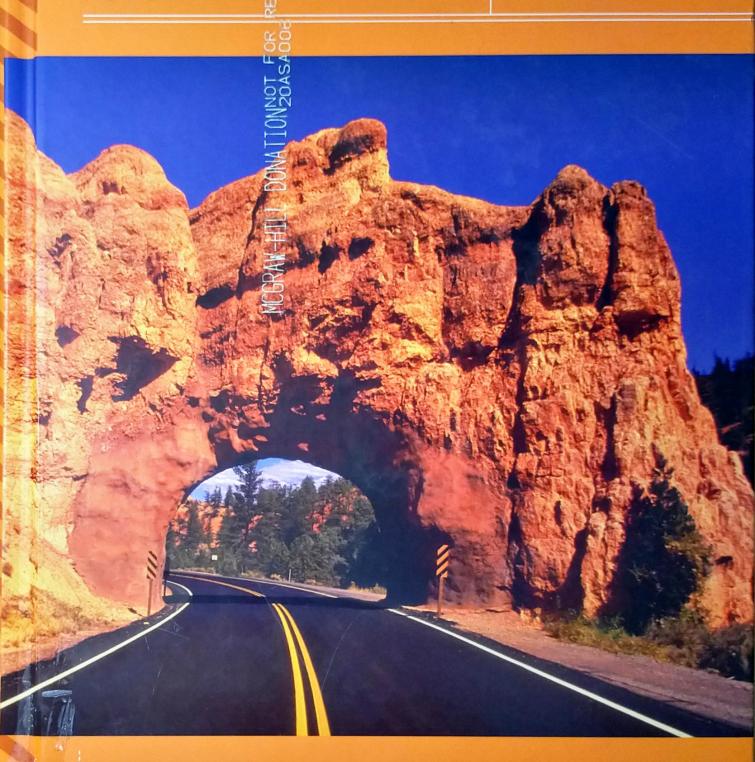
FUNDAMENTAL MANAGERIAL ACCOUNTING CONCEPTS Third Edit Third Edition



Edmonds / Edmonds / Tsay / Olds

Fundamental Managerial ACCOUNTING Concepts



Thomas P. Edmonds

University of Alabama-Birmingham

Cindy D. Edmonds

University of Alabama-Birmingham

Bor-Yi Tsay

All of the University of Alabama-Birmingham

Philip R. Olds

Virginia Commonwealth University

Nancy W. Schneider

Lynchburg College





This book is dedicated to our students whose questions have so frequently casued us to reevaluate our method of presentation that they have, in fact, become major contributors to the development of this text.



FUNDAMENTAL MANAGERIAL ACCOUNTING CONCEPTS

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 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.

1234567890 VNH/VNH0987654

ISBN 0-07-299105-4

Editorial director: Brent Gordon Publisher: Stewart Mattson

Sponsoring editor: Steve Schuetz

Managing developmental editor: Gail Korosa

Marketing manager: Richard Kolasa Media producer: Elizabeth Mavetz Lead project manager: Pat Frederickson

Senior production supervisor: Michael R. McCormick

Senior designer: Mary E. Kazak

Photo research coordinator: Jeremy Cheshareck

Photo researcher: David Tietz Supplement producer: Matthew Perry Senior digital content specialist: Brian Nacik

Cover design: Lodge Design

Cover image: @ Joseph Sohmj ChromoSohm, Inc./Corbis

Interior design: Ellen Pettengell Typeface: 10/12 Times Compositor: Cenveo

Printer: Von Hoffmann Corporation

Library of Congress Cataloging-in-Publication Data

Fundamental managerial accounting concepts / Thomas P. Edmonds ... [et at.].-- 3rd ed.

Includes index.

ISBN 0-07-299105-4 (alk. paper)

1. Managerial accounting. I. Edmonds, Thomas P.

HF5657.4.E35 2006 658.15'11--dc22

www.mhhe.com

2004042316

ABOUT THE



Thomas P. Edmonds

Thomas P. Edmonds, Ph.D., holds the Friends and Alumni Professorship in the Department of Accounting at the University of Alabama at Birmingham (UAB). He has been actively involved in teaching accounting principles throughout his academic career. Dr. Edmonds has coordinated the accounting principles courses at the University of Houston and UAB. He currently teaches introductory accounting in mass sections that frequently contain more than 180 students. He has received five prestigious teaching awards including the UAB President's Excellence in Teaching Award and the distinguished Ellen Gregg Ingalls Award for excellence in classroom teaching. He has written numerous articles that have appeared in many publications including Issues in Accounting, the

