SEVENTH EDITION

Managerial Accounting

THE CORNERSTONE OF BUSINESS DECISION MAKING

Maryanne M. Mowen

Oklahoma State University

Don R. Hansen

Oklahoma State University

Dan L. Heitger

Miami University



Australia • Brazil • Mexico • Singapore • United Kingdom • United States

Brief Contents

CHAPTER 1	Introduction to Managerial Accounting 2
CHAPTER 2	Basic Managerial Accounting Concepts 30
CHAPTER 3	Cost Behavior and Forecasting 78
CHAPTER 4	Job-Order Costing and Overhead Application 148
CHAPTER 5	Activity-Based Costing and Management 214
CHAPTER 6	Process Costing 276
CHAPTER 7	Cost-Volume-Profit Analysis 332
	MAKING THE CONNECTION 390
CHAPTER 8	Tactical Decision Making and Relevant Analysis392
CHAPTER 9	Profit Planning and Flexible Budgets 454
CHAPTER 10	Standard Costing and Variance Analysis 520
	MAKING THE CONNECTION 588
CHAPTER 11	Performance Evaluation and Decentralization 590
CHAPTER 12	Capital Investment Decisions 644
	Making the Connection 697
CHAPTER 13	Emerging Topics in Managerial Accounting 700
CHAPTER 14	Statement of Cash Flows 790
CHAPTER 15	Financial Statement Analysis 836
Glossary 891	
Check Figures	899
Index 903	

iv

Contents

CHAPTER 1

Introduction to Managerial Accounting 2

The Meaning of Managerial Accounting 4

Information Needs of Managers and Other Users 5 Planning 5 Controlling 5 Decision Making 6 **Financial Accounting and Managerial Accounting** 7

Financial Accounting 7 Managerial Accounting 7 Comparison of Financial and Managerial Accounting 7 Exhibit 1.1 Comparison of Financial and Managerial Accounting 8

Current Focus of Managerial Accounting 9

New Methods of Costing Products and Services 9 Customer Orientation 9 Exhibit 1.2 The Value Chain 10 Cross-Functional Perspective 11 Total Quality Management 11 Time as a Competitive Element 12 Efficiency 13

The Role of the Managerial Accountant 13

Exhibit 1.3 Kicker Inc. Organizational Chart 14 Managerial Accounting and Ethical Conduct 15

Ethical Behavior 16 Company Codes of Ethical Conduct 17 Standards of Ethical Conduct for Managerial Accountants 18 Exhibit 1.4 Statement of Ethical Professional Practice 19 **Certification 20**

The Certified Management Accountant 20 The Certified Public Accountant 21 The Certified Internal Auditor 21

CHAPTER 2

Basic Managerial Accounting Concepts 30

The Meaning and Uses of Cost 32

Cost 32 Cost Objects 33 Accumulating and Assigning Costs 33 Assigning Costs to Cost Objects 33 Exhibit 2.1 Object Costing 35 **Product and Service Costs 37**

Providing Cost Information 38 Determining Product Cost 38

Exhibit 2.2 Product Costs Include Direct Materials, Direct Labor, and Overhead 39 **Example 2.1** How to Calculate Product Cost in Total and Per Unit 40 Example 2.2 How to Calculate Prime Cost and Conversion Cost in Total and Per Unit 41 Exhibit 2.3 The Impact of Product versus Period Costs on the Financial Statements 42 Preparing Income Statements 44 Cost of Goods Manufactured 44 Example 2.3 How to Calculate the Direct Materials Used in Production 45 Example 2.4 How to Calculate Cost of Goods Manufactured 45 Cost of Goods Sold 46 Example 2.5 How to Calculate Cost of Goods Sold 46 Exhibit 2.4 Relationship between the Flow of Costs, Inventories, and Cost of Goods Sold 47 Income Statement: Manufacturing Firm 47 Example 2.6 How to Prepare an Income Statement for a Manufacturing Firm 48 **Example 2.7** How to Calculate the Percentage of Sales Revenue for Each Line on the Income Statement 49 Income Statement: Service Firm 50 **Example 2.8** How to Prepare an Income Statement for a Service Organization 50

CHAPTER 3

Cost Behavior and Forecasting 78

Basics of Cost Behavior 80

Measures of Output and the Relevant Range 81 Fixed Costs 81 Exhibit 3.1 Colley Computers Fixed Cost of Supervision 83 Variable Costs 84 Exhibit 3.2 Colley Computers Variable Cost of DVD-ROM Drives 86 More Advanced Cost Behavior: The Reasonableness of Straight-Line Cost Relationships 86 Semi-Variable Costs 86 Exhibit 3.3 Semi-Variable Cost: Decreasing Rate 86 Exhibit 3.4 Semi-Variable Cost: Increasing Rate 87 Mixed Costs and Step Costs 88 Mixed Costs 88 Exhibit 3.5 Mixed Cost Behavior 89 Step Cost Behavior 89 Exhibit 3.6 Step Costs: Narrow Steps and Wide Steps 90

