Fundamentals of Investments

Valuation and Management

Charles J. Corrado

Bradford D. Jordan

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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. The result is frequently 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 differs 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 three key things:

- Focus on the students as investment managers, 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 will 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 "real-world" material and familiar companies wherever appropriate.

By design, the text is not encyclopedic. As the table of contents indicates, we have a total of 19 chapters. Chapter length is about 30 pages, so the text is aimed at a single-term course. By design, 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, both with regard to topics and depth of coverage. Throughout, we strike a balance by introducing and covering the essentials while leaving some of the detail to follow-up courses in security analysis, portfolio management, and options and futures.

Relevance 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 investments 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 as well.

Beyond this, students are more interested in subjects that affect them directly (aren't 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 rewards and risks from investing, how to get started investing, and what investment choices are available.

We close the first part of the text by 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 equity 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, investment 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 very interested in.

A Consistent, Unified Treatment

In most investments texts, depth of treatment and presentation vary dramatically from instrument to instrument, stranding 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 5, 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 are the 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.

Applying Investments Knowledge

After studying from 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 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 buying and selling securities. We have learned that providing some structure, especially with a portfolio simulation, greatly enhances the experience. So, we first 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*. More detail concerning *Stock-Trak®* and these features appears in the next section dealing with pedagogy.

Because we feel that portfolio simulations are so valuable, we have taken steps to assist instructors who, like us, plan to integrate portfolio simulations in their course. 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 it free represents a significant cost savings to students. To our knowledge, ours is the first investment text to offer a full-featured online brokerage account simulation directly with the book at no incremental cost.

Pedagogical Features

From your feedback, we included many pedagogical features in this text that will be valuable learning tools for your students.

Chapter Openers (see pages 3, 275, and 431) These one-paragraph introductions for each chapter present facts and misconceptions that may surprise you. An explanation is more fully developed in the respective chapter.

Anyone can retire as a millionaire!

Consider this: If you invest $2,500 per year while earning 12 percent annual returns, then after 35 years you will have accumulated $1,079,159. But with annual returns of only 8 percent you will have just $430,792. Are these investment returns realistic over a long period of time?

Key Terms (see pages 37, 243, and 463) 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.

margin call A demand for more funds that occurs when the margin in an account drops below the maintenance margin.

A typical maintenance margin would be 30 percent. If your margin falls below 30 percent, then you may be subject to a **margin call**, which is a demand by your broker to add to your account, pay off part of the loan, or sell enough securities to bring your margin back up to an acceptable level. If you do not or cannot comply, your securities may be sold. The loan will be repaid out of the proceeds, and any remaining amounts will be credited to your account.

Check This! (see pages 7, 287, and 491) Each 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

1.1a What are the two parts of total return?

1.1b Why are unrealized capital gains or losses included in the calculation of returns?

1.1c What is the difference between a dollar return and a percentage return? Why are percentage returns usually more convenient?

Investment Updates (see pages 48, 223, and 461) These boxed readings, reprinted from various business press sources, provide additional real-world events and examples to illustrate the material in the chapter. Many articles are from the past two years to highlight very recent events, while others present events of more historical significance.

Investment Updates

Time for Investing's Four-Letter Word

What four-letter word should pop into mind when the stock market takes a harrowing nosedive?

No, not those. R-I-S-K.

Risk is the potential for realizing low returns or even losing money, possibly preventing you from meeting important objectives, like sending your kids to the college of their choice or having the retirement lifestyle you crave.

But many financial advisers and other experts say that these days investors aren't taking the idea of risk as seriously as they should, and they are overexposing themselves to stocks.

"The aim is always to find the fine line between greed and fear," he says.

To that end, many financial advisers, brokerage firms and mutual-fund companies have created risk quizzes to help people determine whether they are conservative, moderate or agressive investors. Some firms that offer such quizzes include **Merrill Lynch, T. Rowe Price Associates** Inc., Baltimore, **Zurich Group** Inc.'s Scudder Kemper Investments Inc., New York, and **Vanguard Group** in Malvern, Pa.

"The typical investor may not have ever experienced a negative turn in the stock market. They need to be pre-

Numbered Examples (see pages 6, 278, and 494) Separate numbered and titled examples are integrated throughout the chapters. Each example illustrates an intuitive or mathematical application in a step-by-step format. There is enough detail in the explanations so the student doesn't have to look elsewhere for additional information.

Example 1.1 **Calculating Percentage Returns**

Suppose you buy some stock for $25 per share. After one year, the price is $35 per share. During the year, you received a $2 dividend per share. What is the dividend yield? The capital gains yield? The percentage return? If your total investment was $1,000, how much do you have at the end of the year?

