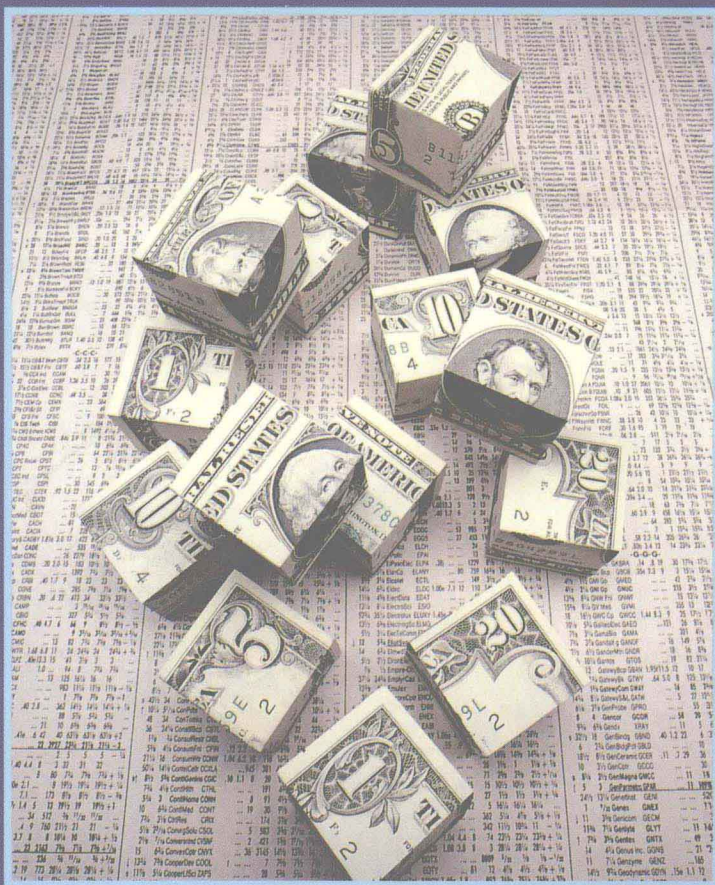


# THE NEW FINANCE

The Case Against Efficient Markets



Robert A. Haugen

Contemporary Issues in Finance

# **THE NEW FINANCE**

## **THE CASE AGAINST EFFICIENT MARKETS**

**ROBERT A. HAUGEN**

*Professor of Finance  
University of California, Irvine*



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# **THE NEW FINANCE**

*This work is dedicated to Professor Robert W. Mayer, who lived through the 1920s and taught me about the New Era Theory and the influence of Edgar Lawrence Smith many, many years ago.*

# PREFACE

This work makes the case for the *inefficient* market.

The efficient-markets paradigm is at the extreme end of a spectrum of possible states. As such, the burden of proof falls on its advocates. It is their burden to deflect the stones and arrows flung at the paradigm by the non-believers. It is their burden to reveal the inaccuracies of those who present evidence contending that the paradigm doesn't square with the facts.

Moreover, the case for market *efficiency* has been made many times by others.<sup>1</sup> In fairness to the growing number of advocates for the *other side*, I present here a comprehensive and organized collection of the evidence and the arguments, which constitute a strong and a persuasive case for over-reactive markets.

In the course of this work, I shall make a case for the following points:

- Players in today's stock market persistently make a fundamental mistake. This mistake was also made in the distant past, only to be rectified. Stock investors began making the mistake once again in the late 1950s and they continue to make it today. Those who recognize the mistake can build stock portfolios, or find mutual funds, which will subsequently out-perform the market averages.
- Owing to the mistake discussed above, the stocks that can be expected to produce the highest returns in the future are the safest stocks. Risky stocks can be expected to produce the lowest returns!
- Because of agency problems in the investment business, the opportunity that is there *now* is likely to *remain* there in the future.
- Once we accept the assertion that corporations face an inefficient and over-reactive capital market, many of the long-accepted principles of corporate finance need to be amended and revised.

<sup>1</sup>See most recently Fama, E., "Efficient Markets II," *The Journal of Finance*, December 1991.

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## Chapter One

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# SEARCH FOR THE GRAIL

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### THE SEARCHERS

For decades, finance professors in business schools throughout the world have tenaciously sifted through computerized data files. These files contain information on security prices and accounting numbers. The professors have been in search of patterns and clues as to why the market behaves as it does.

This search for the way things work has now paid off. The secrets of the market's behavior—the proverbial Holy Grail to stock investors—are rapidly unfolding.

