

*Eleventh Edition*

# FINANCIAL STATEMENT ANALYSIS

*K.R. Subramanyam*

# FINANCIAL STATEMENT ANALYSIS

ELEVENTH EDITION

**K. R.  
SUBRAMANYAM**  
*University of  
Southern  
California*

**Mc  
Graw  
Hill**  
Education



FINANCIAL STATEMENT ANALYSIS, ELEVENTH EDITION

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This book is printed on acid-free paper.

1 2 3 4 5 6 7 8 9 0 QVR/QVR 1 0 9 8 7 6 5 4 3

ISBN 978-0-07-811096-2

MHID 0-07-811096-3

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Cover Image: © *Don Bishop/Getty Images*  
Typeface: *10/12 Caslon Book BE*  
Compositor: *MPS Limited*  
Printer: *Quad/Graphics*

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**Library of Congress Cataloging-in-Publication Data**

Subramanyam, K. R.  
Financial statement analysis / K. R. Subramanyam. -- Eleventh edition.  
pages cm  
ISBN 978-0-07-811096-2 (alk. paper)  
1. Financial statements. I. Title.  
HF5681.B2W4963 2014  
657'.3--dc23

2013010851

The Internet addresses listed in the text were accurate at the time of publication. The inclusion of a website does not indicate an endorsement by the authors or McGraw-Hill Education, and McGraw-Hill Education does not guarantee the accuracy of the information presented at these sites.

# DEDICATION

To my wife Jayasree, son Sujay, and our parents  
—K. R. S.

# P R E F A C E

**W**elcome to the eleventh edition of *Financial Statement Analysis*. This book is the product of extensive market surveys, chapter reviews, and correspondence with instructors and students. I am delighted that an overwhelming number of instructors, students, practitioners, and organizations agree with my approach to analysis of financial statements. This book forges a unique path in financial statement analysis, one that responds to the requests and demands of modern-day analysts. From the outset, a main goal in writing this book has been to respond to these needs by providing the most progressive, accessible, current, and user-driven textbook in the field. I am pleased that the book's reception in the United States and across the world has exceeded expectations.

Analysis of financial statements is exciting and dynamic. This book reveals keys to effective analysis to give readers a competitive advantage in an increasingly competitive marketplace. I know financial statements are relevant to the decisions of many individuals including investors, creditors, consultants, managers, auditors, directors, analysts, regulators, and employees. This book equips these individuals with the analytical skills necessary to succeed in business. Yet experience in teaching this material tells us that to engage readers we must demonstrate the relevance of analysis. This book continually demonstrates that relevance with applications to real world companies. The book aims to benefit a broad readership, ranging from those with a simple curiosity in financial markets to those with years of experience in accounting and finance.

## **ORGANIZATION AND CONTENT**

This book's organization accommodates different teaching styles. While the book is comprehensive, its layout allows instructors to choose topics and depth of coverage as desired. Readers are told in Chapter 1 how the book's topics are related to each other and how they fit within the broad discipline of financial statement analysis. The book is organized into three parts:

1. Analysis Overview.
2. Accounting Analysis.
3. Financial Analysis.

## **ANALYSIS OVERVIEW**

Chapters 1 and 2 are an overview of financial statement analysis. I introduce financial statement analysis as an integral part of the broader framework of business analysis. I examine the role of financial statement analysis in different types of business analysis

such as equity analysis and credit analysis. I emphasize the understanding of business activities—planning, financing, investing, and operating. I describe the strategies underlying business activities and their effects on financial statements. I also emphasize the importance of accrual accounting for analysis and the relevance of conducting accounting analysis to make appropriate adjustments to financial statements before embarking on financial analysis. I apply several popular tools and techniques in analyzing and interpreting financial statements. An important and unique feature is the use of Colgate's annual report as a means to immediately engage readers and to instill relevance. The chapters are as follows:

- *Chapter 1.* I begin the analysis of financial statements by considering their relevance to business decisions. This leads to a focus on users, including what they need and how analysis serves them. I describe business activities and how they are reflected in financial statements. I also discuss both debt and equity valuation.
- *Chapter 2.* This chapter explains the nature and purpose of financial accounting and reporting, including the broader environment under which financial statements are prepared and used. I highlight the importance of accrual accounting in comparison to cash accounting. I also introduce the concept of income and discuss issues relating to fair value accounting. The importance and limitations of accounting data for analysis purposes are described along with the significance of conducting accounting analysis for financial analysis.

## ACCOUNTING ANALYSIS

To aid in accounting analysis, Chapters 3 through 6 explain and analyze the accounting measurement and reporting practices underlying financial statements. I organize this analysis around financing (liabilities and equity), investing (assets), and operating (income) activities. I provide insights into income determination and asset and liability measurement. Most important, I discuss procedures and clues for the analysis and adjustment of financial statements to enhance their economic content for meaningful financial analysis. The four chapters are:

- *Chapter 3.* Chapter 3 begins the detailed analysis of the numbers reflecting financing activities. The focus is on explaining, analyzing, interpreting, and adjusting those reported numbers to better reflect financing activities. Crucial topics include debt financing, leases, off-balance-sheet financing, and shareholders' equity. We discuss postretirement benefits in the chapter's appendix.
- *Chapter 4.* This chapter extends the analysis to investing activities. I show how to analyze and adjust (as necessary) numbers that reflect assets such as receivables, inventories, property, equipment, and intangibles. I explain what those numbers reveal about financial position and performance, including future performance.
- *Chapter 5.* Chapter 5 extends the analysis to special intercompany investing activities. I analyze intercorporate investments, including marketable securities, equity method investments and investments in derivative securities, and business combinations. Also, in an appendix I examine international investments and their reporting implications for financial statements.
- *Chapter 6.* This chapter focuses on analysis of operating activities and income. I discuss the concept and measurement of income as distinct from cash flows. I analyze accrual measures in yielding net income. I stress the difference between

comprehensive income and earnings during a period. Understanding recognition methods of both revenues and expenses is stressed. I analyze and adjust the income statement and its components, including topics such as restructuring charges, asset impairments, employee stock options, and accounting for income taxes.