Journal of Accounting Education, Advances in Accounting Education, Accounting Education: A Journal of Theory, Practice and Research, the Accounting Review, Advances in Accounting, the Journal of Accountancy, Management Accounting, the Journal of Commercial Bank Lending, the Banker's Magazine, and the Journal of Accounting, Auditing, and Finance. Dr. Edmonds is a member of the editorial board for Advances in Accounting: Teaching and Curriculum Innovations and Issues in Accounting Education. He has published four textbooks, five practice problems (including two computerized problems), and a variety of supplemental materials including study guides, work papers, and solutions manuals. Dr. Edmonds' writing is influenced by a wide range of business experience. He is a successful entrepreneur. He has worked as a management accountant for Refrigerated Transport, a trucking company. Dr. Edmonds also worked in the not-for-profit sector as a commercial lending officer for the Federal Home Loan Bank. In addition, he has acted as a consultant to major corporations including First City Bank of Houston, AmSouth Bank in Birmingham, Texaco, and Cortland Chemicals. Dr. Edmonds began his academic training at Young Harris Community College in Young Harris, Georgia. He received a B.B.A. degree with a major in finance from Georgia State University in Atlanta, Georgia. He obtained an M.B.A. degree with a concentration in finance from St. Mary's University in San Antonio, Texas. His Ph.D. degree with a major in accounting was awarded by Georgia State University. Dr. Edmonds' work experience and academic training have enabled him to bring a unique user perspective to this textbook.



Cindy D. Edmonds

Cindy D. Edmonds, Ph.D., is an Associate Professor of Accounting at the University of Alabama at Birmingham. She serves as the coordinator of the introductory accounting courses at UAB. Dr. Edmonds received the 2001 Loudell Ellis Robinson Excellence in Teaching Award. Also, in 2000 and 2001 she was one of two School of Business faculty members nominated for the Ellen Gregg Ingalls Award for excellence in classroom teaching. She has written a variety of supplemental text materials including practice problems, a study guide, work papers, and test banks. Dr. Edmonds' articles appear in numerous publications including Advances in Accounting Education, Journal of Education for Business, Journal of Accounting Regulation, Advances in Accounting, Management Accounting, CMA

Journal, Disclosures, and Business & Professional Ethics Journal. Her manuscript "Running a City on a Shoe String" received a certificate of merit award from the Institute of Management Accountants. The manuscript was used by the City of Vestavia in its application for Moody's Municipal Bond Rating. Dr. Edmonds is heavily involved in service activities. She is the 2001 president of the Birmingham Chapter of the American Society of Women Accountants. Dr. Edmonds has worked in the insurance industry, in a manufacturing company, and in a governmental agency. This work experience has enabled her to bring a real-world flavor to her writing. Dr. Edmonds holds a B.S. degree from Auburn University, an M.B.A degree from the University of Houston and a Ph.D. degree from the University of Alabama.

AUTHORS



Bor-Yi Tsay

Bor-Yi Tsay, Ph.D., CPA is a Professor of Accounting at the University of Alabama at Birmingham (UAB) where he has taught since 1986. He has taught principles of accounting courses at the University of Houston and UAB. Currently, he teaches an undergraduate cost accounting course and an MBA accounting analysis course. Dr. Tsay received the 1996 Loudell Ellis Robinson Excellence in Teaching Award. He has also received numerous awards for his writing and publications including John L. Rhoads Manuscripts Award, John Pugsley Manuscripts Award, Van Pelt Manuscripts Award, and three certificates of merits from the Institute of Management Accountants. His articles appeared in *Journal of Accounting Education, Management Accounting, Journal of Managerial Issues, CPA Journal, CMA*

Magazine, Journal of Systems Management, and Journal of Medical Systems. He currently serves as a member of the board of the Birmingham Chapter, Institute of Management Accountants. He is also a member of the American Institute of Certified Public Accountants and Alabama Society of Certified Public Accountants. Dr. Tsay received a B.S. in agricultural economics from National Taiwan University, an M.B.A. with a concentration in Accounting from Eastern Washington University, and a Ph.D. in Accounting from the University of Houston.



