FUNDAMENTALS OF INVESTMENTS

VALUATION AND MANAGEMENT

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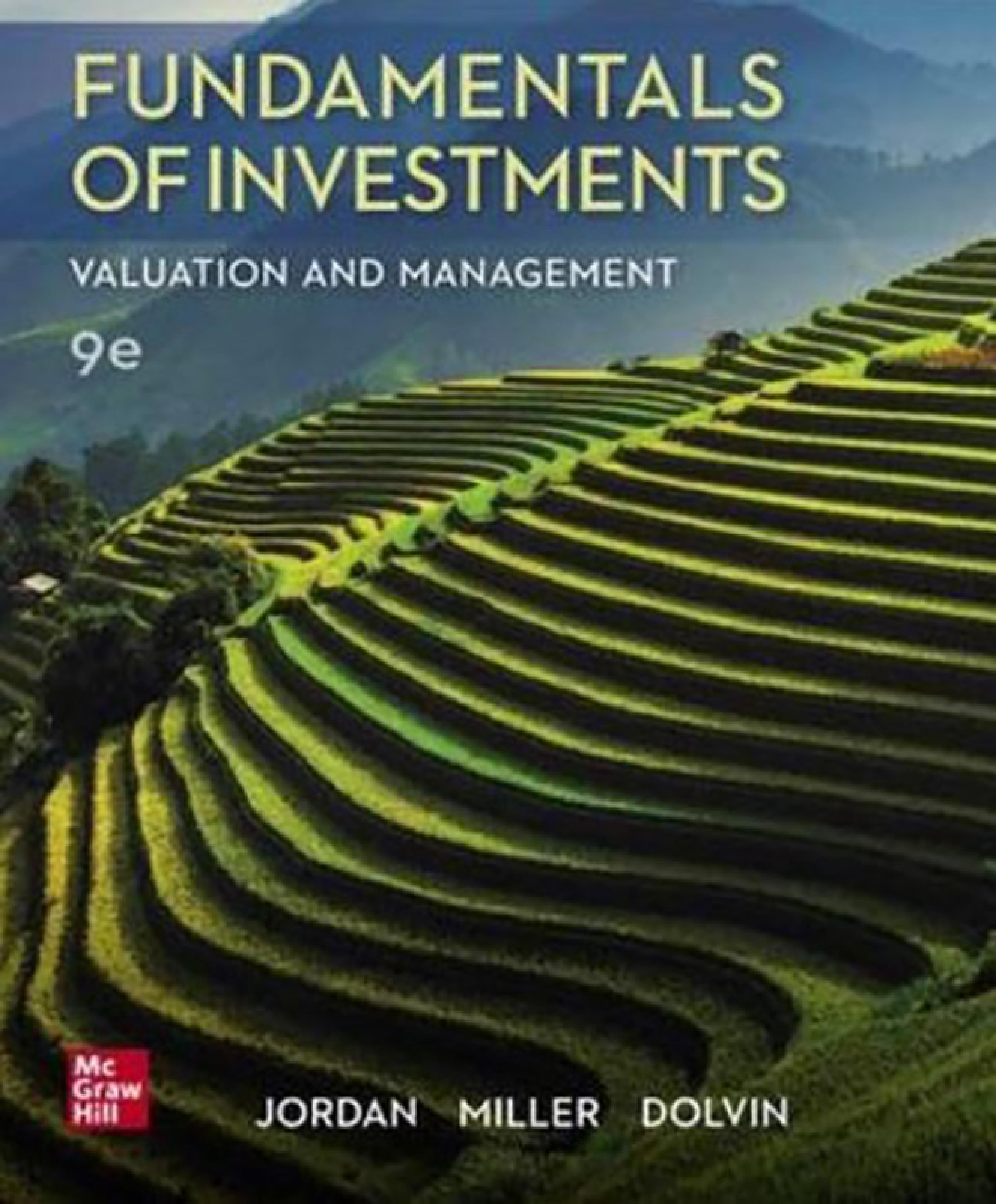

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Fundamentals of Investments

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Fundamentals of Investments

VALUATION AND MANAGEMENT

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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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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 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 21 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 Ninth Edition of This Book Expand Upon the Goals Described Above?

Based on user feedback, we have made numerous improvements and refinements in the ninth 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, particularly online.