Your $2 dividend per share works out to a dividend yield of

$$\begin{aligned}\text{Dividend yield} &= D_{t+1} / P_t \\ &= \$2 / \$25 \\ &= 8\%\end{aligned}$$

Numbered Equations (see pages 149, 468, and 518) Key equations are highlighted and numbered sequentially in each chapter for easy reference.

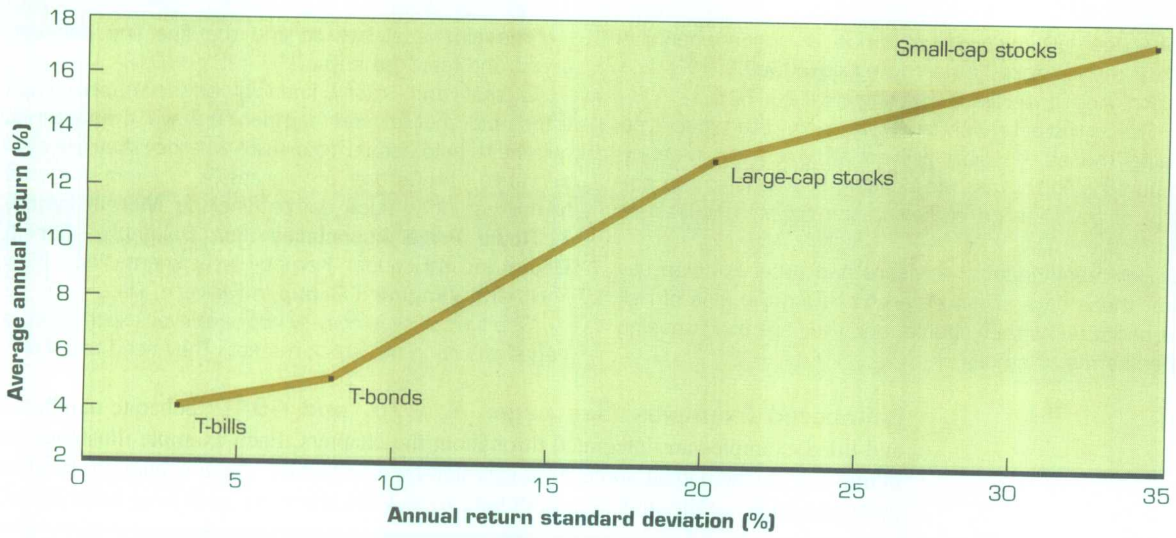
$$V(0) = \frac{D(0)(1+g)}{k-g} \qquad g < k \tag{6.3}$$

Figures and Tables (see pages 19, 126, and 216) This text makes extensive use of real data and presents them in various figures and tables. Explanations in the narrative, examples, and end-of-chapter problems will refer to many of these exhibits.

Table 1.4 Annual Returns Statistics, 1926–1997

Asset Category	Average	Standard Deviation
Large-cap stocks	12.83%	20.38%
U.S. Treasury bonds	5.41	8.35
U.S. Treasury bills	4.10	3.25
Inflation	3.20	4.52

Figure 1.9 Risk-Return Trade-Off



Source: Data from Global Financial Data, reprinted with permission.

Summary and Conclusions (see pages 22, 106, and 360) Each chapter ends with a summary that highlights the important points of the chapter. This provides a handy checklist for students when they review the chapter.

1.6 Summary and Conclusions

This chapter explores financial market history. Such a history lesson is useful because it tells us what to expect in the way of returns from risky assets. We summarized our study of market history with two key lessons:

1. Risky assets, on average, earn a risk premium. There is a reward for bearing risk.
2. The greater the potential reward from a risky investment, the greater is the risk.

When we put these two lessons together, we concluded that there is a risk-return trade-off: The only way to earn a higher return is to take on greater risk.

Get Real! (see pages 22, 231, and 297) For instructors looking to give their students a taste of what it means to be an investment manager, this section (at the end of each chapter) acts as that first step by explaining to students how they can actually apply the material they just learned. They encourage students—whether for practice, in a trading simulation, or with real money—to choose investments and make investment decisions and also give some helpful tips to keep in mind.

GET REAL

This chapter took you through some basic, but important, investment-related calculations. We then walked through the modern history of risk and return, both in the United States and elsewhere. How should you, as an investor or investment manager, put this information to work?

The answer is that you now have a rational, objective basis for thinking about what you stand to make from investing in some important broad asset classes. For the stock market as a whole, as measured by the performance of large-company stocks, you know that you can realistically expect to make 13 percent or so per year on average.

