Financial Statement Analysis

A Data Analytics Approach

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Mc Graw Hill

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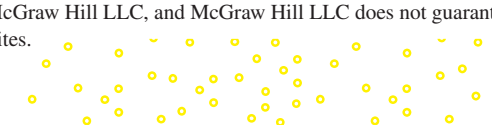


Dedications

To my colleagues around the world, but especially at the University of Michigan, the University of Texas, Dartmouth College, and the University of Georgia, thank you for the positive influence you have had on my career.

To my children, Stephen, William, Lauren, and my wife, Sarah. Thank you for all the support, encouragement, and patience when dealing with the downsides of having an accounting professor in the family.

—Bob Resutek

To my most amazing son, David, who is loyal, helpful and kind. Love you, David!

—Vern Richardson

About the Authors

Robert J. Resutek

Robert J. Resutek is an Associate Professor of Accounting and the PwC Faculty Fellow at the Terry College of Business at the University of Georgia. Prior to his move to Georgia, he was an Associate Professor of Business Administration at the Tuck School of Business at Dartmouth. He received his Bachelors in Business Administration and Masters in Accounting from the University of Michigan and his PhD in accounting from the University of Texas in Austin. He has published articles in *The Accounting Review, Journal of Accounting & Economics, Review of Accounting Studies,* and *Contemporary Accounting Research,* and is on the editorial board of the *Review of Accounting Studies.* His research centers on how the capital market interprets financial information and determining the extent to which investors react to a company's fundamental economic performance or how that fundamental economic performance is measured by the accounting system. Outside of financial accounting, he enjoys spending time with his family and working to turn his land into a self-sustaining homestead.

Vernon J. Richardson

Vernon J. Richardson is Distinguished Professor of Accounting and the G. William Glezen Chair in the Sam M. Walton College of Business at the University of Arkansas and Visiting Professor at Baruch College. He received his BS, Master of Accountancy, and MBA from Brigham Young University and his PhD in accounting from the University of Illinois at Urbana–Champaign. Dr. Richardson is a member of the American Accounting Association and has served as president of the American Accounting Association Information Systems section. He previously served as an editor of *The Accounting Review* and is currently an editor at *Accounting Horizons.* He is also a co-author of McGraw Hill's *Accounting Information Systems, Introduction to Data Analytics for Accounting, Introduction to Business Analytics, Data Analytics for Accounting,* and *Cost Accounting* textbooks. His accounting analytics textbooks won the AAA's 2022 Innovation in Accounting Education Award.

Financial Statement Analysis Requires Data-Driven Insights

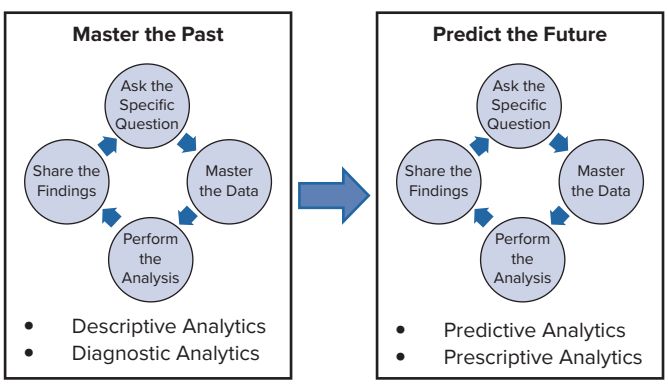
From the Authors

Data available to address accounting questions has changed significantly. Less than 30 years ago, easy access to company-specific financial data was limited to the largest of institutions. Since then, standardized financial data, voluntary corporate disclosures, analyst reports, and scores of other forms of company-specific financial data are available in real time to anyone with an internet connection. Students currently entering careers in business must be able to not only analyze a company's financial statements but also access, incorporate, organize, and present analysis using the additional sources of data now available. The data analytic techniques required in today's corporate world are taught in separate classes, often in different disciplines such as Management Information Systems or Marketing.