To give some examples of our additional new content:

- Chapter 1 contains updates on historical returns for small-company stocks, large-company stocks, long-term government bonds, and Treasury bills, as well as U.S. inflation rates.
- Chapter 2 contains new information on robo-advisors, new discussion of target date funds, and additional information about how margin works at the portfolio level.
- Chapter 3 incorporates added information about sunset provisions and whiskey dividends, as well as updated discussion on how futures contracts work in practice. We have also updated FINRA bond references and online citations, including updated quotes for figures and examples.
- Chapter 4 contains a new feature about socially conscious investing. We have also updated and expanded a section that addresses the significant impact of fees on portfolio ending values.
- Chapter 5 contains a new section on alternative sources of public funding (crowdfunding, ICOs), as well as updated material on the organization of the NYSE. There is also significantly expanded discussion of competitors to the NYSE and NASDAQ.
- Chapter 6 contains discussion of how external factors may affect stock values and significant updates to the discussion of the residual income model (RIM) and free cash flow model. We have also replaced source data for examples throughout the chapter using citations that are freely available to the investing public, thereby making it of more practical use for most students. There is also a brand-new example featuring CVS Health Corporation.
- Chapter 8 contains a new section on investor biases, as well as more robust discussion of mental accounting, loss aversion, and overconfidence.
- Chapter 12 contains new discussion about the purpose and significance of beta. There is also a new section titled "Factor Analysis and Style Portfolios."
- Chapter 13 contains a new example calculating the Sortino and Sharpe ratios.
- Chapter 17 is a *brand-new* chapter, titled "Alternative Investments."
- Chapter 19 (formerly Chapter 17) contains an updated valuation for Starbucks Corporation.
- Chapter 21 (formerly Chapter 20) contains new and expanded discussion on GNMA clones.

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 websites. Second, our *Work the Web* feature, expanded and completely updated for this edition, appears in most chapters. These boxed readings use screenshots to show students how to access, use, and interpret various types of key financial and market data. Finally, 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 a variety of real-life financial sources, 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 ninth 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 (updated for the 2016 exams), as well as the stated learning outcomes, to determine which areas we covered in the eighth edition. Importantly, we also considered which areas might be added to the ninth edition.

In total, our textbook contains material that touches over 75 percent of the readings from Level I of the CFA exam. Topics that we do not address from Level I, 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 and 50 percent of the readings from the Level II and III exams, respectively.

Of course, we make no claim that our textbook is a substitute for the CFA exam readings. Nonetheless, we believe that this ninth 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 ninth edition continues to include an end-of-chapter case review. Kaplan Schweser, a leading purveyor of CFA exam preparation packages, graciously provided extensive material from which we chose these case reviews. In addition, we have added additional Kaplan Schweser practice exams and questions to our online learning system, Connect.

We provide 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 adds tremendous value to the ninth edition.

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 Their Investments Knowledge?

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 *Getting Down to Business* 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.

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 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.

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.

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.

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Bradford D. Jordan

Thomas W. Miller Jr.

Steven D. Dolvin, CFA

Coverage

This book was designed and developed explicitly for a first course in investments taken either by finance majors or nonfinance majors. In terms of background or prerequisites, the book is nearly self-contained, but some familiarity with basic algebra and accounting is assumed. The organization of the text has been designed to give instructors the flexibility they need to teach a quarter-long or semester-long course.

To present an idea of the breadth of coverage in the ninth edition of *Fundamentals of Investments,* the following grid is presented chapter by chapter. This grid contains some of the most significant new features and a few selected chapter highlights. Of course, for each chapter, features like opening vignettes, *Work the Web, Spreadsheet Analysis, Getting Down to Business, Investment Updates,* tables, figures, examples, and end-of-chapter material have been thoroughly reviewed and updated.

Chapters	Selected Topics of Interest	Learning Outcome/Comment
PART ONE Introduction		
Chapter 1		
A Brief History of Risk and Return	Dollar returns and percentage returns.	Average returns differ by asset class.
	Return variability and calculating variance and standard deviation.	Return variability also differs by asset class.
	Arithmetic versus geometric returns.	Geometric average tells you what you actually earned per year, compounded annually. Arithmetic returns tell you what you earned in a typical year. Dollar-weighted average returns adjust for investment inflows and outflows.
	The risk-return trade-off. *Updated material: World stock market capitalization.*	Historically, higher returns are associated with higher risk. Estimates of future equity risk premiums involve assumptions about the risk environment and investor risk aversion.
Chapter 2		
The Investment Process	The investment policy statement (IPS).	By knowing their objectives and constraints, investors can capture risk and safety trade-offs in an investment policy statement (IPS).
	Investor objectives, constraints, and strategies. *New material: Updated risk tolerance questionnaire.*	Presentation of issues like risk and return, resource constraints, market timing, and asset allocation.
	Investment professionals and types of brokerage accounts. *New material: Coverage of portfolio margin.*	Discussion of the different types of financial advisors and brokerage accounts available to an individual investor.
	Retirement accounts.	Readers will know the workings of company-sponsored plans, such as a 401(k), traditional individual retirement accounts (IRAs), and Roth IRAs.

