

Managerial Accounting

Eleventh Edition

Ray H. Garrison, D.B.A., CPA

Professor Emeritus Brigham Young University

Eric W. Noreen, Ph.D., CMA

Professor Emeritus University of Washington

Peter C. Brewer, Ph.D., CPA

Miami University—Oxford, Ohio



Boston Burr Ridge, IL Dubuque, IA Madison, WI New York San Francisco St. Louis Bangkok Bogotá Caracas Kuala Lumpur Lisbon London Madrid Mexico City Milan Montreal New Delhi Santiago Seoul Singapore Sydney Taipei Toronto

Dedication

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



MANAGERIAL ACCOUNTING

Published by McGraw-Hill/Irwin, a business unit of The McGraw-Hill Companies, Inc., 1221 Avenue of the Americas, New York, NY, 10020. Copyright © 2006, 2003, 2000, 1997, 1994, 1991, 1988, 1985, 1982, 1979, 1976 by The McGraw-Hill Companies, Inc. All rights reserved. No part of this publication may be reproduced or distributed in any form or by any means, or stored in a database or retrieval system, without the prior written consent of The McGraw-Hill Companies, Inc., including, but not limited to, in any network or other electronic storage or transmission, or broadcast for distance learning.

Some ancillaries, including electronic and print components, may not be available to customers outside the United States.

This book is printed on acid-free paper.

234567890 DOW/DOW 098765

ISBN 0-07-283494-3 (student edition)

Editorial director: Brent Gordon
Publisher: Stewart Mattson
Executive editor: Tim Vertovec
Developmental editor I: Sarah Wood
Marketing manager: Marc Chernoff
Media producer: Elizabeth Mavetz
Lead project manager: Pat Frederickson
Production supervisor: Debra R. Sylvester

Lead designer: Pam Verros

Photo research coordinator: Kathy Shive
Photo researcher: Charlotte Goldman
Senior supplement producer: Carol Loreth
Senior digital content specialist: Brian Nacik
Cover photograph: © Daryl Benson/Masterfile

Typeface: 10.5/12 Times Roman Compositor: Cenveo Indianapolis

Printer: R. R. Donnelley

Library of Congress Cataloging-in-Publication Data

Garrison, Ray H.

Managerial accounting / Ray H. Garrison, Eric W. Noreen.—11th ed. / Ray H. Garrison, Eric W. Noreen, Peter C. Brewer.

p. cm.

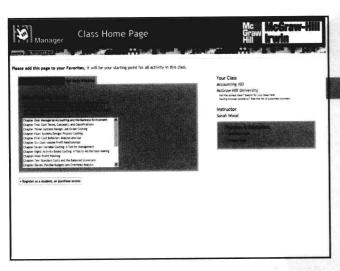
Various multi-media instructional materials are available to supplement the text. Includes index.

ISBN 0-07-283494-3 (alk. paper) — ISBN 0-07-298617-4 (aie : alk. paper)

1. Managerial accounting. I. Noreen, Eric W. II Brewer, Peter C. III. Title.

HF5657.4G37 2006 658.15'11—dc22

2004056942



HomeworkManager

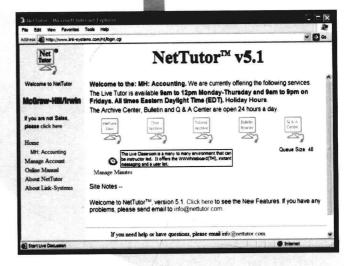


This online homework management solution contains the textbook's end-of-chapter material.

Faculty have the option to build assignments from static and algorithmic versions of the end-ofchapter material or build self-graded guizzes from the test bank.

Features:

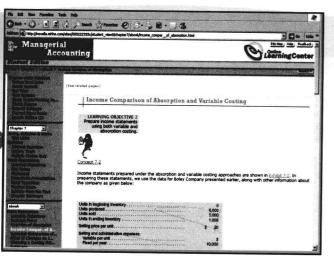
- · assigns book-specific problems/exercises to students
- · provides integrated testbank questions for quizzes and tests
- automatically grades assignments and guizzes and stores results in one gradebook



NetTutor

NetTutorTM Only available through OnePass,

NetTutor connects students with qualified tutors online. Students can submit questions online and receive a response instantly, or within 24 hours.