## FINANCIAL ANALYSIS

Chapters 7 through 11 examine the processes and methods of financial analysis (including prospective analysis). I stress the objectives of different users and describe analytical tools and techniques to meet those objectives. The means of analysis range from computation of ratio and cash flow measures to earnings prediction and equity valuation. I apply analysis tools that enable one to reconstruct the economic reality embedded in financial statements. I demonstrate how analysis tools and techniques enhance users' decisions—including company valuation and lending decisions. I show how financial statement analysis reduces uncertainty and increases confidence in business decisions. This section consists of five chapters and a Comprehensive Case:

- *Chapter 7.* This chapter begins our study of the application and interpretation of financial analysis tools. I analyze cash flow measures for insights into all business activities, with special emphasis on operating activities. Attention is directed at company and industry conditions when analyzing cash flows.
- *Chapter 8.* Chapter 8 emphasizes return on invested capital and explains variations in its measurement. Attention is directed at return on net operating assets and return on equity. I disaggregate both return measures and describe their relevance. I pay special attention to disaggregation of return on equity into operating and nonoperating components, as well as differences in margins and turnover across industries.
- *Chapter 9.* I describe forecasting and pro forma analysis of financial statements. I present forecasting of the balance sheet, income statement, and statement of cash flows with a detailed example. I then provide an example to link prospective analysis to equity valuation.
- *Chapter 10.* This chapter focuses on credit analysis, both liquidity and solvency. I first present analysis tools to assess liquidity—including accounting-based ratios, turnover, and operating activity measures. Then I focus on capital structure and its implications for solvency. I analyze the importance of financial leverage and its effects on risk and return. Analytical adjustments are explained for tests of liquidity and solvency. I describe earnings-coverage measures and their interpretation.
- *Chapter 11.* The final chapter emphasizes earnings-based analysis and equity valuation. The earnings-based analysis focuses on earnings quality, earnings persistence, and earning power. Attention is directed at techniques for measuring and applying these concepts. Discussion of equity valuation focuses on forecasting accounting numbers and estimating company value.
- *Comprehensive Case.* This case is a comprehensive analysis of financial statements and related notes. I describe steps in analyzing the statements and the essential attributes of an analysis report. Analysis is organized around key components of financial statement analysis: cash analysis, return on invested capital, asset utilization, operating performance, profitability, forecasting, liquidity, capital structure, and solvency.

## KEY CHANGES IN THIS EDITION

Many readers provided useful suggestions through chapter reviews, surveys, and correspondence. I made several changes in response to their comments and suggestions.

The key changes to the eleventh edition are:

- **Updating Accounting Pronouncements.** I have updated the text to reflect the latest standards and pronouncements of US GAAP. I have also adopted the new codification system under US GAAP.
- **Incorporating IFRS.** IFRS has been growing in importance both in the United States and around the world. While there are not too many differences between IFRS and US GAAP, there do exist certain key differences. I have updated the text so as to also include references to IFRS and highlight differences from US GAAP when they occur. I have also added sections primarily devoted to certain items where the treatment under IFRS is very different from that under US GAAP.
- **Asset Revaluations under IFRS (Chapter 4).** Unlike US GAAP, IFRS allows upward revaluations of assets. I now include a separate section in Chapter 4 to address this issue.
- **Debt Financing (Chapter 3).** Chapter 3 now has a detailed section on debt financing, including accounting treatment, note disclosures, and analysis issues related to debt financing.
- **Restructuring Chapter 3.** The chapter on financing activities has been restructured. First, the new section on debt financing has been included. Second, the large section on postretirement benefits has now been moved to an appendix. This allows the flexibility of allowing those instructors who wish to cover postretirement benefits to do so, without burdening everyone with this complex topic. Third, the section on shareholders' equity has been updated and streamlined.
- **Colgate Continues as Featured Company.** I continue to use Colgate as our feature company, but now use a more recent annual report. Colgate provides a stable consumer products company to illustrate the analysis; it is also used to explain many business practices and is of interest to a broad audience. Campbell Soup is retained as another company for illustrations and assignments.
- **Streamlining and Updating the Text.** Chapters 1 through 6 have been streamlined and updated to improve presentation and lucidity of the writing. Several sections have been reorganized and rewritten to improve readability.
- **EOC Material Streamlined and Updated.** End-of-chapter material has been streamlined and updated to reflect changes to the text. I have also added many new problems and cases to respond to readers' suggestions.
- **Book Is Focused and Practical.** I continue to emphasize a streamlined and concise book with an abundance of practical applications and directions for analysis.

## INNOVATIVE PEDAGOGY

People learn best when provided with motivation and structure. The pedagogical features of this book facilitate those learning goals. Features include:

- **Analysis Feature.** An article featuring an actual company launches each chapter to highlight the relevance of that chapter's materials. In-chapter analysis is performed on that company. Experience shows readers are motivated to learn when their interests are piqued.



- **Analysis Objectives.** Chapters open with key analysis objectives that highlight important chapter goals.
- **Analysis Linkages.** Linkages launch each chapter to establish bridges between topics and concepts in prior, current, and upcoming chapters. This roadmap—titled *A Look Back*, *A Look at This Chapter*, and *A Look Ahead*—provides structure for learning.
- **Analysis Preview.** A preview kicks off each chapter by describing its content and importance.
- **Analysis Viewpoint.** Multiple role-playing scenarios in each chapter are a unique feature that show the relevance of financial statement analysis to a wide assortment of decision makers.
- **Analysis Excerpt.** Numerous excerpts from practice—including annual report disclosures, newspaper clippings, and press releases—illustrate key points and topics. Excerpts reinforce the relevance of the analysis and engage the reader.
- **Analysis Research.** Multiple short boxes in each chapter discuss current research relevant to the analysis and interpretation of financial statements.
- **Analysis Annotations.** Each chapter includes marginal annotations. These are aimed at relevant, interesting, and topical happenings from business that bear on financial statement analysis.
- **Analysis Feedback.** End-of-chapter assignments include numerous traditional and innovative assignments augmented by several cases that draw on actual financial statements such as those from American Airlines, Best Buy, Campbell Soup, Cendant, Citicorp, Coca-Cola, Colgate, Delta Airlines, Kimberly-Clark, Kodak, Marsh Supermarkets, Merck, Microsoft, Newmont Mining, Philip Morris, Quaker Oats, Sears, TYCO, Toys “R” Us, United Airlines, Walt Disney, and Wal-Mart. Assignments are of four types: *Questions*, *Exercises*, *Problems*, and *Cases*. Each assignment is titled to reflect its purpose—many require critical thinking, communication skills, interpretation, and decision making. This book stands out in both its diversity and number of end-of-chapter assignments. Key check figures are selectively printed in the margins.
- **Analysis Focus Companies.** Entire financial statements of two companies—Colgate and Campbell Soup—are reproduced in the book and used in numerous assignments. Experience shows that frequent use of annual reports heightens interest and learning. These reports include notes and other financial information.