Chapters	Selected Topics of Interest	Learning Outcome/Comment
	Short sales.	Description of the process of short-selling stock and short-selling constraints imposed by regulations and market conditions.
	Forming an investment portfolio.	An investment portfolio must account for an investor's risk tolerance, objectives, constraints, and strategies.
Chapter 3		
Overview of Security Types	Classifying securities.	Interest-bearing, equity, and derivative securities.
	NASD's new TRACE system and transparency in the corporate bond market.	Up-to-date discussion of new developments in fixed income with respect to price, volume, and transactions reporting.
	Equity securities.	Obtaining price quotes for equity securities.
	Derivative securities: Obtaining futures contract and option contract price quotes using the internet.	Defining the types of derivative securities, interpreting their price quotes, and calculating gains and losses from these securities.
Chapter 4		
Mutual Funds and Other Investment Companies	Advantages and drawbacks of investing in mutual funds.	Advantages include diversification, professional management, and minimum initial investment. Drawbacks include risk, costs, and taxes.
	Investment companies and types of funds.	Covers concepts like open-end versus closed-end funds and net asset value.
	Mutual fund organization, creation, costs, and fees.	Presents types of expenses and fees like front-end loads, 12b-1 fees, management fees, and turnover.
	Short-term funds, long-term funds, and fund performance. *New section: Socially responsible investing.*	Discussion of money market mutual funds versus the variety of available stock and bond funds and how to find their performance.
	Special funds like closed-end funds, exchange-traded funds, and hedge funds.	The closed-end fund discount mystery and discussion of exchange-traded funds (ETFs), exchange-traded notes (ETNs), hedge fund investment styles, and the perils of leveraged ETFs.
PART TWO Stock Markets		
Chapter 5		
The Stock Market	Private vs. public equity and primary vs. secondary markets.	The workings of an initial public offering (IPO), a seasoned equity offering (SEO), the role of investment bankers, and the role of the Securities and Exchange Commission (SEC).
	NYSE and NASDAQ.	The role of dealers and brokers, the workings of the New York Stock Exchange (NYSE), and NASDAQ market operations.

Chapters	Selected Topics of Interest	Learning Outcome/Comment
	Stock indexes, including the Dow Jones Industrial Average (DJIA) and the Standard and Poor's 500 index (S&P 500).	The components of the DJIA and their dividend yields. The difference between price-weighted indexes and value-weighted indexes.
Chapter 6		
Common Stock Valuation	The basic dividend discount model (DDM) and several of its variants, like the two-stage dividend growth model.	Valuation using constant growth rates and nonconstant growth rates.
	The residual income model and the free cash flow model.	Valuation of non-dividend-paying stocks. Valuation of stocks with negative earnings.
	Price ratio analysis.	Valuation using price-earnings, price-cash flow, and price-sales. Also, valuation of a firm using the enterprise value ratio.
	New material: Valuing CVS Health Corporation, a detailed example.	Using publicly available information to value a stock using methods presented earlier in the chapter.
Chapter 7		
Stock Price Behavior and Market Efficiency	Forms of market efficiency.	The effects of information on stock prices with respect to market efficiency.
	Event studies using actual events surrounding Advanced Medical Optics.	Explains how new information gets into stock prices and how researchers measure it.
	Informed traders, insider trading, and illegal insider trading.	Example: Martha Stewart and ImClone.
	Updated material: Market efficiency and the performance of professional money managers.	Discusses the performance of professional money managers versus static benchmarks.
	Updated material: Anomalies.	Presentation of the day-of-the-week effect, the amazing January effect, the turn-of-the-year effect, and the turn-of-the-month effect.
	Bubbles and crashes.	Shows the extent of famous events like the Crash of 1929, the Crash of October 1987, the Asian market crash, the "dot-com" bubble, and the Crash of 2008.
Chapter 8		
Behavioral Finance and the Psychology of Investing	Introduction to behavioral finance.	The influence of reasoning errors on investor decisions.
	Prospect theory.	How investors tend to behave differently when faced with prospective gains and losses.
	Overconfidence, misperceiving randomness, and overreacting to chance events.	Examines the consequences of these serious errors in judgment.
	More on behavioral finance.	Heuristics, herding, and overcoming bias.
	Sentiment-based risk and limits to arbitrage.	3Com/Palm mispricing, the Royal Dutch/Shell price ratio.
	Technical analysis.	Advance/decline line indicators, market diary, relative strength charts, and technical analysis data for Microsoft Corp.