Accounting Records and Need for Cost Separation 91

Methods for Separating Mixed Costs into Fixed and Variable Components 91

Example 3.1 How to Create and Use a Cost Formula 92 The High-Low Method 93 Example 3.2 How to Use the High-Low Method to Calculate Fixed Cost and the Variable Rate and to Construct a Cost Formula 94 Example 3.3 How to Use the High-Low Method to Calculate Predicted Total Variable Cost and Total Cost for Budgeted Output 95 Example 3.4 How to Use the High-Low Method to Calculate Predicted Total Variable Cost and Total Cost for a Time Period That Differs from the Data Period 96 Scattergraph Method 97 Exhibit 3.7 Anderson Company's Materials Handling Cost 97 Exhibit 3.8 Scattergraphs with Nonlinear Cost 99 The Method of Least Squares 99 Exhibit 3.9 Line Deviations 99 Exhibit 3.10 A Portion of the Summary Output from Excel for Anderson Company 100 **Example 3.5** How to Use the Regression Method to Calculate Fixed Cost and the Variable Rate and to Construct a Cost Formula and to Determine Budgeted Cost 101 Comparison of Methods 101 Exhibit 3.11 Overview of Methods for Separating Mixed Costs into Fixed and Variable Components 102 Managerial Judgment 102 Variable and Absorption Income Statements: Two Ways of Measuring Income 105 Absorption Costing 105 Variable Costing 105 Comparison of Variable and Absorption Costing Methods 105 Exhibit 3.12 Classification of Costs under Absorption and Variable Costing as Product or Period Costs 105 Inventory Valuation 106 Example 3.6 How to Compute Inventory Cost under Absorption Costing 106 **Example 3.7** How to Compute Inventory Cost under Variable Costing 107 Exhibit 3.13 Product Cost under Absorption and Variable Costing 108 Income Statements Using Variable and Absorption Costing 108 Example 3.8 How to Prepare an Absorption-Costing Income Statemen 108 **Example 3.9** How to Prepare a Variable-Costing Income Statement 109 Production, Sales, and Income Relationships 109 Exhibit 3.14 Production, Sales, and Income Relationships 109 Appendix 3A: Using the Regression Programs 110

Exhibit 3.15 Spreadsheet Data for Anderson Company 111 Exhibit 3.16 Regression Output for Anderson Company 112 Goodness of Fit 112

CHAPTER 4

Job-Order Costing and Overhead Application 148

Characteristics of the Job-Order Environment 150 Job-Order Production and Costing 150 Process Production and Costing 151 Exhibit 4.1 Comparison of Job-Order and Process Costing 151 Production Costs in Job-Order Costing 152 Normal Costing and Overhead Application 152 Actual Costing versus Normal Costing 152 Importance of Unit Costs to Manufacturing Firms 153 Importance of Unit Costs to Service Firms 153 Normal Costing and Estimating Overhead 154 **Example 4.1** How to Calculate the Predetermined Overhead Rate and Apply Overhead to Production 155 Exhibit 4.2 Actual and Applied Overhead 156 **Example 4.2** How to Reconcile Actual Overhead with Applied Overhead 157 Departmental Overhead Rates 157 **Example 4.3** How to Calculate Predetermined Departmental Overhead Rates and Apply Overhead to Production 158 **Example 4.4** How to Convert Departmental Data to Plantwide Data to Calculate the Overhead Rate and Apply Overhead to Production 159 Unit Costs in the Job-Order System 159 Keeping Track of Job Costs with Source Documents 161 Job-Order Cost Sheet 161 Exhibit 4.3 Job-Order Cost Sheet 161 Materials Requisitions 162 Exhibit 4.4 Materials Requisition Form 162 Time Tickets 162 Exhibit 4.5 Time Ticket 163 The Flow of Costs through the Accounts 164 Exhibit 4.6 Flow of Costs through the Accounts of a Job-Order Costing Firm 164 Accounting for Materials 165 Exhibit 4.7 Summary of Materials Cost Flows 165 Accounting for Direct Labor Cost 165 Exhibit 4.8 Summary of Direct Labor Cost Flows 166 Accounting for Overhead 166 Accounting for Actual Overhead Costs 167 Exhibit 4.9 Summary of Overhead Cost Flows 167 Accounting for Finished Goods 167

