

*Investment Analysis and  
Portfolio Management*

*Jerome B. Cohen  
Edward D. Zinbarg  
Arthur Zeikel*

*Fifth Edition*

# *Investment Analysis and Portfolio Management*

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*Investment Analysis and  
Portfolio Management*

*To  
Mina,  
Barbara,  
Terrie,  
Carla,  
Elizabeth, David,  
Allison,  
Jill,  
Judith,  
and Jeffrey*

## PREFACE

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In 1981, the average investor in the stock market, whether an ordinary individual or a trained professional, lost money. In the following two years, had this average investor not been scared out of the market by 1981's experience, his or her portfolio would have gone up about 50 percent. In 1984, the rate of return on stocks was less than the return on a savings account; but in 1985, it soared to 30 percent. Similar oscillations have characterized the bond market in recent years.

Is this the behavior one might expect of rational, efficient markets, as postulated by financial theorists, or is it the behavior one might expect of a gambling casino? The answer is that it is neither and it is both. The investment markets reflect both the intelligent economic judgments made in tens of thousands of households and financial institutions all over the world, and the elements of pure chance that cause the best laid plans to go astray.

In each of the editions of this book, now spanning 20 years of radically changing investment market conditions, our goal has remained constant—to provide the investor with a sound framework for exercising intelligence in the face of great uncertainty. Each new edition has benefited both from our own and our colleagues' new experiences as practicing investors, and from the new insights of brilliant academic researchers who have constantly challenged the conventional wisdom of practitioners. Each new edition exposes the reader both to the changing sights and sounds of the hurly-burly investment world and to the ever-improving theoretical models that seek to bring some order into the apparent chaos. And each new edition, perhaps most importantly, can be easily read and understood by men and women of intelligence, whether or not they have a strong mathematical background.

This Fifth Edition is divided into five parts. Part 1 is a three-chapter overview of the risk/reward trade-offs confronting the investor, the nature of the marketplace in which the investor's choices are focused, and the basic sources of information needed to make the choices. Part 2 also contains three chapters. It describes the evolution and present status of the major theories about how investment decisions are made and how they might be made better.

In Part 3, two chapters are devoted to investment timing decisions: when to buy, when to sell, when to stand pat. This discussion of timing is followed by an eight-chapter Part 4, which deals with a variety of techniques for analyzing financial statements and for judging the merits of specific stocks, bonds, options, and also tangible assets such as real estate. Two chapters of Part 5 try to integrate all of what went before in a case study format; and a final chapter emphasizes that American investors traditionally have been far too parochial and demonstrates that a global vision is as important to the achievement of successful investment results as it is to successful statesmanship. Here's to success!

*Jerome B. Cohen*  
*Edward D. Zinbarg*  
*Arthur Zeikel*

## **ACKNOWLEDGMENTS**

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Over the years, as we have prepared each new edition, we have expressed our gratitude to the many people who have given us their advice. This Fifth Edition continues to benefit from that advice, and we say a collective thank you to them once again.

In working on this latest edition, we were particularly helped by our good friend, Paul Aron, Vice Chairman of Daiwa Securities America, Inc., who drew on his vast knowledge of international investment markets and provided us with a unique overview chapter on that subject (Chapter 19). Special mention is also due to Alvin L. Arnold, Executive Editor of *Real Estate Review*; Fred C. Cohn, President and Editor of Johnson's Charts, Inc.; Eugene Epstein, Senior Economist at the New York Stock Exchange; Arnold Kaufman, Editor of *The Standard & Poor's Outlook*; and Seymour Klein, Senior Vice President, Advest, Inc.

So many of our Wall Street colleagues allowed us to reproduce sections of their newsletters, articles, speeches, and graphic presentations that it is impossible to list them all here. But we must express our deep gratitude to them all, and to their firms, for helping us illustrate how the workaday investment world operates.

The capable assistance of our secretaries, Sharon Bernadette Ernst, Beverly Havriliak, and Lisa Morgan-Vandegrift, was invaluable, as was the advice of our colleagues at Merrill Lynch and Prudential, including particularly Susan Boyd, Robert J. Farrell, Theresa Hamacher, Bryon Ison, Richard I. Klein and David Walter. Professor Chris Prestopino's work on the review questions and Teacher's Manual was similarly skillful.