Chapters	Selected Topics of Interest	Learning Outcome/Comment
PART THREE Interest Rates and Bond Valuation		
Chapter 9		
Interest Rates	Interest rate history and a quick review of the time value of money.	A graphical presentation of the long-term history of interest rates.
	Money market rates and their prices.	Important money market concepts including pricing U.S. Treasury bills, bank discount yields versus bond equivalent yields, annual percentage rates, and effective annual returns.
	Rates and yields on fixed-income securities.	The Treasury yield curve, the term structure of interest rates, Treasury STRIPS, and inflation-indexed Treasury securities (TIPS).
	Nominal versus real interest rates.	The Fisher hypothesis.
	Determinants of nominal interest rates.	Modern term structure theory and problems with traditional term structure theories.
Chapter 10		
Bond Prices and Yields	Straight bond prices and yield to maturity (YTM).	Calculate straight bond prices; calculate yield to maturity.
	The concept of duration and bond risk measures based on duration.	Calculate and interpret a bond's duration. The dollar value of an 01 and the yield value of a 32nd.
	Dedicated portfolios and reinvestment risk.	Learn how to create a dedicated portfolio and show its exposure to reinvestment risk.
	Immunization.	Minimize the uncertainty concerning the value of a bond portfolio at its target date.
PART FOUR Portfolio Management		
Chapter 11		
Diversification and Risky Asset Allocation	Expected returns and variances.	Calculating expected returns and variances using equal and unequal probabilities.
	Portfolios and the effect of diversification on portfolio risk.	Compute portfolio weights, expected returns, variances, and why diversification works.
	The importance of asset allocation.	The effect of correlation on the risk-return trade-off.
	The Markowitz efficient frontier and illustrating the importance of asset allocation using three securities.	Compute risk-return combinations using various portfolio weights for three assets.
Chapter 12		
Return, Risk, and the Security Market Line	Diversification, systematic and unsystematic risk.	Total risk comprises unsystematic and systematic risk; only unsystematic risk can be reduced through diversification.
	The security market line and the reward-to-risk ratio.	The security market line describes how the market rewards risk. All assets will have the same reward-to-risk ratio in a competitive financial market.

Chapters	Selected Topics of Interest	Learning Outcome/Comment
	Measuring systematic risk with beta. Calculating beta using regression.	The average beta is 1.00. Assets with a beta greater than 1.00 have more than average systematic risk.
	The capital asset pricing model (CAPM).	Expected return depends on the amount and reward for bearing systematic risk as well as the pure time value of money.
	Extending CAPM.	One of the most important extensions of the CAPM is the Fama-French three-factor model.
Chapter 13		
Performance Evaluation and Risk Management	Performance evaluation measures.	Calculate and interpret the Sharpe ratio, the Sortino ratio, the Treynor ratio, and Jensen's alpha. Also, calculate alpha using regression, calculate an information ratio, and calculate a portfolio's *R*-squared.
	Sharpe-optimal portfolios.	The portfolio with the highest possible Sharpe ratio given the assets comprising the portfolio is Sharpe optimal.
	Value-at-Risk (VaR).	VaR is the evaluation of the probability of a significant loss.
	Example showing how to calculate a Sharpe-optimal portfolio.	Combines the concepts of a Sharpe ratio, a Sharpe-optimal portfolio, and VaR.
PART FIVE Futures and Options		
Chapter 14		
Futures Contracts	The basics of futures contracts and using them to hedge price risk. Detailed example: hedging an inventory using futures markets.	Futures quotes from the internet and financial press, short and long hedging, futures accounts.
	Spot-futures parity.	Basis, cash markets, and cash-futures arbitrage.
	Stock index futures.	Index arbitrage, speculating with stock index futures, and hedging stock market risk with stock index futures.
	Hedging interest rate risk with futures.	We show how to use portfolio duration when deciding how many futures contracts to use to hedge a bond portfolio.
Chapter 15		
Stock Options	Option basics and option price quotes.	The difference between call and put options, European and American options, online option price quotes, and option chains.
	Option intrinsic value.	Know how to calculate this important aspect of option prices.
	Option payoffs and profits.	Diagram long and short option payoffs and profits for calls and puts.
	Using options to manage risk and option trading strategies.	Protective puts, covered calls, and straddles.