Exhibit 4.10 Summary of Cost Flows from Work in Process to Finished Goods 168 Accounting for Cost of Goods Sold 168 Exhibit 4.11 Schedule of Cost of Goods Manufactured 169 Exhibit 4.12 Statement of Cost of Goods Sold 169 Example 4.5 How to Prepare Brief Job-Order Cost Sheets 170 Accounting for Nonmanufacturing Costs 172 Exhibit 4.13 Income Statement 172 Appendix 4A: Journal Entries Associated With Job-Order Costing 173 Exhibit 4.14 Posting of Journal Entries to the Accounts 175 Appendix 4B: Support Department Cost Allocation 176 Types of Departments 176 Exhibit 4.15 Steps for Determining Product Costs by Using Predetermined Departmental Overhead Rates 177 Methods of Support Department Cost Allocation 177 Exhibit 4.16 Illustration of the Direct Method 178 Example 4.6 How to Assign Support Department Costs by Using the Direct Method 178 Exhibit 4.17 Illustration of the Sequential Method 180 Example 4.7 How to Assign Support Department Costs by Using the Sequential Method 181

CHAPTER 5

Activity-Based Costing and Management 214

Limitations of Functional-Based Cost Accounting Systems 216

Nonunit-Related Overhead Costs 216 Exhibit 5.1 ABC Hierarchy 217 Product Diversity 218 Illustrating the Failure of Unit-Based Overhead Rates 218 Exhibit 5.2 Product-Costing Data for Rio Novo's Porto Behlo Plant 219 **Example 5.1** How to Calculate Consumption Ratios 220 Example 5.2 How to Calculate Activity Rates 221 **Example 5.3** How to Calculate Activity-Based Unit Costs 222 Exhibit 5.3 Activity Rates and Activity-Based Unit Costs for Rio Novo's Porto Behlo Plant 222 Illustrating Relationships: Product Diversity and Product-Costing Accuracy 223 Exhibit 5.4 Diversity and Product-Costing Accuracy 225 Activity-Based Product Costing 225 Exhibit 5.5 Activity-Based Costing: Assigning Cost of Overhead 226 Identifying Activities and Their Attributes 226 Exhibit 5.6 Activity Dictionary for Hemingway Bank's Credit Card Department 228 Assigning Costs to Activities 228

Exhibit 5.7 Work Distribution Matrix for Hemingway Bank's Credit Card Department 228 **Example 5.4** How to Assign Resource Costs to Activities by Using Direct Tracing and Resource Drivers 229 Exhibit 5.8 Activity Costs for Hemingway Bank's Credit Card Department 229 Assigning Costs to Products 229 Exhibit 5.9 Assigning Costs for Hemingway Bank's Credit Card Department 230 Activity-Based Customer Costing and Activity-Based Supplier Costing 231 Exhibit 5.10 Whale Curve of Cumulative Customer Profitability 232 Activity-Based Customer Costing 232 **Example 5.5** How to Calculate Activity-Based Customer Costs 233 Activity-Based Supplier Costing 234 Example 5.6 How to Calculate Activity-Based Supplier Costs 235 Process-Value Analysis 236 Exhibit 5.11 Process-Value Analysis Model 237 Driver Analysis: The Search for Root Causes 237 Activity Analysis: Identifying and Assessing Value Content 237 Example 5.7 How to Assess Nonvalue-Added Costs 241 Activity Performance Measurement 241 **Example 5.8** How to Calculate Cycle Time and

Velocity 242

CHAPTER 6

Process Costing 276

Characteristics of Process Manufacturing 278 Types of Processes 278 Exhibit 6.1 Sequential Processing Illustrated 278 Exhibit 6.2 Parallel Processing Illustrated 279 How Costs Flow through the Accounts in Process Costing 280 Exhibit 6.3 Flow of Manufacturing Costs through the Accounts of a Process-Costing Firm 280 Example 6.1 How to Account for Cost Flows Without Work-in-Process Inventories 280 Accumulating Costs in the Production Report 281 Service and Manufacturing Firms 282 The Impact of Work-In-Process Inventories on Process Costing 283 Equivalent Units of Production 283 **Example 6.2** How to Calculate Equivalent Units of Production with No Beginning Work in Process 284 Example 6.3 How to Measure Output and Assign Costs: No Beginning Work in Process 285