We propose a financial statement analysis textbook that introduces students to financial statement analysis (FSA) topics while developing the key data analytic skills necessary in today's data-driven world. Our textbook centers on the **AMPS model** of data analytics. **AMPS** stands for the following and serves as the framework for the textbook:

1. **A**sk the Question
2. **M**aster the Data
3. **P**erform the Analysis
4. **S**hare the Findings

The exhibit below shows the detailed FSA framework of mastering the past to help predict the future each incorporates the AMPS model of data analytics, which we call the *FSA-AMPS model* in this book.



The FSA-AMPS Model

To support real-world application of FSA, the textbook includes a comprehensive Excel-based financial model. The model's progression mirrors FSA topics covered in each chapter of the textbook and guides the students through the process of building a fully functioning pro-forma financial model. Although the financial model is comprehensive and covers material from each of the chapters, it is modular by design, allowing professors to choose which topics they want their students to cover.

Key Themes

Focus on broad FSA questions to appeal to a broader student base: Rather than a narrow focus centered on equity valuation that appeals more to finance-oriented students (common in this textbook sphere), we broaden our topical focus to appeal to a larger cross-section of the undergraduate, MAcc, and MBA student populations. Our textbook centers on helping students understand how to answer several fundamental questions that are important in business, from the corporate to the not-for-profit world. These include:

1. What does the company's past tell us about their future?
2. How is the company's strategic vision reflected in its financial statements?
3. What is the company's revenue-generating capability?
4. Can the company convert its revenues into sustainable future cash flows?
5. How do the company's projected future cash flows and earnings map into firm value?

Our goal is to not only help students analyze financial statements—the typical focus of FSA textbooks—but also to give students a conceptual framework for using heterogeneous data types in quantitative analysis and to introduce students to contemporary data-driven presentation techniques to support their conclusions. The lack of a singular focus on valuation that is often offered in other textbooks increases the appeal to those students pursuing careers in the not-for-profit or other non-traditional sectors through our examples and illustrations.

Reinforce FSA and data-analytic concepts with hands-on practice: In each chapter, we introduce new concepts that tie into two distinct frameworks: (1) an FSA-oriented framework and (2) a Data-Analytic framework. We reinforce these concepts with practical lab exercises throughout the textbook. Specifically, we use data analytics labs to emphasize critical thinking and data analysis skills, including descriptive, diagnostic, predictive, and prescriptive analyses. This requires matching the question asked to the available data and choosing the appropriate analysis to guide decision making. While competitor textbooks focus on advanced accounting- and valuation-related topics, we believe a more contemporary pedagogy is for students to understand how data can/should be used to analyze financial statements. We do this through a balanced approach, centered on both performing data analysis and data-driven inferences.

Data Analytics Labs: To provide students with hands-on experience in data analytics techniques and skills, each chapter includes four to five detailed labs that require them to use Excel and Tableau. Each lab asks students to bring together their knowledge of FSA and data analytics to ask and answer questions, and to present their findings to decision-makers. Each lab has two versions. The first provides step-by-step instructions to help students learn the relevant techniques, while the second assesses students on the skills learned. Each lab allows students to choose their path through the AMPS model: They can use written instructions with screenshots from the relevant software package, or they can follow along with video tutorials created by the authors. Lab assessment is conducted primarily in Connect through the use of auto-graded questions, including multiple-choice questions, algorithmic questions, and other objective questions.


Lab 1.2 Tableau

Introduction to Tableau: Industry Membership and Net Margins

Key Terms

Descriptive Statistics, Graph, Retail Industry

Lab Insight

In Chapter 1, we discuss the company's competitive environment and its strategic positioning. We used Porter's five forces as a way to think about the company and its competitors, specifically using the number and diversity of competitors as a measure of rivalry among competitors. In this lab, we'll use Tableau and a unique dataset to create a visualization of net profit margins and number of companies in the industry. This is a good example of descriptive analytics, using visualizations to describe the data.

Required

Use Tableau to produce visualizations of net margins and industry membership.

Ask the Question

What is the relationship between number of competitors in an industry and the net profit margin?