Interactive Online Version

of the Textbook



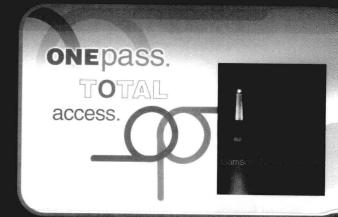
Learning Center

In addition to the textbook, students

can rely on this online version of the text for a convenient way to study. The interactive content is integrated with Homework Manager to give students quick access to relevant content as they work through problems, exercises, and practice quizzes.

Features:

- online version of the text is integrated with Homework Manager
- students referred to sections of the online book as they tackle an assignment or take a practice quiz



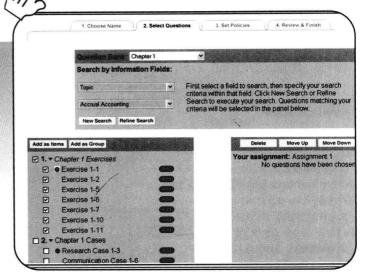
McGraw-Hill's OnePass eliminates the frustration of remembering multiple access codes for different online resources. Now students can use the access code found on their OnePass card to register and create one password for access to their book's online resources. By having just one access code for everything, students can go back and forth between tutorials as they study. And instructors can use OnePass to integrate these supplements into a learning path that fits a specific teaching style.

Homework Manager helps you



McGraw-Hill's Homework Manager

Problems and exercises from the book as well as questions from the testbank have been integrated into Homework Manager to give you many options as you deliver assignments and quizzes to students online. You can choose from static or algorithmic questions and have graded results automatically stored in your gradebook.



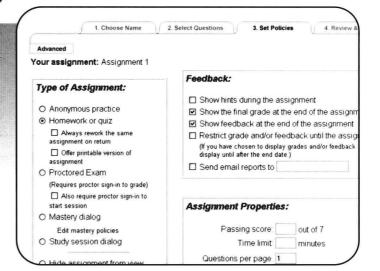
Assign coursework online

blem 2-13: (Appendix 2A) Classification of Labor Costs [LO8] Lynn Bjorland is employed by Southern Laboratories, Inc., and is directly involved in preparing the company's half (i.e., \$36 per hour) for any work in excess of 40 hours per week. 1. Suppose that in a given week Lynn works 45 hours. Compute Lynn's total wages for the week. How much 2. Suppose in another week that Lynn works 50 hours but is idle for 4 hours during the week due to equip allocated to direct labor cost? To manufacturing overhead cost? 3. Southern Laboratories has an attractive package of fringe benefits that costs the company 58 for each 1 but is idle for 3 hours due to material shortages. Compute Lynn's total wages and fringe benefits for the Lynn's wages and fringe benefits for the week would be allocated to direct labor cost? To manufacturin 4. Refer to the data in (3) above. If the company treats that part of fringe benefits relating to direct labor to direct labor cost? To manufacturing overhead cost? 1. Total wages for the week: Regular time: 40 hours × \$24 per hour Overtime: 5 hours × \$36 per hour 180 Total Wages Allocation of total wages: Direct labor: 45 hours × \$24 per hour Manufacturing overhead: 5 hours × \$12 per hour

efficiently manage your class.

22 Control how content is presented.

Homework Manager gives you a flexible and easy way to present coursework to students. You determine which questions to ask and how much help students will receive as they work through assignments. For example, you can determine the number of attempts a student can make with each problem; provide hints and feedback with each question, including references to the online version of the text; and much more.



Track student progress.

3 ton . O . E & D Search of feruntes 6 Hade X Assignments are graded automatically, Month v Day v Year v [2] Heath + Day + Year + with the results stored in your private gradebook. Detailed results let you see at a glance how each student does on an assignment or an individual problem. You can even see how many attempts it took them to solve it. You can monitor how the whole class does Jon J. Agard on each problem, and even exactly where individual students might need extra help. Login: augilate ID: 6009579012436415 Class: Acct 284 Clem O 1/28/04 at 5:34 PM. homework 9.63 Time taken 30 min 2/8/04 at 6/29 PM homework 9.91 Time taken 53 minutes.

Professors can allow to give students helpful feedback.

Auto-grading and feedback.