Two Methods of Treating Beginning Work-in-Process Inventory 286 Weighted Average Costing 286 Overview of the Weighted Average Method 287 **Example 6.4** How to Measure Output and Assign Costs: Weighted Average Method 287 Five Steps in Preparing a Production Report 288 **Example 6.5** How to Prepare a Physical Flow Schedule 289 Production Report 291 **Example 6.6** How to Prepare a Production Report: Weighted Average Method 292 Evaluation of the Weighted Average Method 292 Multiple Inputs and Multiple Departments 293 Nonuniform Application of Manufacturing Inputs 293 **Example 6.7** How to Calculate Equivalent Units, Unit Costs, and Valuing Inventories with Nonuniform Inputs 294 Multiple Departments 295 Exhibit 6.4 Production Report: Weighted Average Method 296 **Example 6.8** How to Calculate the Physical Flow Schedule, Equivalent Units, and Unit Costs with Transferred-In Goods 296 Appendix 6A: Production Report—First-In, First-Out Costing 298 Differences between the First-In, First-Out and Weighted Average Methods 298 Example of the First-In, First-Out Method 298 **Example 6.9** How to Calculate Output and Cost Assignments: First-In, First-Out Method 298 Exhibit 6.5 Physical Flow Schedule 300 **Example 6.10** How to Prepare a Production Report: First-In, First-Out Method 301

CHAPTER 7

Cost-Volume-Profit Analysis 332

Break-Even Point in Units and in Sales Dollars 334

Using Operating Income in Cost-Volume-Profit Analysis 334 Exhibit 7.1 The Contribution Margin Income Statement 335 Example 7.1 How to Prepare a Contribution Margin Income Statement 336 Exhibit 7.2 Contribution Margin and Fixed Cost at Break-Even for Whittier Company 337 Break-Even Point in Units 337 Example 7.2 How to Calculate the Break-Even Point in Units 338 Break-Even Point in Sales Dollars 338 Example 7.3 How to Calculate the Variable Cost Ratio and the Contribution Margin Ratio 340 Example 7.4 How to Calculate the Break-Even Point in Sales Dollars 341

Units and Sales Dollars Needed to Achieve a Target Income 343 Units to Be Sold to Achieve a Target Income 343 **Example 7.5** How to Calculate the Number of Units to Be Sold to Earn a Target Operating Income 344 Sales Revenue to Achieve a Target Income 345 Example 7.6 How to Calculate Sales Needed to Earn a Target Operating Income 345 Graphs of Cost-Volume-Profit Relationships 346 The Cost-Volume-Profit Graph 347 Exhibit 7.3 Cost-Volume-Profit Graph 347 Assumptions of Cost-Volume-Profit Analysis 348 Illustrating Relationships Among CVP Variables 348 Exhibit 7.4 Cost-Volume-Profit Relationships 349 Multiple-Product Analysis 351 Break-Even Point in Units 352 **Example 7.7** How to Calculate the Break-Even Units for a Multiple-Product Firm 353 Break-Even Point in Sales Dollars 354 **Example 7.8** How to Calculate the Break-Even Sales Dollars for a Multiple-Product Firm 354 **Cost-Volume-Profit Analysis and Risk and Uncertainty** 356 Exhibit 7.5 Summary of the Effects of Alternative 1 357 Exhibit 7.6 Summary of the Effects of Alternative 2 358 Exhibit 7.7 Summary of the Effects of Alternative 3 358 Introducing Risk and Uncertainty 358 Exhibit 7.8 Margin of Safety 359 **Example 7.9** How to Calculate the Margin of Safety 360 Example 7.10 How to Calculate the Degree of Operating Leverage 361 Example 7.11 How to Calculate the Impact of Increased Sales on Operating Income Using the Degree of Operating Leverage 362 Exhibit 7.9 Differences between a Manual and an Automated System 363 Sensitivity Analysis and Cost-Volume-Profit 363 **MAKING THE CONNECTION: INTEGRATIVE** EXERCISE (CHAPTERS 2, 3, AND 7) 390

CHAPTER 8

Tactical Decision Making and Relevant Analysis 392

Short-Run Decision Making 394 The Decision-Making Model 394 Step 1: Recognize and Define the Problem 395 Step 2: Identify the Alternatives as Possible Solutions 395 Step 3: Identify the Costs and Benefits Associated with Each Feasible Alternative 396 Step 4: Estimate the Relevant Costs and Benefits for Each Feasible Alternative 396 Step 5: Assess Qualitative Factors 397

