chapter and in the online FIFO Supplement to better highlight the key concepts and steps needed to perform the weighted-average and FIFO process costing calculations.

Chapter 6

We added a new appendix that explains how to analyze mixed costs using the high-low method and the least-squares regression method.

Chapter 7

We added new text that better highlights this chapter's reliance on actual costing and contrasts it with the job-order costing chapters' reliance on normal costing.

Chapter 8

The end-of-chapter materials include three new exercises/problems (8-17, 8-18, and 8-27).

Chapter 9

We revised numerous end-of-chapter exercises and problems to better align them with Connect. We overhauled Appendix 9B to introduce students to a Microsoft Excel-based approach for creating an income statement using standard costing.

Chapter 10

This chapter includes four new In Business boxes.

Chapter 11

We revised the front-end of the chapter to better highlight the six key concepts that provide the foundation for effective decision making. We also revised the end-of-chapter exercises and problems to better dovetail with Connect and streamlined the coverage of sell or process further decisions to aid student comprehension.

Chapter 12

We revised many end-of-chapter exercises and problems and extensively revised the formatting within Connect throughout all the chapters, (not just Chapter 13) to allow students greater flexibility for alternate methods of approaching a problem, such as performing net present value calculations.

Chapter 13

We added three new In Business boxes.



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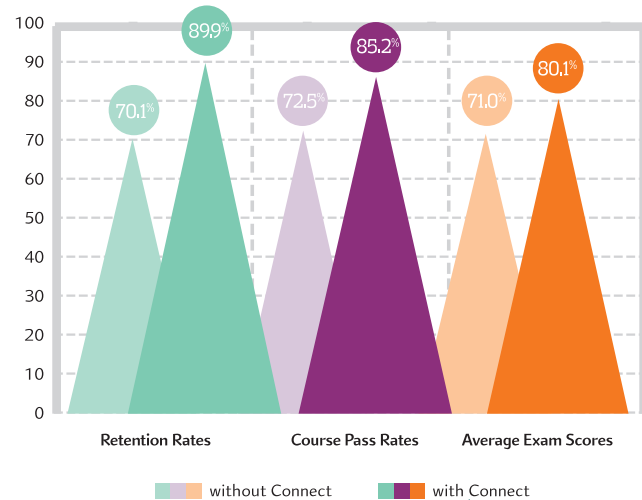
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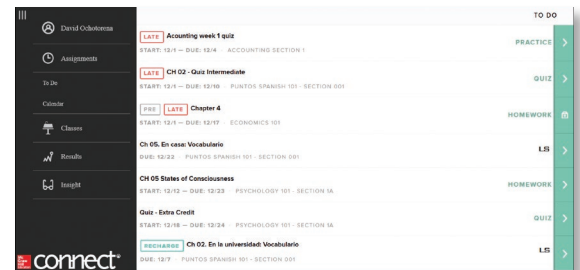


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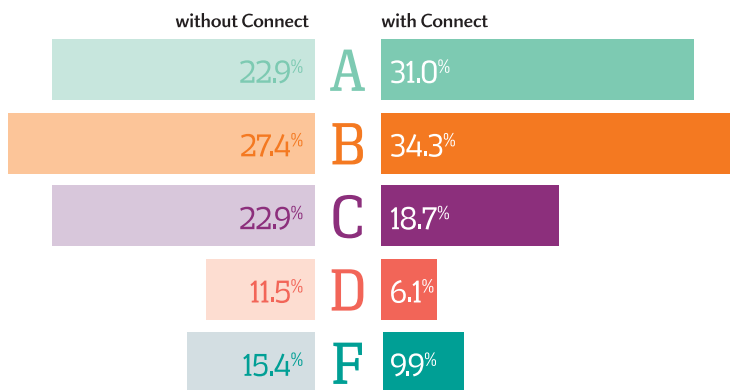
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Acknowledgments

Suggestions have been received from many of our colleagues throughout the world who have used the prior edition of *Introduction to Managerial Accounting*. This is vital feedback that we rely on in each edition. Each of those who offered comments and suggestions has our thanks.

The efforts of many people are needed to develop and improve a text. Among these people are the reviewers and consultants who point out areas of concern, cite areas of strength, and make recommendations for change. We thank current and past reviewers who have provided feedback that was enormously helpful in preparing *Introduction to Managerial Accounting*.