Master the Data

Designed to meet data analytics requirements of AACSB: The requirement to include data analytics into business school curriculums has gained momentum over the past 10 years (see AACSB Accreditation Standard A5). Our textbook

offers accounting professors a novel pedagogy that introduces and teaches modern data analytics skills within the general framework of an FSA accounting course. We believe this will allow professors to attract more students to their FSA course than to more traditional FSA courses centered around more advanced accounting topics.

Practical Examples from Real-World Companies: Throughout the text, management accounting concepts use examples from a host of real-world companies and industries.

Videos: Accompanying the text are many types of video resources, including guided examples, worked-out problems, and data analytics labs. These videos are available in Connect.

Consider a company like **Amazon**. What industry best describes **Amazon**? Which set of other firms is most comparable to **Amazon**? Is **Amazon** a retailer? If so, it would fit into the retail industry with companies such as **Walmart**, **Macy**'s, and **The Home Depot**. Or consider **Amazon**'s self-produced hit shows like *The Man in the High Castle* and *The Marvelous Mrs. Maisel*. Is **Amazon** a media company? If so, it would fit into the media production industry with companies such as **Universal** and **Disney**. Or with its growing fleet of delivery vans and cargo planes, is **Amazon** a logistics and distribution company? If so, it would fit into the air freight and logistics industry with the likes of **UPS**, **Federal Express**, and **DHL**.

Industry analysis is important, but perhaps more important is understanding that companies are unique. Simple classification techniques rarely work well because companies rarely compete in a single product domain. Accordingly, it is important to understand the product markets in which the company you are analyzing competes. Often, as in the case of **Amazon**, you will need to understand the economic dynamics of several

End-of-Chapter Exercises and Problems: In-chapter and end-of-chapter progress checks, exercises, and problems are essential to each chapter. The end-of-chapter assessments include real-world application questions with a special emphasis on data analytics skills and tools. Each chapter also provides multiple-choice and discussion questions as well as exercises and problems to reinforce learning.

Problems

1. (LO 3.2) You are working to update your own financial forecasts for the following two firms and you see these sets of forecasts from professional financial analysts:
   a. Firm A is followed by 20 different analysts with EPS estimates between $0.95 and $1.15. Each analyst updated their forecast on April 12, the day after the 1Q earnings conference call.
   b. Firm B is followed by 40 different analysts with EPS estimates between $0.75 and $1.25. Twenty analysts updated their forecasts on April 12, the day after the 1Q earnings conference call. The other 20 analysts with forecasts between $1.10 and $1.1, have not updated their forecasts in over 6 months.

Required

1. If you had to choose between these two groups of analyst forecasts to do your own forecasting, which would be the most useful, those from Firm A or Firm B? W

Progress Checks: Progress Check questions posed following each major section of each chapter encourage students to consider and apply the concepts presented.

PROGRESS CHECK

1. How can an information gap about a product between a buyer and a seller affect the transaction?
2. What are some examples of discretion that managers have in the accounting methods they use in the financial statements other than those related to inventory?
3. Why don't managers switch between different accounting methods for a particular financial statement item on a regular basis?

Multiple presentation styles: Students will be provided tutorials in WRDS (a large standardized financial data provider available to most university students), Excel (the most common software program used to analyze financial data), and Tableau (the most common software program for presenting data analysis). These tutorials will be delivered using:

- Screenshots
- Videos
- Within-chapter sidebars
- End-of-chapter questions

Bob Resutek

Vern Richardson

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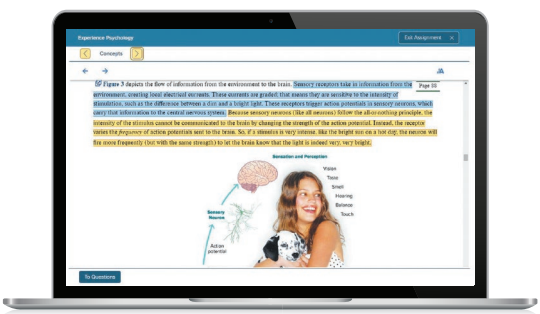

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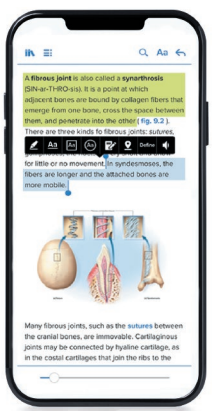

"I really liked this app—it made it easy to study when you don't have your textbook in front of you."