Step 6: Make the Decision 398 Relevant Costs Defined 399 Cost Behavior and Relevant Costs 401 Some Common Relevant Cost Applications 402 Make-or-Buy Decisions 403 Exhibit 8.1 Make-or-Buy Decisions 403 Example 8.1 How to Structure a Make-or-Buy Problem 405 Special-Order Decisions 406 Exhibit 8.2 Accept or Reject a Special Order 406 Example 8.2 How to Structure a Special-Order Problem 407 Keep-or-Drop Decisions 408 Example 8.3 How to Prepare a Segmented Income Statement 410 Exhibit 8.3 Comparison of Segmented Income Statement With and Without Allocated Common Fixed Expense 411 **Example 8.4** How to Structure a Keep-or-Drop Product-Line Problem 412 Example 8.5 How to Structure a Keep-or-Drop Product-Line Problem with Complementary Effects 414 Further Processing of Joint Products 414 Exhibit 8.4 Further Processing of Joint Products 416 Example 8.6 How to Structure the Sell-or-Process-Further Decision 416 Product Mix Decisions 417 **Example 8.7** How to Determine the Optimal Product Mix with One Constrained Resource 418 **Example 8.8** How to Determine the Optimal Product Mix with One Constrained Resource and a Sales Constraint 419 Multiple Constrained Resources 420 The Use of Costs in Pricing Decisions 420 Cost-Based Pricing 420 Example 8.9 How to Calculate Price by Applying a Markup Percentage to Cost 421 Target Costing and Pricing 422 Example 8.10 How to Calculate a Target Cost 423

CHAPTER 9

Profit Planning and Flexible Budgets 454

Description of Budgeting 456 Budgeting and Planning and Control 456 Exhibit 9.1 Planning, Control, and Budgets 456 Advantages of Budgeting 457 The Master Budget 457 Exhibit 9.2 The Master Budget and Its Interrelationships 458 Preparing the Operating Budget 459 Sales Budget 459 Example 9.1 How to Prepare a Sales Budget 460 Production Budget 461 Example 9.2 How to Prepare a Production Budget 461 Direct Materials Purchases Budget 462

Example 9.3 How to Prepare a Direct Materials Purchases Budget 463 Direct Labor Budget 464 Example 9.4 How to Prepare a Direct Labor Budget 464 Overhead Budget 464 Example 9.5 How to Prepare an Overhead Budget 464 Ending Finished Goods Inventory Budget 465 Example 9.6 How to Prepare an Ending Finished Goods Inventory Budget 465 Cost of Goods Sold Budget 466 Example 9.7 How to Prepare a Cost of Goods Sold Budget 466 Selling and Administrative Expenses Budget 466 **Example 9.8** How to Prepare a Selling and Administrative Expenses Budget 467 Budgeted Income Statement 467 Example 9.9 How to Prepare a Budgeted Income Statement 467 Preparing the Financial Budget 469 Cash Budget 469 Exhibit 9.3 The Cash Budget 469 Example 9.10 How to Prepare a Schedule for Cash Collections on Accounts Receivable 470 **Example 9.11** How to Determine Cash Payments on Accounts Payable 471 **Example 9.12** How to Prepare a Cash Budget 472 Budgeted Balance Sheet 473 Exhibit 9.4 Budgeted Balance Sheet 474 Using Flexible Budgets for Planning and Performance Reporting 475 Example 9.13 How to Prepare a Before-the-Fact Flexible Budget 476 Exhibit 9.5 Performance Report Comparing Actual Costs to the Static Budget 477 Example 9.14 How to Prepare a Performance Report Using a Flexible Budget 478 Using Budgets for Performance Evaluation 479 Frequent Feedback on Performance 480 Monetary and Nonmonetary Incentives 480 Participative Budgeting 480 Exhibit 9.6 The Art of Standard Setting 481 Realistic Standards 481 Controllability of Costs 482

CHAPTER 10

Standard Costing and Variance Analysis 520

Multiple Measures of Performance 482

Unit Standards and Basic Concepts of Standard Costing 522 How Standards Are Developed 523 Types of Standards 523