## TARGET AUDIENCE

This best-selling book is targeted to readers of all business-related fields. Students and professionals alike find the book beneficial in their careers as they are rewarded with an understanding of both the techniques of analysis and the expertise to apply them. Rewards also include the skills to successfully recognize business opportunities and the knowledge to capitalize on them.

The book accommodates courses extending over one quarter, one semester, or two quarters. It is suitable for a wide range of courses focusing on analysis of financial statements, including upper-level “capstone” courses. The book is used at both the undergraduate and graduate levels, as well as in professional programs. It is the book of choice in modern financial statement analysis education.

## SUPPLEMENT PACKAGE

This book is supported by a wide array of supplements aimed at the needs of both students and instructors of financial statement analysis. They include:

- **Book Website.** [<http://www.mhhe.com/subramanyam11e>] The Web is increasingly important for financial statement analysis. This book has its own dedicated Online Learning Center, which is an excellent starting point for analysis resources. The site includes links to key websites as well as support materials for both instructors and students.
- **Instructor's Solutions Manual.** An Instructor's Solutions Manual contains complete solutions for assignments. It is carefully prepared, reviewed, and checked for accuracy. The Manual contains chapter summaries, analysis objectives, and other helpful materials. It has transition notes to instructors for ease in moving from the tenth to the eleventh edition. It is available on the Online Learning Center.
- **Test Bank.** The Test Bank contains a variety of test materials with varying levels of difficulty. All materials are carefully reviewed for consistency with the book and thoroughly examined for accuracy. It is available on the Online Learning Center.
- **Chapter Lecture Slides.** A set of PowerPoint slides is available for each chapter. They can be used to augment the instructor's lecture materials or as an aid to students in supplementing in-class lectures. It is available on the Online Learning Center.
- **Casebook Support.** Some instructors augment the book with additional case materials. While practical illustrations and case materials are abundant in the text, more are available. These include (1) Create custom case selection [[www.mcgrawhillcreate.com](http://www.mcgrawhillcreate.com)] and (2) *Financial Shenanigans*—ISBN: 978-0-07-138626-5(0-07-138626-2).
- **Customer Service.** 1-800-331-5094 or access <http://www.mhhe.com>

## ACKNOWLEDGMENTS

We are thankful for the encouragement, suggestions, and counsel provided by many instructors, professionals, and students in writing this book. It has been a team effort and we recognize the contributions of all these individuals. They include the following professionals who read portions of this book in various forms:

Kenneth Alterman  
*(Standard & Poor's)*

Michael Ashton  
*(Ashton Analytics)*

Clyde Bartter  
*(Portfolio Advisory Co.)*

Laurie Dodge  
*(Interbrand Corp.)*

Vincent C. Fung  
*(PricewaterhouseCoopers)*

Hyman C. Grossman  
*(Standard & Poor's)*

Richard Huff  
*(Standard & Poor's)*

Michael A. Hyland  
*(First Boston Corp.)*

Robert J. Mebus  
*(Standard & Poor's)*

Robert Mednick  
*(Arthur Andersen)*

William C. Norby  
*(Financial Analyst)*

David Norr  
*(First Manhattan Corp.)*

Thornton L. O'Glove  
*(Quality of Earnings Report)*

Paul Rosenfield  
*(AICPA)*

George B. Sharp  
*(CITIBANK)*

Fred Spindel  
*(PricewaterhouseCoopers)*

Frances Stone  
*(Merrill Lynch & Co.)*

Jon A. Stroble  
*(Jon A. Stroble & Associates)*

Jack L. Treynor  
*(Treynor-Arbit Associates)*

Neil Weiss  
*(Jon A. Stroble & Associates)*

Gerald White  
*(Grace & White, Inc.)*

We also want to recognize the following instructors and colleagues who provided valuable comments and suggestions for this edition and past editions of the book:

