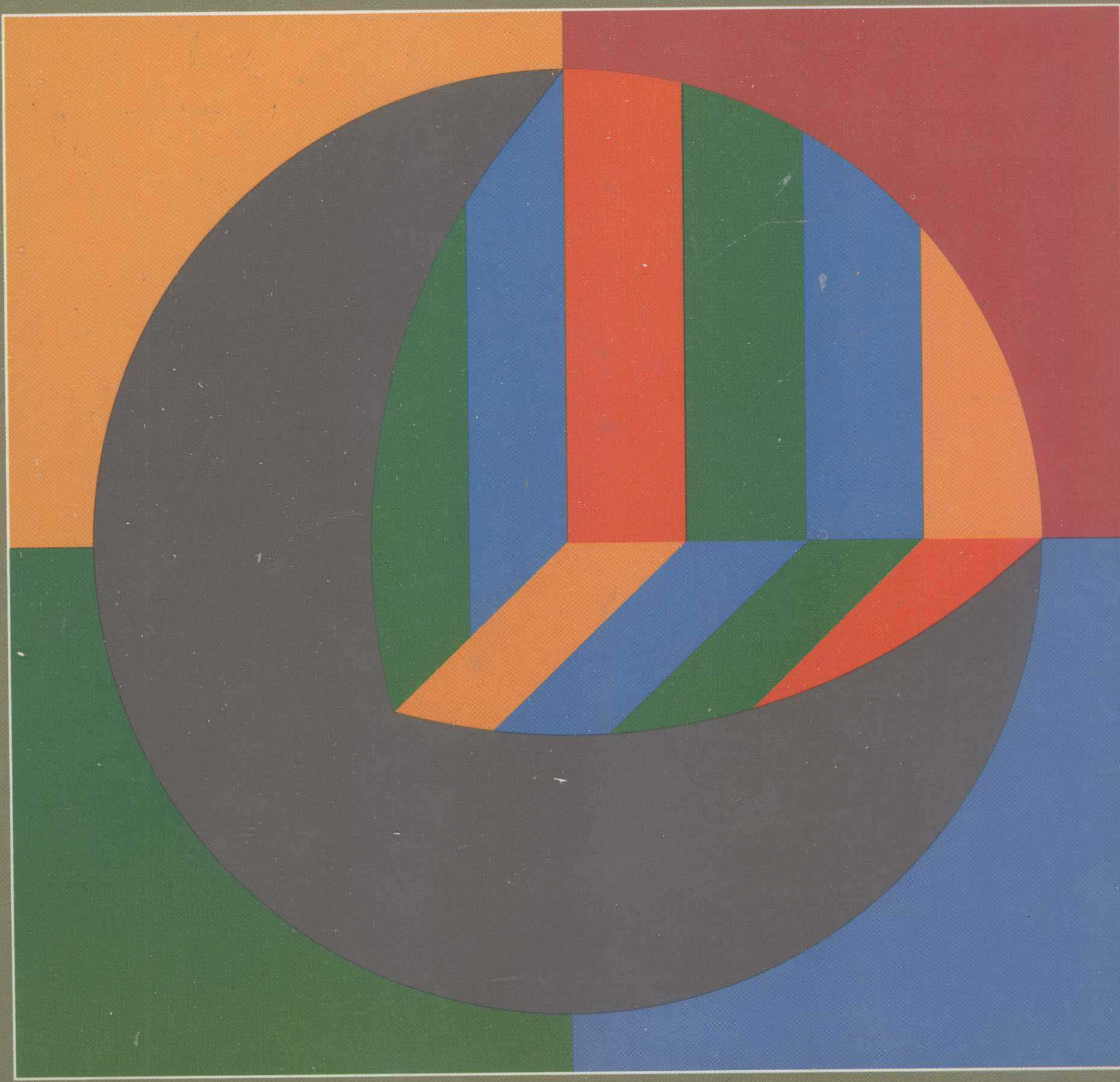
CHARLES P. JONES

INVESTMENTS
ANALYSIS AND MANAGEMENT



INVESTMENTS: ANALYSIS AND MANAGEMENT

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To Kay and Kathryn

PREFACE

This book gives readers a good understanding of investments while at the same time stimulating their interest in the subject. This understanding and interest can be very valuable because each of us must make various investment decisions during our lifetime, both as individuals and as managers. Upon completing this book, the reader will be able to appreciate what is involved in making investment decisions, what the opportunities are, and where the problems can arise.

