SECOND EDITION

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financial management & analysis

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Financial Management and Analysis

Second Edition

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Financial Management and Analysis

Second Edition

FRANK J. FABOZZI
PAMELA P. PETERSON

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FJF
To my wife and children, Francesco, Patricia, and Karly

PPP
To my children, Ken and Erica

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Preface

Financial Management and Analysis is an introduction to the concepts, tools, and applications of finance. The purpose of this textbook is to communicate the fundamentals of financial management and financial analysis. This textbook is written in a way that will enable students who are just beginning their study of finance to understand financial decision-making and its role in the decision-making process of the entire firm.

Throughout the textbook, you'll see how we view finance. We see financial decision-making as an integral part of the firm's decision-making, not as a separate function. Financial decision-making involves coordination among personnel specializing in accounting, marketing, and production aspects of the firm.

The principles and tools of finance are applicable to all forms and sizes of business enterprises, not only to large corporations. Just as there are special problems and opportunities for small family-owned businesses (such as where to obtain financing), there are special problems and opportunities for large corporations (such as agency problems that arise when management of the firm is separated from the firm's owners). But the fundamentals of financial management are the same regardless of the size or form of the business. For example, a dollar today is worth more than a dollar one year from today, whether you are making decisions for a sole proprietorship or a large corporation.

We view the principles and tools of finance as applicable to firms around the globe, not just to U.S. business enterprises. While customs and laws may differ among nations, the principles, theories, and tools of financial management do not. For example, in evaluating whether to buy a particular piece of equipment, you must evaluate what happens to the firm's future cash flows (How much will they be? When will they occur? How uncertain are they?), whether the firm is located in the United States, Great Britain, or elsewhere.

In addition, we believe that a strong foundation in finance principles and the related mathematical tools are necessary for you to understand how investing and financing decisions are made. But building that foundation need not be strenuous. One way that we try to help you build that foundation is to present the principles and theories of finance using intuition, instead of with proofs and theorems. For example, we walk you through the intuition of capital structure theory with numerical and real world examples, not equations and proofs. Another way we try to assist you is to approach the tools of finance using careful, step-by-step examples and numerous graphs.

ORGANIZATION

Financial Management and Analysis is presented in seven parts. The first two parts (Parts One and Two) cover the basics, including the objective of financial management, valuation principles, and the relation between risk and return. Financial decision-making is covered in Parts Three, Four, and Five where we present long-term investment management (commonly referred to as capital budgeting), the management of long-term sources of funds, and working capital management. Part Six covers financial statement analysis which includes financial ratio analysis, earnings analysis, and cash flow analysis. The last part (Part Seven) covers several specialized topics: international financial management, borrowing via structured financial transactions (i.e., asset securitization), project financing, equipment leasing, and financial planning and strategy.

DISTINGUISHING FEATURES OF THE TEXTBOOK

Logical structure. The text begins with the basic principles and tools, followed by long-term investment and financing decisions. The first two parts lay out the basics; Part Three then focuses on the "left side" of the balance sheet (the assets) and the Part Four is the "right side" of the balance sheet (the liabilities and equity). Working capital decisions, which are made to support the day-to-day operations of the firm, are discussed in Part Five. Part Six provides the tools for analyzing a firm's financial statements. In the last chapter of the book, you are brought back full-circle to the objective of financial management: the maximization of owners' wealth.

Graphical illustrations. Graphs and illustrations have been carefully and deliberately developed to depict and provide visual reinforcement of mathematical concepts. For example, we show the growth of a bank balance through compound interest several ways: mathematically, in a time-line, and with a bar graph.

Applications. As much as possible, we develop concepts and mathematics using examples of actual practice. For example, we first present financial analysis using a simplified set of financial statements for a fictitious company. After you've learned the basics using the fictitious company, we demonstrate financial analysis tools using data from Wal-Mart Stores, Inc. Actual examples help you better grasp and retain major concepts and tools. We integrate over 100 actual company examples throughout the text, so you're not apt to miss them. Considering both the examples throughout the text and the research questions and problems, you are exposed to hundreds of actual companies.

Extensive coverage of financial statement analysis. While most textbooks provide some coverage of financial statement analysis, we have provided you with much more detail in Part Six of the textbook. Chapter 6 and the three chapters in Part Six allow an instructor to focus on financial statement analysis.

