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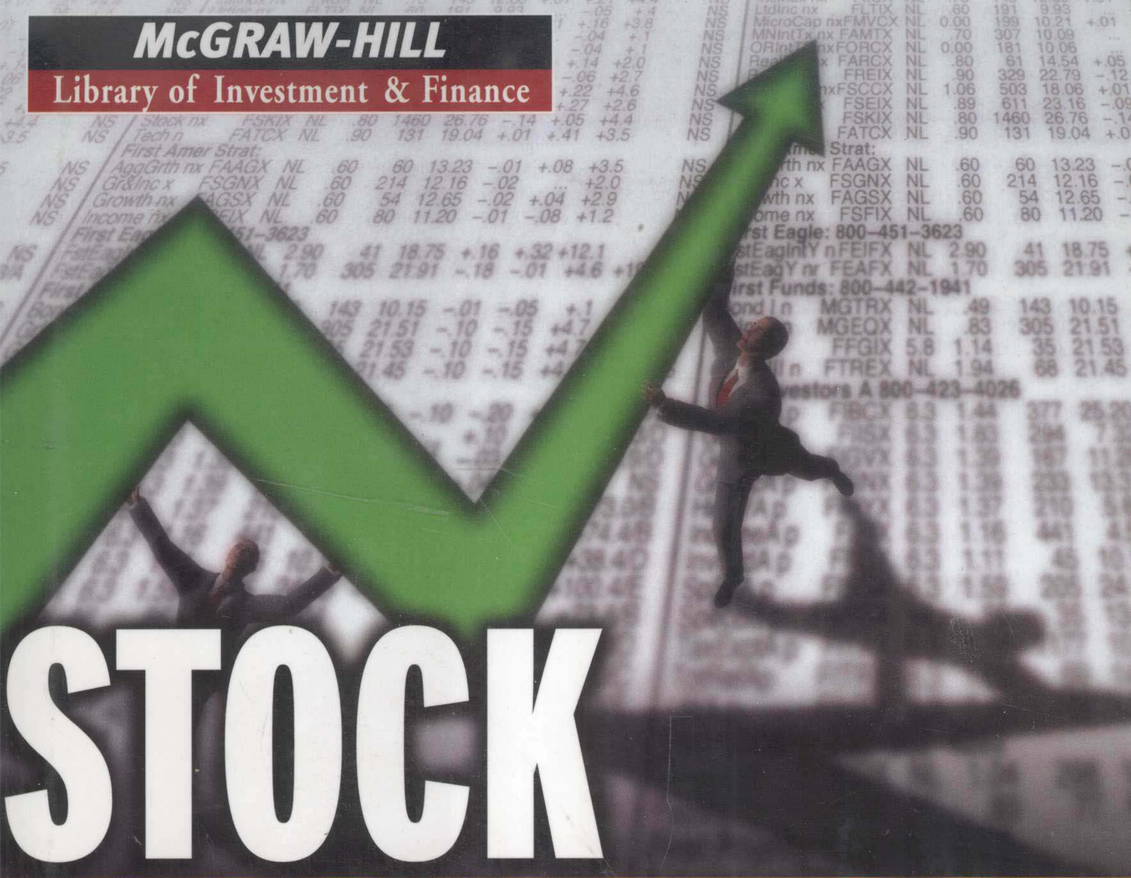

STOCK VALUATION

AN ESSENTIAL GUIDE TO WALL STREET'S MOST POPULAR VALUATION MODELS

SCOTT A. HOOVER

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*To my wife, Annalie;
to my children,
Quinn, Emmalyn,
and Jessa; and to my
parents for their
continual and
unconditional love
and support.*

PREFACE

In the fall of 2000, I joined the faculty at Washington and Lee University to teach investments and, more interestingly, to act as an advisor to the Williams Investment Society at the university. The Williams Investment Society consists of more than thirty students who manage roughly a million dollars of the school's endowment by investing in common stocks. The society is entirely extracurricular, and the students come from a variety of different backgrounds and a variety of different majors, so teaching those students how to properly value stocks presents some interesting educational challenges. In particular, how do we best teach stock valuation to bright young people who want to work in investments but who may have little or no background in finance? More than anything, this book is an attempt to provide a resource to those people. It will not make them expert stock-pickers, but my hope is that the book will lay the groundwork for their future as investment professionals.

