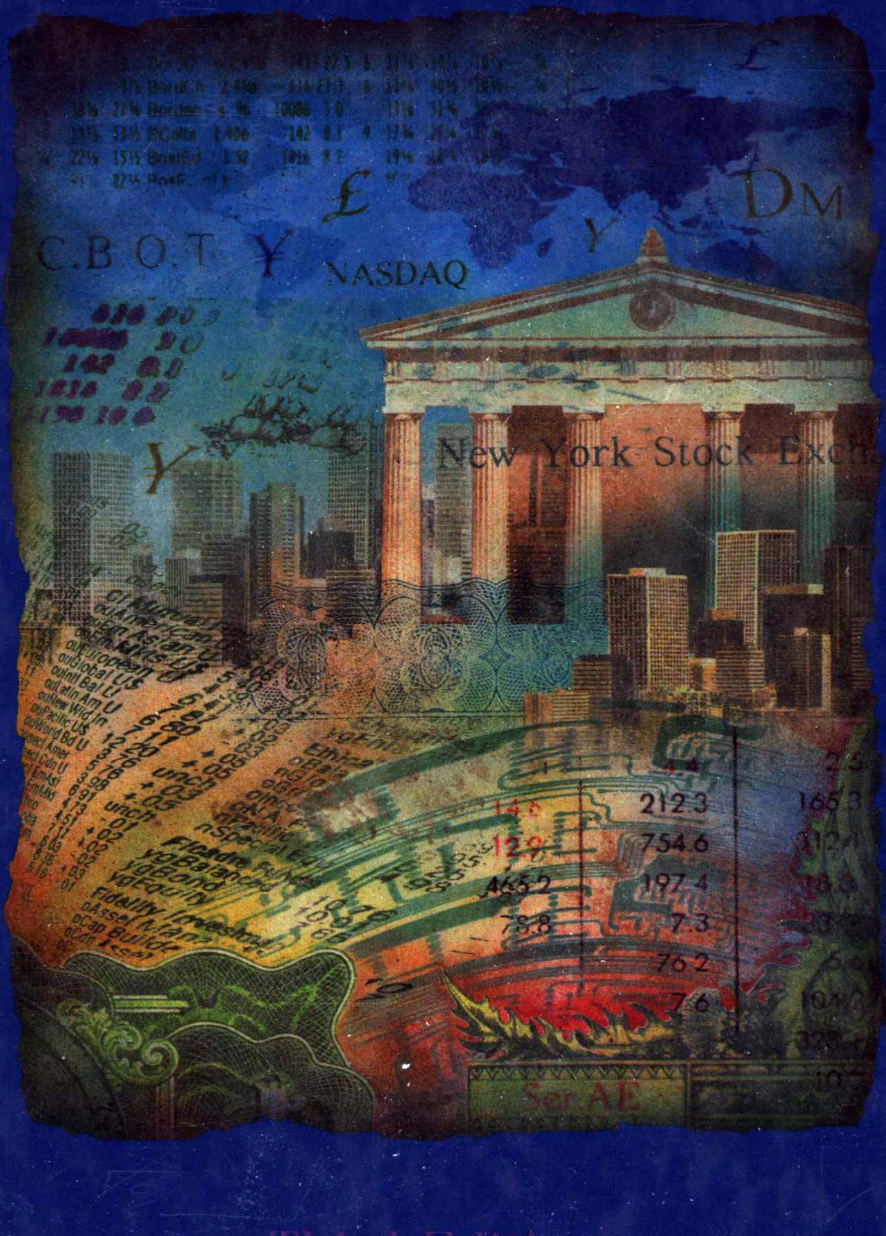
INVESTMENTS



Third Edition

BODIE KANE MARCUS

INVESTMENTS

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Alan Marcus is Professor of Finance in the Wallace E. Carroll School of Management at Boston College. He received his Ph.D. in Economics from MIT in 1981. Professor Marcus recently has been a Visiting Professor at the Athens Laboratory of Business Administration and at MIT's Sloan School of Management and has served as a Research Associate at the National Bureau of Economic Research. He also is the director of the Chartered Financial Analysts Review Program at Boston College. Professor Marcus has published widely in the fields of capital markets and portfolio management, with an emphasis on applications of futures and options pricing models. His consulting work has ranged from new product development to provision of expert testimony in utility rate proceedings. He also spent two years at the Federal Home Loan Mortgage Corporation (Freddie Mac) where he developed models of mortgage pricing and credit risk.

Preface

In teaching and practice, the field of investments has experienced many changes over the last two decades. This is due in part to an abundance of newly designed securities, in part to the creation of new trading strategies that would have been impossible without concurrent advances in computer technology, and in part to rapid advances in the theory of investments that have come out of the academic community. In no other field, perhaps, is the transmission of theory to real-world practice as rapid as is now commonplace in the financial industry. These developments place new burdens on practitioners and teachers of investments far beyond what was required only a short while ago.

