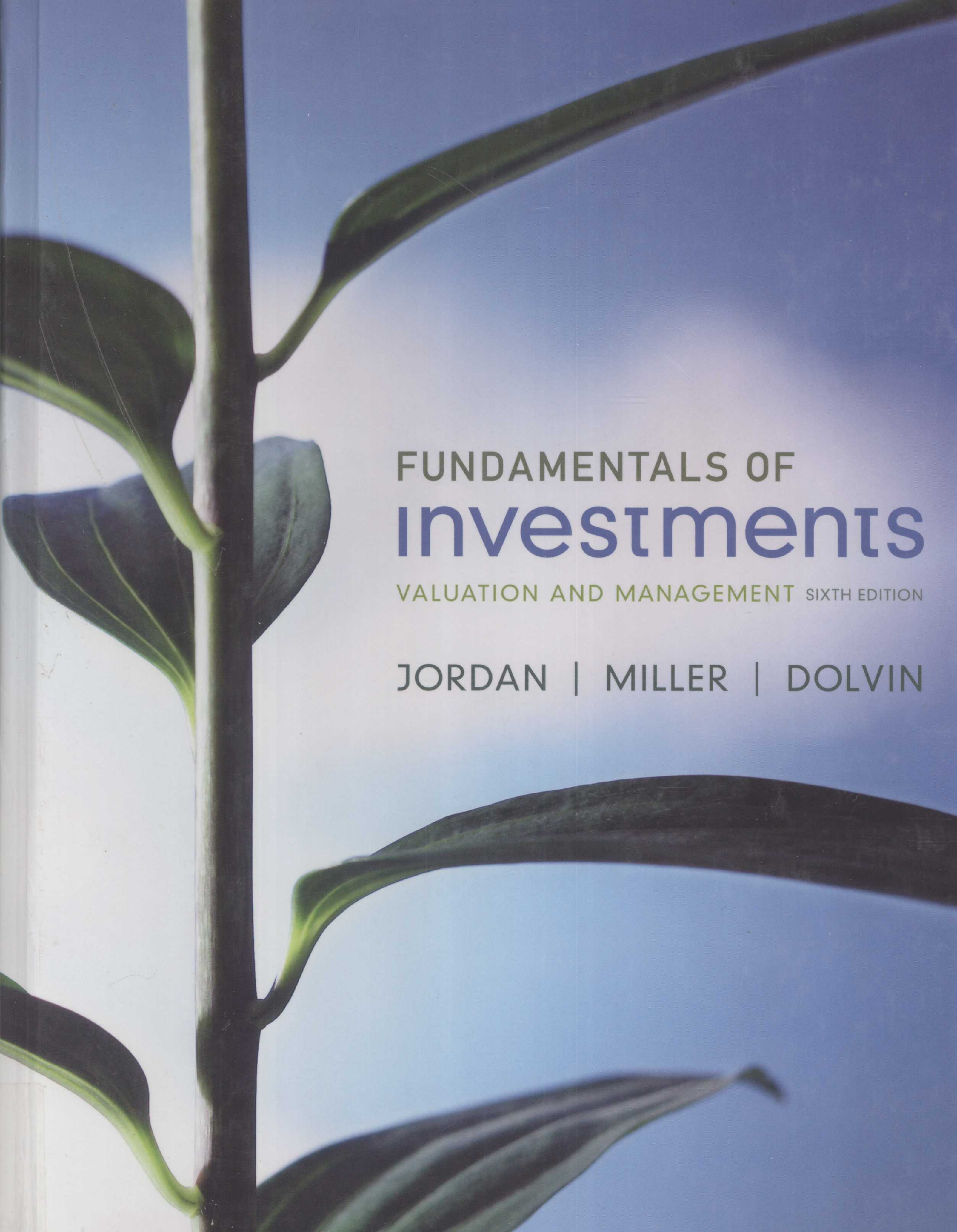

FUNDAMENTALS OF investments

VALUATION AND MANAGEMENT SIXTH EDITION

JORDAN | MILLER | DOLVIN

Sixth Edition

Fundamentals of Investments

VALUATION AND MANAGEMENT

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Focus on Personal Finance: An Active Approach to Help You Develop Successful Financial Skills
Third Edition

Kapoor, Dlabay, and Hughes
Personal Finance
Tenth Edition

To my late father, S. Kelly Jordan Sr.,
a great stock picker.