- |  |   |  |
|--|---|--|
| Rashad Abdel-Khalik<br><i>(University of Illinois)</i>           | Douglas Carmichael<br><i>(CUNY-Baruch)</i>                                  | Henry Jaenicke<br><i>(Drexel University)</i>               |
| M. J. Abdolmohammadi<br><i>(Bentley College)</i>                 | Benny R. Copeland<br><i>(University of North Texas)</i>                     | Keith Jakob<br><i>(University of Montana)</i>              |
| Robert N. Anthony<br><i>(Harvard University)</i>                 | Harry Davis<br><i>(CUNY-Baruch)</i>   | Kurt R. Jesswein<br><i>(Sam Houston State University)</i>  |
| Hector R. Anton<br><i>(New York University)</i>                  | Peter Lloyd Davis<br><i>(CUNY-Baruch)</i>                                   | Kenneth H. Johnson<br><i>(Georgia Southern University)</i> |
| Terry Arndt<br><i>(Central Michigan University)</i>              | Wallace N. Davidson III<br><i>(University of North Texas)</i>               | J. William Kamas<br><i>(University of Texas at Austin)</i> |
| Florence Atiase<br><i>(University of Texas at Austin)</i>        | Timothy P. Dimond<br><i>(Northern Illinois University)</i>                  | Jocelyn D. Kauffunger<br><i>(University of Pittsburgh)</i> |
| Dick Baker<br><i>(Northern Illinois University)</i>              | Peter Easton<br><i>(University of Notre Dame)</i>                           | Janet Kimbrell<br><i>(Oklahoma State University)</i>       |
| Steven Balsam<br><i>(Temple University)</i>                      | James M. Emig<br><i>(Villanova University)</i>                              | Jo Koehn<br><i>(Central Missouri State)</i>                |
| Mark Bauman<br><i>(University of Northern Iowa)</i>              | Calvin Engler<br><i>(Iona College)</i>                                      | Homer Kripke<br><i>(New York University)</i>               |
| William T. Baxter<br><i>(CUNY-Baruch)</i>                        | Vivian W. Fang<br><i>(Rutgers University)</i>                               | Linda Lange<br><i>(Regis University)</i>                   |
| William Belski<br><i>(Virginia Tech)</i>                         | Karen Foust<br><i>(Tulane University)</i>                                   | Russ Langer  |
| Martin Benis<br><i>(CUNY-Baruch)</i>                             | Thomas J. Frecka<br><i>(University of Notre Dame)</i>                       | Barbara Leonard<br><i>(Loyola University, Chicago)</i>     |
| Shyam Bhandari<br><i>(Bradley University)</i>                    | WaQar I. Ghani<br><i>(Saint Joseph's University)</i>                        | Steven Lillien<br><i>(CUNY-Baruch)</i>                     |
| Fred Bien<br><i>(Franklin University)</i>                        | Don Giacomino<br><i>(Marquette University)</i>                              | Ralph Lim<br><i>(Sacred Heart University)</i>              |
| John S. Bildersee<br><i>(New York University)</i>                | Edwin Grossnickle<br><i>(Western Michigan University)</i>                   | Thomas Lopez<br><i>(Georgia State University)</i>          |
| Linda Bowen<br><i>(University of North Carolina-Chapel Hill)</i> | Peter M. Gutman<br><i>(CUNY-Baruch)</i>                                     | Mostafa Maksy<br><i>(Northeastern Illinois University)</i> |
| Vince Brenner<br><i>(Louisiana State University)</i>             | J. Larry Hagler<br><i>(East Carolina University)</i>                        | Brenda Mallouk<br><i>(University of Toronto)</i>           |
| Abraham J. Briloff<br><i>(CUNY-Baruch)</i>                       | James William Harden<br><i>(University of North Carolina at Greensboro)</i> | Ann Martin<br><i>(University of Colorado-Denver)</i>       |
| Gary Bulmash<br><i>(American University)</i>                     | Frank Heflin<br><i>(Purdue University)</i>                                  | Martin Mellman<br><i>(Hofstra University)</i>              |
| Joseph Bylinski<br><i>(University of North Carolina)</i>         | Steven L. Henning<br><i>(Southern Methodist University)</i>                 | Krishnagopal Menon<br><i>(Boston University)</i>           |
| Shelly Canterbury<br><i>(George Mason University)</i>            | Yong-Ha Hyon<br><i>(Temple University)</i>                                  | William G. Mister<br><i>(Colorado State University)</i>    |

- Stephen Moehrle  
*(University of Missouri–  
St. Louis)*
- Belinda Mucklow  
*(University of Wisconsin)*
- Sia Nassiripour  
*(William Paterson University)*
- Hugo Nurnberg  
*(CUNY–Baruch)*
- Per Olsson  
*(Duke University)*
- Parunchara Pacharn  
*(SUNY–Buffalo)*
- Zoe-Vonna Palmrose  
*(University of Southern  
California)*
- Stephen Penman  
*(Columbia University)*
- Marlene Plumlee  
*(University of Utah)*
- Sirapat Polwitoon  
*(Susquehanna  
University)*
- Tom Porter  
*(NERA Economic  
Consulting)*
- Eric Press  
*(Temple University)*
- Chris Prestigiacomo  
*(University of Missouri  
at Columbia)*
- Larry Prober  
*(Riber University)*
- William Ruland  
*(CUNY–Baruch)*
- Stanley C. W. Salvary  
*(Canisius College)*
- Phil Shane  
*(University of Colorado  
at Boulder)*
- Don Shannon  
*(DePaul University)*
- Ken Shaw  
*(University of Missouri)*
- Lenny Soffer  
*(University of Illinois–  
Chicago)*
- Vic Stanton  
*(University of California,  
Berkeley)*
- Pamela Stuerke  
*(University of Rhode  
Island)*
- Karen Taranto  
*(George Washington  
University)*
- Gary Taylor  
*(University of Alabama)*
- Rebecca Todd  
*(Boston University)*
- Bob Trezevant  
*(University of Southern  
California)*
- John M. Trussel  
*(Penn State University  
at Harrisburg)*
- Joseph Weintrop  
*(CUNY–Baruch)*
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*(Lehman College)*
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*(University of Houston)*
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*(University of London)*
- Richard F. Williams  
*(Wright State University)*
- Philip Wolitzer  
*(Marymount Manhattan  
College)*
- Christine V. Zavgren
- Stephen Zeff  
*(Rice University)*

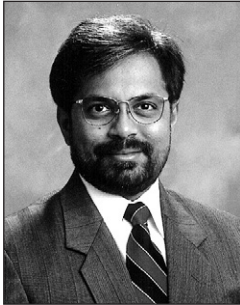
For the eleventh edition I would like to acknowledge the services of Bryce Schonberger, who helped with updating exhibits and preparing EOC material.

We acknowledge permission to use materials adapted from examinations of the Association for Investment Management and Research (AIMR) and the American Institute of Certified Public Accountants (AICPA). Also, we are fortunate to work with an outstanding team of McGraw-Hill Education professionals, extending from editorial to marketing to sales.

Special thanks go to my family for their patience, understanding, and inspiration in completing this book, and I dedicate the book to them.

**K. R. Subramanyam**

# ABOUT THE AUTHOR



**K.R. Subramanyam** is Associate Dean and the KPMG Foundation Professor of Accounting at the Marshall School of Business, University of Southern California. He received his MBA from the Indian Institute of Management and his PhD from the University of Wisconsin. Prior to obtaining his PhD, he worked as an international management consultant and as a financial planner for General Foods.

