Does It Pay to Be an Active Investor?

All businesses are competitive. Few are more competitive than the financial markets. Bright, superbly educated professional money managers pour enormous energy into gaining an investment edge. Their ostensible goal is to interpret the information that zips through the market better than their peers do and thereby generate superior returns.

The results are undeniably disappointing. Most professional investors fail to match the performance of investment benchmarks like the S&P 500 year after year. And it is not getting easier. Computing power and communication technology assure that information is unearthed, and disseminated, at an accelerating pace. Mutual fund and pension investors are quick to pull money from portfolio managers that underperform the market in the short term. This backdrop begs a fundamental question:

> Are stock market prices set so efficiently that it is unproductive for individual investors and professional investment managers to actively manage stock portfolios?

Stock market efficiency is important because it determines whether the effort and cost of gathering and interpreting information offer an acceptable probability of generating a superior return. Active management in a purely efficient market is a losing game. We present a critical examination of market efficiency and the performance record of professional money managers. We conclude that there is a fundamental case in favor of active portfolio management. However, the path to success requires a fresh look at the investment process and prevailing incentive systems for professional managers. Expectations investing, a significant departure from the mainstream approach, provides the tools for success for investors who actively manage their portfolios.

Market efficiency

Economists, from the very beginnings of organized financial markets, recognized that stock prices represent the consensus judgment of profit-seeking buyers and sellers. However, the publication of Eugene Fama's University of Chicago doctoral dissertation in 1965 amplified and formalized the theory of stock price behavior. Fama also introduced the term *efficient markets.*[1] Ever since, academic researchers and market practitioners have passionately debated the extent to which the market is efficient.

Efficient markets theory asserts that stock prices quickly reflect all publicly available information. Informed, profit-motivated investors compete aggressively to exploit available information about earnings, interest rates, technology, and other factors that affect the value of companies. As a result, stock prices rapidly adjust to reflect all publicly available information, and thereby eliminate obvious opportunities to profit from mispriced stocks.

Why should this be true? Because, according to efficient markets theory, stock prices respond only to new information. Since new information is unpredictable, stock price changes are by definition unpredictable as well. Therefore, investors cannot find

systematic profit opportunities from mispriced stocks. If stocks are in fact mispriced, the argument continues, arbitrageurs act quickly to return them to their fundamental values.

As evidence to support their case, efficient market advocates point to the virtual absence of investment strategies or investors that have consistently outperformed the market over longer periods of time. Many try, but few succeed. And they dismiss those who succeed as lucky beneficiaries of statistical chance. Efficient market advocates also are quick to note that a majority of active portfolio managers underperform their market benchmarks year after year.

If our discussion were to end here, we would have to conclude that active management is a loser's game and that the only sensible way to invest in stocks is through a passive index fund. But the reality is that investments in index funds account for only about 10% of total investment in stocks. The apparent contradiction between efficient markets theory and the demonstrated preference for actively managed portfolios requires that we examine the evidence against market efficiency. If persuasive, it allows us to understand why a majority of investors choose active management in a market widely believed—at least by most financial economists—to be efficient. If the evidence against efficient markets is not persuasive, we have to look elsewhere to justify actively managed portfolios.

Challenges to market efficiency typically begin with the following: How can stock prices be "correct" when so many irrational, poorly informed investors participate in the market? Efficiency critics cite the frenetic activity of day traders and momentum investors who follow price movements rather than value, uninformed investors who buy and sell on equally uninformed advice, and those who focus on a company's reported short-term performance rather than its long-term business prospects. Robert Shiller, Yale University economist and a leading efficient markets critic, characterizes the situation as follows:

> "The present stock market displays the classic features of a speculative bubble: a situation in which temporarily high prices are sustained largely by investors' enthusiasm rather than by consistent estimation of real value."[2]

Shiller claims that many stocks, particularly Internet stocks, are significantly *overvalued* and "cannot possibly be right." But not all market efficiency doubters deem prices too high. In their best-selling and widely discussed book, *Dow 36,000,* James Glassman and Kevin Hassett assert that stocks are wildly *undervalued*.[3] They attribute much of the stock market's exceptional rise in the 1980s and 1990s to a growing awareness that investing in a diversified portfolio of stocks for the long run is no more risky than investing in Treasury bonds. They argue that as more investors are persuaded of this, they will no longer demand a risk premium for owning stocks. Consequently the Dow Jones Industrial Average will enjoy a quick, "one-time-only rise" to 36,000. In the end, Shiller as well as Glassman and Hassett agree that the market is mispricing stocks—albeit in radically different directions.