BDJ

To my parents, Tom and Kathy Miller,
my wife Carolyn, and #21 —Thomas W. Miller III.

TWM Jr.

To my wife, Kourtney, and the "three L's"—my greatest investment in this life.

SDD

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Steven D. Dolvin, CFA, is an Associate Professor of Finance at Butler University. He teaches primarily in the area of investments, but he also oversees student-run portfolios in both public and private equity. He has received multiple teaching awards and has also published numerous articles in both academic and practitioner outlets. His principal areas of interest are IPOs, venture capital, financial education, retirement investing, and behavioral finance. His prior experience includes work in both corporate finance and investments, and he currently does investment consulting for both individuals and businesses. Professor Dolvin is also a CFA charterholder and is actively involved as a board member of his local society.

Preface

So why *did* we write this book?

As we toiled away, we asked ourselves this question many times, and the answer was always the same: *Our students made us.*

Traditionally, investments textbooks tend to fall into one of two camps. The first type has a greater focus on portfolio management and covers a significant amount of portfolio theory. The second type is more concerned with security analysis and generally contains fairly detailed coverage of fundamental analysis as a tool for equity valuation. Today, most texts try to cover all the bases by including some chapters drawn from one camp and some from another.

The result of trying to cover everything is either a very long book or one that forces the instructor to bounce back and forth between chapters. This frequently leads to a noticeable lack of consistency in treatment. Different chapters have completely different approaches: Some are computational, some are theoretical, and some are descriptive. Some do macroeconomic forecasting, some do mean-variance portfolio theory and beta estimation, and some do financial statements analysis. Options and futures are often essentially tacked on the back to round out this disconnected assortment.

The goal of these books is different from the goal of our students. Our students told us they come into an investments course wanting to learn how to make investment decisions. As time went by, we found ourselves supplying more and more supplemental materials to the texts we were using and constantly varying chapter sequences while chasing this elusive goal. We finally came to realize that the financial world had changed tremendously, and investments textbooks had fallen far behind in content and relevance.

What we really wanted, and what our students really needed, was a book that would do several key things:

- Focus on the students as investment managers by giving them information they can act on instead of concentrating on theories and research without the proper context.
- Offer strong, consistent pedagogy, including a balanced, unified treatment of the main types of financial investments as mirrored in the investment world.
- Organize topics in a way that would make them easy to apply—whether to a portfolio simulation or to real life—and support these topics with hands-on activities.

We made these three goals the guiding principles in writing this book. The next several sections explain our approach to each and why we think they are so important.

Who Is This Book For?

This book is aimed at introductory investments classes with students who have relatively little familiarity with investments. A typical student may have taken a principles of finance class and had some exposure to stocks and bonds, but not much beyond the basics. The introductory investments class is often a required course for finance majors, but students from other areas often take it as an elective. One fact of which we are acutely aware is that this may be the only investments class many students will ever take.

We intentionally wrote this book in a relaxed, informal style that engages the student and treats him or her as an active participant rather than a passive information absorber. We think the world of investments is exciting and fascinating, and we hope to share our considerable enthusiasm for investing with the student. We appeal to intuition and basic principles whenever possible because we have found that this approach effectively promotes understanding. We also make extensive use of examples throughout, drawing on material from the world around us and using familiar companies wherever appropriate.

By design, the text is not encyclopedic. As the table of contents indicates, we have a total of 20 chapters. Chapter length is about 30 to 40 pages, so the text is aimed at a single-term course; most of the book can be covered in a typical quarter or semester.

Aiming the book at a one-semester course necessarily means some picking and choosing, with regard to both topics and depth of coverage. Throughout, we strike a balance by introducing and covering the essentials while leaving some of the details to follow-up courses in security analysis, portfolio management, and options and futures.