Professor Subramanyam has taught courses in financial statement analysis, financial accounting, and managerial accounting at both the graduate and undergraduate levels. He is a highly regarded teacher, recognized for his commitment to business education. His course in financial statement analysis is one of the most popular courses in the Marshall School of Business. Professor Subramanyam is a National Talent Scholar, a member of Beta Alpha Psi, and a Deloitte and Touche National Fellow. For many years he was a Leventhal Research Fellow at the Marshall School of Business. Professor Subramanyam is actively involved in several national and international organizations, such as the American Accounting Association. He has served these organizations in several capacities, including as a member of the Research Committee and Committee to Identify Seminal Contributions to Accounting, and as program coordinator for national conferences.

Professor Subramanyam's research interests span a wide range, including financial accounting standards, the economic effects of financial statements, implications of earnings management, financial statement analysis and valuation, financial regulation, and auditing issues. Professor Subramanyam is a prolific and highly cited author. His articles appear in leading academic journals such as *The Accounting Review*, *Journal of Accounting and Economics*, *Journal of Accounting Research*, *Contemporary Accounting Research*, *Review of Accounting Studies*, *Journal of Accounting and Public Policy*, and *Journal of Business Finance and Accounting*. Professor Subramanyam's work has been cited over 5,000 times, and he has won both national and international research awards, including the *Notable Contribution to the Auditing Literature* from the American Accounting Association. Professor Subramanyam serves on the editorial boards of *The Accounting Review*, *Contemporary Accounting Research*, and *Auditing: A Journal of Practice and Theory*.

Professor Subramanyam's work has also had wide impact outside the academe. For example, his work on auditor independence was prominently featured in congressional testimony. In addition, his research has been widely covered by the international media, including, among others, *The Wall Street Journal*, *The Economist*, *BusinessWeek*, *Barrons*, *Los Angeles Times*, *Chicago Tribune*, *Boston Globe*, *Sydney Morning Herald*, *The Atlanta Journal-Constitution*, *Orange County Register*, *Bloomberg.com*, and *Reuters*.

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FINANCIAL  
STATEMENT  
ANALYSIS



## 1

## OVERVIEW OF FINANCIAL STATEMENT ANALYSIS

**A LOOK AT THIS CHAPTER** •

We begin our analysis of financial statements by considering its relevance in the broader context of business analysis. We use Colgate Palmolive Co. as an example to help us illustrate the importance of assessing financial performance in light of industry and economic conditions. This leads us to focus on financial statement users, their information needs, and how financial statement analysis addresses those needs. We describe major types of business activities and how they are reflected in financial statements. A preliminary financial analysis illustrates these important concepts.

**A LOOK AHEAD** >

Chapter 2 describes the financial reporting environment and the information included in financial statements. Chapters 3 through 6 deal with accounting analysis, which is the task of analyzing, adjusting, and interpreting accounting numbers that make up financial statements. Chapters 7 through 11 focus on mastering the tools of financial statement analysis and valuation. A comprehensive financial statement analysis follows Chapter 11.

**ANALYSIS OBJECTIVES**

- Explain business analysis and its relation to financial statement analysis.
- Identify and discuss different types of business analysis.
- Describe component analyses that constitute business analysis.
- Explain business activities and their relation to financial statements.
- Describe the purpose of each financial statement and linkages between them.
- Identify the relevant analysis information beyond financial statements.
- Analyze and interpret financial statements as a preview to more detailed analyses.
- Apply several basic financial statement analysis techniques.
- Define and formulate some basic valuation models.
- Explain the purpose of financial statement analysis in an efficient market.

## Something to Smile About?

Colgate has been creating smiles the world over for the past 200 years. However, the smiles are not limited to users of its immensely popular toothpaste. Colgate's financial and stock price performance during the past decade has given plenty for its shareholders to smile about. Stock price appreciated 60% over this period, generating average returns for Colgate's stockholders to the tune of about 7% per year, many times higher than that on the S&P 500 over a comparable period. Earnings have almost doubled during the past decade, which has witnessed the worst economic times since the Great Depression of the 1930s.

One of the world's oldest corporations, Colgate today is a truly global company, with a presence in almost 200 countries and sales revenues of about \$17 billion. Its

brand name—most famously associated with its toothpaste—is one of the oldest and best recognized brands in the world. In fact, the brand has been so successful that “Colgate” has become a generic word for toothpaste in many countries, spawning imitations over which the company has been engaged in bitter legal disputes.

Colgate leverages the popularity of its brand as well as its international presence and implements a business strategy that focuses on attaining market leadership in certain key product categories and markets where its strengths lie. For example, Colgate controls almost a third of the world's toothpaste market, where it has been gaining market share in the recent past! Such market leadership allows it pricing power in the viciously competitive consumer products

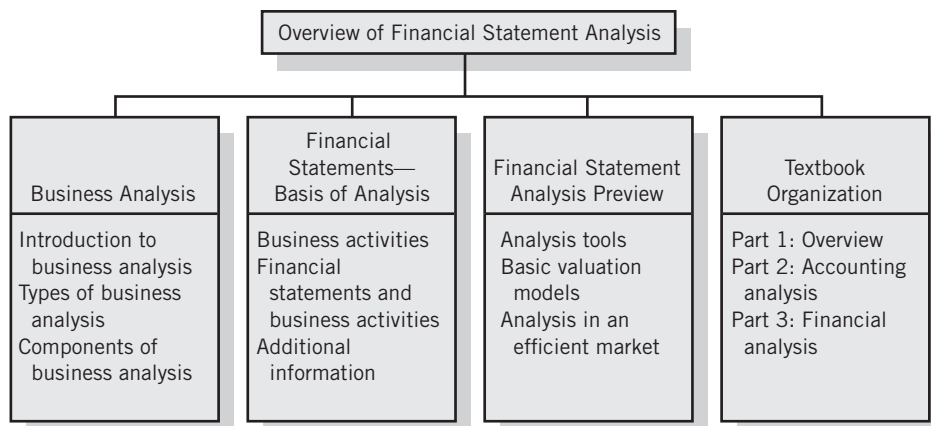
markets. A total consumer orientation, constant innovation, and relentless quest for improving cost efficiencies have been Colgate's hallmarks to success.