- Jordan Cunningham, Eastern Washington University

iPhone: Getty Images

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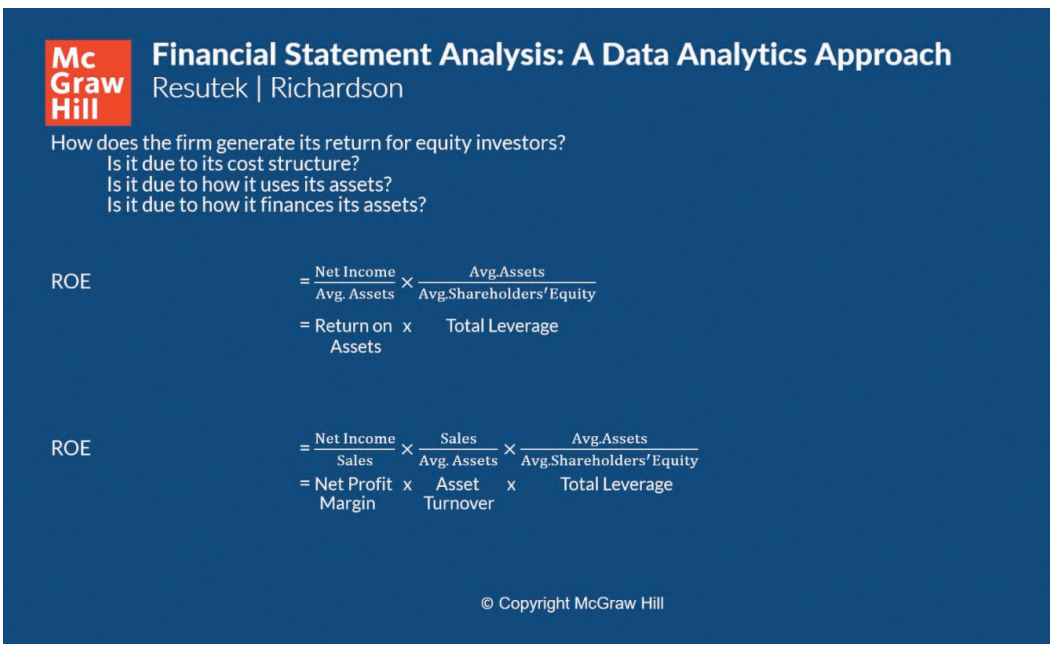
Connect for *Financial Statement Analysis*

SmartBook® is the market-leading adaptive study resource that is proven to strengthen memory recall, increase retention, and boost grades. SmartBook 2.0 identifies and closes knowledge gaps through a continually adapting reading and questioning experience that helps students master the key concepts in each chapter.

Lecture Videos: The author lecture videos are designed to reinforce learning objectives and important chapter concepts.



Discussion Questions: These can be utilized for in-class discussion or individual assignment to enhance reflection, analysis, and critical thinking.

Brief Exercises and Problems: These are available for assignment in Connect to ensure students are building an analytical skill set. Many are available in an auto-graded format.

Required:
Using **Netflix** assets and liabilities from its balance sheet (Exhibit 4.10), identify the financial assets (FA) and financial liabilities (FL), and compute NFO and FLEV.