Investments is intended primarily as a textbook for courses in investment analysis. Our guiding principle has been to present the material in a framework that is organized by a central core of consistent fundamental principles. We make every attempt to strip away unnecessary mathematical and technical detail, and we have concentrated on providing the intuition that may guide students and practitioners as they confront new ideas and challenges in their professional lives.

Our primary goal is to present material of practical value, but all three of us are active researchers in the science of financial economics and find virtually all of the material in this book to be of great intellectual interest. Fortunately, we think, there is no contradiction in the field of investments between the pursuit of truth and the pursuit of money. Quite the opposite. The capital asset pricing model, the arbitrage pricing model, the efficient markets hypothesis, the option-pricing model, and the other centerpieces of modern financial research are as much intellectually satisfying subjects of scientific inquiry as they are of immense practical importance for the sophisticated investor.

Since 1983 we have participated in annual review programs for candidates from all over the world preparing for the Chartered Financial Analyst examinations. From its inception in 1963 the CFA program has come to symbolize high standards of professionalism in the investment community. The CFA curriculum represents the consensus of a committee of distinguished scholars and practitioners regarding the core of knowledge required by the investment professional.

This book has benefited from our continuing CFA experience in two ways. First, we have incorporated in the text much of the content of the readings and other study materials in the official CFA curriculum. As a result, the book includes some material not found in most other investments texts. Most notably, Part VIII presents material on portfolio management principles and techniques that stems largely from the CFA curriculum. Second, we have included questions from CFA examinations in the end-of-chapter problem sets throughout the book. The number of CFA questions has been greatly expanded in this edition.

Realistic Presentation of Modern Portfolio Theory

The exposition of modern portfolio theory in this text differs from its presentation in all other major investments texts in that we develop the basic model starting with a risk-free asset such as a bank certificate of deposit or a U.S. Treasury bill, and a single risky asset such as a common stock mutual fund.[1] Not until later do we add other risky assets. Other texts develop the model by first assuming that the investor has to choose from two risky assets; only later do they introduce the possibility of investing in a risk-free asset. Ultimately both approaches reach the same end point, which is a model in which there are many risky assets in addition to a risk-free asset.

We think our approach is better for two important reasons. First, it corresponds to the actual procedure that most individual investors follow. Typically, one starts with all of one's money invested in a bank account and only then considers how much to invest in something riskier that may offer the prospect of a higher expected return. The next logical step is to consider the addition of other risky assets such as real estate or gold, which requires determining whether the benefits of such increased diversification are worth the additional transaction costs involved in including them in one's portfolio.

The second advantage of our approach is that it vastly simplifies exposition of the mathematics for deriving the menu of risk-return combinations open to the investor. Portfolio optimization techniques are mathematically complex, ultimately requiring a computer. Anything that can help to simplify their presentation should thus be welcome. In short, we believe our approach is both more realistic and analytically simpler than the conventional one.

New in the Third Edition

The outline of this edition of *Investments* is essentially the same as in the second edition. Many of the major innovations relate to enhanced coverage of timely topics. What follows is a brief summary of the more important changes in this edition. In addition to the specific changes cited below, we direct the reader to the extensive additions to and changes in the boxed material containing timely readings from the financial press, including *The Wall Street Journal*, *Business Week*, and *The Economist*. We

[1]We define and discuss mutual funds in Chapter 3. For now it is sufficient to know that a common stock mutual fund is a diversified portfolio of stocks in which an investor can invest as much money as desired.

have also added to the collection of CFA problems presented with the problem sets at the end of each chapter.

Market Structure

We update our treatment of market microstructure with additional discussion of the competition between the NYSE and Nasdaq markets, and new coverage of the recent controversy over trading practices in the Nasdaq market. We also expand our coverage of international differences in market structure.

Risk and Return

We have updated our discussion of empirical evidence on the risk-return relationship; in particular, we have updated our treatment of the "anomalies" literature (for example, the book-to-market effect), with emphasis on the interpretation of these results.

Fixed-Income Markets

Chapter 13 on bond pricing has been reorganized and now contains more extensive coverage of different measures of bond yields and returns, for example, yield to call, realized compound yield, and so on. Chapter 15 on fixed-income portfolio management now contains coverage of fixed-income derivatives such as inverse floaters or stripped mortgage-backed securities that have been created through financial engineering.

Security Analysis

Chapter 16 on macroeconomic and industry analysis has been expanded to provide more coverage of international issues as well as greatly enhanced coverage of industry analysis, industry lifecycles, and industry structure. Chapter 17 on equity valuation analysis contains an expanded discussion of the interpretation of the price-earnings ratio. A discussion of comparability issues in financial statements across national boundaries has been added to Chapter 18 on Financial Statement Analysis.