Finally, we thank the many reviewers of earlier editions of our book and the many adopters who sent us constructive criticisms. Among the adopters, the continued use of our book in the C.F.A. and C.L.U. programs is extremely gratifying. As always, we apologize for not being able to satisfy every adopter's specific needs, but we hope that this Fifth Edition will again be deemed worthy of their vote of confidence.

*J.B.C.*

*E.D.Z.*

*A.Z.*

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P A R T

1

*Introduction*



## *An Overview of Risk and Return*

*October. This is one of the peculiarly dangerous months to speculate in stocks. The others are July, January, September, April, November, May, March, June, December, August, and February.*

Mark Twain

Investment has many facets. It may involve putting money into bonds, or common stock, or paintings, or real estate, or mortgages, or oil ventures, or cattle, or the theater. It may involve speculating in bull markets or selling short in bear markets. It may involve choosing growth stocks, or blue chips, or defensive stocks, or income stocks, or even penny cats and dogs. It may involve puts and calls, straddles, rights, warrants, convertibles, financial futures, money market funds, CDs, commercial paper, Treasury bills and notes, gold, silver, commodities, or mutual funds. And it may result in accumulation of wealth or dissipation of resources. Diversity and challenge characterize the field. For the able or the lucky, the rewards may be substantial. For the uninformed, the results can be disastrous.

### ■ **THE INVESTMENT PROCESS**

Individual investors and professional money managers must decide on their investment objectives and then select from possible investment alternatives.

The investment challenge involves certain fundamental choices. As part of controlling risks, decisions must be made on the selection of complementary assets so

the portfolio will provide a mix with attractive rates of return balanced against acceptable risk.

Another judgment that determines an investment's success is time horizon. The choice of short-term, intermediate, or long-term investments can result in an advantageous return or lock the investor into a no-win situation. After a proper time there should be a performance assessment. Investment decision making in all its phases is continuous.

Fundamental to investing is the recognition of the personal needs and lifestyle of the individual investor and the recognition of the institutional needs of professional investors. Both must be aware that the competitive, complicated market demands knowledge of the techniques for controlling risks and making capital appreciate in real terms.

## ***Expectations***

A commodity trader, an investor concerned with inflation protection, a newly married couple, a middle-aged professional, and a retiree have different expectations for the return on their investment. Differences also exist among institutional investors—pension funds, mutual funds, insurance companies, and the like. And even people (or institutions) in similar circumstances may be adventurous or conservative investors. Age, lifestyle, and personality help determine the choice of an investment. Studies on the investment psychology of individuals indicate that most people are risk averse. At the same time about 50 percent of them, by owning only one or two stocks, have portfolios that are risky because they are undiversified.

Risk averters can expect the least gain. The obverse is equally true. Among risk averters are retirees who must safeguard capital and generate income, those fearful of inflation and the loss of purchasing power, and young families saving to build an investment nest egg.

Less concerned with risk and more with gain are confident single persons with or without assured income, aggressive investors seeking special situations, and contrarians whose viewpoints favor the long chance and high reward potential. All investors must be conscious of the impact different forms of risk can have on an investment. Since risk affects particular investments in varying ways, the wary investor will make choices with that knowledge in mind. It also helps to learn how to measure risk.

## **■ INFLUENCES ON INVESTMENTS**

### ***Risk and Return***

Before discussing investment alternatives, it is essential to note the cardinal concepts of risk and return that in later chapters will be studied in detail.

“Keep your alpha high and your beta low” is basic strategy for those who want to generate good investment performance. This advice reflects increasing concern with

how to measure risk—how to quantify this heretofore elusive factor in order to compare it with the rate of return. It has long been apparent that the return achieved by an individual on a modest personal portfolio or by a money manager of a large investment fund is closely related to the degree of risk undertaken. But how do you measure risk for individual stocks as well as for an entire portfolio? The beta coefficient has been developed as a method for measuring risk. It relates the volatility of a stock to the volatility of the market as a whole.

Another way of obtaining above-average performance is to achieve a positive alpha, or “excess return.” When one stock has a higher or lower rate of return than another stock with the same beta, when it does better or worse against the market than its beta would have predicted, this is said to be due to its alpha factor or the various residual nonmarket influences unique to each stock. If you can select enough stocks with positive alphas, your portfolio will perform better than its beta would have indicated for a given market movement.