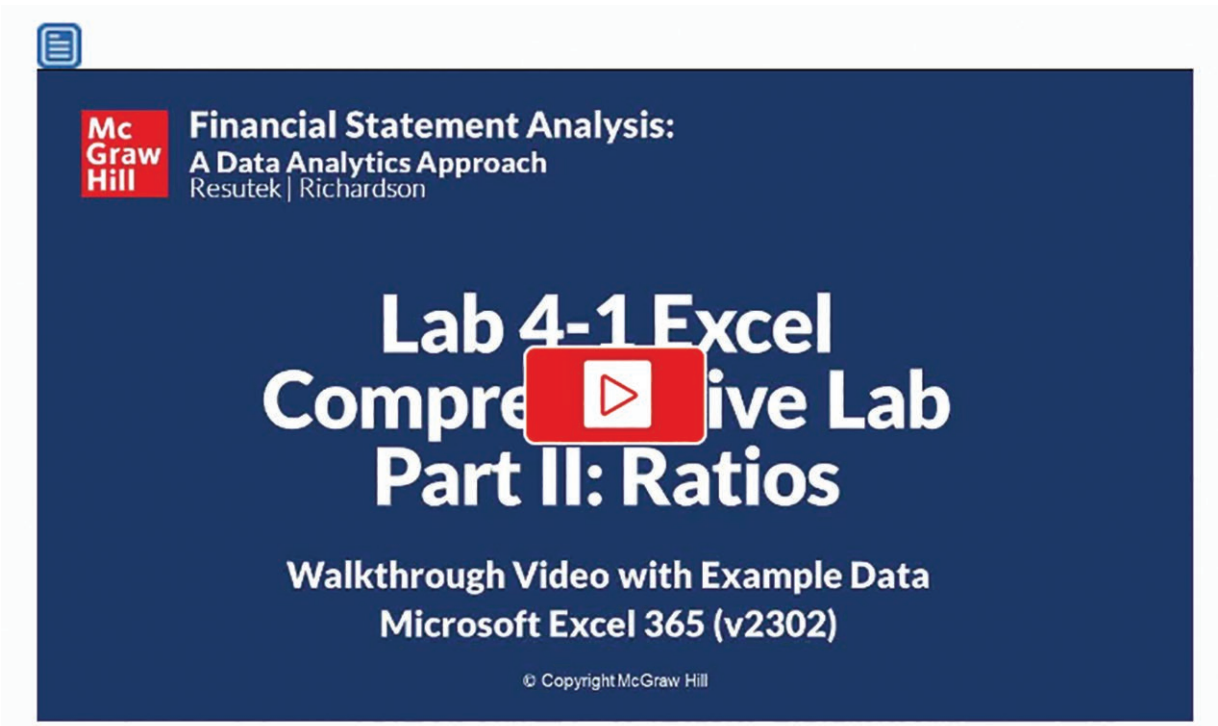
Netflix (NFLX)	Year 2022	Year 2021
Financial Assets (FA) Note: Enter in millions of dollars as shown on the balance sheet.		
Financial Liabilities (FL) Note: Enter in millions of dollars as shown on the balance sheet.		
Net Financial Obligations (NFO) Note: Enter in millions of dollars as shown on the balance sheet. Negative values must be entered as a negative number.		
Financial Leverage (FLEV) Note: Round to 3 decimal places. Negative values must be entered as a negative number.		

Labs and Alternate Labs with Assessments: Allows students to work in Excel and/or Tableau, answer auto-graded assessment questions, analysis questions, and upload their lab results. The labs are designed to reinforce the concepts and techniques taught in each chapter. Regular labs come with step-by-step instructions. Alternate labs "on your own" have minimal instruction and allow students to apply what they have learned.

Answer the following questions based on the details provided.

Question	Answer
1. What is the 2022 RNOA (Return on Net Operating Assets)? (Round to 3 decimal places.)	
2. What is the 2022 RCOE (Return on Common Equity)? (Round to 3 decimal places.)	
3. What is the 2022 ROOA (Return on Operating Assets)? (Round to 3 decimal places.)	
4. What is the 2022 Gross Margin? (Round to 3 decimal places.)	
5. What is the 2022 A/R Turnover? (Round to 2 decimal places.)	

Lab Help Videos: Provide step-by-step instructions that walk students through the assigned analysis tasks of each regular lab in Excel and Tableau.



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