Derivative Markets

An introduction to new exotic options has been added to Chapter 19. Chapter 22 now includes more material on the valuation of swaps and credit risk in swaps markets. (Interest-rate swaps as asset allocation tools also receive a new treatment in Chapter 15.)

Players and Strategies

An extensive discussion of the proposition that stocks are less risky in the long-run has been added as an appendix to Chapter 27. Also, please note that the material on

"Managing Investment Companies," formerly Chapter 29, is now included in the Instructor's Manual.

Recent Developments in Investments Research

We have introduced a new chapter (Chapter 29) that is devoted to a discussion of recent developments in investments research. This chapter introduces and summarizes innovative research that we believe may have important implications for practitioners in the not-too-distant future. In this edition, we focus on statistical modeling of stock market volatility, new research on the risk-return relationship, and an innovative approach to option pricing.

Pedagogical Features

This book contains several features designed to make it easy for the student to understand, absorb, and apply the concepts and techniques presented. Each chapter begins with an **overview,** which describes the material to be covered, and ends with a detailed **summary,** which recapitulates the main ideas presented.

Learning investments is in many ways like learning a new language. Before one can communicate, one must learn the basic vocabulary. To facilitate this process, all new terms are presented in **boldface** type the first time we use them, and at the end of each chapter there is a **Key Terms** section listing the most important new terms introduced in that chapter. A **Glossary** of all of the terms used appears at the end of the book.

Boxes containing short articles from business periodicals are included throughout the book. We think they enliven the text discussion with examples from the world of current events. The article in the Prologue from *Business Week* on the invasion of Wall Street by so-called rocket scientists is an example. We chose the boxed material on the basis of relevance, clarity of presentation, and consistency with good sense.

A unique feature of this book is the inclusion of **Concept Checks** in the body of the text. These self-test questions and problems enable the student to determine whether he or she has understood the preceding material and to reinforce that understanding. Detailed solutions to all these questions are provided in Appendix B at the end of the book.

These Concept Checks may be approached in a variety of ways. They may be skipped altogether in a first reading of the chapter with no loss in continuity. They can then be answered with any degree of diligence and application upon the second reading. Finally, they can serve as models for solving the end-of-chapter problems assigned by the instructor.

Each chapter also contains a list of **Selected Readings** that are annotated to guide the student toward useful sources of additional information in specific subject areas.

The **end-of-chapter problems** progress from the simple to the complex. We strongly believe that practice in solving problems is a critical part of learning investments, so we have provided lots of problems. Many are taken from CFA examinations and therefore represent the kinds of questions that professionals in the field believe are relevant to the "real world." These problems are identified by an icon in the text margin.

Ancillary Materials

The Innovative Investor

The Innovative Investor, by David Shimko, is now available in a DOS format, which uses Lotus 1-2-3 templates, and both Windows and DOS formats, which use Excel spreadsheets. This software is designed to provide students quick access to difficult financial calculations, in applications covering stocks, bonds, callables and convertibles, options, futures, asset allocation, and portfolio performance valuation. All spreadsheets come with comprehensive analysis and automatic graphing and printing capabilities. The "real-world" applications presented in The Innovative Investor are designed to enhance the student's understanding of the concepts and techniques presented in the text.

U.S. Equities on Floppy—Educational Version

U.S. Equities on Floppy is a fundamental database and analysis system of approximately 6,000 companies with common stock trading on the NYSE, AMEX, and Nasdaq National Market exchanges. This software can be used to solve selected end-of-chapter problems in Chapters 12, 16, 17, and 18. These problems are clearly identified with the U.S. Equities on Floppy icon. This software can be packaged with the textbook. For additional information, please contact your local Irwin representative.

Instructor's Manual

The Instructor's Manual, prepared by Linda J. Martin at Arizona State University, has been revised and improved in this edition. Each chapter includes a chapter overview, a review of learning objectives, an annotated chapter outline, and teaching tips and insights ("Perspectives"). In addition, the Instructor's Manual includes a total of 175 transparency masters that can be prepared as acetates for lecture use.

Test Bank

The Test Bank to accompany *Investments*, third edition, has been revised to increase both the quantity and level of difficulty of the multiple-choice questions. Short answer essay questions are also provided for each chapter to further test student comprehension and critical thinking abilities. The test bank is also available in computerized version. Test bank disks are available in DOS, Windows, and Macintosh-compatible formats.

Solutions Manual

The Solutions Manual includes a detailed solution to each end-of-chapter problem. This manual is available for packaging with the text. Please contact your local Irwin representative for further details on how to order the Solutions manual/textbook package.

ACKNOWLEDGMENTS

The development of this book involved the efforts of many dedicated professionals. Almost 250 academic colleagues who teach investments responded to a detailed market survey in the spring of 1994. That input provided useful information about the focus and structure of the modern investments course and afforded a unique insight into the needs of both students and instructors of investments. We would like to thank each survey respondent again for providing us with such important information.

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Zvi Bodie
Alex Kane
Alan J. Marcus

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