Students are provided with an adequate background in as readable and concise a manner as possible. Since the book is designed for the first course in investments, descriptive material must be — and is — thoroughly covered. Furthermore, the analytics of investments are presented throughout the book in order that students can learn to reason these issues out for themselves and be better prepared when the investing decisions of the real world are confronted.

The book was written for juniors and seniors in four-year colleges and universities. Standard prerequisites for most students taking this course include accounting and economics, and possibly financial management. A course in statistics is useful but not essential. I have sought to minimize formulas and to simplify difficult material, consistent with the presentation of investments from a thoroughly up-to-date standpoint. Relevant, state-of-the-art material has in no way been omitted or skimped on; instead, it has been simplified and structured for the specific benefit of the beginning student.

Organization of the Book

This book is divided into seven parts. Part One provides a background for students before they encounter the specifics of security analysis and portfolio management. Chapter 1 establishes a framework for the entire book by outlining the factors involved in investments. It is very important for beginners to obtain an overall idea of what investments is all about at the outset. Chapter 2 describes the wide range of financial asset alternatives available with primary emphasis on marketable securities. Chapter 3 analyzes financial markets, focusing both on the actual operations and functioning of markets and the changing structure of the marketplace. Sources of information available to investors, both published and computerized, are discussed in Chapter 4. Finally, Chapter 5, by describing the risk-return concepts that underlie all investment analysis, establishes a risk-return framework for the remainder of the book.

Parts Two and Three focus on the basic approach to security analysis by presenting the "how-to" tools and techniques. Part Two discusses the calculation and management of bonds, a logical starting point in learning to value all securities. Part Three builds on these concepts in discussing the valuation (security analysis) of common stocks. Chapters 6 and 8 provide the necessary information about bonds and common stocks, while Chapters 7 and 9 discuss the valuation of each. Appendix 7-A, covering preferred stocks, is a natural transition between Parts Two and Three.

Given the basis for analyzing and valuing common stocks established in Part Three, Parts Four and Five proceed to the three strategies typically discussed in the selection of common stocks. Part Four is concerned with fundamental analysis, the heart of security analysis. Because of its scope and complexity, Chapters 10 to 12 are required to adequately cover the fundamental approach. The order of these chapters—market, industry, and company—reflects the recommended order of procedure in doing fundamental analysis.

Part Five discusses the other two approaches to common stock selection—technical analysis and the efficient markets approach. Technical analysis, discussed in Chapter 13, remains a controversial subject. The reason for this is explained in Chapter 14, which describes the efficient-market hypothesis. As explained in Chapter 1, investors should be aware of and carefully consider this hypothesis; however, it need not dominate the entire book. For example, Chapter 14 discusses current market "anomalies," which also deserve investor consideration.

Parts Three, Four, and Five are devoted to common stocks, a reasonable allocation given investor interest in common stock. Part Six discusses the other major securities available to investors. Chapter 15 analyzes options (puts and calls), a popular investment alternative in recent years. Stock index options are also covered. Chapter 16 continues the analysis of equity-derivative securities by focusing on warrants and convertibles. Chapter 17 is devoted to financial futures, an important new topic in investments. Finally, Chapter 18 analyzes the investor's alternative of indirect investing—buying shares in an investment company and thereby indirectly owning a portfolio of securities.