Extensive coverage of alternative debt instruments. Because of the innovations in the debt market, alternative forms debt instruments can be issued by a corporation. In Chapter 15, you are introduced to these instruments. We then devote one chapter to the most popular alternative to corporate bond issuance, the creation and issuance of asset-backed securities.

Coverage of leasing and project financing. We provide in-depth coverage of leasing in Chapter 27, demystifying the claims about the advantages and disadvantages of leasing you too often read about in some textbooks and professional articles. Project financing has grown in importance for not only corporations but for countries seeking to develop infrastructure facilities. Chapter 28 provides the basic principles for understanding project financing.

Early introduction to derivative instruments. Derivative instruments (futures, swaps, and options) play an important role in finance. You are introduced to these instruments in Chapter 4. While derivative instruments are viewed as complex instruments, you are provided with an introduction that makes clear their basic investment characteristics. By the early introduction of derivative instruments, you will be able to appreciate the difficulties of evaluating securities that have embedded options (Chapter 9), how there are real options embedded in capital budgeting decisions (Chapter14), and how derivative instruments can be used to reduce or to hedge the cost of borrowing (Chapter 15).

Stand-alone nature of the chapters. Each chapter is written so that chapters may easily be rearranged to fit different course structures. Concepts, terminology, and notation are presented in each chapter so that no chapter is dependent upon another. This means that instructors can tailor the use of this book to fit their particular time frame for the course and their students' preparation (for example, if students enter the course with sufficient background in accounting and taxation, Chapters 5 and 6 can be skipped).

We believe that our approach to the subject matter of financial management and analysis will help you understand the key issues and provide the foundation for developing a skill set necessary to deal with real world financial problems.

Frank J. Fabozzi
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About the Authors

Frank J. Fabozzi, Ph.D., CFA, CPA is the Frederick Frank Adjunct Professor of Finance in the School of Management at Yale University. Prior to joining the Yale faculty, he was a Visiting Professor of Finance in the Sloan School at MIT. Professor Fabozzi is a Fellow of the International Center for Finance at Yale University and the editor of the *Journal of Portfolio Management*. He earned a doctorate in economics from the City University of New York in 1972. In 1994 he received an honorary doctorate of Humane Letters from Nova Southeastern University and in 2002 was inducted into the Fixed Income Analysts Society's Hall of Fame. He is the honorary advisor to the Chinese Asset Securitization website.

Pamela Parrish Peterson, Ph.D., CFA is a Professor of finance at Florida State University where she teaches undergraduate courses in corporate finance and doctoral courses in valuation theory. She received her Ph.D. from the University of North Carolina and has taught at FSU since receiving her degree in 1981. Professor Peterson is a co-author with Don Chance of *Real Options* (AIMR Research Foundation, 2002), is a co-author with Frank J. Fabozzi of *Capital Budgeting* (John Wiley & Sons, 2002) and *Analysis of Financial Statements* (published by Frank J. Fabozzi Associates, 1999), co-author with David R. Peterson of the AIMR monograph *Company Performance and Measures of Value Added* (1996), and author of *Financial Management and Analysis* (published by McGraw-Hill, 1994). Professor Peterson has published articles in journals including the *Journal of Finance*, the *Journal of Financial Economics*, the *Journal of Banking and Finance*, *Financial Management*, and the *Financial Analysts Journal*.

PART One

Foundations

CHAPTER 1

Introduction to Financial Management and Analysis

Finance is the application of economic principles and concepts to business decision-making and problem solving. The field of finance can be considered to comprise three broad categories: financial management, investments, and financial institutions:

- ***Financial management***. Sometimes called ***corporate finance*** or ***business finance***, this area of finance is concerned primarily with financial decision-making within a business entity. Financial management decisions include maintaining cash balances, extending credit, acquiring other firms, borrowing from banks, and issuing stocks and bonds.
- ***Investments***. This area of finance focuses on the behavior of financial markets and the pricing of securities. An investment manager's tasks, for example, may include valuing common stocks, selecting securities for a pension fund, or measuring a portfolio's performance.
- ***Financial institutions***. This area of finance deals with banks and other firms that specialize in bringing the suppliers of funds together with the users of funds. For example, a manager of a bank may make decisions regarding granting loans, managing cash balances, setting interest rates on loans, and dealing with government regulations.