Primarily, I wanted to provide a text on stock valuation that is both theoretically appealing and consistent with how stock valuation is conducted in the real world. Typical investment textbooks lack the real-world perspective these students need, and typical popular books on valuation tend to avoid the theoretical underpinnings that help us truly understand why we do certain things and what the limitations are in doing so. This book is designed to stand between those two approaches. In preparation for writing the book, I spent a great deal of time looking at how investment professionals value stocks. Of special interest were three asset managers who have seemingly defied the odds and outperformed the market over extended periods of time. There are many books available on Warren Buffett (of Berkshire Hathaway), and he has written extensively in his annual letters to shareholders,

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so I had ample information about his views on valuation. Peter Lynch (formerly of Fidelity's Magellan fund) has himself written extensively on how he picks stocks, which gave me some insight into his thinking. Very little has been written about Bill Miller (of Legg Mason's Value Trust), but he was in a sense the most interesting of the three managers. Perhaps more than any other prominent asset manager, he closely follows what the academics teach. I contacted Miller, and he was especially gracious in allowing me to spend three days with him and his team in Baltimore. In addition, he spent several days at Washington and Lee to observe and educate the investment society. The value of the time with him is incalculable.

In addition to Miller, the Williams Investment Society has hosted a large number of other investment professionals over the years, including fund managers, investment bankers, and other finance-related professionals. All told, these interactions gave me a great deal of exposure to stock valuation in practice. Several investment banks went so far as to provide me with the training materials they use to teach new employees, which was quite useful to gaining an understanding of how they deal with the issues.

To be clear, this book is not intended for the casual investor, but is rather intended for anyone who wishes to work in an investment field. Although the discussions are based more on intuition than on the underlying math, stock valuation is a nontrivial undertaking. As such, we must discuss some difficult concepts. Despite this, I wrote the book to be accessible to those without substantial knowledge of finance or accounting principles. There were three objectives that I kept in mind in choosing a style for the book. First, it would be a stand-alone book that does not require significant prior knowledge of accounting and finance concepts. Rather than assume (or hope) that the reader already understands the time value of money, the relationship between risk and return, and how to analyze financial statements, the book addresses those issues in depth. Second, the book does not focus solely on academic theories or solely on the practices of investment professionals, but rather joins those ideas together. In doing so, we could understand both the theoretical underpinnings of the practices of investment professionals and the difficulties those professionals face in applying the theories. Third, to the extent possible, the book is conversational in nature, so the reader will not be overwhelmed with technical jargon and highly scientific arguments. Instead, concepts are presented in simple, understandable language that focuses on the important intuition. This does not mean that the book lacks rigor, but that the book's highest priority is to communicate an understanding of the key intuition behind the topics—first and foremost, I wanted the reader to understand why investment professionals use various techniques, and what biases might be introduced in using them.

ACKNOWLEDGMENTS

Many people and organizations have contributed to this effort. Most notably, I thank Bill Miller and his team at Legg Mason (particularly Samantha McLemore and Michael Mauboussin), who went way out of their way to accommodate me. People at J. P. Morgan, Morgan Stanley, and Lehman Brothers were quite helpful as well, as were several individuals at smaller investment banks and at other mutual funds. I am in debt to too many individuals to list them all by name, but several are worth mentioning specifically because they contributed directly to the book or because they were instrumental in shaping my thinking on various issues: Fred Sterbenz, Nick Sayers, Brian Castleberry, Will Flynn, Elizabeth Oliver, Chuck Phillips, Bob Culpepper, Robert Battalio, Jeff Tucker, and Ryan Scott. In addition, my father was particularly helpful in answering accounting questions.

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CHAPTER 1

Setting the Stage

PURPOSE AND SCOPE

In this chapter, we set the stage for the remainder of the book by discussing a series of big-picture topics. First, we spend some time thinking about who values stocks and what their goals are in doing so. Next, we briefly lay out the objective of equity investment, which provides the real motivation for the rest of the book. We then discuss some of the common perceptions about stock valuation so that we can begin to understand some of the basic principles we must address. Finally, we briefly discuss the investment process. As part of this discussion, we spend some time talking about the different strategies we might employ to take advantage of our beliefs and the information we have.

WHO VALUES STOCKS?

In considering the investment world, we observe that there are several broad categories of people who need to value stocks. The motivations to undertake valuation include the potential to profit from trading, the desire to establish effective economic policies, the desire to understand and better manage companies, and the need to convey accurate yet simplified information to the public. It follows that there are many different classes of people who need to understand the stock valuation process, ranging from corporate insiders who manage companies to economists who manage the economy.

Corporate Managers

Company managers have a vested interest in valuing not only their own stock, but the stocks of other companies that might make promising strategic partners or profitable acquisitions. Knowing the value of their own stock allows them, for example, to properly make strategic decisions about raising money. For instance, if managers believe their stock is being undervalued by the market, they would generally not want to issue more stock. If in contrast they believe that their stock is being overvalued by the market, it might be a good time to sell more stock. For similar reasons, it is useful for managers to know the value of other companies. If another company's stock is currently being undervalued by the market, the managers might consider acquiring that company.