Review Problems and Self-Test (see pages 23, 136, and 298) Students are provided with 1–3 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. **Calculating Returns** You bought 400 shares of Metallica Heavy Metal, Inc., at \$30 per share. Over the year, you received \$.75 per share in dividends. If the stock sold for \$33 at the end of the year, what was your dollar return? Your percentage return?

Answers to Self-Test Problems

1. Your dollar return is just your gain or loss in dollars. Here, we receive \$.75 in dividends on each of our 400 shares, for a total of \$300. In addition, each share rose from \$30 to \$33, so we make \$3 × 400 shares = \$1,200. Our total dollar return is thus \$300 + \$1,200 = \$1,500.

   Our percentage return (or just "return" for short) is equal to the \$1,500 we made divided by our initial outlay of \$30 × 400 shares = \$12,000; so \$1,500/12,000 = .125 = 12.5%. Equivalently, we could have just noted that each share paid a \$.75 dividend and each share gained \$3, so the total dollar gain per share was \$3.75. As a percentage of the cost of one share (\$30), we get \$3.75 / 30 = .125 =12.5%.

Test Your IQ (Investment Quotient) (see pages 138, 299, and 334) 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 Level I exam. Answers to theses questions appear in Appendix A.

Test Your Investment Quotient

1. **Securities Regulation** Which of the following is not a function of the SEC in approving an IPO of a company's common stock shares?
   - **a.** Ensuring that the company is high quality and the stock offering price is fair.
   - **b.** Ensuring full disclosure of the company's financial position.
   - **c.** Ensuring that a prospectus is made available to all interested investors.
   - **d.** Ensuring that the offering does not violate federal securities laws.

Questions and Problems (see pages 26, 140, and 336) A variety of problems (average of 20 per chapter) are included in each chapter to test students' understanding of the conceptual and problem-solving elements. Each problem is labeled with the subject and the level—core or intermediate. Selected answers appear in Appendix B, and complete solutions are included in the instructor's manual.

Questions and Problems

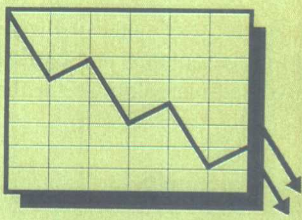
Core Questions

1. **Calculating Returns** Suppose you bought 200 shares of stock at an initial price of \$42 per share. The stock paid a dividend of \$2.40 per share during the following year, and the share price at the end of the year was \$31. Compute your total dollar return on this investment. Does your answer change if you keep the stock instead of selling it? Why or why not?
2. **Calculating Yields** In the previous problem, what is the capital gains yield? The dividend yield? What is the total rate of return on the investment?

Intermediate Questions

11. **Using Returns Distributions** Based on the historical record, what is the approximate probability that an investment in small stocks will double in value in a single year? How about triple in a single year?

Stock-Trak Exercises (see pages 142, 337, and 572) Unique to this text! This text is the only book that incorporates *Stock-Trak® Portfolio Simulations* exercises. *Stock-Trak®* is one of the most successful trading simulations with over 10,000 college students using trading accounts each semester (see *Supplements* for more information). Go the next step in teaching your students about investment management by encouraging your students to use this product. This section, included in most of the chapters, briefly summarizes topics from the chapter and asks students to perform certain trades as covered in the text.



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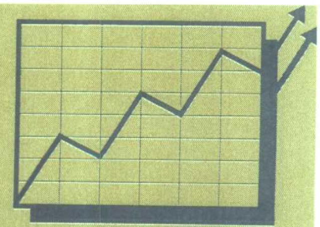

Stock Market Day Trading with Stock-Trak

The Internet has given rise to a new breed of stock market investors—day traders. Day traders buy and sell common stocks within a day and typically close out their positions before the end of the day to avoid carrying a stock position overnight. The most popular trading strategy among day traders is "momentum trading," whereby the day trader tries to identify stocks that have started moving up and will continue to move up through the day. Once such a stock is identified, the day trader buys the stock and tracks its progress through the day. Some time later—perhaps a few minutes, perhaps a few hours—the day trader sells the stock to close out the position before the end of trading that day.

How do you identify stocks with sustainable momentum? Day traders often use sophisticated computer programs to assist their decision processes, but they must ultimately depend on instincts. While most day traders have a difficult time recouping their trading expenses, there are often spectacular successes to inspire the would-be trader. The beauty of a Stock-Trak account is that you can try your hand at day trading without risking your own capital.