Ouestion 1: Score 6.5/8

Exercise 2-1: Using Cost Terms [LO2, LO5, LO7]

Following are a number of cost terms introduced in the chapter:

Period cost	Fixed cost
Variable cost	Prime cost
Opportunity cost	Conversion cost
Product cost	Sunk cost

Choose the cost term or terms above that most appropriately describe the costs identified in each of the following situations. A cost term can be used more than once.

- Crestline Books, Inc., prints a small book titled The Pocket Speller. The paper going into the manufacture of the book would be called direct materials and classified as a Product cost (6%). In terms of cost behavior, the paper could also be described as a Product cost. (0%) with respect to the number of books printed.
- Instead of compiling the words in the book, the author hired by the company could have earned considerable fees consulting with business organizations. The consulting fees forgone by the author would be called **Opportunity** cost (6%).
- The paper and other materials used in the manufacture of the book, combined with the direct labor cost involved, would be called Prime cost (6%).
- The salary of Crestline Books' president would be classified as a
 Product cost (%), and the salary will appear on the
 income statement as an expense in the time period in which it is incurred.
- 5. Depreciation on the equipment used to print the book would be classified by Crestline Books as a Product cost (6%). However, depreciation on any equipment used by the company in selling and administrative activities would be classified as a Period cost (6%). In terms of cost behavior, depreciation would probably be classified as a Fixed cost (6%) with respect to the number of books printed.
- 6. A **Product cost** (6%) is also known as an inventoriable cost,

Exercise 2-1: Using Cost Terms [LO2, LO5, LO7]

Following are a number of cost terms introduced in the chapter:

Period cost	Phoed cost
Variable cost	Prime cost
Opportunity cost	Conversion cost
Product cost	Sunk cost

Choose the cost term or terms above that most appropriately describe the costs identified in each of the following situations. A cost term can be used more than once.

- Crestline Books, Inc., prints a small book titled The Pocket Speller. The paper going into the manufacture of the book would be called direct materials and classified as a Product cost. In terms of cost behavior, the paper could also be described as a variable cost with respect to the number of books printed.
- Instead of compiling the words in the book, the author hired by the company could have earned considerable fees consulting with business organizations. The consulting fees forgone by the author would be called Opportunity cost.
- The paper and other materials used in the manufacture of the book, combined with the direct labor cost involved, would be called Prime cost.
- The salary of Crestline Books' president would be classified as a <u>Period cost</u>, and the salary will appear on the income statement as an expense in the time period in which it is incurred.
- 5. Depreciation on the equipment used to print the book would be classified by Crestline Books as a Product cost. However, depreciation on any equipment used by the company in selling and administrative activities would be classified as a Period cost. In terms of cost behavior, depreciation would probably be classified as a Pizzed cost with respect to the number of books printed.

A three death worth is also known as an immentariable cost since

Immediately after finishing an assignment or quiz, students can compare their answers side by side with the detailed solutions. Students can try again with new numbers to see if they have mastered the concept.

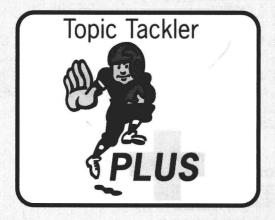
X NCOR

Garrison—Leading Textbook, Leading Technology

The wide array of technology assets that come with Managerial Accounting aren't add-ons thrown in at the last minute: They're extensions of the textbook itself, that work in unison to make managerial accounting as easy as possible to learn.

You may be tempted to put aside your CD and registration cards, planning to "get to them later"; you may even want to discard them outright. **Don't do it!** These supplements can offer you tremendous help as you go through the course; the sooner you become familiar with them, the sooner you can enjoy the immense benefits they have to offer.

Here's what you need to know to get the most out of Managerial Accounting's technology package.



Topic Tackler Plus

Topic Tackler provides focused help on the two most challenging topics in every chapter. How do you use Topic Tackler? Take your pick:

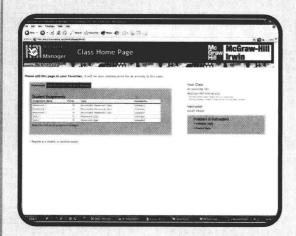
- Watch a short, high-quality video presentation.
- · Review the topic highlights with a graphical slide show.
- Practice on numerous interactive exercises.
- Follow the links to more information on the World Wide Web.