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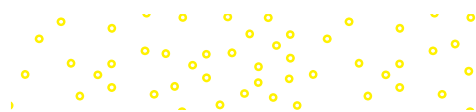


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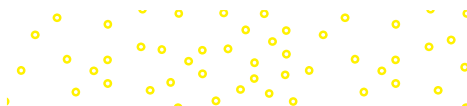
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A LOOK AT THE PROLOGUE

The Prologue defines managerial accounting and explains why it is important to the future careers of all business students. It also explains how managerial accounting involves more than just quantitative calculations.

A LOOK AHEAD

Chapter 1 defines many of the cost terms that will be used throughout the textbook. It explains that in managerial accounting the term cost is used in many different ways depending on the immediate needs of management.

Managerial Accounting: An Overview

PROLOGUE

PROLOGUE OUTLINE

What Is Managerial Accounting?

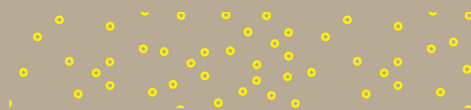
- Planning
- Controlling
- Decision Making

Why Does Managerial Accounting Matter to Your Career?

- Business Majors
- Accounting Majors

Managerial Accounting: Beyond the Numbers

- An Ethics Perspective
- A Strategic Management Perspective
- An Enterprise Risk Management Perspective
- A Corporate Social Responsibility Perspective
- A Process Management Perspective
- A Leadership Perspective