Another key feature in Colgate's strategy has been its extremely generous dividend policy; over the past ten years Colgate has paid out almost \$15 billion to its shareholders through cash dividends and stock buybacks, which is significantly more than the money it has raised from its shareholders in its entire history! Colgate's dividend policy reflects its management philosophy of staying focused on generating superior shareholder returns rather than pursuing a strategy of misguided growth. Small, in Colgate's case, has certainly been beautiful!

Source: Company's 10-Ks.

## PREVIEW OF CHAPTER 1

Financial statement analysis is an integral and important part of the broader field of business analysis. **Business analysis** is the process of evaluating a company's economic prospects and risks. This includes analyzing a company's business environment, its strategies, and its financial position and performance. Business analysis is useful in a wide range of business decisions, such as whether to invest in equity or in debt securities, whether to extend credit through short- or long-term



loans, how to value a business in an initial public offering (IPO), and how to evaluate restructurings including mergers, acquisitions, and divestitures. **Financial statement analysis** is the application of analytical tools and techniques to general-purpose financial statements and related data to derive estimates and inferences useful in business analysis. Financial statement analysis reduces reliance on hunches, guesses, and intuition for business decisions. It decreases the uncertainty of business analysis. It does not lessen the need for expert judgment but, instead, provides a systematic and effective basis for business analysis. This chapter describes business analysis and the role of financial statement analysis. The chapter also introduces financial statements and explains how they reflect underlying business activities. We introduce several tools and techniques of financial statement analysis and apply them in a preliminary analysis of Colgate. We also show how business analysis helps us understand Colgate's prospects and the role of business environment and strategy for financial statement analysis.

## ..... BUSINESS ANALYSIS

This section explains business analysis, describes its practical applications, identifies separate analyses that make up business analysis, and shows how it all fits in with financial statement analysis.

### Introduction to Business Analysis

Financial statement analysis is part of business analysis. Business analysis is the evaluation of a company's prospects and risks for the purpose of making business decisions. These business decisions extend to equity and debt valuation, credit risk assessment, earnings predictions, audit testing, compensation negotiations, and countless other decisions. Business analysis aids in making informed decisions by helping structure the decision task through an evaluation of a company's business environment, its strategies, and its financial position and performance.

To illustrate what business analysis entails we turn to Colgate. Much financial information about Colgate—including its financial statements, explanatory notes, and selected news about its past performance—is communicated in its *annual report* reproduced in Appendix A near the end of this book. The annual report also provides qualitative information about Colgate's strategies and future plans, typically in the Management Discussion and Analysis, or MD&A, section.

An initial step in business analysis is to evaluate a company's business environment and strategies. We begin by studying Colgate's business activities and learn that it is a leading global consumer products company. Colgate has several internationally well-known brands that are primarily in the oral, personal, and home care markets. The company has brands in markets as varied as dental care, soaps and cosmetics, household cleaning products, and pet care and nutrition. The other remarkable feature of Colgate is its comprehensive global presence. Almost 80% of Colgate's revenues are derived from international operations. The company operates in 200 countries around the world, with equal presence in every major continent! Exhibit 1.1 provides key financial details of Colgate's operating divisions.

Colgate's strengths are the popularity of its brands and the highly diversified nature of its operations. These strengths, together with the static nature of demand for consumer products, give rise to Colgate's financial stability, thereby reducing risk for its equity and debt investors. For example, Colgate's stock price weathered the bear market of 2008–2009, when the S&P 500 shed half its value (see Exhibit 1.2). The static nature of demand in the consumer products markets, however, is a double-edged

**Colgate's Operating Divisions****Exhibit 1.1**

	(2011 AMOUNTS IN \$ MILLION)		
	Net Sales	Operating Profit	Total Assets
Oral, personal, and home care			
North America* . . . . .	\$ 2,995	\$ 791	\$ 2,288
Latin America . . . . .	4,778	1,414	3,636
Europe/South Pacific . . . . .	3,508	715	3,555
Greater Asia/Africa . . . . .	3,281	807	2,069
<b>Total oral, personal, and home care . . . . .</b>	<b>14,562</b>	<b>3,727</b>	<b>11,548</b>
Pet nutrition† . . . . .	2,172	560	1,078
Corporate . . . . .	N/A	(446)	98
<b>Total net sales . . . . .</b>	<b>\$16,734</b>	<b>\$3,841</b>	<b>\$12,724</b>

\*Net sales in the United States for oral, personal, and home care were \$2,567.

†Net sales in the United States for pet nutrition were \$1,032.

**Colgate Stock Price Growth versus the S&P 500****Exhibit 1.2**

sword: while reducing sales volatility, it also fosters fierce competition for market share. Colgate has been able to thrive in this competitive environment by following a carefully defined business strategy that develops and increases market leadership positions in certain key product categories and markets that are consistent with the company's core strengths and competencies and through relentless innovation. For example, the company uses its valuable consumer insights to develop successful new products regionally, which are then rolled out on a global basis. Colgate also focuses on areas of the world where economic development and increasing consumer spending provide opportunities for growth. Despite these strategic overtures, Colgate's profit margins are continuously squeezed by competition. The company was thus forced to initiate a major restructuring program in 2004 to reduce costs by trimming its workforce by 12% and shedding several unprofitable product lines.



Colgate's brand leadership together with its international diversification and sensible business strategies have enabled it to become one of the most successful consumer products companies in the world. In 2011, Colgate earned \$2.43 billion on sales revenues of \$16.73 billion. During the past decade, Colgate's operating profit margin has averaged above 20% of sales, which translates to an average return on assets of almost 30%, suggesting that its business is extremely profitable. Colgate then uses its small equity base and significant amount of debt financing to leverage its return on equity to above 100%, one of the highest of all publicly traded companies. The stock market has richly rewarded Colgate's excellent financial performance and low risk: the company's price-to-earnings and its price-to-book ratios are, respectively, 19 and 21, and its stock price has significantly outperformed the broader market.