Philip R. Olds

Professor Olds is Associate Professor of Accounting at Virginia Commonwealth University (VCU). He serves as the coordinator of the introduction to accounting courses at VCU. Professor Olds received his A.S. degree from Brunswick Junior College in Brunswick, Georgia (now Costal Georgia Community College). He received a B.B.A. in Accounting from Georgia Southern College (now Georgia Southern University) and his M.P.A. and Ph.D. degrees are from Georgia State University. After graduating from Georgia Southern, he worked as an auditor with the U.S. Department of Labor in Atlanta, Georgia. A CPA in Virginia, Professor Olds has published articles in various professional journals and presented papers at national and regional conferences. He also served as the faculty

adviser to the VCU chapter of Beta Alpha Psi for five years. In 1989, he was recognized with an Outstanding Faculty Vice-President Award by the national Beta Alpha Psi organization.



Nancy Schneider

Professor Schneider is Associate Professor of Accounting at Lynchburg College in central Virginia where she has served for many years as the lead instructor for the accounting principles courses. Since attending graduate school she has participated in the writing, reviewing, editing, checking, and revising of college-level accounting and finance textbooks, textbook supplements, and related teaching materials. She has a deep personal commitment to student learning and to finding and

sharing ways to improve college teaching. She is a recipient of the Sydnor Award for Teaching Excellence in Business at Lynchburg College and is frequently nominated by students for the College Excellence in Teaching Award. Professor Schneider initiated and organizes a highly popular annual symposium in which professors across all disciplines at the College exchange good teaching ideas. She has made numerous presentations at local and regional conferences, often related to teaching strategies, and is the coauthor of articles published in professional journals. Professor Schneider's professional activities also include active membership on the board of her local chapter of the Institute of Management Accountants where she regularly involves students in professional accounting educational meetings. Prior to teaching accounting, she was an auditor with an international public accounting firm in Atlanta and an internal auditor for a large integrated oil and gas company in Houston. Professor Schneider has maintained an active license to practice as a certified public accountant since 1980, and became a certified management accountant in 1992. She is a member of the American Institute of Certified Public Accountants and the Virginia Society of Certified Public Accountants. Professor Schneider received a Bachelor's degree in Mathematics Education with High Honors from the University of Florida in 1973, and a Master's degree in Professional Accountancy from Georgia State University in 1978.

BRIEF CONTENTS

Chapter 1	Management Accounting: A Value-Added Discipline 2
Chapter 2	Cost Behavior, Operating Leverage, and Profitabilit Analysis 48
Chapter 3	Analysis of Cost, Volume, and Pricing to Increase Profitability 94
Chapter 4	Relevant Information for Special Decisions 134
Chapter 5	Cost Accumulation, Tracing, and Allocation 182
Chapter 6	Cost Management in an Automated Business Environment: ABC, ABM, and TQM 228
Chapter 7	Planning for Profit and Cost Control 272
Chapter 8	Performance Evaluation 312
Chapter 9	Responsibility Accounting 358
Chapter 10	Planning for Capital Investments 398
Chapter 11	Product Costing in Service and Manufacturing Entities 438
Chapter 12	Job-Order, Process, and Hybrid Cost Systems 482
Chapter 13	Financial Statement Analysis 530
Chapter 14	Statement of Cash Flows 588

Chapter 1 Management Accounting: A Value-Added Discipline 2

Chapter Opening 3

Differences between Managerial and Financial Accounting 4

Users and Types of Information 4
Level of Aggregation 4
Regulation 4
Information Characteristics 5
Time Horizon and Reporting Frequency 5

Product Costing 6

Product Costs in Manufacturing Companies 6

Tabor Manufacturing Company 6
Average Cost per Unit 7
Costs Can Be Assets or Expenses 7
Effect of Product Costs on Financial Statements 8
Manufacturing Product Cost Summary 12

Importance of Cost Classification 13

Marion Manufacturing Company 13
Practical Implications 14

Ethical Considerations 15

Common Features of Criminal and Ethical Misconduct 16

Upstream and Downstream Costs 17
Product Costs in Service Companies 17

Emerging Trends in Managerial Accounting 18

Total Quality Management 18 Activity-Based Assessment 18 Just-in-Time Inventory 19 Value Chain Analysis Across Companies 21

A Look Back 21 A Look Forward 22

Appendix 22

Self-Study Review Problem 23

Key Terms 25 Questions 25

Exercises—Series A 26 Problems—Series A 30 Exercises—Series B 34 Problems—Series B 39