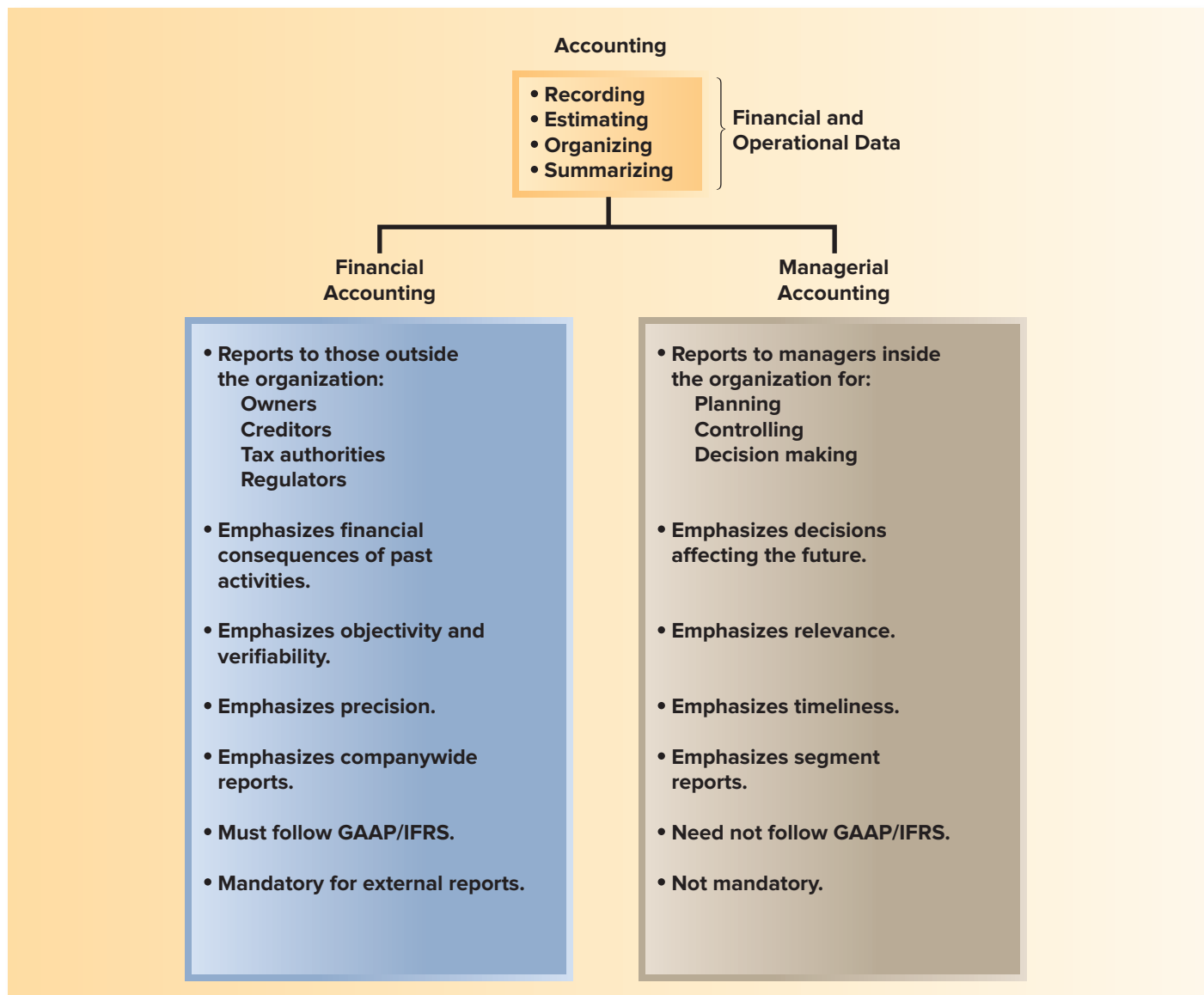


The prologue explains why **managerial accounting** is important to the future careers of all business students. It begins by answering two questions: (1) What is managerial accounting? and (2) Why does managerial accounting matter to your career? It concludes by discussing six topics—ethics, strategic management, enterprise risk management, corporate social responsibility, process management, and leadership—that define the business context for applying the quantitative aspects of managerial accounting.

WHAT IS MANAGERIAL ACCOUNTING?

Many students enrolled in this course will have recently completed an introductory *financial accounting* course. **Financial accounting** is concerned with reporting financial information to external parties, such as stockholders, creditors, and regulators. **Managerial accounting** is concerned with providing information to managers for use within the organization. Exhibit P-1 summarizes seven key differences between financial and managerial accounting. It recognizes that the fundamental difference between financial and managerial accounting is that financial accounting serves the needs of those

EXHIBIT P-1 Comparison of Financial and Managerial Accounting



outside the organization, whereas managerial accounting serves the needs of managers employed *inside* the organization. Because of this fundamental difference in users, financial accounting emphasizes the financial consequences of past activities, objectivity and verifiability, precision, and companywide performance, whereas managerial accounting emphasizes decisions affecting the future, relevance, timeliness, and *segment* performance. A **segment** is a part or activity of an organization about which managers would like cost, revenue, or profit data. Examples of business segments include product lines, customer groups (segmented by age, ethnicity, gender, volume of purchases, etc.), geographic territories, divisions, plants, and departments. Finally, financial accounting is mandatory for external reports and it needs to comply with rules, such as generally accepted accounting principles (GAAP) and international financial reporting standards (IFRS), whereas managerial accounting is not mandatory and it does not need to comply with externally imposed rules.

As mentioned in Exhibit P-1, managerial accounting helps managers perform three vital activities—*planning*, *controlling*, and *decision making*. **Planning** involves establishing goals and specifying how to achieve them. **Controlling** involves gathering feedback to ensure that the plan is being properly executed or modified as circumstances change. **Decision making** involves selecting a course of action from competing alternatives. Now let's take a closer look at these three pillars of managerial accounting.

Planning

Assume that you work for **Procter & Gamble (P&G)** and that you are in charge of the company's campus recruiting for all undergraduate business majors. In this example, your planning process would begin by establishing a goal such as: our goal is to recruit the "best and brightest" college graduates. The next stage of the planning process would require specifying how to achieve this goal by answering numerous questions such as:

- How many students do we need to hire in total and from each major?
- What schools do we plan to include in our recruiting efforts?
- Which of our employees will be involved in each school's recruiting activities?
- When will we conduct our interviews?
- How will we compare students to one another to decide who will be extended job offers?
- What salary will we offer our new hires? Will the salaries differ by major?
- How much money can we spend on our recruiting efforts?

The Financial Side of Running a Community Theatre

Formulating plans and creating budgets is an important part of running a community theater. For example, the **Manatee Players** is a theater group from Bradenton, Florida, that has seen its annual operating budget grow from \$480,000 to \$1.5 million over the last 10 years. The theater's ticket sales cover about 77% of its operating costs, with additional financial support coming from individual and corporate donors.