Exhibit 10.1 Types of Standards 523 Why Standard Cost Systems Are Adopted 524 Exhibit 10.2 Cost Assignment Approaches 525 Exhibit 10.3 Standard Cost Sheet for Corn Chips 526 Example 10.1 How to Compute Standard Quantities Allowed (SQ and SH) 527 Variance Analysis: General Description 528 Price and Usage Variances 528 Exhibit 10.4 Variance Analysis: General Description 529 The Decision to Investigate 529 Example 10.2 How to Use Control Limits to Trigger a Variance Investigation 531 Variance Analysis: Materials And Labor 532 Total Variance for Materials 532 **Example 10.3** How to Calculate the Total Variance for Materials 532 Direct Materials Variances 533 **Example 10.4** How to Calculate Materials Variances: Formula and Columnar Approaches 534 Using Materials Variance Information 535 Total Variance Analysis: Direct Labor 536 **Example 10.5** How to Calculate the Total Variance for Labor 537 Direct Labor Variances 538 Example 10.6 How to Calculate Labor Variances: Formula and Columnar Approaches 539 Using Labor Variance Information 539 Additional Cost Management Practices 541 Overhead Analysis 543 Total Variable Overhead Variance 543 **Example 10.7** How to Calculate the Total Variable Overhead Variance 543 Variable Overhead Variances 544 Example 10.8 How to Calculate Variable Overhead Spending and Efficiency Variances: Columnar and Formula Approaches 544 Comparison of the Variable Overhead Spending Variance with the Price Variances of Materials and Labor 545 Responsibility for the Variable Overhead Spending Variance 546 Responsibility for the Variable Overhead Efficiency Variance 546 A Performance Report for the Variable Overhead Spending and Efficiency Variances 546 **Example 10.9** How to Prepare a Performance Report for the Variable Overhead Variances 547 Fixed Overhead Analysis 547 Total Fixed Overhead Variance 548 **Example 10.10** How to Calculate the Total Fixed Overhead Variance 548 Fixed Overhead Variances 549

Example 10.11 How to Calculate Fixed Overhead Variances: Columnar and Formula Approaches 549 Responsibility for the Fixed Overhead Spending Variance 550 Analysis of the Fixed Overhead Spending Variance 550 Responsibility for the Fixed Overhead Volume Variance 551 Analysis of the Volume Variance 552 Exhibit 10.5 Graphical Analysis of the Volume Variance 552 Appendix 10A: Accounting for Variances 552 Entries for Direct Materials Variances 553 Entries for Direct Labor Variances 553 Disposition of Materials and Labor Variances 554 **MAKING THE CONNECTION: INTEGRATIVE** EXERCISE (CHAPTERS 5, 9, AND 10) 588 **CHAPTER 11 Performance Evaluation and Decentralization** 590 Decentralization and Responsibility Centers 592 Exhibit 11.1 Centralization and Decentralization 592 Reasons for Decentralization 592 Divisions in the Decentralized Firm 593 Types of Goods or Services 593 Exhibit 11.2 Decentralized Divisions 594 Geographic Lines 594

Responsibility Centers 594 Exhibit 11.3 Types of Responsibility Centers and Accounting Information Used to Measure Performance 595 Measuring the Performance of Investment Centers by Using Return on Investment 596 Return on Investment 596 Margin and Turnover 597 Example 11.1 How to Calculate Average Operating Assets, Margin, Turnover, and Return on Investment 597 Exhibit 11.4 Comparison of Divisional Performance 598 Advantages of Return on Investment 599 Disadvantages of the Return on Investment Measure 600 Measuring the Performance of Investment Centers by Using Residual Income and Economic Value Added 602 Residual Income 603 Example 11.2 How to Calculate Residual Income 603 Economic Value Added (EVA) 604 Example 11.3 How to Calculate Economic Value Added 605 Transfer Pricing 607 Impact of Transfer Pricing on Divisions and the Firm as a Whole 607 Exhibit 11.5 Impact of Transfer Price on Transferring Divisions and the Company, ABC Inc., as a Whole 607 Transfer Pricing Policies 608 Example 11.4 How to Calculate Transfer Price 609 Appendix 11A: The Balanced Scorecard—Basic Concepts 611 Exhibit 11.6 Balanced Scorecard for Ashley Hotel* 612 Strategy Translation 612

Exhibit 11.7 Testable Strategy Illustrated 614
The Four Perspectives and Performance Measures 615
Exhibit 11.8 Summary of Objectives and Measures: Financial Perspective 616
Exhibit 11.9 Summary of Objectives and Measures: Customer Perspective 617
Example 11.5 How to Compute Cycle Time and Velocity 618
Example 11.6 How to Calculate Manufacturing Cycle Efficiency 620
Exhibit 11.10 Summary of Objectives and Measures: Internal Perspective 621
Exhibit 11.11 Summary of Objectives and Measures: Learning and Growth Perspective 622