How Does the Sixth Edition of This Book Expand upon the Goals Described Above?

Based on user feedback, we have made numerous improvements and refinements in the sixth edition of *Fundamentals of Investments: Valuation and Management*. We updated an appendix containing useful formulas. We updated every chapter to reflect current market practices and conditions, and we significantly expanded and improved the end-of-chapter material. Also, our chapters devoted to market efficiency and to behavioral finance continue to rate highly among readers.

To give some examples of our additional new content:

- Chapter 1 contains new sections on the crash of 2008, dollar-weighted average returns, and the equity risk premium.
- Chapter 2 contains a new section on the Investment Policy Statement (IPS) and new material on asset allocation, retirement accounts, and short sale constraints.
- Chapter 3 describes the new ticker symbols for exchange-traded options.
- Chapter 4 contains new material on target date funds and a greatly expanded section on exchange-traded funds, particularly leveraged ETFs. Considerable new material is introduced on hedge funds, particularly their fee structure and investment styles.
- Chapter 5 includes new material on the structure of private equity funds. In addition, the sections on the NYSE and NASDAQ contain much new material.
- Chapter 6 contains sections on how to analyze ROE, how to compute stock prices using the H-model, and how to compute stock prices using the free cash flow model.
- Chapter 7 contains new material on the market crash of 2008.
- Chapter 8 offers new material on heuristics, herding, and overcoming bias. Students have an opportunity to take an online quiz about overconfidence.
- Chapter 11 contains new material on the fallacy of time diversification.
- Chapter 12 includes new material on how to calculate beta using regression.
- Chapter 13 contains new material on calculating alpha using regression, calculating an information ratio, calculating a portfolio's *R*-squared, and Global Investment Performance Standards (GIPS).
- Chapter 15 contains a vastly improved section on option intrinsic value and option moneyness. The chapter also has new material on the "new" option symbols and credit default swaps (CDS).
- Chapter 17 updates the valuation of Starbucks Corporation.
- Chapter 18 contains some new material on bond ratings and alternatives to bond ratings.

In addition, we have updated learning objectives for each chapter. We have reworked our chapter summaries to reflect the chapter's learning objectives.

For the sixth edition, we significantly expanded and improved the end-of-chapter material. We added new problems throughout, and we have significantly increased the CFA™ content.

We updated the questions that test understanding of concepts with no calculations involved. In addition, our *What's on the Web?* questions give students assignments to perform based on information they retrieve from various Web sites. Finally, in selected chapters, we have included spreadsheet assignments, which ask students to create certain types of spreadsheets to solve problems.

We continue to emphasize the use of the Web in investments analysis, and we integrate Web-based content in several ways. First, wherever appropriate, we provide a commented link in the margin. These links send readers to selected, particularly relevant Web sites. Second, our *Work the Web* feature, expanded and completely updated for this edition, appears in most chapters. These boxed readings use screen shots to show students how to access, use, and interpret various types of key financial and market data. Finally, as previously noted, new end-of-chapter problems rely on data retrieved from the Web.

We continue to provide *Spreadsheet Analysis* exhibits, which we have enhanced for this edition. These exhibits illustrate directly how to use spreadsheets to do certain types of important problems, including such computationally intensive tasks as calculating Macaulay duration, finding Black-Scholes option prices, and determining optimal portfolios based on Sharpe ratios. We also continue to provide, where relevant, readings from *The Wall Street Journal*, which have been thoroughly updated for this edition.

CFA™ Mapping

Consider this description provided by the CFA Institute: "First awarded in 1963, the Chartered Financial Analyst (CFA) charter has become known as the gold standard of professional credentials within the global investment community. Investors recognize the CFA designation as the definitive standard for measuring competence and integrity in the fields of portfolio management and investment analysis." The importance and growing significance of the CFA charter are compelling reasons to integrate CFA curriculum material into our sixth edition.