Part Seven is concerned with portfolio management and portfolio performance measurement. Chapter 19 contains a complete discussion of modern portfolio concepts, with primary emphasis on the essentials of Markowitz portfolio theory and the single-index model. Chapter 20 discusses capital market theory, which contains material necessary for the understanding of today's investing environment. Chapter 21 concludes the text with a discussion on how to measure portfolio performance. This is a logical conclusion to both Part Seven and the entire book because all investors are keenly interested in how well their investments have performed. Mutual funds are used as examples of how to apply these portfolio performance measures (and of the problems in interpretation that can result).

Special Features

This text offers several important features, some of which are unique. First, the sequence of chapters has been carefully structured and coordinated as a package, reflecting considerable experimentation and careful thought. While other arrangements are workable, this one seems to me to be the most satisfactory in a beginning investments course. Starting with background material and progressing through an analysis of various securities to a discussion of portfolio management, the book proceeds from easier to more difficult concepts, and from fewer to more numerous equations.

Second, I have diligently sought to hold the text to a length that is manageable for the average student. Instructors may choose to omit one or more chapters, depending on preferences and constraints. As part of this effort to concentrate on the essentials, appendixes are used throughout the text to explain difficult material (e.g., how to fit a regression line and the Black-Scholes option model) or material that the instructor may wish to assume that each student knows (e.g., present-value formulas). This format streamlines the approach while allowing instructors the flexibility they need and want.

Third, each chapter features several items specifically designed for the student's benefit. Key words appear in boldface, and these words are defined in the glossary. Other important words are italicized. Each chapter contains a thorough and detailed summary to help the student in reviewing the material, a feature more extensive than those found in any other text. Finally, each chapter contains an extensive set of questions and problems designed to thoroughly review the material. In addition, some chapters have "extended problems with examples," which provide the student with even more practice. These problems are self-contained in that they guide students through the problem by showing them some of the solutions. The extensive set of problems presented in this book helps to fill a gap that has existed in investments texts.

Another distinctive feature of this book is the use of boxed inserts where appropriate. These inserts provide timely and interesting material from the popular press, enabling the student to see the "real-world" side to issues and concepts discussed in the text.

Acknowledgments

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CHARLES P. JONES

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CONTENTS

PART ONE

BACKGROUND

CHAPTER 1

A BACKGROUND FOR UNDERSTANDING INVESTMENTS

If stocks are an inflation hedge, why have they declined so sharply in value during the severe inflation of recent years?

Is it possible to have earned 40% or more investing in default-free Treasury bonds in only one year?

Why did the price of Texas Instruments stock fall 32% ($50.75 per share) in only two days in June 1983 (a total drop in market value of $1.2 billion)?

How can futures contracts, with a reputation for being extremely risky, be used to reduce an investor's risk?

What average rate of return can an investor reasonably expect from stocks in the future? What did they earn in the past?

The objective of this text is to help you understand the investments field as it is currently understood, discussed, and practiced so that you can intelligently answer questions such as those above. To accomplish this objective, key concepts are presented to provide an appreciation of the theory and practice of investments.

Both descriptive and quantitative materials about investing are readily available. Some of this material is very enlightening; much of it is debatable because there are many controversies in investments; some of it is worthless. This text attempts to cover what is particularly useful and relevant for today's investment climate. It offers some ideas about what you can reasonably expect to accomplish by using what you learn and, therefore, what you cannot realistically expect to achieve as an investor in today's investment world. In fact, this may be the single most important benefit to be derived from this text.

The Nature of Investments

Some Definitions

The term *investing* can cover a wide range of activities. It often refers to investing money in certificates of deposit, bonds, common stocks, or mutual funds. More knowledgeable investors would include other financial assets such as warrants, puts and calls, futures contracts, and convertible securities, as well as such **real assets** (i.e., tangible assets) as gold, silver, diamonds, art, and real estate. Investing encompasses very conservative positions and aggressive speculation. It also involves various types of jobs, such as account executive at a brokerage firm (i.e., a broker), security analyst, bond or futures trader, portfolio manager, and economic forecaster.