No matter the particular category of finance, business situations that call for the application of the theories and tools of finance generally involve either investing (using funds) or financing (raising funds).

Managers who work in any of these three areas rely on the same basic knowledge of finance. In this book, we introduce you to this common body of knowledge and show how it is used in financial decision-making. Though the emphasis of this book is financial management, the basic principles and tools also apply to the areas of investments and financial institutions. In this introductory chapter, we'll consider the types of decisions financial managers make, the role of financial analysis, the forms of business ownership, and the objective of managers' decisions. Finally, we will describe the relationship between owners and managers.

FINANCIAL MANAGEMENT

Financial management encompasses many different types of decisions. We can classify these decisions into three groups: investment decisions, financing decisions, and decisions that involve both investing and financing. Investment decisions are concerned with the use of funds—the buying, holding, or selling of all types of assets: Should we buy a new die stamping machine? Should we introduce a new product line? Sell the old production facility? Buy an existing company? Build a warehouse? Keep our cash in the bank?

Financing decisions are concerned with the acquisition of funds to be used for investing and financing day-to-day operations. Should managers use the money raised through the firms' revenues? Should they seek money from outside of the business? A company's operations and investment can be financed from outside the business by incurring debts, such as though bank loans and the sale of bonds, or by selling ownership interests. Because each method of financing obligates the business in different ways, financing decisions are very important.

Many business decisions simultaneously involve both investing and financing. For example, a company may wish to acquire another firm—an investment decision. However, the success of the acquisition may depend on how it is financed: by borrowing cash to meet the purchase price, by selling additional shares of stock, or by exchanging existing shares of stock. If managers decide to borrow money, the borrowed funds must be repaid within a specified period of time. Creditors (those lending the money) generally do not share in the control of profits of the borrowing firm. If, on the other hand, managers decide to raise funds by selling ownership interests, these funds never have to be paid back. However, such a sale dilutes the control of (and profits accruing to) the current owners.

Whether a financial decision involves investing, financing, or both, it also will be concerned with two specific factors: expected return and risk. And throughout your study of finance, you will be concerned with these factors. ***Expected return*** is the difference between potential benefits and potential costs. ***Risk*** is the degree of uncertainty associated with these expected returns.

Financial Analysis

Financial analysis is a tool of financial management. It consists of the evaluation of the financial condition and operating performance of a business firm, an industry, or even the economy, and the forecasting of its future condition and performance. It is, in other words, a means for examining risk and expected return. Data for financial analysis may come from other areas within the firm, such as marketing and production departments, from the firm's own accounting data, or from financial information vendors such as Bloomberg Financial Markets, Moody's Investors Service, Standard & Poor's Corporation, Fitch Ratings, and Value Line, as well as from government publications, such as the *Federal Reserve Bulletin*. Financial publications such as *Business Week*, *Forbes*, *Fortune*, and the *Wall Street Journal* also publish financial data (concerning individual firms) and economic data (concerning industries, markets, and economies), much of which is now also available on the Internet.

Within the firm, financial analysis may be used not only to evaluate the performance of the firm, but also its divisions or departments and its product lines. Analyses may be performed both periodically and as needed, not only to ensure informed investing and financing decisions, but also as an aid in implementing personnel policies and rewards systems.

Outside the firm, financial analysis may be used to determine the creditworthiness of a new customer, to evaluate the ability of a supplier to hold to the conditions of a long-term contract, and to evaluate the market performance of competitors.

Firms and investors that do not have the expertise, the time, or the resources to perform financial analysis on their own may purchase analyses from companies that specialize in providing this service. Such companies can provide reports ranging from detailed written analyses to simple creditworthiness ratings for businesses. As an example, Dun & Bradstreet, a financial services firm, evaluates the creditworthiness of many firms, from small local businesses to major corporations. As another example, three companies—Moody's Investors Service, Standard & Poor's, and Fitch—evaluate the credit quality of debt obligations issued by corporations and express these views in the form of a rating that is published in the reports available from these three organizations.