HANDBOOK
OF
FINANCE

VOLUME I

Financial Markets and Instruments

Frank J. Fabozzi
Editor

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John Wiley & Sons, Inc.

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Preface

Over the past two decades, financial professionals have had available to them excellent reference books on specialty areas in finance. There are handbooks on corporate financial management, financial instruments, portfolio strategies, structured finance, capital budgeting, derivatives, and the list goes on. But to truly understand financial markets throughout the world, it is necessary to understand how financial decision makers—such as corporate treasurers, chief financial officers, portfolio managers, traders, and security analysts—make decisions and the tools that they employ in doing so. From that perspective, the idea for this handbook was conceived.

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 markets and instruments, financial management, and investment management.

The field of *financial markets and instruments* deals with the role of financial markets in an economy, the structure and organization of financial markets, the efficiency of markets, the role of the various players in financial markets (i.e., governments, regulators, financial institutions, investment banks and securities firms, and institutional and retail investors), and the determinants of asset pricing and interest rates.

Financial management, sometimes referred to as *business finance,* is the specialized field in finance that is concerned primarily with financial decision-making within a business entity and encompasses many different types of decisions. (While financial management is sometimes referred to as *corporate finance,* the principles are applied to the management of municipalities and nonprofit profit entities.) We can classify financial management decisions into two groups: investment decisions and financing decisions. *Investment decisions* are concerned with the use of funds—the buying, holding, or selling of all types of assets. Basically, the types of assets acquired are either working capital, such as inventory and receivables, or long-term assets. Decisions involving the former are called *working capital decisions* and those involving the latter are called *capital budgeting decisions.* Financing decisions are concerned with the acquisition of funds to be used for investing and financing day-to-day operations. Basically, this involves the selection of the firm's capital structure—that is, the combination of equity and debt used to finance the firm—and is referred to as the *capital structure decision.* The financing decision also involves the determination of how much of the company's earnings to retain and how much to distribute to shareholders in the form of dividends. This decision is referred to as the *dividend decision.* Whether a financial decision involves investing or financing, the core of the decision will rest on two specific factors: expected return and risk. *Expected return* is the difference between potential benefits and potential costs. *Risk* is the degree of uncertainty associated with the expected returns.

Investment management is the area of finance that focuses on the management of portfolios of assets for institutional investors and individuals. The activities involved in investment management, also referred to as *asset management,* include working with clients to set investment objectives and an investment policy to accomplish those objectives, the selection a portfolio strategy consistent with the investment objectives and investment policy, and the construction of the specific assets to include in a portfolio based on the portfolio strategy. Investment management begins with the decision as to how to allocate funds across the major asset classes (e.g., stocks, bonds, real estate, alternative investments). This decision, referred to as the *asset allocation decision,* requires a thorough understanding of the expected returns and risks associated with investing in a specific asset class. Again, we see the importance of understanding expected return and risk. The investment strategy employed can be classified as either active or passive and the decision as to which type to follow depends on the client's view of the efficiency (i.e., the difficulty of obtaining superior returns) of the market for the asset class. The portfolio construction phase involves assembling the best portfolio given the client's investment objectives, given the investment constraints set forth in the investment policy, and the estimated expected return and risk of the individual assets that are potential candidates for inclusion in the portfolio.

These three general areas use theories and analytical tools developed in other disciplines. For example, theories about the pricing of assets and the determination of interest rates draw from theories in economics. In fact, many academics refer to finance as *financial economics.* There are investment management strategies that utilize theories and concepts that draw from the field of psychology, giving rise to the specialized field in finance known as *behavioral finance.* The complex nature of financial markets requires a finance professional to draw from the fields of statistics and econometrics in order to describe the movement in asset prices and returns, as well as to obtain meaningful measures of risk. The field of *financial risk management,* used both in financial management and investment management, employ these tools. These same tools are used by investment managers in formulating and testing potential strategies and in the valuation (pricing) of complex financial instruments known as derivatives. Investment managers and financial managers utilize sophisticated mathematical models developed in the area of operations research/management science to aid in making optimal allocation decisions such as in portfolio construction and the selection of capital projects. Managers also use simulation models, a tool of operations research, in a variety of activities that involve corporate and investment decisions. *Financial engineering,* sometimes referred to as *mathematical finance,* is the relatively new specialized field in finance that uses statistical and mathematical tools to deal with problems in all areas of finance and risk management.

This multivolume reference provides a bird's-eye view of finance that will help the reader appreciate the wide range of topics that the discipline of "finance" encompasses. While there are handbooks that address specialized areas within finance, the purpose of this three-volume handbook is to cover all of the areas mentioned above and is intended for professionals involved in finance, as well as the student of finance.