An **investment** can be defined as the commitment of funds to one or more assets that will be held over some future time period. **Investments**, therefore, is the study of the investment process. The field of investments encompasses many aspects; however, as the title of this book suggests, it can be thought of in terms of two functions: analysis and management. In fact, the investments process has traditionally been divided into these two components, formally labeled security analysis and portfolio management.

Opportunities Available: Financial Assets

The term investments, in this text, refers in general to financial assets and in particular to marketable securities. **Financial assets** are pieces of paper evidencing a financial claim on some issuer, such as the federal government or a corporation. **Marketable securities** are financial assets that are easily and cheaply tradable between investors. Because of the vast scope of investment opportunities available to investors, we do not include a direct, detailed study of real assets.[1]

Although this discussion is restricted to financial assets, there are many different financial assets, as explained in Chapter 2. Investors may choose from the very safest, such as a short-term Treasury bill backed by the full faith and credit of the federal government, to the more risky, such as the broad array of all common stocks, to the most risky, such as puts and calls on stocks and futures contracts.

Why Invest?

We invest to improve our **welfare**, which for our purposes can be defined as monetary wealth, both current and future.[2] Funds to be invested come from assets al-

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[1]Most of the principles and techniques discussed in this text are applicable to real assets.

[2]A good discussion of the wealth problem for investors can be found in Charles A. D'Ambrosio, *Principles of Modern Investments* (Chicago: SRA, 1976), Chapter 3.

ready owned, borrowed money, and savings or foregone consumption. By foregoing consumption today and investing the savings, investors expect to enhance their future consumption possibilities.

Basically, investments is concerned with the management of an investor's **wealth**, which is the sum of current income and the present value of all future income. (Therefore, present value and compound interest concepts have an important role in the investing process). Investors seek to manage their wealth effectively, obtaining the most from it while protecting it from inflation, taxes, and other factors. They are also interested in increasing their wealth. To manage your wealth, and increase it, you must deal with the investment process—investable funds must be allocated to assets within some existing environment, based on an objective that will be subject to constraints.

A Perspective on Investing

The investment of funds in various assets is only part of the overall financial decisionmaking and planning that most individuals must do. Before investing, each individual should develop an overall financial plan. Such a plan will typically include the decision of whether to purchase a house, a major investment for most individuals. Also, decisions must be made about insurance of various types—life, health, disability, and protection of business and property. Finally, many individuals provide for emergency reserve funds.[3]

It is assumed in this text that investors have an overall financial plan and are now interested in managing and enhancing their wealth by investing in an optimal combination of financial assets.

The Importance of Studying Investments

It is important to remember that all individuals have wealth of some kind—if nothing else, the value of their services in the marketplace. Most individuals will have to make investment decisions sometime in their lives. Some workers, for example, can decide if their retirement funds are to be invested in stocks or bonds. Others may wish to maximize the return from their "savings account" funds by investing in alternatives to insured savings accounts.

Particularly important to many individuals today are the new provisions of **Individual Retirement Accounts** (IRAs), available to all income earners. IRA funds can be invested in a wide range of assets, ranging from the very safe to the quite speculative. IRA owners are allowed to have self-directed brokerage accounts, which offer a wide range of investment opportunities. As these funds may be invested for as long as 40 or more years, good investment decisions are critical.

In the final analysis, investments involves the enhancement of one's economic welfare through the sound management of present and future monetary wealth. This wealth, which is in the form of various assets, should be evaluated and managed as a unified whole, that is, within a **portfolio** context (the term portfolio des-

[3]Personal financial decisions of this type are discussed in detail in personal finance texts. See, for example, Lawrence J. Gitman, *Personal Finance* (Hinsdale, Illinois: The Dryden Press, 1981).