However you want to use it, Topic Tackler is the perfect tool for review sessions, or just for some quick reinforcement as you read. Look for the Topic Tackler icon while you read—that means you'll find Topic Tackler ready to help you on that particular subject.

Turn to the inside front cover to learn how to get started using Topic Tackler!



OnePass eliminates the frustration of remembering multiple access codes for different online resources. Now students can use the access code found on their OnePass card to register and create one password for access to their book's online resources. By having just one access code for everything, students can go back and forth between tutorials as they study.

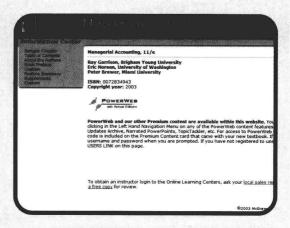


McGraw-Hill's Homework Manager

Practice makes perfect, and when it comes to managerial accounting, there's often no better practice than working with the numbers yourself. *Managerial Accounting* provides a great many problems for your instructor to assign or for you to do on your own, but there are only so many problems you can fit into a textbook. That's where McGraw-Hill's Homework Manager comes in.

McGraw-Hill's Homework Manager duplicates problems from the textbook in a convenient, online format. You can work problems and receive instant feedback on your answers, taking as many tries as you want. Because McGraw-Hill's Homework Manager uses specialized algorithms to generate values for each problem, it can produce infinite variations of certain text problems just by changing the values—you can practice on the same problem as many times as you need to, with fresh figures to work with every time.

Your instructor will have already decided whether to make McGraw-Hill's Homework Manager a part of your course, and he or she will create a course account and generate the assignments for you to do. Your McGraw-Hill's Homework Manager user guide will include an access code enabling you to enroll; refer to the guide for help in creating your account. Talk to your instructor to be sure McGraw-Hill's Homework Manager is available for you as you begin the course.



Online Learning Center (OLC)

When it comes to getting the most out of your textbook, the Online Learning Center is the place to start. The OLC follows *Managerial Accounting* chapter by chapter, offering all kinds of supplementary help for you as you read. OLC features include:

- · Learning objectives
- Chapter overviews
- Internet-based activities
- Self-grading quizzes
- · Links to text references
- Links to professional resources on the Web
- Job opportunity information
- Internet factory tours

Before you even start reading Chapter 1, go to this address and bookmark it:

www.mhhe.com/garrison11e

Remember, your Online Learning Center was created specifically to accompany Managerial Accounting—so don't let this great resource pass you by!

Supplements Student

Topic Tackler Plus CD-ROM

ISBN 0072986166

Free with the text, the Topic Tackler CD-ROM helps students master difficult concepts in managerial accounting through a creative, interactive learning process. Designed for study outside the classroom, this multimedia CD delves into chapter concepts with graphical slides and diagrams, Web links, video clips, and animations, all centered around engaging exercises designed to put students in control of their learning of managerial accounting topics.

Workbook/Study Guide

ISBN 0072986131

This study aid provides suggestions for studying chapter material, summarizes essential points in each chapter, and tests students' knowledge using self-test questions and exercises.

Ready Notes

ISBN 0073080667

This booklet provides Ready Slide exhibits in a workbook format for efficient note taking.

Student Lecture Aid

ISBN 007298614X

Much like the Ready Notes, this booklet offers a hard-copy version of all the Teaching Transparencies. Students can annotate the material during the lecture and take notes in the space provided.

Working Papers

ISBN 0072986123

This study aid contains forms that help students organize their solutions to homework problems.

Excel Templates

Prepared by Jack Terry of ComSource Associates, Inc., this spreadsheet-based software uses Excel to solve selected problems and cases in the text. These selected problems and cases are identified in the margin of the text with an appropriate icon. The Student Excel Templates are only available on the text's Web site.

Telecourse Guide

ISBN 0072986115

This study guide ties the Dallas County Community College Telecourse directly to this text.