Chapters	Selected Topics of Interest	Learning Outcome/Comment
	Option pricing bounds and put-call parity.	Upper and lower pricing bounds for call and put options. Showing how a call option price equals a put option price, the price of an underlying share of stock, and appropriate borrowing.
Chapter 16		
Option Valuation	The one-period and two-period binomial option pricing models.	How to compute option prices using these option pricing models—by hand and by using an online option calculator.
	The Black-Scholes option pricing model.	How to compute option prices using this famous option pricing model—by hand and by using an online option calculator.
	Measuring the impact of changes in option inputs.	Computing call and put option deltas.
	Hedging stock with stock options.	Using option deltas to decide how many option contracts are needed to protect a stock's price from feared declines in value.
	Employee stock options (ESOs) and their valuation.	Features of ESOs, repricing ESOs, and ESO valuation.
PART SIX Topics in Investments		
Chapter 17 *NEW CHAPTER*		
Alternative Investments	*New: Benefits and risks of alternative investments.*	Understanding how alternative investments affect the stability and diversity of a portfolio.
	New: Hedge fund structure, regulations, fees, and styles. Private equity investment process.	Identify the styles and structure of private equity and hedge funds.
	New: Commodities trading with spot markets, third-party managers, and futures contracts.	Understand how commodities can be used within an investment portfolio.
	New: Forms of real estate investing and real estate valuation.	Identify the forms of investment and valuation alternatives for real estate.
Chapter 18		
Corporate and Government Bonds	Corporate bond basics, types of corporate bonds, and corporate bond indentures.	Become familiar with the basics of the various types of corporate bonds and their obligations.
	Callable bonds, putable bonds, convertible bonds, and protective covenants.	Bond seniority provisions, call provisions, make-whole call provisions, put provisions, conversion provisions, and protective covenants.
	Government bonds basics emphasizing U.S. government debt, federal government agency securities, and municipal bonds.	Details of U.S. Treasury bills, notes, bonds, STRIPS, agency bonds, and features of various types of municipal bonds.
	Bond credit ratings and junk bonds.	Assessing the credit quality of a bond issue.

Chapters	Selected Topics of Interest	Learning Outcome/Comment
Chapter 19		
Projecting Cash Flow and Earnings	The basics of financial statements.	Income statement, balance sheet, cash flow statement, performance, and price ratios.
	Financial statement forecasting using the percentage of sales approach.	Preparing pro forma income statements and balance sheets to examine the potential amount of external financing needed.
	Updated material: A detailed case study valuing Starbucks Corporation.	Using actual financial data to prepare pro forma income statements and balance sheets using different sales growth scenarios.
Chapter 20		
Global Economic Activity and Industry Analysis	The process of top-down analysis.	Be able to funnel the choices of thousands of individual stocks through macroeconomic and industry filters.
	Measure the level of economic activity globally and domestically.	Understand GDP, real GDP, business cycles, economic indicators, and the effects of exchange rates on international investments.
	Understand the relation of monetary and fiscal policies to economic activity.	The role of the Federal Reserve, money supply, and government policies on taxation.
	Identify industry sensitivity to business cycles.	Identify the S&P sectors, compare companies within sectors, use Porter's five forces.
Chapter 21 (online)		
Mortgage-Backed Securities	Fixed-rate mortgages and prepayment.	Presents home mortgage principal and interest calculations.
	Secondary mortgage markets and reverse mortgages.	The function of GNMA and its clones, and the PSA mortgage prepayment model.
	Collateralized mortgage obligations, CMOs.	Describes how cash flows from mortgage pools are carved up and distributed to investors.

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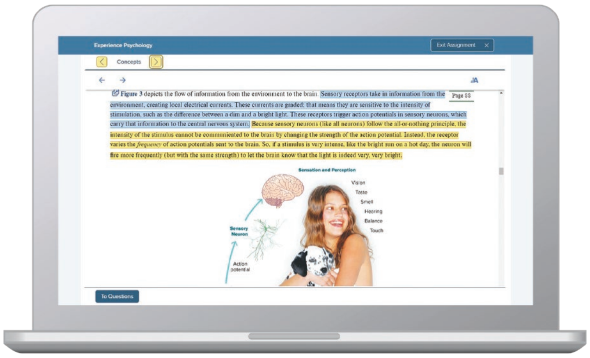

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- Jordan Cunningham, Eastern Washington University

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Features

Pedagogical Features

From your feedback, we have included many pedagogical features in this text that will be valuable learning tools for your students. This walkthrough highlights some of the most important elements.

Chapter Openers

These short introductions for each chapter present scenarios and common misconceptions that may surprise you. An explanation is more fully developed in the chapter.

CFA™ Exam Map

This feature maps topics within each chapter to readings from the CFA™ curriculum.


PART 1

Mutual Funds and Other Investment Companies

chapter 4

"Take calculated risks. That is quite different from being rash."

–General George S. Patton

Learning Objectives

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 mutual fund performance.
4. The workings of exchange-traded funds (ETFs) and hedge funds.