To try your hand at day trading using your Stock-Trak account, simultaneously log on to an Internet stock quote server and the Stock-Trak website in the morning, ideally about an hour or two after NYSE trading has started. Note that web browsers support several different sessions at one time and many stock quote servers also provide stock price charts. Next, identify several stocks that are up since the opening of trading that day. Most stock quote servers report intraday stock price statistics, including high and low prices along with an opening price and change in price. Pick two or three stocks and submit an order to Stock-Trak to buy these stocks. Stock-Trak will return a trade confirmation indicating the trade prices for your order. Print the trade confirmation so you don't forget your trade prices. Later in the day, log on to Stock-Trak to close out your position and calculate your profits and losses. Remember, a real day trader will not hold a position overnight. It's easier to sleep that way.

Supplements

We have developed a number of supplements for both teaching and learning to accompany this text:

For Instructors

Instructor's Manual, prepared by Stuart Michelson, University of Central Florida

ISBN 0072312572

We have developed the Instructor's Manual to clearly outline the chapter material, as well as provide extra teaching support to assist new users. The first section of the Instructor's Manual includes an annotated outline of each chapter with suggested websites, references to PowerPoint slides, teaching tips, additional examples, and current events references. The second section contains complete worked-out solutions for the end-of-chapter questions and problems.

Test Bank, prepared by Jeffery A. Manzi, Ohio University

ISBN 0072312548

With almost 1,500 questions, this Test Bank provides questions in true-false and multiple-choice formats and different levels of difficulty to meet any instructor's testing needs.

Computerized Test Bank

ISBN 0072346477

Available in Windows format, this software provides you with the Test Bank in electronic form. The keyword search option lets you browse through the question bank for problems containing a specific word or phrase. Password protection is available for saved tests or for the entire database. Questions can be added, modified, or deleted.

PowerPoint Presentation System, prepared by Stuart Michelson, University of Central Florida

ISBN 0072325860

More than 300 full-color slides of images from the text, lecture outlines, and additional examples and data are available in this product.

Videos

ISBN 0072312564

Irwin/McGraw-Hill has produced a new series of finance videos which are 10-minute case studies on topics such as Financial Markets, Stocks, Bonds, Portfolio Management, Derivatives, and Going Public.

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Visit the Corrado/Jordan website for a complete look at this text. The On-Line Learning Center (OLC), available to adopters only, contains electronic formats of the supplements as well as additional teaching materials. Or, link to the Finance Resources Access Network (FRAN) page from this site to connect to the F.I.R.E supersite, which contains lots of teaching tips and ideas for all of your courses.

For Students

The Wall Street Journal Edition

ISBN 0072326158

If your instructor ordered this special edition, you will find a reply card bound in the front of the book that entitles you to a 10-week subscription to *The Wall Street Journal.* No additional payment is necessary; the cost of the subscription is included in the price of the book.

Self-Study CD-ROM

Packaged free with every new book purchased from Irwin/McGraw-Hill!

This CD-ROM contains a tutorial program to provide questions written specifically for this text. Students can choose one chapter, or a number of chapters, and the program will select random questions to be answered. Questions were written by Jeffery A. Manzi, Ohio University, and care has been taken to ensure that these questions are not duplicated in the Test Bank. Also included on the CD is the Power Point Presentation Software, and an Options Calculator that helps students perform calculations based on material in Chapter 15.

Ready Notes

ISBN 0072356456

Ready Notes provides a reduced copy of every PowerPoint slide as an inexpensive, but valuable, note-taking system. Ask your Irwin/McGraw-Hill representative about packaging options.

Stock-Trak® Portfolio Simulation

Give your students investment management experience! Irwin/McGraw-Hill has partnered with Stock-Trak® and is providing a free subscription to Stock-Trak® Portfolio Simulations for one semester with the purchase of every *new* copy of *Fundamentals of Investments: Valuation and Management* by Corrado and Jordan. Stock-Trak® gives students $500,000 in play money to allow them to trade stocks, options, futures, bonds, mutual funds, and international stocks—no other simulation offers all these types of securities! Over 600 professors have used this service, and about 10,000 college students each semester participate. Instructors receive reports every week. All trades are done on the web through **www.mhhe.com/cj**. See this site for more information.

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Throughout the development of this book, we have taken great care to discover and elminate errors. Our goal is to provide the best investments textbook on the market, period. To ensure that future printings and editons are error-free, we gladly offer $10 per arithmetic error to the first person reporting it as a modest token of our appreciation. More than this, we want to know how to make this book better for students and instructors alike. Please write with your suggestions, thoughts, and ideas. You can send comments to: Dr. Charles J. Corrado, c/o Editorial-Finance, Irwin/McGraw-Hill, 1333 Burr Ridge Parkway, Burr Ridge IL, 60521.

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Brief Contents