Acknowledgments

Suggestions have been received from many of our colleagues throughout the world who have used the prior edition of Managerial Accounting. This is vital feedback that we rely on in each edition. Each of those who have 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. In this regard, the following professors provided feedback that was enormously helpful in preparing the eleventh edition of Managerial Accounting:

Noel Addy, Mississippi State University

Jack Bailes, Oregon State University

Mohamed Bayou, University of Michigan - Dearborn

Linda Benz, Jefferson Community College

Karen Bird, University of Michigan

Phillip A. Blanchard, University of Arizona

Lisa Bonitati Church, Rhode Island College

Arthur Braza, Three Rivers Community College

Sarah Brown, University of North Alabama

George R. Cash, Alabama A&M University

Kimberly Charron, University of Nevada Las Vegas

Julie Chenier, Louisiana State University - Baton Rouge

Richard Claire, Cañada College

Antoinette Clegg, Palm Beach Community College

Nolan Clemens, Jr., University of Dallas

Deb Cosgrove, University of Nebraska - Lincoln

Rita Counts, Radford University

Kreag Danvers, Wayne State University

Betty David, Francis Marion University

Charles Davis, Baylor University

Dr. Henry Day, Mount Olive College

Patricia A. Doherty, Boston University

Carleton Donchess, Bridgewater State College

Roger Doost, Clemson University

Robert Deutsch, Campbell University

Barbara Eide, University of Wisconsin - La Crosse

Dennis Elam, Southwest Texas University

Jack R. Fay, Pittsburgh State University

Richard Fleischman, John Carroll University

Karen M. Foust, Tulane University

Susan Coomer Galbreath, Lipscomb University

Les Heitger, Indiana University - Bloomington

Sharon J. Huxley, Teikyo Post University

Wayne Ingalls, University of Maine

Gene Johnson, Clark College

Celina Jozsi, University of South Florida

Carl Keller, Indiana University - Purdue University at Ft. Wayne

Zafar Khan, Eastern Michigan University

Mike Klickman, University of Dallas

Frank Kopczynski, Plymouth State University

Barbara Kren, Marquette University

Kip Krumwiede, Brigham Young University

Sandra S. Lang, McKendree College

Chor T. Lau, California State University - Los Angeles

Keith Leeseberg, Manatee Community College

C. Angela Letourneau, Winthrop University

Robert Lin, California State University - Hayward

Larry Logan, University of Massachusetts - Dartmouth

Dr. Tim Lowder, Francis Marion University

Suzanne Lowensohn, Colorado State University

Gina Lord, Santa Rosa Junior College

Dorinda Lynn, Pensacola Jr. College

Lois Mahoney, University of Central Florida

Robert McConkie, Bethany College

Helga M. Mervine, Mercyhurst College

Betty K. Mullins, Hesser College

Kevin Nathan, Oakland University

Marguerite Nagy, Cuyahoga Community College

Kevin Nathan, Oakland University

Emeka T. Nwaeze, Rutgers University

Margaret O'Reilly-Allen, Rider University

Janet L. O'Tousa, University of Notre Dame

Emil A. Radosevich, Alberquerque Technical Vocational

Institute

Judy Ann Ramage, Christian Brothers University

Martha Rassi, Glendale Community College

Dr. David Remmele, University of Wisconsin-Whitewater

Kimberley A. Richardson, James Madison University

John C. Roberts, St. Johns River Community College

Marilyn Salter, University of Central Florida

Angela Sandberg, Jacksonville State University

George Schmelzle, Indiana Purdue Fort Wayne

James A. Schweikart, Boston University

Ann Selk, University of Wisconsin, Green Bay

Lewis Shaw, Suffolk University

Ieff Shields, University of Southern Maine

John W. Shishoff, University of Dayton

Khim L. Sim, Western New England College

Bonnie Simmons, Elmburst College

Kenneth Sinclair, Lehigh University

Douglas L. Smith, Samford University

Toni Smith, University of New Hampshire

Beverly Soriano, Framingham State College

Philip Stickney, Cochise College

Jeffrey M. Storm, Lincoln Land Community College

Suzy Summers, Furman University

Lateef Syed, Dominican University

Rita N. Taylor, University of Cincinnati