In addition to managing its revenues, the theater also seeks to control its costs in various ways—such as saving \$3,000 per year by bringing the production of its programs in-house. Rather than promoting individual shows, the group has decided to focus its marketing dollars on touting the entire season of shows. It also shifted a portion of its marketing budget away from traditional methods to more cost-effective social-media outlets.

Source: Brass, Kevin, "Let's Put on a Show," *The Wall Street Journal*, November 3, 2014, p. D7.

IN BUSINESS



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As you can see, there are many questions that need to be answered as part of the planning process. Plans are often accompanied by a *budget*. A **budget** is a detailed plan for the future that is usually expressed in formal quantitative terms. As the head of recruiting at P&G, your budget would include two key components. First, you would have to work with other senior managers inside the company to establish a budgeted amount of total salaries that can be offered to all new hires. Second, you would have to create a budget that quantifies how much you intend to spend on your campus recruiting activities.

Controlling

Once you established and started implementing P&G's recruiting plan, you would transition to the control process. This process would involve gathering, evaluating, and responding to feedback to ensure that this year's recruiting process meets expectations. It would also include evaluating the feedback in search of ways to run a more effective recruiting campaign next year. The control process would involve answering questions such as:

- Did we succeed in hiring the planned number of students within each major and at each school?
- Did we lose too many exceptional candidates to competitors?
- Did each of our employees involved in the recruiting process perform satisfactorily?
- Is our method of comparing students to one another working?
- Did the on-campus and office interviews run smoothly?
- Did we stay within our budget in terms of total salary commitments to new hires?
- Did we stay within our budget regarding spending on recruiting activities?

As you can see, there are many questions that need to be answered as part of the control process. When answering these questions your goal would be to go beyond simple yes or no answers in search of the underlying reasons why performance exceeded or failed to meet expectations. Part of the control process includes preparing *performance reports*. A **performance report** compares budgeted data to actual data in an effort to identify and learn from excellent performance and to identify and eliminate sources of unsatisfactory performance. Performance reports can also be used as one of many inputs to help evaluate and reward employees.

Although this example focused on P&G's campus recruiting efforts, we could have described how planning enables **FedEx** to deliver packages across the globe overnight, or how it helped **Apple** develop and market the iPad. We could have discussed how the control process helps **Pfizer**, **Eli Lilly**, and **Abbott Laboratories** ensure that their pharmaceutical drugs are produced in conformance with rigorous quality standards, or how **Kroger** relies on the control process to keep its grocery shelves stocked. We also could have looked at planning and control failures such as **Takata's** recall of more than 30 million defective driver-side air bags installed by a variety of automakers such as **Honda**, **Ford**, **Toyota**, and **Subaru**. In short, all managers (and that probably includes you someday) perform planning and controlling activities.

Decision Making

Perhaps the most basic managerial skill is the ability to make intelligent, data-driven decisions. Broadly speaking, many of those decisions revolve around the following three questions. *What* should we be selling? *Who* should we be serving? *How* should we execute? Exhibit P-2 provides examples of decisions pertaining to each of these three categories.

The left-hand column of Exhibit P-2 suggests that every company must make decisions related to the products and services that it sells. For example, each year **Procter & Gamble** must decide how to allocate its marketing budget across numerous brands that each generates over \$1 billion in sales as well as other brands that have promising growth potential. **Mattel** must decide what new toys to introduce to the market. **Southwest Airlines** must

EXHIBIT P-2 Examples of Decisions

What should we be selling?	Who should we be serving?	How should we execute?
What products and services should be the focus of our marketing efforts?	Who should be the focus of our marketing efforts?	How should we supply our parts and services?
What new products and services should we offer?	Who should we start serving?	How should we expand our capacity?
What prices should we charge for our products and services?	Who should pay price premiums or receive price discounts?	How should we reduce our capacity?
What products and services should we discontinue?	Who should we stop serving?	How should we improve our efficiency and effectiveness?

decide what ticket prices to establish for each of its thousands of flights per day. **General Motors** must decide whether to discontinue certain models of automobiles.