Among the requirements to earn the CFA charter, candidates must pass three sequential levels of comprehensive exams. Each exam asks questions on a wide array of subject areas concerning the investment process. To help candidates study for the exams, the exams at each level are divided into so-called study sessions. Each of these study sessions has a core set of readings designed to help prepare the candidate for the exams. We carefully examined the content of each reading, as well as the stated learning outcomes, to determine which areas we covered in the fifth edition. Importantly, we also considered which areas might be added to the sixth edition.

As a result of this thorough process, in our sixth edition we expanded coverage on 10 readings and added completely new coverage of 15 readings. In total, our textbook contains material that touches over 70 percent of the readings from Level 1 of the CFA exam. Topics that we do not address from Level 1, such as basic statistics, accounting, and economics, are likely addressed in prerequisite courses taken before the investments course. In addition, we present some higher level material: We touch on about 35 percent of the readings from the Level 2 and 3 exams.

Of course, we make no claim that our textbook is a substitute for the CFA exam readings. Nonetheless, we believe that our sixth edition provides a terrific framework and introduction for students looking to pursue a career in investments—particularly for those interested in eventually holding the CFA charter. To provide a sense of studying for the CFA, the sixth edition includes an end-of-chapter case review. *Schweser,* a leading purveyor of CFA exam preparation packages, graciously provided extensive material from which we chose these case reviews.

We provide a mapping between the textbook and the CFA curriculum as follows. Each chapter opens with a CFA Exam box citing references to specific readings from the CFA curriculum that are covered within the chapter. The topic is identified and we indicate which level and study session the reading comes from. We label these topics CFA1, CFA2, CFA3, and so on, for easy reference. End-of-chapter problems in the book and in *Connect* are also labeled with these tags. Over 95 percent of our end-of-chapter material is related to the CFA exam. We believe that this integration has added tremendous value to the sixth edition.

Assurance-of-Learning Ready

Many educational institutions today are focused on the notion of assurance of learning, an important element of some accreditation standards. This edition is designed specifically to support your assurance-of-learning initiatives with a simple, yet powerful, solution. Listed below are the learning objectives for each chapter.

Each test bank question for this book maps to a specific chapter learning objective listed in the text. You can use the test bank software to easily query for learning outcomes and objectives that directly relate to the learning objectives for your course. You can then use the reporting features of the software to aggregate student results in similar fashion, making the collection and presentation of assurance-of-learning data simple and easy.

Chapter Learning Objectives

Chapter 1: A Brief History of Risk and Return

To become a wise investor (maybe even one with too much money), you need to know:

1. How to calculate the return on an investment using different methods.
2. The historical returns on various important types of investments.
3. The historical risks on various important types of investments.
4. The relationship between risk and return.

Chapter 2: The Investment Process

Don't sell yourself short. Instead, learn about these key investment subjects:

1. The importance of an investment policy statement.
2. The various types of securities brokers and brokerage accounts.
3. How to calculate initial and maintenance margin.
4. The workings of short sales.

Chapter 3: Overview of Security Types

Price quotes for all types of investments are easy to find, but what do they mean? Learn the answer for:

1. Various types of interest-bearing assets.
2. Equity securities.
3. Futures contracts.
4. Option contracts.

Chapter 4: Mutual Funds

You're probably going to be a mutual fund investor very soon, so you should definitely know the following:

1. The different types of mutual funds.
2. How mutual funds operate.
3. How to find information about how mutual funds have performed.
4. The workings of exchange-traded funds and hedge funds.

Chapter 5: The Stock Market

Take stock in yourself. Make sure you have a good understanding of:

1. The differences between private and public equity and between primary and secondary stock markets.
2. The workings of the New York Stock Exchange.
3. How NASDAQ operates.
4. How to calculate index returns.

Chapter 6: Common Stock Valuation

Separate yourself from the commoners by having a good understanding of these security valuation methods:

1. The basic dividend discount model.
2. The two-stage dividend growth model.
3. The residual income and free cash flow models.
4. Price ratio analysis.

Chapter 7: Stock Price Behavior and Market Efficiency

You should strive to have your investment knowledge fully reflect:

1. The foundations of market efficiency.
2. The implications of the forms of market efficiency.
3. Market efficiency and the performance of professional money managers.
4. What stock market anomalies, bubbles, and crashes mean for market efficiency.