Gerald Thalman, North Central College

Ralph Tower, Wake Forest University

Michael Tyler, Barry University

Sankaran Venkateswar, Trinity University

Ron Vogel, College of Eastern Utah

Frank Walker, Lee University

Dan Ward, University of Louisiana at Lafayette

Marcia Weidenmier, Texas Christian University

Charles Wellens, Fitchburg State College

Micheline West, New Hampshire Community Technical

College - Manchester

Jack Wiehler, San Joaquin Delta College

Priscilla Wisner, American Graduate School of International

Business

Dr. Rahnl Wood, Northwest Missouri State University

Eric Yap, Ohlone College

Jennifer Yin, Rutgers University

We are grateful for the outstanding support from McGraw-Hill/Irwin. In particular, we would like to thank Brent Gordon, Editorial Director; Stewart Mattson, Publisher; Tim Vertovec, Executive Editor; Sarah Wood, Developmental Editor; Marc Chernoff, Marketing Manager; Pat Frederickson, Lead Project Manager; Debra Sylvester, Production Supervisor; Pam Verros, Lead Designer; Carol Loreth, Senior Supplement Producer; Kathy Shive, Photo Research Coordinator, Elizabeth Mayetz, Media Producer; Dan Wiencek, Advertising Manager; and Erwin Llereza, Advertising Manager.

Finally, we would like to thank Beth Woods and Barbara Schnathorst for working so hard to ensure an error-free eleventh edition.

We are grateful to the Institute of Certified Management Accountants for permission to use questions and/or unofficial answers from past Certificate in Management Accounting (CMA) examinations. Likewise, we thank the American Institute of Certified Public Accountants, the Society of Management Accountants of Canada, and the Chartered Institute of Management Accountants (United Kingdom) for permission to use (or to adapt) selected problems from their examinations. These problems bear the notations CPA, SMA, and CIMA respectively.

Ray H. Garrison • Eric Noreen • Peter Brewer

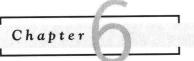
CONTENTS

	D-11 21
Chapter	Problems 31 Group and Internet Exercises 33
Managerial Accounting and the	Group and Internet Exercises 55
Business Environment 2	
The Work of Management and the Need for Managerial	Chapter
Accounting Information 4	Chapter
Planning 5	Cost Terms, Concepts, and
Directing and Motivating 5	Classifications 34
Controlling 5	General Cost Classifications 36
The Planning and Control Cycle 6	Manufacturing Costs 36
The Planning and Control Cycle 6	Direct Materials 36
Comparison of Financial and Managerial Accounting 6	Direct Labor 36
Emphasis on the Future 6	Manufacturing Overhead 37
Relevance of Data 8	Nonmanufacturing Costs 38
Less Emphasis on Precision 8	Product Costs versus Period Costs 38
Segments of an Organization 8	Product Costs 38
Generally Accepted Accounting Principles	Period Costs 39
(GAAP) 9	Cost Classifications on Financial Statements 41
Managerial Accounting—Not Mandatory 9	The Balance Sheet 41
Organizational Structure 9	The Income Statement 42
Decentralization 9	Schedule of Cost of Goods Manufactured 43
Line and Staff Relationships 10	Product Cost Flows 45
The Chief Financial Officer 11	Inventoriable Costs 45
The Changing Business Environment 12	An Example of Cost Flows 46
Just-In-Time (JIT) 12	Cost Classifications for Predicting Cost Behavior 48
JIT Consequences 14	Variable Cost 48 Fixed Cost 49
Benefits of a JIT System 15 Total Quality Management (TQM) 15	
Process Reengineering 16	Cost Classifications for Assigning Costs to Cost Objects 50
The Theory of Constraints (TOC) 17	Direct Cost 50
International Competition 18	Indirect Cost 50
E-Commerce 19	Cost Classifications for Decision Making 51
Professional Ethics 20	Differential Cost and Revenue 51
Code of Conduct for Management Accountants 22	Opportunity Cost 52
Company Codes of Conduct 24	Example 1 52
Codes of Conduct on the International Level 26	Example 2 52
The Certified Management Accountant (CMA) 27	Example 3 52
Summary 27	Sunk Cost 53
Glossary 28	Summary 53
Questions 29	Review Problem 1: Cost Terms 54
Exercises 30	Review Problem 2: Schedule of Cost of Goods Manufactured and Income Statement 55
viii	namyacimica ana meetic suurium 33