Analyze, Think, Communicate 42 Comprehensive Problem 46

Chapter 2 Cost Behavior, Operating Leverage, and Profitability Analysis 48

Chapter Opening 49

Fixed Cost Behavior 50

Operating Leverage 50

Calculating Percentage Change 51 Risk and Reward Assessment 52

Variable Cost Behavior 52

Relationship between Cost Behavior and Revenue 53

Effect of Cost Structure on Profit Stability 53

An Income Statement under the Contribution

Margin Approach 54

Measuring Operating Leverage Using Contribution Margin 55

Using Fixed Cost to Provide a Competitive Operating Advantage 56

Cost Behavior Summarized 57

The Relevant Range 58
Context-Sensitive Definitions of Fixed and
Variable Costs 58

Cost Averaging 59

Use of Estimates in Real-World Problems 61

High-Low Method of Estimating Fixed and Variable Costs 61

Scattergraph Method of Estimating Fixed and Variable Costs 62

A Look Back 64

A Look Forward 64

Self-Study Review Problem 65

Key Terms 66

Questions 67

Exercises—Series A 67

Problems—Series A 72 Exercises—Series B 78 Problems—Series B 82 Analyze, Think, Communicate 88 Comprehensive Problem 92

Analysis of Cost, Volume, and Pricing to Increase Chapter 3 Profitability 94

Chapter Opening 96

Determining the Contribution Margin per Unit 96

Determining the Break-Even Point 96

Using the Contribution Approach to Estimate the Sales Volume Necessary to Attain a Target Profit 98

Using the Contribution Approach to Estimate the Effects of Changes in Sales Price 98

Target Pricing 99

Using the Contribution Approach to Estimate the Effects of Changes in Variable Costs 99

Using the Contribution Approach to Estimate the Effects of Changes in Fixed Costs 101

Using the Cost-Volume-Profit Graph 101

Calculating the Margin of Safety 102

Performing Sensitivity Analysis Using Spreadsheet Software 105

Assessing the Pricing Strategy 106

Using the Contribution Approach to Assess the Effect of Simultaneous Changes in CVP

Variables 107

A Decrease in Sales Price Accompanied by an Increase in Sales Volume 107

An Increase in Fixed Cost Accompanied by an Increase in Sales Volume 107

A Simultaneous Reduction in Sales Price, Fixed Costs, Variable Costs, and Sales Volume 107

Performing Cost-Volume-Profit (CVP) Analysis Using the Contribution Margin Ratio 108

Performing Cost-Volume-Profit Analysis Using the **Equation Method 109**

Cost-Volume-Profit Limitations 110

A Look Back 111

A Look Forward 111

Appendix 112

Self-Study Review Problem 113

Key Terms 115

Questions 115

Exercises—Series A 115

Problems—Series A 118

Exercises—Series B 122

Problems—Series B 125

Analyze, Think, Communicate 128

Comprehensive Problem 132

Relevant Information for Special Decisions 134 **Chapter 4**

Chapter Opening 135

The Decision Environment 136

Relevant Information 136

Sunk Cost 136

Relevant (Differential) Revenues 137

Relevant (Avoidable) Costs 137

Relevance Is an Independent Concept 138

Relevancy of Opportunity Costs 139

Relevance Is Context Sensitive 140

Relationship Between Relevance and Accuracy 140 Quantitative Versus Qualitative Characteristics of

Decision Making 140

Relevant Information and Special Decisions 141 Special Order Decisions 141

Outsourcing Decisions 143

Segment Elimination Decisions 146

Summary of Relationships Between Avoidable Costs and the Hierarchy of Business Activity 148 **Equipment Replacement Decisions 149**

A Look Back 150

A Look Forward 151

Appendix 151

Self-Study Review Problem 153

Key Terms 155

Questions 156

Exercises—Series A 156

Problems—Series A 162

Exercises—Series B 167

Problems—Series B 172

Analyze, Think, Communicate 177

Comprehensive Problem 181

Chapter 5 Cost Accumulation, Tracing, and Allocation 182

Chapter Opening 183

Use of Cost Drivers to Accumulate Costs 184
Estimated Versus Actual Cost 184

Assignment of Cost to Objects in a Retail Business 185

Identifying Direct Versus Indirect Costs 185
Cost Classifications—Independent and Context
Sensitive 186
Allocating Indirect Costs to Objects 186
Selecting a Cost Driver 188
Behavioral Implications 191

Effects of Cost Behavior on Selecting the Most Appropriate Cost Driver 191

Using Volume Measures to Allocate Variable Overhead Costs 192

Allocating Fixed Overhead Costs 194

Allocating Costs to Solve Timing Problems 195

Establishing Cost Pools 196

Allocating Joint Costs 196

Joint Costs and the Issue of Relevance 197

Relative Sales Value as the Allocation Base 197 By-Product Costs 198

Cost Allocation: The Human Factor 198

Using Cost Allocation in a Budgeting Decision 199
Using Cost Drivers to Make Allocations 199
Choosing the Best Cost Driver 200
Controlling Emotions 200