With only $2,000 to invest, you can easily own shares in Microsoft, GM, McDonald's, IBM, Coke, and many more stocks through a mutual fund. Or you can invest in a portfolio of government bonds or other investments. Indeed, many thousands of different mutual funds are available to investors. In fact, there are about as many, if not more, mutual funds as there are different stocks traded on the NASDAQ and the New York Stock Exchange combined. There are funds for aggressive investors, conservative investors, short-term investors, and long-term investors. There are bond funds, stock funds, international funds, and you-name-it funds. Is there a right fund for you? This chapter will help you find out.

CFA™ Exam Topics in This Chapter:

1. Guidance for standards I–VII (L1, S1)
2. Discounted cash flow applications (L1, S2)
3. Introduction to alternative investments (L1, S19)
4. Passive equity investing (L3, S13)
5. Alternative investments portfolio management (L3, S15)

Go to Connect for a guide that aligns your textbook with CFA readings.

Check This

Every major section in each chapter ends with questions for review. This feature helps students test their understanding of the material before moving on to the next section.

CHECK THIS

4.1a What are some advantages of investing in mutual funds?

4.1b What are some drawbacks of investing in mutual funds?

risk-free rate
The rate of return on a riskless investment.

print money to pay its expenses, Treasury bills are virtually free of any default risk. Thus, we will call the rate of return on such debt the **risk-free rate**, and we will use it as a kind of investing benchmark.

A particularly interesting comparison involves the virtually risk-free return on T-bills and the risky return on common stocks. The difference between these two returns can be interpreted as a measure of the *excess return* on the average risky asset (assuming that the stock of

Key Terms

Key terms are indicated in bold and defined in the margin. The running glossary in the margin helps students quickly review the basic terminology for the chapter.

Key Websites

Websites are called out in the margin, along with a notation of how they relate to the chapter material.

For more risk tolerance quizzes, visit fool.com, individual.ml.com, and msn.com/en-us/money.

receive preferential tax treatment. The tax break can be enormous, and, as a result, th you can invest each year in these accounts is strictly limited. There are also rules when you can withdraw the money, and it is important to pay careful attention to t

Taxes impact almost every step of the investment process, from the type of ac choose to the nature and length of the investments themselves. Thus, we will dis throughout the remainder of the book, and throughout the rest of this chapter in For now, though, consider a simple example on the impact of taxes.

If you started with $1 and were fortunate enough to make an investment th 100 percent (i.e., "a double"), then you would end up with $2. What if you were enough to do this 20 times? So, your $1 became $2, which became $4, and so on

INVESTMENT UPDATES

SOME EXAMPLE DISCLOSURES

1. Regarding Communicating and Sending Trades to Your Broker via E-mail

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2. Regarding Stock Analyst Reports

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Investment Updates

These boxed readings, reprinted from various business press sources, provide additional real-world events and examples to illustrate the material in the chapter. Some articles from the past two years highlight very recent events, and others present events of more historical significance.

Work the Web

Various screenshots appear throughout the text. These exercises illustrate how to access specific features of selected websites in order to expand students' knowledge of current investment topics.

WORK THE WEB

You can find the short interest for the current month in many financial publications. But what if you want a longer history of the shares sold short for a particular company? At nasdaq.com, you can find the short interest for companies listed on the NASDAQ for the previous year. We went to the site in early 2019 and looked up Tesla (TSLA), and here is what we found:

As you can see, the short interest in Tesla fell from about 35 million shares in July 2018 to about 27 million shares in December 2018. Why would you want a history of short sales? Some investors use short sales as a technical indicator, which we discuss in a later chapter. Here's a question for you: What do you think "Days to Cover" means? It is the ratio of short interest to average daily share volume. Thus, "Days to Cover" measures how many days of normal trading would be necessary to completely cover all outstanding short interest.

Another commonly used measure of short interest is the *percentage of float.* This metric measures the percentage of a firm's outstanding shares that are currently being shorted. Some stocks have large short interest positions because they have a large number of shares outstanding (think about Apple). "Days to Cover" and percentage of float help to standardize the way short interest is presented, which makes the information more meaningful.

TSLA

☑ Save Stocks

Settlement Date	Short Interest	Avg Daily Share Volume	Days To Cover
12/14/2018	26,646,210	7,530,469	3.538453
11/30/2018	27,361,651	6,110,314	4.477945
11/15/2018	28,792,194	6,547,759	4.397259
10/31/2018	29,931,418	13,099,206	2.284980
10/15/2018	34,056,805	11,748,424	2.898840
9/28/2018	33,611,481	10,345,288	3.248965
9/14/2018	33,459,061	10,291,531	3.251126
8/31/2018	32,843,807	9,252,052	3.549894

Spreadsheet Analysis

Self-contained spreadsheet examples show students how to set up spreadsheets to solve problems—a vital part of every business student's education.