The middle column of Exhibit P-2 indicates that all companies must make decisions related to the customers that they serve. For example, **Sears** must decide how to allocate its marketing budget between products that tend to appeal to male versus female customers. **FedEx** must decide whether to expand its services into new markets across the globe. **Hewlett-Packard** must decide what price discounts to offer corporate clients that purchase large volumes of its products. A bank must decide whether to discontinue customers that may be unprofitable.

The right-hand column of Exhibit P-2 shows that companies also make decisions related to how they execute. For example, **Boeing** must decide whether to rely on outside vendors such as **Goodrich, Saab,** and **Rolls-Royce** to manufacture many of the parts used to make its airplanes. **Cintas** must decide whether to expand its laundering and cleaning capacity in a given geographic region by adding square footage to an existing facility or by constructing an entirely new facility. In an economic downturn, a manufacturer might have to decide whether to eliminate one 8-hour shift at three plants or to close one plant. Finally, all companies have to decide among competing improvement opportunities. For example, a company may have to decide whether to implement a new software system, to upgrade a piece of equipment, or to provide extra training to its employees.

This portion of the prologue has explained that the three pillars of managerial accounting are planning, controlling, and decision making. This book helps prepare you to become an effective manager by explaining how to make intelligent data-driven decisions, how to create financial plans for the future, and how to continually make progress toward achieving goals by obtaining, evaluating, and responding to feedback.

WHY DOES MANAGERIAL ACCOUNTING MATTER TO YOUR CAREER?

Many students feel anxious about choosing a major because they are unsure if it will provide a fulfilling career. To reduce these anxieties, we recommend deemphasizing what you cannot control about the future; instead focusing on what you can control right now. More specifically, concentrate on answering the following question: What can you do now to prepare for success in an unknown future career? The best answer is to learn skills that will make it easier for you to adapt to an uncertain future. You need to become adaptable!

Whether you end up working in the United States or abroad, for a large corporation, a small entrepreneurial company, a nonprofit organization, or a governmental entity, you'll need to know how to plan for the future, how to make progress toward achieving goals, and how to make intelligent decisions. In other words, managerial accounting skills are useful in just about any career, organization, and industry. If you commit energy to this course, you'll be making a smart investment in your future—even though you cannot clearly envision it. Next, we will elaborate on this point by explaining how managerial accounting relates to the future careers of business majors and accounting majors.

EXHIBIT P-3 Relating Managerial Accounting to Three Business Majors

	Marketing	Supply Chain Management	Human Resource Management
Planning	How much should we budget for TV, print, and Internet advertising?	How many units should we plan to produce next period?	How much should we plan to spend for occupational safety training?
	How many salespeople should we plan to hire to serve a new territory?	How much should we budget for next period's utility expense?	How much should we plan to spend on employee recruitment advertising?
Controlling	Is the budgeted price cut increasing unit sales as expected?	Did we spend more or less than expected for the units we actually produced?	Is our employee retention rate exceeding our goals?
	Are we accumulating too much inventory during the holiday shopping season?	Are we achieving our goal of reducing the number of defective units produced?	Are we meeting our goal of completing timely performance appraisals?
Decision Making	Should we sell our services as one bundle or sell them separately?	Should we transfer production of a component part to an overseas supplier?	Should we hire an on-site medical staff to lower our health care costs?
	Should we sell directly to customers or use a distributor?	Should we redesign our manufacturing process to lower inventory levels?	Should we hire temporary workers or full-time employees?

Business Majors

Exhibit P-3 provides examples of how planning, controlling, and decision making affect three majors other than accounting—marketing, supply chain management, and human resource management.

The left-hand column of Exhibit P-3 describes some planning, controlling, and decision-making applications in the marketing profession. For example, marketing managers make planning decisions related to allocating advertising dollars across various communication mediums and to staffing new sales territories. From a control standpoint, they may closely track sales data to see if a budgeted price cut is generating an anticipated increase in unit sales, or they may study inventory levels during the holiday shopping season so that they can adjust prices as needed to optimize sales. Marketing managers also make many important decisions such as whether to bundle services together and sell them for one price or to sell each service separately. They may also decide whether to sell products directly to the customer or to sell to a distributor, who then sells to the end consumer.