In our discussion here, we reference a number of financial performance measures, such as operating profit margins, return on assets, and return on equity. We also refer to certain valuation ratios such as price-to-earnings and price-to-book, which appear to measure how the stock market rewards Colgate's performance. Financial statements provide a rich and reliable source of information for such financial analysis. The statements reveal how a company obtains its resources (financing), where and how those resources are deployed (investing), and how effectively those resources are deployed (operating profitability). Many individuals and organizations use financial statements to improve business decisions. Investors and creditors use them to assess company prospects for investing and lending decisions. Boards of directors, as investor representatives, use them to monitor managers' decisions and actions. Employees and unions use financial statements in labor negotiations. Suppliers use financial statements in setting credit terms. Investment advisors and information intermediaries use financial statements in making buy-sell recommendations and in credit rating. Investment bankers use financial statements in determining company value in an IPO, merger, or acquisition.

To show how financial statement information helps in business analysis, let's turn to the data in Exhibit 1.3. These data reveal that over the past ten years Colgate's net income increased by 89%. Much of this growth was fueled by a significant growth in

**Exhibit 1.3****Colgate's Summary Financial Data (in billions, except per share data)**

	2011	2010	2009	2008	2007	2006	2005	2004	2003	2002
<b>Continuing Operations</b>										
Net sales .....	\$16.73	\$15.56	\$15.33	\$15.33	\$13.79	\$12.24	\$11.40	\$10.58	\$9.90	\$9.29
Gross profit .....	9.59	9.20	9.01	9.01	8.22	7.21	6.62	6.15	5.75	5.35
Operating income .....	3.84	3.49	3.62	3.33	2.96	2.57	2.37	2.20	2.14	2.02
Net income .....	2.43	2.20	2.29	1.96	1.74	1.35	1.35	1.33	1.42	1.29
Total assets .....	12.72	11.17	11.13	9.98	10.11	9.14	8.51	8.67	7.48	7.09
Total liabilities .....	10.18	8.36	7.88	7.94	7.72	7.62	7.05	7.21	6.38	6.53
Long-term debt .....	4.43	2.82	2.82	3.59	3.22	2.72	2.92	3.09	2.68	3.21
Shareholders' equity .....	2.38	2.68	3.12	1.92	2.29	1.41	1.35	1.25	0.89	0.35
Treasury stock at cost .....	12.81	11.31	10.48	9.70	8.90	8.07	7.58	6.97	6.50	6.15
Basic earnings per share .....	4.98	4.45	4.53	3.81	3.35	2.57	2.54	2.45	2.60	2.33
Cash dividends per share .....	2.27	2.03	1.72	1.56	1.40	1.25	1.11	0.96	0.90	0.72
Closing stock price .....	92.39	80.37	82.15	68.54	77.96	65.24	54.85	51.16	50.05	52.43
Shares outstanding (billions) ....	0.48	0.49	0.49	0.50	0.51	0.51	0.52	0.53	0.53	0.54

revenues (80%). Colgate pays generous dividends: over the past 10 years it has paid \$7 billion in cash dividends and almost \$8 billion through stock repurchases (see movement in treasury stock). Therefore, Colgate has returned almost \$15 billion to its shareholders over the past decade, an amount which comprises most of its earnings during this period. By paying out most of its earnings, Colgate has been able to maintain a small equity base. A closer look suggests that most of the increase in Colgate shareholders' equity occurred during the financial crisis (2007–2009), when companies were conserving cash because of uncertainty regarding credit availability. Since then, Colgate has been *decreasing* its shareholders' equity, which is consistent with its overall strategy of leveraging high shareholder returns through a small equity base. Consequently, Colgate's return on equity is once again approaching the 100% mark (it was 96% in 2011). One downside of maintaining a small equity base is Colgate's riskiness that arises through its high financial leverage. For example, the company's ratio of total liabilities to equity is almost 5. However, the extremely stable nature of its operating performance allows Colgate to leverage returns for its equity shareholders through having a high proportion of debt in its capital structure.

Further examination of Exhibit 1.3 reveals that Colgate's earnings growth over the past decade has not occurred evenly. After dropping slightly in 2004, net income remained stagnant for the next couple of years, and Colgate was able to achieve modest growth in earnings per share over this period only by reducing its equity base. However, this earnings stagnation is partly because of costs related to Colgate's restructuring program that commenced in 2004. Earnings before the restructuring charge actually grew by 12% between 2004 and 2006. The restructuring program appears to have paid off handsomely. Colgate's earnings grew spectacularly during the next three years, at the height of the financial crisis!

Is the summary financial information sufficient to use as a basis for deciding whether or not to invest in Colgate's stock or in making other business decisions? The answer is clearly no. To make informed business decisions, it is important to evaluate Colgate's business activities in a more systematic and complete manner. For example, equity investors desire answers to the following types of questions before deciding to buy, hold, or sell Colgate stock:

- What are Colgate's future business prospects? Are Colgate's markets expected to grow? What are Colgate's competitive strengths and weaknesses? What strategic initiatives has Colgate taken, or does it plan to take, in response to business opportunities and threats?
- What is Colgate's earnings potential? What is its recent earnings performance? How sustainable are current earnings? What are the "drivers" of Colgate's profitability? What estimates can be made about earnings growth?
- What is Colgate's current financial condition? What risks and rewards does Colgate's financing structure portray? Are Colgate's earnings vulnerable to variability? Does Colgate possess the financial strength to overcome a period of poor profitability?
- How does Colgate compare with its competitors, both domestically and globally?
- What is a reasonable price for Colgate's stock?

Creditors and lenders also desire answers to important questions before entering into lending agreements with Colgate. Their questions include the following:

- What are Colgate's business plans and prospects? What are Colgate's needs for future financing?

#### FALLING STAR

Regulators slapped a fine on Merrill Lynch and banned one of its star analysts from the securities industry for life for privately questioning a telecom stock while he publicly boosted it.

- What are Colgate's likely sources for payment of interest and principal? How much cushion does Colgate have in its earnings and cash flows to pay interest and principal?
- What is the likelihood Colgate will be unable to meet its financial obligations? How volatile are Colgate's earnings and cash flows? Does Colgate have the financial strength to pay its commitments in a period of poor profitability?