This three-volume handbook offers coverage of both established and cutting-edge theories and developments in finance. It contains chapters from global experts in industry and academia, and offers the following unique features:

- The handbook was written by more than 190 experts from around the world. This diverse collection of expertise has created the most definitive coverage of established and cutting-edge financial theories, applications, and tools in this ever-evolving field.
- The series emphasizes both technical and managerial issues. This approach provides researchers, educators, students, and practitioners with a balanced understanding of the topics and the necessary background to deal with issues related to finance.
- Each chapter follows a format that includes the author, chapter abstract, keywords, introduction, body, summary, and references. This enables readers to pick and choose among various sections of a chapter and creates consistency throughout the entire handbook.
- Each chapter provides extensive references for additional readings, enabling readers to further enrich their understanding of a given topic.
- Numerous illustrations and tables throughout the work highlight complex topics and assist further understanding.
- Each chapter provides cross-references within the body of the chapter. This helps readers identify other chapters within the handbook related to a particular topic, which provides a one-stop knowledge base for a given topic.
- Each volume includes a complete table of contents and index for easy access to various parts of the handbook.

TOPIC CATEGORIES

The allocation of the topics among the three volumes of the handbook required a good deal of time, with more than two dozen restructurings of the table of contents for each volume before reaching what I believe to be the most useful allocation for readers. There was no simple formula. The decision involved feedback from practitioners, academics, and graduate students. The final allocation to the three volumes was as follows.

Volume I (*Financial Markets and Instruments*) covers the general characteristics of the different asset classes, derivative instruments, the markets in which financial instrument trade, and the players in the market. Topics include:

- Market Players and Markets
- Common Stock
- Fixed Income Instruments
- Real Estate
- Alternative Investments
- Investment Companies, Exchange-Traded Funds, and Life Insurance Products
- Foreign Exchange
- Inflation-Hedging Products
- Securities Finance

Volume II (*Investment Management and Financial Management*) covers the theories, issues, decisions, and implementation for both investment management and financial management. Topics include:

- Investment Management
- Equity Portfolio Management
- Fixed Income Portfolio Management
- Alternative Investments
- Corporate Finance

The analytical tools, the measurement of risk, and the techniques for valuation are the subject of Volume III (*Valuation, Financial Modeling, and Quantitative Tools*). Topics include:

- Risk Management
- Interest Rate Modeling
- Credit Risk Modeling and Analysis
- Valuation
- Mathematical Tools and Techniques for Financial Modeling and Analysis

The chapters can serve as material for a wide spectrum of courses, such as the following:

- Financial markets
- Principles of finance
- Investment and portfolio management
- Corporate finance
- Derivative instruments and their applications
- Financial mathematics
- Financial engineering

Frank J. Fabozzi
Editor, *Handbook of Finance*

Guide to the *Handbook of Finance*

The *Handbook of Finance* is a comprehensive overview of the field of finance. This reference work consists of three separate volumes and 229 chapters. Each chapter provides a comprehensive overview of the selected topic intended to inform a broad spectrum of readers ranging from finance professionals to academicians to students to the general business community.

To derive the greatest possible benefit from the *Handbook of Finance*, we have provided this guide. It explains how the information within the handbook can be located.

ORGANIZATION

The *Handbook of Finance* is organized to provide maximum ease of use for its readers. The material is broken down into three distinct volumes:

- Volume I (*Financial Markets and Instruments*) covers the general characteristics of the different asset classes, derivative instruments, the markets in which financial instrument trade, and the players in the market.
- Volume II (*Investment Management and Financial Management*) covers the theories, issues, decisions, and implementation for both investment management and financial management.
- Volume III (*Valuation, Financial Modeling, and Quantitative Tools*) tackles the analytical tools, the measurement of risk, and the techniques for valuation.

TABLE OF CONTENTS

A complete table of contents for the entire handbook appears in the front of each volume. This list of titles represents topics that have been carefully selected by the editor, Frank J. Fabozzi. The Preface includes a more detailed description of the volumes and parts the chapters are grouped under.

INDEX

A Subject Index for the entire handbook is located at the end of each volume. The subjects in the index are listed alphabetically and indicate the volume and page number where information on this topic can be found.

CHAPTERS

Each chapter in the *Handbook of Finance* begins on a new page, so that the reader may quickly locate it. The author's name and affiliation are displayed at the beginning of the chapter.

All chapters in the handbook are organized according to a standard format, as follows:

- Title and author
- Outline
- Abstract
- Keywords
- Introduction
- Body
- Summary
- References

Outline

Each chapter begins with an outline indicating the content to come. The outline is intended as an overview and thus lists only the major headings of the chapter. Lower-level headings also may be found within the chapter.

Abstract

The abstract for each chapter gives an overview of the topic, but not necessarily the content of the chapter. This is designed to put the topic in the context of the entire handbook, rather than give an overview of the specific chapter content.

Keywords

The keywords section contains terms that are important to an understanding of the chapter.

Introduction

The text of each chapter begins with an introductory section that defines the topic under discussion and summarizes the content. By reading this section, the reader gets a general idea about the content of a specific chapter.

Body

The body of each chapter discusses the items that were listed in the outline section.

Summary

The summary section provides a review of the materials discussed in each chapter. It imparts to the reader the most important issues and concepts discussed.

References

The references section lists both publications cited in the chapter and secondary sources to aid the reader in locating more detailed or technical information. Review articles and research papers that are important to an understanding of the topic are also listed. The references provide direction for further research on the given topic.

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