There are other observations that do not square with market efficiency. For example, statistical studies conducted by Shiller[4] and others suggest that stock price

volatility is greater than fundamentals such as earnings and dividends warrant. Empirical research has also uncovered a number of efficient market anomalies. There is, for example, the so-called January effect, the discovery that small stocks outperform larger stocks in January. As Jeremy Siegel[5] explains, the January effect is the only reason that small stocks have generated greater total returns than large stocks over the past 70 years. Other calendar anomalies include the September effect (September is by far the worst month of the year for stock returns and the only month in which stock returns have been negative) and the day-of-the-week effects (Monday is by far the worst day of the week for the market). Other studies offer evidence that stocks with low price-earnings multiples outperform high-multiple stocks. Finally, some studies show that stocks that sell at a low price relative to book value produce higher returns than those with high price-to-book multiples.

We now attempt to reconcile the arguments and evidence presented by efficient markets advocates and their critics. Remember that advocates assert that stock prices quickly impound all publicly available information in a way that prevents investors from profiting from known information. Critics typically begin with a different interpretation of market efficiency. Pointing to irrational and oftentimes uninformed investors, unjustified stock price levels, and greater volatility than warranted, they contend that stock prices cannot be "correct." A conclusion drawn from the anomaly studies is that stock prices are not only incorrect, but that corrections sometimes materialize very slowly.

But where are the guardians of efficiency, the arbitrageurs? An essential argument of the efficient markets critics is that riskless hedges do not exist in the real world because there are no close substitutes for mispriced stocks. As a result, arbitrageurs can't correct mispriced stocks. For example, Andrei Schleifer[6] observes that an arbitrageur who believes stocks as a whole are overpriced cannot sell short stocks and buy a substitute portfolio, since such a portfolio does not exist. So inefficiencies may exist, they're just not exploitable. It's like finding a $20 bill on the sidewalk only to find that it's firmly glued to the ground.

A correct price is one that accurately predicts the future. The problem is that there is no way to know the correctness of current stock prices. In a world of uncertainty, correctness is an illusion. Nor can we judge the correctness of current stock prices by subsequent prices. This is because future prices will not be based on today's information but rather on an updated set of publicly available information. So when market pundits declare that today's stocks *are* mispriced, odds are that they are doing so with less information than is available collectively to the market. When they contend that stocks *were* mispriced in the past, they typically rely on information that only became available subsequent to the alleged mispricing. In brief, there is no credible way to judge the correctness of current or past stock prices.

So we can reject the correctness of prices as a standard for assessing market efficiency. Where does that leave us? The most fruitful alternative is to return to the widely accepted and operational criterion for determining market efficiency—whether or not stock prices represent *exploitable* opportunities for superior gains. What good are inefficiencies if investors cannot translate them into superior performance? How easy is it to exploit these inefficiencies? Here is what Richard Roll, a distinguished academic

researcher and manager of billions of dollars of investment funds, has to say in an exchange with Robert Shiller:

> "I have personally tried to invest money, my client's money and my own, in every single anomaly and predictive device that academics have dreamed up. . . . I have attempted to exploit the so-called year-end anomalies and a whole variety of strategies supposedly documented by academic research. *And I have yet to make a nickel on any of these supposed market inefficiencies. . . .* I agree with Bob that investor psychology plays an important role. But, I have to keep coming back to my original point that a true market *inefficiency* ought to be an exploitable opportunity. If there's nothing investors can exploit in a systematic way, time in and time out, then it's very hard to say that information is not being properly incorporated into stock prices. . . . Real money investment strategies don't produce the results that academic papers say they should."[7]

The dismal performance record of active portfolio managers provides more general evidence of just how difficult it is to beat the market. Once again, we would have difficulty rationalizing an active investment strategy if we were to end the discussion here.

Nonetheless, we contend that the expectations investing approach represents a genuine superior-performance opportunity for active management. We support this conclusion with three fundamental arguments.