SPREADSHEET ANALYSIS

Using a Spreadsheet to Calculate Average Returns and Volatilities

Here is an Excel spreadsheet summarizing the formulas and analysis needed to calculate average returns and standard deviations using the 1990s as an example:

	A	B	C	D	E	F	G	H
1								
2	**Using a spreadsheet to calculate average returns and standard deviations**							
3								
4	Looking back in the chapter, the data suggest that the 1990s were one							
5	of the best decades for stock market investors. We will find out just how good by							
6	calculating the average returns and standard deviations for this period. Here are the							
7	year-by-year returns on the large-company stocks:							
8								
9		*Year*	*Return (%)*	*Year*	*Return (%)*			
10		1990	−3.10	1995	37.58			
11		1991	30.46	1996	22.96			
12		1992	7.62	1997	33.36			
13		1993	10.08	1998	28.58			
14		1994	1.32	1999	21.04			
15								
16		Average return (%):		18.99				

Summary and Conclusions

Each chapter ends with a summary that highlights the important points of the chapter. This material provides a handy checklist for students when they review the chapter.

2.6 Summary and Conclusions

In this chapter, we cover many aspects of the investing process—which we summarize by the chapter's important concepts.

1. The importance of an investment policy statement.

A. The investment policy statement (IPS) identifies the objectives (risk and return) of an investor, as well as the constraints the investor faces in achieving these objectives.

B. The IPS provides an investing "road map" and will influence the strategies, type of account, and holdings an investor chooses.

2. The various types of securities brokers and brokerage accounts.

A. Opening a brokerage account is straightforward and really much like opening a bank account. You supply information and sign agreements with your broker. Then you write a check and provide instructions on how you want your money invested.

B. Brokers are traditionally divided into three groups: full-service brokers, discount brokers, and deep-discount brokers. What distinguishes the three groups is the level of service they provide and the resulting commissions they charge. In recent years, the boundaries among the groups have blurred.

C. Your broker does not have a duty to provide you with guaranteed purchase and sale recommendations. However, your broker does have a duty to exercise reasonable care in formulating recommendations. Your broker has a legal duty to act in your best interest. However, your broker relies on commissions generated from your account.

Getting Down to Business

For instructors looking to give their students a taste of what it means to be an investment manager, this feature (at the end of each chapter) acts as a first step by explaining to students how to apply the material they just learned. The *Getting Down to Business* boxes encourage students—whether for practice in a trading simulation or with real money—to make investment decisions, and they also give some helpful tips to keep in mind. These boxes include a link to a handy blog written by the authors.

GETTING DOWN TO BUSINESS

This chapter covered the basics of policy statements, brokerage accounts, some important trade types, and, finally, some big-picture issues regarding investment strategies. How should you, as an investor or investment manager, put this information to work?

The answer is that you need to open a brokerage account! Investing is like many activities: The best way to learn is by making mistakes. Unfortunately, making mistakes with real money is an expensive way to learn, so we don't recommend trying things like short sales with real money, at least not at first.

Instead, to learn how to trade and gain some experience with making (and losing) money, you should open a Stock-Trak account (or a similar simulated brokerage account). Take it seriously. Try various trade types and strategies and see how they turn out. The important thing to do is to follow your trades and try to understand why you made or lost money and also why you made or lost the amount you did.

In a similar vein, you should carefully review your account statements to make sure you understand exactly what each item means and how your account equity is calculated.

After you have gained some experience trading "on paper," you should open a real account as soon as you can pull together enough money. Try visiting some online brokers to find out the minimum amount you need to open an account. The amount has been declining. In fact, in 2019, you could open a TD Ameritrade account with no minimum, although you would need $2,000 to open a margin account.

Looking back at Chapter 1, you know that it's important to get started early. Once you have a real account, however, it's still a good idea to keep a separate "play money" account to test trading ideas to make sure you really understand them before committing your precious real money.

For the latest information on the real world of investments, visit us at jmdinvestments.blogspot.com.

Chapter Review Problems and Self-Test

Students are provided with one to three practice problems per chapter with worked-out solutions to test their abilities in solving key problems related to the content of the chapter.

Chapter Review Problems and Self-Test

1. **Front-End Loads (LO2, CFA3)** The Madura HiGro Fund has a net asset value of $50 per share. It charges a 3 percent load. How much will you pay for 100 shares?
2. **Turnover (LO2, CFA3)** The Starks Income Fund's average daily total assets were $100 million for the year just completed. Its stock purchases for the year were $20 million, while its sales were $12.5 million. What was its turnover?