A Look Back 200
A Look Forward 200
Appendix 201

Appendix 201

Self-Study Review Problem 205

Key Terms 206 Questions 207

Exercises—Series A 207 Problems—Series A 212 Exercises—Series B 215

Problems—Series B 220

Analyze, Think, Communicate 223 Comprehensive Problem 227

Chapter 6 Cost Management in an Automated Business Environment: ABC, ABM, and TQM 228

Chapter Opening 229

Development of a Single Companywide Cost Driver 230

Effects of Automation on Selecting a Cost Driver 231

Activity-Based Cost Drivers 231
Activity-Based Cost Drivers Enhance Relevance 232

Activity-Based Costing 233

Costs 240

Identifying Activity Centers 233
Comparing ABC with Traditional Two-Stage Cost
Allocation 233
Types of Production Activities 235
Selecting Cost Drivers 239
Using ABC Information to Trace Costs to Product
Lines 239
Under- and Overcosting 240

Examining the Relevance of Allocated Facility-Level

Downstream Costs and Upstream Costs 241 Employee Attitudes and the Availability of Data 241

Total Quality Management 242

Minimizing Tota! Quality Cost 242 Quality Cost Reports 243

A Look Back 244

A Look Forward 245

Self-Study Review Problem 245

Key Terms 248

Questions 248

Exercises—Series A 249

Problems—Series A 253

Exercises—Series B 258

Problems—Series B 262

Analyze, Think, Communicate 267

Comprehensive Problem 271

Chapter 7 Planning for Profit and Cost Control 272

Chapter Opening 273
The Planning Process 274
Three Levels of Planning for Business Activity 274

Advantages of Budgeting 275
Planning 275

Coordination 275

Performance Measurement 275

Corrective Action 276

Budgeting and Human Behavior 276

The Master Budget 276

Hampton Hams Budgeting Illustration 277

Sales Budget 277

Inventory Purchases Budget 280

Selling and Administrative Expense Budget 281

Cash Budget 283

Pro Forma Income Statement 285 Pro Forma Balance Sheet 286

Pro Forma Statement of Cash Flows 286

A Look Back 287

A Look Forward 288

Self-Study Review Problem 288

Key Terms 289

Questions 289

Exercises—Series A 290 Problems—Series A 295

Exercises—Series B 298

Problems—Series B 303

Analyze, Think, Communicate 307

Comprehensive Problem 311

Chapter 8 Performance Evaluation 312

Chapter Opening 313

Preparing Flexible Budgets 314

Determining Variances for Performance Evaluation 315

Sales Volume Variances 315 Flexible Budget Variances 317

The Human Element Associated with Flexible Budget Variances 319

Establishing Standards 320

Need for Standard Costs 321
Selecting Variances to Investigate 321

Flexible Budget Manufacturing Cost Variances 322

Price and Usage Variances 324
Variable Overhead Variances 327
Fixed Overhead Variances 328
Summary of Manufacturing Cost Variances 329

General, Selling, and Administrative Cost

Variances 329

A Look Back 331

A Look Forward 332

Self-Study Review Problem 333

Key Terms 334

Questions 334

Exercises—Series A 335

Problems—Series A 339

Exercises—Series B 344

Problems—Series B 348

Analyze, Think, Communicate 353

Comprehensive Problem 357

Chapter 9 Responsibility Accounting 358

Chapter Opening 360

Decentralization Concept 360

Organization Chart 361

Responsibility Centers 361

Responsibility Reports 361

Management by Exception and Degree of Summarization 362 Controllability Concept 363

Qualitative Reporting Features 364

Managerial Performance Measurement 364

Return on Investment 364
Residual Income 368
Responsibility Accounting and the Balanced
Scorecard 371