Financial Analysts: Investment Banking

Investment bankers play a unique role in society as they work to match companies with investors. For example, a company may need to raise money to finance the rollout of a new product. The investment banker would evaluate the company and make recommendations about the best way for the company to raise the needed funds. If the company chooses to follow those recommendations, the investment banker (and associates within the bank and perhaps within other banks) typically works to sell whatever securities are being offered to raise the needed money. As part of this process, investment bankers must not only value the company's stock, but must lay out a convincing case to justify that valuation. In a sense, the task of an investment banker is not to determine what a stock is really worth, but is rather to determine the price at which the investment bank can sell the stock. Although these are slightly different objectives, we do observe that investment bankers use many of the same basic techniques that are used by other financial analysts.

Financial Analysts: Equity Research

Those who work in equity research are responsible not only for tracking companies, but for making assessments of the true values of those companies. These assessments allow the analysts to make recommendations to public and/or private investors. As public investors, we observe buy/sell recommendations along with "upgrades" or "downgrades" of the stocks. Stock prices sometimes react dramatically to these ratings, so there is reason to believe that equity researchers provide meaningful information to investors. Still, there is little empirical evidence supporting the idea that we can earn abnormally high profits based on the information provided by equity researchers. Obviously, the reputation of an analyst is quite important because it can lend credibility to reports and because it potentially allows the analyst to move into a more lucrative job (such as one in asset management).

Asset Managers

Asset managers are professionals who invest money on behalf of individuals and organizations (such as pension funds). In the world of stocks, the main objective of these managers is typically to construct portfolios that will beat the fund's *benchmark* portfolio (i.e., "the market") over the long run. A benchmark portfolio is a well-diversified set of assets that is comparable in structure and risk to the fund. Conceptually, the benchmark represents an equivalent-risk alternative investment that investors might choose. If the asset manager consistently underperforms that benchmark, then investors would find it to their advantage to shift their money into the benchmark itself. If a fund is composed only of large companies, we would consider a well-diversified benchmark portfolio of large companies. If a fund is composed only of healthcare stocks, we would choose a well-diversified benchmark portfolio of healthcare stocks. Whatever the focus of the fund, we know that in order for the fund manager to beat the benchmark consistently, the manager must identify assets that are misvalued by the market. Obviously, this means that asset managers must be well versed in valuation.

Individuals

Many individuals also engage in stock picking and therefore need to know how to value stocks. I hope it will become clear as you read through this book that it is generally unwise for individuals to attempt to pick stocks. Doing so is quite difficult and time-consuming, and individuals are generally better off investing in an index fund rather than trying to pick stocks themselves. Still, stock picking can be quite enjoyable, and we would be naïve to expect individuals to avoid it entirely.

Economic Policymakers

Ever since Alan Greenspan, chairman of the U.S. Federal Reserve Board, uttered the words "irrational exuberance" to describe stock market investors in 1996, even the noninvesting public has known that our policymakers examine valuations in the stock market. The focus of policymakers is different from the others we have mentioned in that they examine the value of the stock market as a whole relative to its "true" value. This allows them to better assess, among other things, the stability of the financial markets and the potential need to change interest rates to generate higher growth or to slow it down. We will not pretend to know what models Chairman Greenspan and his colleagues use to value the stock market, but it is fair to say that in order to value the stock market as a whole, they must understand how to value stocks individually. Indeed, Greenspan (and other members of the Federal Reserve) often talk publicly about corporate inventory levels and other variables that are important to the valuation process, so we have good reason to believe that economic policymakers are well versed in the details of stock valuation.

THE OBJECTIVE OF EQUITY INVESTMENT

Generally speaking, the objective of an equity investor is to substantially increase wealth over time. This is different from but related to the objective of stock picking, which is not only to substantially increase wealth over time, but to increase it by a greater amount than it would increase if we invested in some appropriate benchmark portfolio. If we achieve that goal, we are said to have "beaten the market."

There is a wide spectrum of strategies that give us opportunities to meet the objective of equity investing. At one end of the spectrum, we might simply invest in an index fund or a mutual fund and leave our money there for a long period of time. This is a naturally passive strategy that requires little or no financial knowledge and very little time commitment. At the other end, we might conduct research on stocks, invest in the best ones, and turn over our portfolio from time to time as conditions change. This is a naturally active approach that requires both time and

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