1. Investment research is worthwhile in an uncertain world where the valuation implications of information are not obvious and are subject to a broad spectrum of interpretations.
2. Underperformance by active portfolio managers is not an indictment of active management but rather an indictment of the investment strategies most active managers employ.[8]
3. Unlike traditional equity analysis, expectations analysis searches for buy and sell opportunities by assessing the reasonableness of performance prospects implied by a company's stock price.

Investment research

Peter Bernstein, the first editor of the *Journal of Portfolio Management* and author of the widely acclaimed *Against the Gods: The Remarkable Story of Risk*, makes a persuasive and elegant case for why investment research for active management of portfolios is worth the effort after all.[9] Bernstein contends that the fatal flaw in the efficient market hypothesis is that there is no such thing as an equilibrium price in the real world. An equilibrium price is one that all market participants agree is "correct" based on currently available information.[10] With such agreement, there is no reason to buy or sell. A price that reflects market-demanded returns persists until new information

arrives and investors revise their expectations. Equilibrium prices can only exist in the absence of uncertainty.

Investors don't deal in a world of equilibrium but rather in a sea of uncertainty. In this uncertain environment, sound investment research may well justify the time and cost. And those who *already* engage in active portfolio management have little choice but to invest in research. While research does not guarantee superior returns, forgoing research increases the odds of earning poor returns.

The case for active management and investment research rests largely on the inherently uncertain interpretation of available information. In 1976, Jack Treynor distinguished "between ideas whose implications are obvious" and those "that require reflection, judgment, and special expertise for their evaluation." The latter ideas, he argued, are "the only meaningful basis for long-term investing."[11] When companies announce earnings surprises, mergers and acquisitions, the discovery of a new drug, and a government antitrust action, the long-term valuation implications are rarely obvious. Investors quickly assess the effects—favorable or unfavorable—on current price, and they trade accordingly. Not surprisingly, trading volume typically increases after these announcements. Volatile stock prices and increased trading volume affirm that investors quickly respond to such information. But what distinguishes the winners from the losers is not how quickly they respond, but how well they *interpret* the information. Different investors interpret the same information in differently, and some interpretations are better than others.

It is then perfectly rational for stock prices to respond to information with potentially significant but highly uncertain implications. Stock price volatility and increased trading volume offer evidence that investors do "efficiently" respond to such information. This prompts the important distinction between the stock market's efficiency in *responding* to information and the market's efficiency in *interpreting* information. *Markets are efficient at quickly revising expectations through the stock price: it is just that the expectations may be based on investor judgments that turn out to be wrong.* So to be successful, investors must first know how to read expectations and then use the best available tools to decide whether or not today's expectations are likely to change.

It is this uncertain interpretation of information that is the springboard of hope for active management. Bernstein, borrowing from Charles Darwin's theory of evolution, describes the unfolding of information over time as a tree rather than a ladder.

> "On a ladder, we know precisely where the next step is. A tree develops branches that in turn develop branches of their own that in turn develop branches of their own. We have no advance knowledge of precisely where each branch will appear, how big it will be, or what its shape will be like. The growth patterns of a tree describe uncertainty. Anything can happen. Nevertheless, although the outcome may look random, each branch is connected to the tree, developed from the tree, and shares common roots from the tree. Each

branch, in other words, is an effect that resulted from a cause."[12]

Let there be no doubt about where we stand. Active investing is not for the faint-hearted. Achieving sustained superior returns is an extraordinarily difficult hurdle for even the most astute and diligent investors. However, Darwin's trees greatly encourage us. We agree with Bernstein's conclusion that "if events can occur only as a result of causes, even if the outcomes are uncertain, analysis becomes a worthwhile—indeed essential—endeavor and information has value."[13] It is best to come to the investment arena armed rather than unarmed.

But, with the widespread underperformance of professional money managers, how do we reconcile the argument that some interpretations of information will be better than others? We address this important question in the next section.

Performance record of active managers

The disappointing performance of actively managed equity funds relative to market indices is well documented. Charles Ellis[14] reports that over three-quarters of professionally managed funds underperformed the S&P 500 Index for the 25 years ending 1997. Siegel[15] presents data that show that annual return of funds during this period failed to keep pace with both the S&P 500 and the broader Wilshire 5000 Stock Index. Actively managed funds also lagged the risk-adjusted performance of the passive funds that track these indices.