The middle column of Exhibit P-3 states that supply chain managers have to plan how many units to produce to satisfy anticipated customer demand. They also need to budget for operating expenses such as utilities, supplies, and labor costs. In terms of control, they monitor actual spending relative to the budget and closely watch operational measures, such as the number of defects produced relative to the plan. Supply chain managers make numerous decisions, such as deciding whether to transfer production of a component part to an overseas supplier. They also decide whether to invest in redesigning a manufacturing process to reduce inventory levels.

The right-hand column of Exhibit P-3 explains how human resource managers make a variety of planning decisions, such as budgeting how much to spend on occupational safety training and employee recruitment advertising. They monitor feedback related to numerous management concerns, such as employee retention rates and the timely completion of employee performance appraisals. They also help make many important decisions such as whether to hire on-site medical staff in an effort to lower health care costs, and whether to hire temporary workers or full-time employees in an uncertain economy.

For brevity, Exhibit P-3 does not include all business majors, such as finance, management information systems, and economics. Can you explain how planning, controlling, and decision-making activities would relate to these majors?

Accounting Majors

Many accounting graduates begin their careers working for public accounting firms that provide a variety of valuable services for their clients. Some of these graduates will build successful and fulfilling careers in the public accounting industry; however, most will leave public accounting at some point to work in other organizations. In fact, the **Institute of Management Accountants** (IMA) estimates that more than 80% of professional accountants in the United States work in nonpublic accounting environments (www.imanet.org).

The public accounting profession has a strong financial accounting orientation. Its most important function is to protect investors and other external parties by assuring them that companies are reporting historical financial results that comply with applicable accounting rules. Managerial accountants also have strong financial accounting skills. For example, they play an important role in helping their organizations design and maintain financial reporting systems that generate reliable financial disclosures. However, the primary role of managerial accountants is to partner with their coworkers within the organization to improve performance.

Given the 80% figure mentioned above, if you are an accounting major there is a very high likelihood that your future will involve working for a nonpublic accounting employer. Your employer will expect you to have strong financial accounting skills, but more importantly, it will expect you to help improve organizational performance by applying the planning, controlling, and decision-making skills that are the foundation of managerial accounting.

Professional Certification—A Smart Investment If you plan to become an accounting major, the Certified Management Accountant (CMA) and Chartered Global Management Accountant (CGMA) designations are globally respected credentials that will increase your credibility, upward mobility, and compensation.

The CMA exam is sponsored by the Institute of Management Accountants (IMA) in Montvale, New Jersey. To become a CMA requires membership in the IMA, a bachelor's degree from an accredited college or university, two continuous years of relevant professional experience, and passage of the CMA exam. Exhibit P-4 summarizes the topics covered in the IMA's two-part CMA exam. For brevity, we are not going to define all the terms included in this exhibit. Its purpose is simply to emphasize that the CMA exam focuses on the planning, controlling, and decision-making skills that are critically

A Networking Opportunity

IN BUSINESS

The **Institute of Management Accountants** (IMA) is a network of more than 70,000 accounting and finance professionals from over 120 countries. Every year the IMA hosts a student leadership conference that attracts 300 students from over 50 colleges and universities. Guest speakers at past conferences have discussed topics such as leadership, advice for a successful career, how to market yourself in a difficult economy, and excelling in today's multigenerational workforce. One student who attended the conference said, "I liked that I was able to interact with professionals who are in fields that could be potential career paths for me." For more information on this worthwhile networking opportunity, contact the IMA at the phone number and website shown below.

Source: Conversation with Jodi Ryan, the Institute of Management Accountants' Director, Education/Corporate Partnerships. (201) 474-1556 or visit its website at www.imanet.org.

EXHIBIT P-4 CMA Exam
Content Specifications

<i>Part 1</i>	<i>Financial Reporting, Planning, Performance and Control</i>
	External financial reporting decisions
	Planning, budgeting, and forecasting
	Performance management
	Cost management
	Internal controls
<i>Part 2</i>	<i>Financial Decision Making</i>
	Financial statement analysis
	Corporate finance
	Decision analysis
	Risk management
	Investment decisions
	Professional ethics

important to all managers. Information about becoming a CMA is available on the IMA's website (www.imanet.org) or by calling 1-800-638-4427.