CHAPTER 12

Capital Investment Decisions 644

Types of Capital Investment Decisions 646 Independent and Mutually Exclusive Projects 646 Making Capital Investment Decisions 646 Nondiscounting Models: Payback Period and Accounting Rate of Return 647 Payback Period 648 Example 12.1 How to Calculate Payback 648 Accounting Rate of Return 650 Example 12.2 How to Calculate the Accounting Rate of Return 651 Discounting Models: The Net Present Value Method 652 Net Present Value Defined 652 Net Present Value Illustrated 653 Example 12.3 How to Assess Cash Flows and Calculate Net Present Value 653 Illustrating Relationships: NPV, Discount Rates, and Cash Flows 654 Exhibit 12.1 NPV, Discount Rates, and Cash Flow 655 Internal Rate of Return 656 Internal Rate of Return Defined 656 Internal Rate of Return Illustrated: Multiple-Period Setting with Uniform Cash Flows 656 **Example 12.4** How to Calculate Internal Rate of Return with Uniform Cash Flows 657 Internal Rate of Return Illustrated: Multiple-Period Setting with Uneven Cash Flows 657 Postaudit of Capital Projects 659 Postaudit Illustrated 659 Postaudit Benefits 660 Postaudit Limitations 661 Mutually Exclusive Projects 661 Net Present Value Compared with Internal Rate of Return 661 Exhibit 12.2 Net Present Value Compared with Internal Rate of Return 662 NPV Analysis for Mutually Exclusive Projects Illustrated 662

Example 12.5 How to Calculate Net Present Value and Internal Rate of Return for Mutually Exclusive Projects 663 Special Considerations for Advanced Manufacturing Environment 664 Exhibit 12.3 Investment Data; Direct, Intangible, and Indirect Benefits 665 Appendix 12A: Present Value Concepts 667 Future Value 667 Present Value 667 Present Value of an Uneven Series of Cash Flows 668 Exhibit 12A.1 Present Value of an Uneven Series of Cash Flows 668 Present Value of a Uniform Series of Cash Flows 669 Exhibit 12A.2 Present Value of an Annuity 669 Appendix 12B: Present Value Tables 669 Exhibit 12B.1 Present Value of a Single Amount 670 Exhibit 12B.2 Present Value of an Annuity 671

MAKING THE CONNECTION: INTEGRATIVE EXERCISE (CHAPTERS 3, 5, 8, AND 12) 697

CHAPTER 13

Emerging Topics in Managerial Accounting 700

Enterprise Risk Management 702

Exhibit 13.1 Key Steps within the ERM Process 702 Determining Risk Appetite 703 Exhibit 13.2 Key Elements of a Portfolio Risk Management Perspective 703 Identifying Top Risks 703 Assessing Inherent Risks 703 Responding to Risks Using a Portfolio Perspective 705 Example 13.1 How to Use Net Benefit to Evaluate Risk **Response Alternatives** 707 Monitoring the ERM Process 708 **Business Sustainability** 709 Exhibit 13.3 The Role of Management Accounting in the Business Sustainability Cycle 710 Exhibit 13.4 Business Sustainability Issues throughout the Value Chain 711 Exhibit 13.5 The Relationship Between Stakeholders and Strategy 712 Exhibit 13.6 Stakeholder Engagement Activities at Eli Lilly 713 Exhibit 13.7 The Relationship between Stakeholder Concerns and Business Success at UPS 714 Exhibit 13.8 Rapid Growth in Corporate Sustainability Reporting Since Its Inception 716 Exhibit 13.9 Widespread Adoption of Corporate Sustainability Reporting across Industries 716 Exhibit 13.10 The Global Phenomenon of Corporate Sustainability Reporting 717 Exhibit 13.11 Growth in Independent Assurance of Corporate Sustainability Information 718

Quality Cost Management 719 Costs of Quality 720 Exhibit 13.12 Examples of Quality Costs by Category 721 Reporting Quality Costs 721 Example 13.2 How to Prepare a Quality Cost Report 721 Exhibit 13.13 Quality Cost Categories: Relative Contribution by Category 723 Controlling Quality Costs 724 Example 13.3 How to Prepare an Interim Quality Performance Report 724 **Example 13.4** How to Prepare Multiple-Period Quality Trend Reports 726 Exhibit 13.14 Multiple-Period Trend Graph: Total Quality Costs 726 Exhibit 13.15 Multiple-Period Trend Graph: Individual Quality Cost Categories 727 Lean Manufacturing and Lean Accounting 727 Lean Manufacturing 727 Exhibit 13.16 Order Fulfillment Value Stream 728 Exhibit 13.17 Traditional Batch Production Process 729 Exhibit 13.18 Proposed Manufacturing Cell 730 Example 13.5 How to Calculate Production Time for Traditional and Cellular Manufacturing 730 Lean Accounting 731 Exhibit 13.19 Value-Stream Cost Assignments 732 Exhibit 13.20 Value-Stream Costs and Production Hours: Models X12 and Y35 735 Example 13.6 How to Calculate Value-Stream Product Costs 735 Value-Stream Operational Control 736 Exhibit 13.21 Holland Company Value-Stream Box Scorecard 736 International Issues in Management Accounting 738 Types of Involvement in the International Economy 738 Foreign Currency Exchange 740 **Example 13.7** How to Calculate the Value of an Exchange in Another Currency 741 Transfer Pricing and the Multinational Firm 743 Exhibit 13.22 Use of Transfer Pricing to Affect Taxes Paid 743 The Role of Cost and Managerial Accounting in Fraud And Forensic Accounting 745 Fraud and Management Accounting 745 Forensic Accounting in Management Accounting 747 Exhibit 13.23 Applying Different Types of Accounting Knowledge to Forensic Accounting 748