Investment performance is a zero-sum game. For every investor who beats the market, there must be another who underperforms it. In such a world, we would expect skilled investors to gain at the expense of the unskilled.

This makes the persistent underperformance of talented, hard-working professional investment managers with substantial resources at their command all the more baffling. Bernstein[16] adds to the puzzle by observing that since 1984, the top quintile of professional fund managers beat the S&P 500 by a narrower margin than in the past while the bottom quintile performers lagged by margins as great or greater than before. On top of all this, there is less membership stability in the top quintile than in the bottom quintile. A top-performing manager in one year is not likely to be there the following year. So there is no reliable way to predict which managers will outperform the market.

There are two explanations for active investment manager underperformance. The first is that the *costs* of active management, including taxes, are significantly greater than the costs incurred by passive index funds. The second is that the *incentives* of active managers are not aligned with the goal of maximizing long-term risk-adjusted returns for fund investors.

John Bogle, the legendary founder of The Vanguard Group, Inc., underscores the toll taken by costs by noting that "the surest route to top-quartile performance is bottom-quartile expenses."[17] Annual equity fund operating and management investment expenses average about 1.5% of asset value, and range from 0.2% for index funds to 2.2% or more for high-cost funds. Mutual funds typically charge much higher fees than

do pension funds. In addition, because of high portfolio turnover, mutual funds pay the brokers that handle their trades activity another 1% or so. With total costs that average about 2.5% per year, investors only earn 75% of an annual long-term return of 10%. And this excludes the role of taxes. In contrast, index funds have lower operating expenses and incur relatively low transaction costs, as they trade sparingly.[18]

Fund shareholders generally evaluate the performance of institutional fund managers relative to benchmark indices on the basis of pretax returns. These same shareholders, however, must account for the taxes they pay on the fund's dividends and capital gains distributions. Funds have become increasingly tax-unfriendly as their portfolio turnover rates have increased over the years. Bogle reports that in the mid-1970s fund turnover averaged 30%, implying a holding period of just over three years. [19] Today the turnover rate is nearly 90%, which means that, on average, managers are holding stocks for just over one year. In contrast, index funds have turnover rates that average around 20%, which generate a smaller amount of taxable capital gains distributions. Bogle estimates that the annual 14% return generated by the average equity fund over the past 15 years would be reduced to only 10.8% after taxes.

Investors are forced to forego the benefits of deferring taxes when funds are closed or merged out of existence. During the 1990s, an astounding 5% of funds disappeared each year. Finally, investors themselves contribute to tax-inefficiency by selling their fund holdings too often. Investor holding periods declined from 14 years in the 1960s to an average of 30 months in 1999. Shareholder redemptions can force funds to liquidate some of their holdings, triggering capital gains and further tax liabilities for its shareholders.

In summary, the underperformance of active managers is even more disappointing when tax considerations are taken into account. Index funds enthusiasts have powerful evidence on their side. So *why* does this underperformance persist? If the stock market is efficient, why do investors with the best training and resources underperform those with less advantage? If there are pockets of inefficiency, why don't the advantaged exploit them at the expense of the less advantaged? For answers, we need to examine the financial incentives of professional investment managers.

Let's begin by establishing reasonable performance standards for institutional investors. Logically, a majority of them cannot outperform the market over the long run, since collectively they are a large part of the market. But managers do worse than if they were investing by chance. If they were selecting stocks by chance, we would expect about half of them to beat their target indices. Based on the historical track record, only one of every four active managers beat index funds. The odds of any *single* active manager outpacing the benchmark index fund over the *long term* are narrow indeed. The growing recognition of these odds has probably triggered the heightened interest in index funds and the increased popularity of individually managed portfolios. Greater index fund participation may also reflect the fact that many investors are perfectly satisfied to earn broad market returns rather than face the risks associated with trying to outperform the market.

There is no escaping the fact that professional money managers are performing well below reasonable expectations. Why? While we cannot be certain, the most plausible explanation lies in the apparent financial incentives of fund managers.