And much of what we are seeing is truly astonishing. The results fly directly in the face of what has been called *Modern Finance*—the collection of wisdom that every MBA is required to master. We now see a market that is highly inefficient and overreactive; a market literally turned upside down—where the highest-risk stocks can be expected to produce the lowest returns and the lowest-risk stocks, the highest returns!

What we are seeing is so profound that Modern Finance is rapidly being displaced by something called the *New Finance*. New evidence is unfolding about what stocks are best to invest in, how firms should raise capital, how utilities should be regulated, and how CFOs should estimate their costs of capital.

Overwhelming evidence is piling up that investors overreact to the past performance of firms, pricing *growth stocks*—stocks which are expected to grow faster than average—too high and *value stocks*—stocks which are expected to grow slower than average—too low. Subsequent to these over-

reactions, growth stocks produce low returns for the investors who buy them at high prices, and similarly, value stocks produce high returns for their investors.

---

## THE CELEBRATED F&F STUDY

Consider first the results of a study<sup>1</sup> by two professors from the University of Chicago named Eugene Fama and Ken French (F&F). This study was voted as the best article published in the *Journal of Finance* in 1992 by the widest margin in history! The *Journal of Finance* is the oldest and most prestigious journal in academic finance.

The F&F study spans the period running from the early 1960s through 1990, and it covers nearly all stocks traded on the New York Stock exchange (NYSE), the American Stock Exchange (AMEX), and the Over-the-Counter Market (NASDAQ).

F&F focus on the relationship between the accounting value of stockholders' equity (called the *book value*) and the *market value* of their stock.

Book value is the accountant's estimate of the value of the stockholder's stake in the firm. To a great extent, it is based on historical cost. You start with the accounting value of the total assets of the firm, and then subtract the claims on the assets which come ahead of the stockholders'. These claims would include amounts owed to suppliers, to the bank, to bondholders, and others. What's left is for the stockholders.

As I said, to a large extent book value is based on historical costs—it doesn't reflect the value of future prospects.

On the other hand, the market value of the stock *does* reflect these prospects.

If the prospects of future growth are better than average (growth stock), the book value will be small relative to the market value. Think of a company that has recently introduced a new and exciting product. The historical cost of its assets in place may be small, but sales and earnings are up,

<sup>1</sup>Fama, E. and K. French, "The Cross-section of Expected Stock Returns," *The Journal of Finance*, June, 1992.

and the firm has great prospects for generating even greater cash flow in the future. The market has valued the stock of this company highly. The book value of this growth stock will be small now in relation to its market value. The question for the future, however, is: "Will competitors enter the market with their own versions of the product with lower prices and smaller profit margins, forcing the profitability of this firm to revert to average levels?" If the market doesn't properly discount this possibility into the *current price*, it will be unpleasantly surprised as competitors enter, the stock price will fall, and *future returns* will be *disappointing*.

The opposite may be true for a value stock. Think of a company that is inefficient and poorly organized. Earnings reports have been poor, and the stock price has crashed, based on the assumption that the firm will continue its unprofitable ways. For this *value* stock, book value (the historic cost of assets) is large relative to market value. Again, the question for the future is: "Will the board of directors force existing management out, bring in a fresh team to reorganize the firm, bringing its profitability back to average levels?" If the market doesn't discount this possibility into the current price, it will be pleasantly surprised as the firm becomes more efficient, the stock price will rise, and future returns will be surprisingly *good*.

Remember. The Dallas Cowboys went from winning Super Bowls (growth stock) to the bottom of the league (value stock) and back to winning Super Bowls (growth stock again).

What goes around comes around.

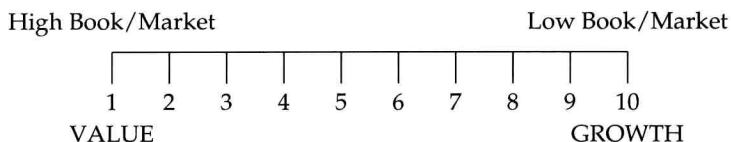
In any case, growth stocks: *low book-to-market*; value stocks: *high book-to-market*.

And F&F want to know the relative magnitude of *future* returns for stocks that have *different* book-to-market relationships *now*.

They begin in mid-year 1963. Across the firms in their sample, they rank the stocks based on the ratio of book to market value. Value stocks on the top; growth stocks on the bottom.