A Look Back 371

A Look Forward 372

Appendix 372

Self-Study Review Problem 375

Key Terms 376
Ouestions 376

Exercises—Series A 377

Problems—Series A 381

Exercises—Series B 384

Problems—Series B 388

Analyze, Think, Communicate 392

Comprehensive Problem 396

Chapter 10 Planning for Capital Investments 398

Chapter Opening 400

Capital Investment Decisions 400

Time Value of Money 401

Techniques for Analyzing Capital Investment

Proposals 405

Net Present Value 405 Internal Rate of Return 406

Techniques for Measuring Investment

Cash Flows 407

Cash Inflows 407

Techniques for Comparing Alternative Capital

Investment Opportunities 408

Net Present Value 408 Internal Rate of Return 410

Relevance and the Time Value of Money 412

Tax Considerations 412

Techniques that Ignore the Time Value of Money 414

Real-World Reporting Practices 416

Postaudits 417

A Look Back 417

A Look Forward 417

Appendix 418

Self-Study Review Problem 418

Key Terms 419

Questions 420

Exercises—Series A 420

Problems—Series A 420

Exercises—Series B 426

Problems—Series B 430

Analyze, Think, Communicate 432

Comprehensive Problem 436

Chapter 11 Product Costing in Service and Manufacturing Entities 438

Chapter Opening 439

Cost Flow in Manufacturing Companies 440

Cost Flow in Service Companies 441

Manufacturing Cost Flow Illustrated 442

Events Affecting Manufacturing Cost Flow in January 442

Flow of Overhead Costs 444

Manufacturing Overhead Account 445

Summary of January Events 448

Manufacturing Cost Flow Events for February through

December 449

Analyzing Underapplied Overhead 450

Preparing the Schedule of Cost of Goods

Manufactured and Sold 452

Financial Statements 453

Motive to Overproduce 453

Absorption Costing Versus Variable Costing 453

Variable Costing 454

A Look Back 455

A Look Forward 456

Self-Study Review Problem 456

Key Terms 457

Questions 457

Exercises—Series A 458

Problems—Series A 463

Exercises—Series B 468

Problems—Series B 472

Analyze, Think, Communicate 478

Comprehensive Problem 481

Chapter 12 Job-Order, Process, and Hybrid Cost Systems 482

Chapter Opening 483

Cost Systems 484

Cost Systems and Type of Product 484

Job-Order Cost Flow 484

Process Cost Flow 485

Hybrid Accounting Systems 486

Documentation in a Job-Order Cost System 486

Job-Order Cost System Illustrated 488

Process Cost System Illustrated 495

A Look Back 506

A Look Forward 506

Self-Study Review Problem 1 507

Self-Study Review Problem 2 507

Key Terms 508

Questions 508

Exercises—Series A 509 Problems—Series A 513 Exercises—Series B 517 Problems—Series B 521
Analyze, Think, Communicate 525
Comprehensive Problem 529

Chapter 13 Financial Statement Analysis 530

Chapter Opening 531

Factors in Communicating Useful Information 532

The Users 532
The Types of Decisions 532
Information Analysis 532

Methods of Analysis 532

Horizontal Analysis 533 Vertical Analysis 535 Ratio Analysis 536

Measures of Debt-Paying Ability 537

Liquidity Ratios 537 Solvency Ratios 540

Measures of Profitability 542

Measures of Managerial Effectiveness 542 Stock Market Ratios 545

Presentation of Analytical Relationships 547
Limitations of Financial Statement Analysis 548

Different Industries 548
Changing Economic Environment 549
Accounting Principles 549

A Look Back 550 A Look Forward 550

Self-Study Review Problem 550

Key Terms 552 Questions 552

Exercises—Series A 553
Problems—Series A 558
Exercises—Series B 562

Problems—Series B 567

Analyze, Think, Communicate 572
Supplement: Annual Report and Financial

Statement Analysis Projects 577

Chapter 14 Statement of Cash Flows 588

Chapter Opening 589

Operating Activities 590
Investing Activities 590
Financing Activities 590
Noncash Investing and Financing

Noncash Investing and Financing Activities 590

Reporting Format for the Statement of Cash Flows 590

Converting from Accrual to Cash-Basis Accounting 591

Operating Activities 591 Investing Activities 595 Financing Activities 595

Comprehensive Example Using the T-Account Approach 596

Preparing a Statement of Cash Flows 597 Cash Flows from Operating Activities 597 Cash Flows from Investing Activities 601 Cash Flows from Financing Activities 601 Presenting Information in the Statement of Cash Flows 603

Statement of Cash Flows Presented under the Indirect Method 603

The Financial Analyst 605 Real-World Data 606

A Look Back 607

A Look Forward 607

Self-Study Review Problem 608

Key Terms 610 Questions 610

Exercises—Series A 611

Problems—Series A 614

Exercises—Series B 618

Problems—Series B 621

Analyze, Think, Communicate 626