CHAPTER 14

Statement of Cash Flows 790

Overview of the Statement of Cash Flows 792

Cash Defined 792 Sources and Uses of Cash 792 Exhibit 14.1 Sources and Uses of Cash 792

Methods for Calculating Operating Cash Flows 793 Example 14.1 How to Classify Activities and Identify Them as Sources or Uses of Cash 793 Noncash Exchanges 794 Preparation of the Statement: Indirect Method 795 Exhibit 14.2 Balance Sheets: Lemmons Company 795 Step 1: Compute the Change in Cash 796 Example 14.2 How to Compute the Change in Cash 796 Step 2: Compute Operating Cash Flows 796 Example 14.3 How to Calculate Operating Cash Flows Using the Indirect Method 796 Step 3: Compute Investing Cash Flows 798 **Example 14.4** How to Compute Investing Cash Flows 798 Step 4: Compute Financing Cash Flows 799 Example 14.5 How to Compute Financing Cash Flows 799 Step 5: Prepare the Statement of Cash Flows 800 Example 14.6 How to Prepare the Statement of Cash Flows 800 The Direct Method: An Alternative Approach 801 Example 14.7 How to Calculate Operating Cash Flows Using the Direct Method 802 Worksheet Approach to the Statement of Cash Flows 803 Exhibit 14.3 Balance Sheets: Portermart Company 804 **Example 14.8** How to Prepare a Statement of Cash Flows Using a Worksheet Approach 804 Analysis of Transactions 806 The Final Step 807 Exhibit 14.4 Worksheet-Derived Statement of Cash Flows for Portermart Company 808

CHAPTER 15

Financial Statement Analysis 836

Common-Size Analysis 838 Exhibit 15.1 Common-Size Analysis 839 Horizontal Analysis 839 **Example 15.1** How to Prepare Common-Size Income Statements Using Base Period Horizontal Analysis 839 Vertical Analysis 840 Example 15.2 How to Prepare Income Statements Using Net Sales as the Base: Vertical Analysis 840 Percentages and Size Effects 841 Ratio Analysis 842 Standards for Comparison 842 Exhibit 15.2 Ratio Analysis 843 Classification of Ratios 844 Exhibit 15.3 Income Statement and Statement of Retained Earnings for Payne Company for Year 2 844 Exhibit 15.4 Comparative Balance Sheets for Payne Company for Years 1 and 2 845 Liquidity Ratios 846 Current Ratio 846 Quick or Acid-Test Ratio 848

Example 15.3 How to Calculate the Current Ratio and the Quick (or Acid-Test) Ratio 848 Accounts Receivable Turnover Ratio 848 **Example 15.4** How to Calculate the Average Accounts Receivable, the Accounts Receivable Turnover Ratio, and the Accounts Receivable Turnover in Davs 849 Inventory Turnover Ratio 850 Example 15.5 How to Calculate the Average Inventory, the Inventory Turnover Ratio, and the Inventory Turnover in Days 851 Impact of the Just-in-Time Manufacturing Environment 852 Leverage Ratios 853 Times-Interest-Earned Ratio 853 Example 15.6 How to Calculate the Times-Interest-Earned Ratio 853 Debt Ratio 854 **Example 15.7** How to Calculate the Debt Ratio and the Debt-to-Equity Ratio 855 Profitability Ratios 856 Return on Sales 856 Example 15.8 How to Calculate the Return on Sales 856 Return on Total Assets 856

Example 15.9 How to Calculate the Average Total Assets and the Return on Assets 857 Return on Common Stockholders' Equity 857 Example 15.10 How to Calculate the Average Common Stockholders' Equity and the Return on Stockholders' Equity 858 Earnings per Share 859 Example 15.11 How to Compute Earnings per Share 859 Price-Earnings Ratio 859 Example 15.12 How to Compute the Price-Earnings Ratio 860 Dividend Yield and Payout Ratios 860 Example 15.13 How to Compute the Dividend Yield and the Dividend Payout Ratio 861 The Importance of Profitability Ratios to External Users of the Financial Statements 861 Glossary 891

Check Figures 899

Index 903