But as you add more stocks to your portfolio, you tend to diversify away both the chance of obtaining a positive alpha, as well as the risk of getting a negative alpha. Your portfolio’s volatility will also become very much like the market as a whole. A fully diversified portfolio, if there is such, would have a beta of 1.0 and an alpha of 0.

This theoretic framework has enabled money managers to incorporate the trade-off of returns versus the variability (uncertainty) of returns into investment decisions. In calculating betas and alphas, the S&P (Standard & Poor’s) 500 is generally used as a proxy for the market.

## **Measuring Risk—Beta**

According to a *Forbes* article, beta is no longer in vogue and has been superseded by “value oriented investing.”<sup>1</sup> While beta may not be as much in the spotlight, it still has extensive acceptance. The individual investor who is a risk averter will seek only as high a beta for a given stock as is consistent with the risk he can tolerate. On the other hand, the performance-minded portfolio manager who is concerned with competition will attempt to undertake risk, usually beyond levels acceptable to individual investors.

For a given security, an investor will accept a certain beta. To illustrate, if Intel Corporation moves up 3 points every time the market moves up 1 point, it has a beta of 3.0, which is a very high beta since its volatility in relation to the market is great. On the other hand, a stock like Commonwealth Edison is likely to be less volatile than the market as it is regarded as stable. When the market goes up, it will go up too—but less rapidly. It is said to have a low beta. Some stocks, such as General Motors, are said to approximate the same beta as the market as a whole. They are, therefore, regarded as of average volatility. The implications of the risk, volatility, and variability are that if one wishes to take substantial risks, one buys heavily into high-beta stocks. They will rise more sharply than the market and provide greater

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<sup>1</sup>Anne Bagamery, “Alpha, Beta, Gotcha,” *Forbes*, June 17, 1985, p. 208.



profitability in the long run. But in the short run they will require watching—especially if the market declines.

Studies relating beta to corporate bond ratings reason that increasing beta values are associated with decreasing bond quality ratings.

Another study concluded that high-beta firms do much better than low beta firms in a rising market and much worse in a falling market. Observation indicated that similar returns were true for high variance stocks. On average high-beta stocks do not outperform low-beta stocks. Using a 20-year sample and the three variables of size (measured by the market value of a firm's assets) beta and variance of securities returns indicated a 15.5 percent return per year difference between the smaller and larger firms in the sample. Size provided the "most statistically significant variable for the overall period."<sup>2</sup>

Different forms of risk such as purchasing power risk, interest rate risk, business risk, and market risk are the more usual concerns of the traditional investor.

## **Purchasing Power Risk**

The typical risk averter will seek a safe investment which will return at least the same number of dollars put into the investment originally. Additionally, the investor hopes to achieve a current income and/or capital gain from an increase in the earnings and assets of the corporation.

However, if it takes a decade to achieve a 60 percent return inclusive of reinvested dividends but the price level over this period of time has risen over 100 percent, the investor clearly will be receiving in return a lesser amount of purchasing power than was committed originally. Purchasing power risk must be faced even when equity is considered on the basis of total return.

As Figure 1-1 indicates, common stock prices over the long run have exceeded the growth of inflation. However, over shorter periods, inflation has often outrun common stock prices, and investors have then been disappointed in equities as a hedge against inflation. Figure 1-2 shows the inflation rate in an uneven rise and fall when reviewed year by year. Seen over 10-year periods, the inflation rate moved slowly and steadily upwards until 1982 when the decline began. The typical risk averter will also hesitate to buy bonds in a period of inflation because bond prices fall when interest rates rise. In the Ibbotson and Sinquefeld study updated by CDA Investment Technologies, Inc., and further updated by a new series of yearbooks, historical data indicates that during the short holding period of one year, common stocks, corporate bonds, government bonds, and Treasury bills performed almost equally relative to inflation.<sup>3</sup> As the holding periods lengthened (5-year, 10-year, and 25-year periods), common stocks increasingly outpaced inflation over more periods and to a greater degree than the other assets.

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<sup>2</sup>Josef Lakonishok and Alan C. Shapiro, "Stock Returns, Beta, Variance and Size, An Empirical Analysis," *Financial Analysts Journal*, July–August 1984.

<sup>3</sup>R. G. Ibbotson Associates, Inc., *The Stocks, Bonds, Bills and Inflation Yearbook*. Chicago, updated by CDA Investment Technologies, Inc., Silver Springs, Md., 1985.