The CGMA designation is co-sponsored by the **American Institute of Certified Public Accountants** (AICPA) and the **Chartered Institute of Management Accountants** (CIMA), each of whom provides a distinct pathway to becoming a CGMA. The AICPA pathway requires a bachelor's degree in accounting (accompanied by a total of 150 college credit-hours), passage of the Certified Public Accountant (CPA) exam, membership in the AICPA, three years of relevant management accounting work experience, and passage of the CGMA exam—which is a case-based exam that focuses on technical skills, business skills, leadership skills, people skills, and ethics, integrity, and professionalism. Notice that the AICPA's pathway to becoming a CGMA requires passage of the multipart CPA exam, which emphasizes rule-based compliance—assurance standards, financial accounting standards, business law, and the tax code. Information on becoming a CGMA is available at www.cgma.org.

IN BUSINESS
How's the Pay?

The **Institute of Management Accountants** has created the following table that allows individuals to estimate what their salary would be as a management accountant.

			Your Calculation
Start with this base amount		\$48,990	\$48,990
If you are top-level management	ADD	\$58,043	
OR, if you are senior-level management	ADD	\$35,855	
OR, if you are middle-level management	ADD	\$15,086	
Number of years in the field _____	TIMES	\$905	
If you have an advanced degree	ADD	\$14,509	
If you hold the CMA	ADD	\$15,308	
If you hold the CPA	ADD	\$14,509	_____
Your estimated salary level			=====

For example, if you make it to top-level management in 10 years, have an advanced degree and a CMA, your estimated salary would be \$145,900 [$\$48,990 + \$58,043 + (10 \times \$905) + \$14,509 + \$15,308$].

Source: Krumweide, Kip, "IMA's Global Salary Survey," *Strategic Finance*, March 2017, pp. 29–39.

MANAGERIAL ACCOUNTING: BEYOND THE NUMBERS

Exhibit P-5 summarizes how each chapter of the book teaches measurement skills that managers use on the job every day. For example, Chapter 8 teaches you the measurement skills that managers use to answer the question—how should I create a financial plan for next year? Chapter 9 teaches you the measurement skills that managers use to answer the question—how well am I performing relative to my plan? Chapter 4 teaches you measurement skills related to product and customer profitability. However, it is vitally important that you also understand managerial accounting involves more than just “crunching numbers.” To be successful, managers must complement their measurement skills with six business management perspectives that “go beyond the numbers” to enable intelligent planning, control, and decision making.

Chapter Number	The Key Question from a Manager’s Perspective
Chapter 1	What cost classifications do I use for different management purposes?
Chapter 2	How much does it cost us to manufacture customized jobs for each of our customers?
Chapters 3 & 5	What is the value of our ending inventory and cost of goods sold for external reporting purposes?
Chapter 4	How profitable is each of our products and customers?
Chapter 6	How will my profits change if I change my selling price, sales volume, or costs?
Chapter 7	How should the income statement be presented?
Chapter 8	How should I create a financial plan for next year?
Chapter 9	How well am I performing relative to my plan?
Chapter 10	What performance measures should we monitor to ensure that we achieve our strategic goals?
Chapter 11	How do I quantify the financial impact of pursuing one course of action versus another?
Chapter 12	How do I make long-term capital investment decisions?
Chapter 13	What cash inflows and outflows explain the change in our cash balance?
Chapter 14	How can we analyze our financial statements to better understand our performance?

EXHIBIT P-5

Measurement Skills: A Manager’s Perspective

An Ethics Perspective

Ethical behavior is the lubricant that keeps the economy running. Without that lubricant, the economy would operate much less efficiently—less would be available to consumers, quality would be lower, and prices would be higher. In other words, without fundamental trust in the integrity of business, the economy would operate much less efficiently. Thus, for the good of everyone—including profit-making companies—it is vitally important that business be conducted within an ethical framework that builds and sustains trust.

Code of Conduct for Management Accountants The **Institute of Management Accountants** (IMA) of the United States has adopted an ethical code called the *Statement of Ethical Professional Practice* that describes in some detail the ethical responsibilities of management accountants. Even though the standards were developed specifically for management accountants, they have much broader application. The standards consist of two parts that are presented in full in Exhibit P-6. The first part provides general guidelines