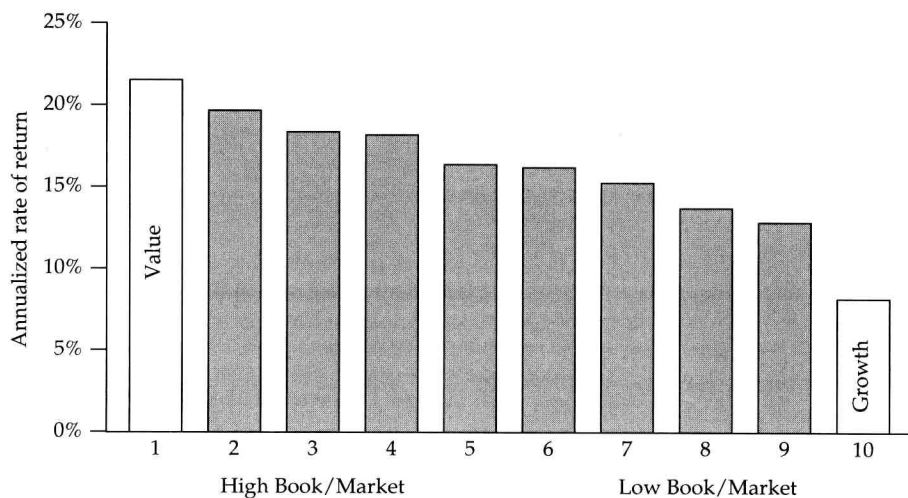
The ranking is done at mid-year because they want to be sure that an investor that might have performed this exercise had access to both numbers (book and market) needed to compute the ratio. While today's market value is available today, book value isn't reported until several months after the close of the fiscal year. Presumably, by July 1 nearly all firms would have reported their book values.

Based on the rankings, the stocks are sorted into ten groups, each containing an equal number of stocks. The most value-oriented stocks are in group 1 and the most growth-oriented in group 10.



The groups are bought and held as portfolios until mid-year 1964. Then the stocks which existed at that time are re-ranked by book to market value, and the portfolios are re-formed in the same way that they were in 1963.

They, again, observe the performance of groups 1 through 10 through mid-year 1965. And the process is repeated year after year through 1990. The average annual return (1963–90) for each of the groups is plotted in Figure 1.1.<sup>2</sup> Take a good look.



**FIGURE 1.1. Book to market as a predictor of return**

<sup>2</sup>The source of the plot is Table V from the F&F paper. Break-points for the groups are based on the yearly decile rankings of the NYSE stocks.

That's 21.4% for the value stocks and only 8% for the growth stocks.<sup>3</sup> And as we go from group 1 (most value-oriented), to 2, to 3, etc., the returns keep falling.

To be sure, each of the groups contains nearly two hundred stocks, and individual stocks migrate from group to group over time. Prospects change, and stocks may change from growth to value and even back again. But, for well diversified portfolios, the ratio of book/market value is an extremely good predictor of future return.

This is not to say that *all* growth stocks are destined to produce poor future returns. In any given year, the stocks in group 10 produce returns over a very wide range.

<sup>3</sup>Kothari, Shanken, and Sloan (Kothari, S.P., J. Shanken, and R.G. Sloan, "Another Look at the Cross-section of Expected Stock Returns," working paper, Simon Graduate School of Business Administration, University of Rochester) contend that the book/market effect revealed by F&F is due, in part, to the fact that the Compustat tapes (the source of much of F&F's data) contain a survival bias. The tapes were greatly expanded in 1978 to 6000 companies. The additional companies were in existence in 1978, however no companies were added that existed prior to 1978, *but not in 1978*. In another working paper (Harindra de Silva, "What Underlies the Book-to-Market Effect," Graduate School of Management, University of California, Irvine), the methodology of F&F was replicated on the Compustat tapes over the period 1982 through 1992, a period over which survival bias is not a problem. de Silva finds the following average monthly returns for firms ranked first by size and then by book/market

	Low B/M			High B/M	
Big	1.10%	1.19%	1.09%	1.29%	1.48%
	.50%	.85%	.99%	1.23%	1.15%
	.20%	.68%	.94%	1.13%	1.00%
	.61%	.87%	.96%	1.16%	1.52%
Small	2.59%	2.98%	2.77%	3.57%	6.91%

From this evidence he concludes that survival bias is not the source of the effect. We will get a better idea of the extent to which the F&F results are influenced by survival bias in Chapter 7, where we estimate the relative future expected returns to value stocks and growth stocks. A small part of the difference between the record of the past and our expectation for the future might be bias in the record.