Contents ix

Glossary 57	Use of Information Technology 112
Appendix 2A: Further Classification of Labor Costs 58	Summary 113
Appendix 2B: Cost of Quality 59	Review Problem: Job-Order Costing 114
Questions 68	Glossary 116
Exercises 69	Appendix 3A: The Predetermined Overhead Rate and
Problems 73	Capacity 117
Cases 82	Questions 118
Group and Internet Exercises 84	Exercises 119
	Problems 126
	Cases 138
Chapter	Group and Internet Exercises 142
Systems Design: Job-Order Costing 86	
Process and Job-Order Costing 88	Chapter
Process Costing 88	
Job-Order Costing 89	Systems Design: Process Costing 144
Job-Order Costing—An Overview 89	Comparison of Job-Order and Process Costing 146
Measuring Direct Materials Cost 90	Similarities between Job-Order and Process
Job Cost Sheet 91	Costing 146
Measuring Direct Labor Cost 91	Differences between Job-Order and Process
Application of Manufacturing Overhead 93	Costing 146
Using the Predetermined Overhead Rate 94	A Perspective of Process Cost Flows 147
The Need for a Predetermined Rate 94	Processing Departments 147
Choice of an Allocation Base for Overhead Cost 96	The Flow of Materials, Labor, and Overhead Costs 148
Computation of Unit Costs 96	Materials, Labor, and Overhead Cost Entries 148
Summary of Document Flows 96	Materials Costs 149
Job-Order Costing—The Flow of Costs 98	Labor Costs 149
The Purchase and Issue of Materials 98	Overhead Costs 150
Issue of Direct and Indirect Materials 98	Completing the Cost Flows 150
Issue of Direct Materials Only 99	Equivalent Units of Production 152
Labor Cost 99	Weighted-Average Method 152
Manufacturing Overhead Costs 100	Production Report—Weighted-Average Method 153
The Application of Manufacturing Overhead 101 The Concept of a Clearing Account 101	Step 1: Prepare a Quantity Schedule and Compute the Equivalent Units 155
Nonmanufacturing Costs 102	Step 2: Compute Costs per Equivalent Unit 156
Cost of Goods Manufactured 103	Step 3: Prepare a Cost Reconciliation 156
Cost of Goods Sold 103	Example of a Cost Reconciliation 156
Summary of Cost Flows 104	Operation Costing 159
Problems of Overhead Application 104	Summary 159
Underapplied and Overapplied Overhead 104	Review Problem: Process Cost Flows and Reports 160
Disposition of Under- or Overapplied Overhead	Glossary 162
Balances 109	Appendix 4A: FIFO Method 162
Closed Out to Cost of Goods Sold 109	Questions 168
Allocated between Accounts 110	Exercises 169
A General Model of Product Cost Flows 110	Problems 174
Multiple Predetermined Overhead Rates 110	Cases 180
Job-Order Costing in Service Companies 111	Group and Internet Exercises 181

Chapter
Cost Behavior: Analysis and Use 182
Types of Cost Behavior Patterns 184
Variable Costs 184
The Activity Base 185
Extent of Variable Costs 186
True Variable versus Step-Variable Costs 187
True Variable Costs 187
Step-Variable Costs 187
The Linearity Assumption and the Relevant Range 188
Fixed Costs 188
Types of Fixed Costs 190
Committed Fixed Costs 190
Discretionary Fixed Costs 191
The Trend toward Fixed Costs 192
Is Labor a Variable or a Fixed Cost? 192
Fixed Costs and the Relevant Range 193
Mixed Costs 194
The Analysis of Mixed Costs 196
Diagnosing Cost Behavior with a Scattergraph Plot 198
The High-Low Method 201
The Least-Squares Regression Method 204
Multiple Regression Analysis 206
The Contribution Format Income Statement 206
Why a New Income Statement Format? 206
The Contribution Approach 207
Summary 207
Review Problem 1: Cost Behavior 208
Review Problem 2: High-Low Method 209
Glossary 210
Appendix 5A: Least-Squares Regression Using
Microsoft® Excel 210
Questions 212
Exercises 213
Problems 217
Cases 223
Group and Internet Exercises 227



Cost-Volume-Profit Relationships 228

The Basics of Cost-Volume-Profit (CVP) Analysis 231
Contribution Margin 231
CVP Relationships in Graphic Form 233