Chapter 8: Behavioral Finance and the Psychology of Investing

Psych yourself up and get to know something about:

1. Prospect theory.
2. The implications of investor overconfidence and misperceptions of randomness.
3. Sentiment-based risk and limits to arbitrage.
4. The wide array of technical analysis methods used by investors.

Chapter 9: Interest Rates

It will be worth your time to increase your rate of interest in these topics:

1. Money market prices and rates.
2. Rates and yields on fixed-income securities.
3. Treasury STRIPS and the term structure of interest rates.
4. Nominal versus real interest rates.

Chapter 10: Bond Prices and Yields

Bonds can be an important part of portfolios. You will learn:

1. How to calculate bond prices and yields.
2. The importance of yield to maturity.
3. Interest rate risk and Malkiel's theorems.
4. How to measure the impact of interest rate changes on bond prices.

Chapter 11: Diversification and Risky Asset Allocation

To get the most out of this chapter, spread your study time across:

1. How to calculate expected returns and variances for a security.
2. How to calculate expected returns and variances for a portfolio.
3. The importance of portfolio diversification.
4. The efficient frontier and the importance of asset allocation.

Chapter 12: Return, Risk, and the Security Market Line

Studying some topics will yield an expected reward. For example, make sure you know:

1. The difference between expected and unexpected returns.
2. The difference between systematic risk and unsystematic risk.
3. The security market line and the capital asset pricing model.
4. The importance of beta.

Chapter 13: Performance Evaluation and Risk Management

To get a high evaluation of your performance, make sure you know:

1. How to calculate the best-known portfolio evaluation measures.
2. The strengths and weaknesses of three portfolio evaluation measures.
3. How to calculate a Sharpe-optimal portfolio.
4. How to calculate and interpret Value-at-Risk.

Chapter 14: Futures Contracts

You will derive many future benefits if you have a good understanding of:

1. The basics of futures markets and how to obtain price quotes for futures contracts.
2. The risks involved in futures market speculation.
3. How cash prices and futures prices are linked.
4. How futures contracts can be used to transfer price risk.

Chapter 15: Stock Options

Give yourself some in-the-money academic and professional options by understanding:

1. The basics of option contracts and how to obtain price quotes.
2. The difference between option payoffs and option profits.
3. The workings of some basic option trading strategies.
4. The logic behind the put-call parity condition.

Chapter 16: Option Valuation

Make sure the price is right by making sure that you have a good understanding of:

1. How to price options using the one-period and two-period binomial model.
2. How to price options using the Black-Scholes model.
3. How to hedge a stock portfolio using options.
4. The workings of employee stock options.

Chapter 17: Projecting Cash Flow and Earnings

Help yourself grow as a stock analyst by knowing:

1. How to obtain financial information about companies.
2. How to read basic financial statements.
3. How to use performance and price ratios.
4. How to use the percentage of sales method in financial forecasting.

Chapter 18: Corporate Bonds

Conform to your fixed-income knowledge covenants by learning:

1. The basic types of corporate bonds.
2. How callable bonds function.
3. The different types of corporate bonds.
4. The basics of bond ratings.

Chapter 19: Government Bonds

Before you loan money to Uncle Sam (and his relatives), you should know:

1. The basics of U.S. Treasury securities and how they are sold.
2. The workings of the STRIPS program and pricing Treasury bonds.
3. How federal agencies borrow money.
4. How municipalities borrow money.

Chapter 20 (*Web site only*): Mortgage-Backed Securities

Before you mortgage your future, you should know:

1. The workings of a fixed-rate mortgage.
2. Government's role in the secondary market for home mortgages.
3. The impact of mortgage prepayments.
4. How collateralized mortgage obligations are created and divided.

How Is This Book Relevant to the Student?

Fundamental changes in the investments universe drive our attention to relevance. The first major change is that individuals are being asked to make investment decisions for their own portfolios more often than ever before. There is, thankfully, a growing recognition that traditional "savings account" approaches to investing are decidedly inferior. At the same time, the use of employer-sponsored "investment accounts" has expanded enormously. The second major change is that the investments universe has exploded with an ever-increasing number of investment vehicles available to individual investors. As a result, investors must choose from an array of products, many of which are very complex, and they must strive to choose wisely.