Answers to these and other questions about company prospects and risks require analysis of both qualitative information about a company's business plans and quantitative information about its financial position and performance. Proper analysis and interpretation of information is crucial to good business analysis. This is the role of financial statement analysis. Through it, an analyst will better understand and interpret both qualitative and quantitative financial information so that reliable inferences are drawn about company prospects and risks.

## Types of Business Analysis

Financial statement analysis is an important and integral part of business analysis. The goal of business analysis is to improve business decisions by evaluating available information about a company's financial situation, its management, its plans and strategies, and its business environment. Business analysis is applied in many forms and is an important part of the decisions of security analysts, investment advisors, fund managers, investment bankers, credit raters, corporate bankers, and individual investors. This section considers major types of business analysis.

### RATINGS INFO

One can find company debt ratings at [standardandpoors.com](http://standardandpoors.com), [moody.com](http://moody.com), and [fitchratings.com](http://fitchratings.com).

### BOND FINANCING

As of 2009, the size of the worldwide bond market (total debt outstanding) is an estimated \$82.2 trillion, of which the size of the outstanding U.S. bond market debt was \$31.2 trillion according to Bank for International Settlements (BIS), or alternatively \$35.2 trillion as of Q2 2011 according to Securities Industry and Financial Markets Association (SIFMA).

## Credit Analysis

**Creditors** lend funds to a company in return for a promise of repayment with interest. This type of financing is temporary since creditors expect repayment of their funds with interest. Creditors lend funds in many forms and for a variety of purposes. **Trade** (or operating) **creditors** deliver goods or services to a company and expect payment within a reasonable period, often determined by industry norms. Most trade credit is short term, ranging from 30 to 60 days, with cash discounts often granted for early payment. Trade creditors do not usually receive (explicit) interest for an extension of credit. Instead, trade creditors earn a return from the profit margins on the business transacted. **Nontrade creditors** (or debtholders) provide financing to a company in return for a promise, usually in writing, of repayment with interest (explicit or implicit) on specific future dates. This type of financing can be either short or long term and arises in a variety of transactions.

In pure credit financing, an important element is the fixed nature of benefits to creditors. That is, should a company prosper, creditors' benefits are limited to the debt contract's rate of interest or to the profit margins on goods or services delivered. However, creditors bear the *risk of default*. This means a creditor's interest and principal are jeopardized when a borrower encounters financial difficulties. This asymmetric relation of a creditor's risk and return has a major impact on the creditor's perspective, including the manner and objectives of credit analysis.

Credit analysis is the evaluation of the creditworthiness of a company. *Creditworthiness* is the ability of a company to honor its credit obligations. Stated differently, it is the ability of a company to pay its bills. Accordingly, the main focus of credit analysis is on risk, not profitability. Variability in profits, especially the sensitivity of profits to downturns

in business, is more important than profit levels. Profit levels are important only to the extent they reflect the margin of safety for a company in meeting its obligations.

Credit analysis focuses on downside risk instead of upside potential. This includes analysis of both liquidity and solvency. **Liquidity** is a company's ability to raise cash in the short term to meet its obligations. Liquidity depends on a company's cash flows and the makeup of its current assets and current liabilities. **Solvency** is a company's long-run viability and ability to pay long-term obligations. It depends on both a company's long-term profitability and its capital (financing) structure.

The tools of credit analysis and their criteria for evaluation vary with the term (maturity), type, and purpose of the debt contract. With short-term credit, creditors are concerned with current financial conditions, cash flows, and the liquidity of current assets. With long-term credit, including bond valuation, creditors require more detailed and forward-looking analysis. Long-term credit analysis includes projections of cash flows and evaluation of extended profitability (also called *sustainable earning power*). Extended profitability is a main source of assurance of a company's ability to meet long-term interest and principal payments.

## Equity Analysis

**Equity investors** provide funds to a company in return for the risks and rewards of ownership. Equity investors are major providers of company financing. Equity financing, also called *equity* or *share capital*, offers a cushion or safeguard for all other forms of financing that are senior to it. This means equity investors are entitled to the distributions of a company's assets only after the claims of all other senior claimants are met, including interest and preferred dividends. As a result, equity investors are said to hold a *residual interest*. This implies equity investors are the first to absorb losses when a company liquidates, although their losses are usually limited to the amount invested. However, when a company prospers, equity investors share in the gains with unlimited upside potential. Thus, unlike credit analysis, equity analysis is symmetric in that it must assess both downside risks and upside potential. Because equity investors are affected by all aspects of a company's financial condition and performance, their analysis needs are among the most demanding and comprehensive of all users.

Individuals who apply active investment strategies primarily use technical analysis, fundamental analysis, or a combination. **Technical analysis**, or charting, searches for patterns in the price or volume history of a stock to predict future price movements. **Fundamental analysis**, which is more widely accepted and applied, is the process of determining the value of a company by analyzing and interpreting key factors for the economy, the industry, and the company. A main part of fundamental analysis is evaluation of a company's financial position and performance.

A major goal of fundamental analysis is to determine intrinsic value, also called *fundamental value*. **Intrinsic value** is the value of a company (or its stock) determined through fundamental analysis without reference to its market value (or stock price). While a company's market value can equal or approximate its intrinsic value, this is not necessary. An investor's strategy with fundamental analysis is straightforward: buy when a stock's intrinsic value exceeds its market value, sell when a stock's market value exceeds its intrinsic value, and hold when a stock's intrinsic value approximates its market value.

To determine intrinsic value, an analyst must forecast a company's earnings or cash flows and determine its risk. This is achieved through a comprehensive, in-depth analysis of a company's business prospects and its financial statements. Once a company's



### GREATEST INVESTORS

The "top five" greatest equity investors of the 20th century, as compiled in a survey:

1. Warren Buffett, Berkshire Hathaway
2. Peter Lynch, Fidelity Funds
3. John Templeton, Templeton Group
4. Benjamin Graham & David Dodd, professors
5. George Soros, Soros Fund