Answers to Self-Test Problems

1. You will pay 100 times the offering price. Since the load is computed as a percentage of the offering price, we can compute the offering price as follows:

$$\text{Net asset value} = (1 - \text{Front-end load}) \times \text{Offering price}$$

In other words, the NAV is 97 percent of the offering price. Since the NAV is $50, the offering price is $50/.97 = $51.55. You will pay $5,155 in all, of which $155 is a load.

2. Turnover is the lesser of purchases or sales divided by average daily assets. In this case, sales are smaller at $12.5, so turnover is $12.5/$100 = .125 times.

Test Your Investment Quotient

An average of 15 multiple-choice questions are included for each chapter, many of which are taken from past CFA exams. This text is unique in that it presents CFA questions in multiple-choice format—which is how they appear on the actual exam. Answers to these questions appear in Appendix A.

Test Your Investment Quotient

IQ

1. **Prices and Returns (LO1, CFA1)** You plan to buy a common stock and hold it for one year. You expect to receive both $1.50 from dividends and $26 from the sale of the stock at the end of the year. If you wanted to earn a 15 percent rate of return, what is the maximum price you would pay for the stock today?
   a. $22.61
   b. $23.91
   c. $24.50
   d. $27.50
2. **Returns (LO1, CFA1)** A portfolio of non–dividend-paying stocks earned a geometric mean return of 5 percent between January 1, 2010, and December 31, 2016. The arithmetic mean return for the same period was 6 percent. If the market value of the portfolio at the beginning of 2010 was $100,000, the market value of the portfolio at the end of 2016 was *closest* to:
   a. $135,000
   b. $140,710
   c. $142,000
   d. $150,363
3. **Standard Deviation (LO4, CFA2)** Which of the following statements about standard deviation is true? Standard deviation:
   a. Is the square of the variance.
   b. Can be a positive or negative number.
   c. Is denominated in the same units as the original data.
   d. Is the arithmetic mean of the squared deviations from the mean.

CFA Exam Review by Schweser

Unique to this text! These reviews are excerpted from Schweser, a leader in CFA exam preparation. Each review addresses chapter content but in a way that is consistent with the format of the actual CFA exam.

CFA Exam Review by Kaplan Schweser

[CFA3, CFA5]
Suzanne Harlan has a large, well-diversified stock and bond portfolio. She wants to try some alternative investments, such as hedge funds, and has contacted Lawrence Phillips, CFA, to help assemble a new portfolio.

Before agreeing to make recommendations for Ms. Harlan, Mr. Phillips wants to determine if she is a good candidate for alternative investments. He gives her a standard questionnaire. Here are some of her comments:

- I'm interested in high returns. I'm not afraid of risk, and I'm investing money for the benefit of my heirs.
- I pay a lot of attention to expense and return data from my investments and track their performance closely.
- Investors have told me that assessing the quality of hedge funds is difficult, so I'm interested in purchasing a fund of funds where I can diversify my risk while potentially sharing in some outsized returns.
- I pay several million dollars in taxes every year, and I want any additional investments to be tax-friendly.
- My neighbors founded Kelly Tool and Die 20 years ago. They are declaring bankruptcy, and I am interested in obtaining a partial interest in the business.

Ms. Harlan then tells Mr. Phillips that it is imperative that the returns of any investments he recommends must be in some way comparable to a benchmark.

Mr. Phillips is not excited about the business idea or the fund of funds. However, he does know of several managers of individual hedge funds. He talks her out of a fund of funds and suggests she put her money in the Stillman Fund, which concentrates on spin-offs, generally buying the spun-off company and shorting the parent company.

What's on the Web?

These end-of-chapter activities show students how to use and learn from the vast amount of financial resources available on the internet.

What's on the Web?

1. **Bond Funds** One of the best internet sites for information on mutual funds is morningstar.com. Go to the website and find the ticker symbol for the Harbor Bond Fund. Find all of the following information on the website for this fund: loads, expense ratio, top five holdings, bond quality ratings, the fund's rank in its category for the last seven years, and the Morningstar rating. Next, find out how the Morningstar star ranking system works.
2. **Stock Funds** Go to morningstar.com and find the ticker symbol for a domestic stock fund. Enter the ticker symbol and find the following information for the fund: manager and manager start date, year-to-date return, three-year return, five-year return, front-end or back-end loads, actual and maximum 12b-l fees, management fees, expense ratio, the top 25 holdings, and the fund address and phone number.