Wal-Mart is a member of group 10. But its very high returns are offset by the low returns of scores of other growth stocks with great prospects that didn't "pan out."

---

## DIAMOND HEAD OR DIAMOND BAR

Now let's concentrate on the meaning of the difference between 8% and 21.4% in the context of compound interest.

Suppose you're an investor of average means, and you're able to come up with \$2,000 each year to invest in an IRA. You're 30 years old, and you plan to retire at 65.

That gives you 35 years to accumulate a nest egg.

How to invest the money?

You have a choice. You can invest in growth stocks (Portfolio 10) or in value stocks (Portfolio 1).

An annual return of 8% in nominal dollars is equivalent to an annual return of 2.47% *in real dollars*, given the average rate of inflation over the F&F study. This real return makes your nest egg grow to \$109,232 at retirement (1993 dollars). If, in your golden years, you continue to invest in something that earns a 2.47% real rate of return (like growth stocks), you will be able to draw a retirement income of \$2,698 annually without eating into real principal:

$$\$109,232 * 2.47\% = \$2,698 \text{ per year}$$

Good luck, and have a really *great* retirement!

On the other hand, if you invest in something that produces the returns that value stocks (Portfolio 1) have, your nest egg grows as in the rear bars of Figure 1.2.

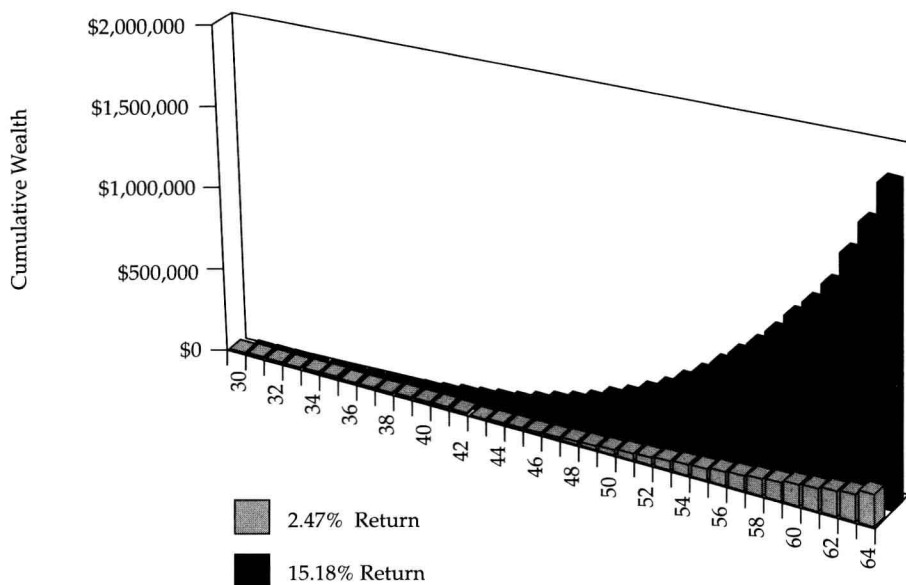
Wow!

With a *real* rate of return of 15.18%, by the time retirement comes, you will have accumulated \$1,839,369. If you continue to invest in this way *past* retirement, you will be able to draw an annual income of \$279,216 in 1993 dollars:

$$\$1,839,369 * 15.18\% = \$279,216 \text{ per year}$$

Think of it!





**FIGURE 1.2. The roads to Diamond Bar and Diamond Head**

For a 30-year-old investor, investing a mere \$2000 per year in an IRA, the past performance differential between value and growth stocks can mean *100 times* more wealth at retirement, the difference between retiring in *luxury* or in *poverty*. This can mean the difference between retiring on Waikiki Beach in the shadow of *Diamond Head* or in the midst of the smog-filled San Bernardino Valley in an unexciting place called *Diamond Bar*. And even to live in Diamond Bar, you're going to need some real help from your rich uncle!

The New Finance gives you the opportunity to *choose* between going to Diamond Head or Diamond Bar.

---

## WILL GO GO AWAY?

The Golden Opportunity (GO) of the New Finance isn't going to vanish before our eyes either. We're not likely to see massive amounts of capital move into GO, increasing its price and driving down its subsequent return.

Why? Because, as it turns out, stock prices are dominated by institutional investors (pension funds, insurance companies, trust and endowment funds). Because the fiduciaries, who run their portfolios, are subject to