Preparing the CVP Graph 233

Contribution Margin Ratio (CM Ratio) 235

Some Applications of CVP Concepts 236

Change in Fixed Cost and Sales Volume 236

Change in Variable Costs and Sales Volume 237

Change in Fixed Cost, Sales Price, and Sales

Volume 237

Change in Variable Cost, Fixed Cost, and Sales

Volume 238

Change in Regular Sales Price 239

Break-Even Analysis 239

Break-Even Computations 239

The Equation Method 239

The Contribution Margin Method 240

Target Profit Analysis 241

The CVP Equation 241

The Contribution Margin Approach 242

The Margin of Safety 242

CVP Considerations in Choosing a Cost Structure 244

Cost Structure and Profit Stability 244

Operating Leverage 246

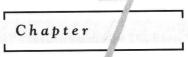
Structuring Sales Commissions 247

The Concept of Sales Mix 248

The Definition of Sales Mix 248
Sales Mix and Break-Even Analysis 248

Assumptions of CVP Analysis 250

Summary 251
Review Problem: CVP Relationships 251
Glossary 254
Questions 254
Exercises 255
Problems 260
Cases 268
Group and Internet Exercises 272



Variable Costing: A Tool for Management 274

Overview of Absorption and Variable Costing 276

Absorption Costing 276
Variable Costing 276
Unit Cost Computations 277

Income Comparison of Absorption and Variable Costing 278

Extended Comparison of Income Data 280

Contents xi

Effect of Changes in Production on Net Operating Income 284

Variable Costing 285 Absorption Costing 285

Choosing a Costing Method 288

The Impact on the Manager 288

CVP Analysis and Absorption Costing 289

Decision Making 290

External Reporting and Income Taxes 290

Advantages of Variable Costing and the Contribution Approach 291

Variable Costing and the Theory of Constraints 292
Impact of JIT Inventory Methods 292

Summary 293

Review Problem: Contrasting Variable and Absorption

Costing 293

Glossary 295

Questions 295

Exercises 296

Problems 300

Cases 306

Group and Internet Exercises 310



Activity-Based Costing: A Tool to Aid Decision Making 312

How Costs Are Treated under Activity-Based Costing 315

Nonmanufacturing Costs and Activity-Based Costing 315

Manufacturing Costs and Activity-Based Costing 315

Plantwide Overhead Rate 315

Departmental Overhead Rates 316

The Costs of Idle Capacity in Activity-Based Costing 317

Designing an Activity-Based Costing (ABC) System 317

Step 1: Identify and Define Activities and Activity Cost Pools 320

The Mechanics of Activity-Based Costing 323

Step 2: Whenever Possible, Directly Trace Overhead Costs to Activities and Cost Objects 323

Step 3: Assign Costs to Activity Cost Pools 324

Step 4: Calculate Activity Rates 327

Step 5: Assign Costs to Cost Objects 328

Step 6: Prepare Management Reports 330

Comparison of Traditional and ABC Product Costs 330

Product Margins Computed Using the Traditional Cost System 330

The Differences between ABC and Traditional Product Costs 331

Targeting Process Improvements 335

Activity-Based Costing and External Reports 337 The Limitations of Activity-Based Costing 338

Summary 339

Review Problem: Activity-Based Costing 340

Glossary 341

Appendix 8A: ABC Action Analysis 342

Questions 350

Exercises 351

Problems 361

Cases 369

Group and Internet Exercises 375

Chapter

Profit Planning 376

The Basic Framework of Budgeting 378

Personal Budgets 378

Difference between Planning and Control 378

Advantages of Budgeting 378

Responsibility Accounting 379

Choosing a Budget Period 380

The Self-Imposed Budget 381

Human Factors in Budgeting 382

Zero-Based Budgeting 382

The Budget Committee 384

The Master Budget: An Overview 385

The Sales Budget 385

The Cash Budget 385

Sales Forecasting—A Critical Step 385

Preparing the Master Budget 387

The Sales Budget 389

The Production Budget 390

Inventory Purchases—Merchandising Company 391

The Direct Materials Budget 391

The Direct Labor Budget 393

The Manufacturing Overhead Budget 394

The Ending Finished Goods Inventory Budget 395

The Selling and Administrative Expense Budget 395

The Cash Budget 396