Beyond this, students are more interested in subjects that affect them directly (as are we all). By taking the point of view of the student as an investor, we are better able to illustrate and emphasize the relevance and importance of the material.

Our approach is evident in the table of contents. Our first chapter is motivational; we have found that this material effectively "hooks" students and even motivates a semester-long discourse on risk and return. Our second chapter answers the student's next natural question: "How do I get started investing and how do I buy and sell securities?" The third chapter surveys the different types of investments available. After only three chapters, very early in the term, students have learned something about the risks and rewards from investing, how to get started investing, and what investment choices are available.

We close the first part of the text with a detailed examination of mutual funds. Without a doubt, mutual funds have become the most popular investment vehicles for individual investors. There are now more mutual funds than there are stocks on the NYSE! Given the size and enormous growth in the mutual fund industry, this material is important for investors. Even so, investments texts typically cover mutual funds in a cursory way, often banishing the material to a back chapter under the obscure (and obsolete) heading of "investment companies." Our early placement lets students quickly explore a topic they have heard a lot about and are typically interested in learning more about.

How Does This Book Allow Students to Apply the Investments Knowledge They Learn?

After studying this text, students will have the basic knowledge needed to move forward and actually act on what they have learned. We have developed two features to encourage students in making decisions as an investment manager. Learning to make good investment decisions comes with experience, while experience (regrettably) comes from making bad investment decisions. As much as possible, we press our students to get those bad decisions out of their systems before they start managing real money!

Not surprisingly, most students don't know how to get started in buying and selling securities. We have learned that providing some structure, especially with a portfolio simulation, greatly enhances the experience. Therefore, we have a series of *Get Real* boxes. These boxes (at the end of each chapter) usually describe actual trades for students to explore. The intention is to show students how to gain real experience with the principles and instruments covered in the chapter. The second feature is a series of *Stock-Trak* exercises that take students through specific trading situations using *Stock-Trak Portfolio Simulations,* which can be found in the book's Web site, www.mhhe.com/jmd6e.

Because we feel that portfolio simulations are so valuable, we have taken steps to assist instructors who, like us, plan to integrate portfolio simulations into their courses. Beyond the features mentioned above, we have organized the text so that the essential material needed before participating in a simulation is covered at the front of the book. Most notably, with every book, we have included a *free* subscription to *Stock-Trak Portfolio Simulations. Stock-Trak* is the leading provider of investment simulation services to the academic community; providing *Stock-Trak* free represents a significant cost savings to students. To our knowledge, ours is the first (and only) investments text to directly offer a full-featured online brokerage account simulation with the book at no incremental cost.

How Does This Book Maintain a Consistent, Unified Treatment?

In most investments texts, depth of treatment and presentation vary dramatically from instrument to instrument, which leaves the student without an overall framework for understanding the many types of investments. We stress early on that there are essentially only four basic types of financial investments—stocks, bonds, options, and futures. In parts 2 through 6, our simple goal is to take a closer look at each of these instruments. We take a unified approach to each by answering these basic questions:

1. What are the essential features of the instrument?
2. What are the possible rewards?
3. What are the risks?
4. What are the basic determinants of investment value?
5. For whom is the investment appropriate and under what circumstances?
6. How is the instrument bought and sold, and how does the market for the instrument operate?

By covering investment instruments in this way, we teach the students what questions to ask when looking at any potential investment.

Unlike other introductory investments texts, we devote several chapters beyond the basics to the different types of fixed-income investments. Students are often surprised to learn that the fixed-income markets are so much bigger than the equity markets and that money management opportunities are much more common in the fixed-income arena. Possibly the best way to see this is to look at recent CFA exams and materials and note the extensive coverage of fixed-income topics. We have placed these chapters toward the back of the text because we recognize not everyone will want to cover all this material. We have also separated the subject into several shorter chapters to make it more digestible for students and to allow instructors more control over what is covered.

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