Fund managers widely suffer from what we call “benchmark addiction,” or what is more commonly called tracking-error risk. Institutional clients evaluate fund results relative to a benchmark, most often the Standard & Poor’s 500 Composite Stock Price Index. Moreover, this evaluation takes place every quarter. Thus, fund managers focus on short-term relative performance. In light of this, they are hypersensitive to any deviations between their returns and those of the index—tracking-error risk. Managers fear that if they underperform the benchmark, they must not only rationalize such performance every three months but that it may also lead to their dismissal. In this environment, a fund manager’s preoccupation with short-term returns relative to the S&P 500, rather than maximizing risk-adjusted long-term returns, is not surprising. Working in their own financial interests, fund managers prefer the safety and continued rewards of sticking close to the index to the more risky strategy of trying to generate superior long-term returns. If they fail to achieve acceptable benchmark performance in the short run, they may be dismissed and have no opportunity to achieve long-term superior returns. It is hard to argue with fund managers who choose a low-risk, high-reward strategy. It is rational and perfectly consistent with the way they are evaluated and compensated. Unfortunately, it leads to a fundamental conflict between the real or perceived interests of fund managers and the long-term interests of fund shareholders. Economists call this an agency cost.

Benchmark addiction can also affect which stocks a fund manager chooses to include in the portfolio and the weight given to each. Fear of underperforming the benchmark index shifts the investment focus from searching for mispriced stocks to structuring a portfolio with expected returns within tolerable limits of the index return. Portfolio managers who advertise their funds as actively managed but instead closely mimic their target indices are commonly referred to as closet indexers. Authoritative observers agree that closet indexing is pervasive.

Since investors typically compare fund returns with those of competing funds, managers are also reluctant to buy stocks that are not widely held, even if they promise superior risk-adjusted returns. The fast turnover of stocks needed to align the portfolio adds to trading costs, making it even more difficult to match or beat the results of lower-cost index funds.

A final constraint to achieving superior returns is approximating the degree of diversification and the stock weightings of the benchmark index. As Bernstein and others have observed, managers cannot expect to outperform without making some concentrated bets that lead to less diversification and different weightings from the benchmark fund. For benchmark-addicted managers, this is a personally risky strategy because while it may beat the benchmark in the long run, it may also fall substantially behind the benchmark in the short run.

Index funds and closet indexers reduce portfolio risk through diversification. But a widely diversified portfolio is anathema to stock picking. Warren Buffett’s focus-investing

approach stands in direct opposition to those who broadly, and blindly, diversify. The essence of focus investing can be summarized as follows:

> "Choose a few stocks that are likely to produce above-average returns over the long haul, concentrate the bulk of your investments in those stocks, and have the fortitude to hold steady during any short-term market gyrations."[20]

Buffett views diversification as protection against ignorance—the logical province of those who do not know how to analyze businesses.

Like all investors, those who embrace expectations investing must start with an investment policy. An investment policy defines what percentage of a portfolio is allocated to stocks, whether or how frequently that allocation changes, and the extent to which the stock portfolio can take aggressive positions in individual stocks or sectors. Once an investor sets an investment policy, the expectations investing approach optimizes the stock selection process.

Before going on to explore the promise of expectations investing, let's briefly review the basic argument presented so far. We began with the hopeful observation that investment research can be worthwhile because the valuation implications of information are often not obvious and therefore subject to varying opinions. We then faced the sobering reality that active portfolio managers typically underperform passive index funds. An examination of their financial incentives leads us to conclude that their underperformance is not an indictment of active management but rather the investment strategies that active portfolio managers employ. We now turn to examine the potential of expectations investing.

Expectations investing

For investors seeking to replicate broad market returns, low-cost index funds are the obvious choice. For those hoping to beat the market, funds overly concerned with tracking-error risk are not the answer. We offer expectations investing as a new approach. While expectations investing is a significant departure from traditional equity analysis, it is designed to improve the performance of individuals and professional managers willing to pursue the opportunities that only actively managed portfolios provide.

Expectations investors have no practical need to engage in a debate about overall market efficiency. They are interested only in unearthing mispricing opportunities for specific stocks. Judicious expectations investors always begin with the assumption that the market price is a reasonable price. They then profile the consensus expectations implied by a company's stock price to assess whether it might be undervalued or overvalued. Expectations investors can then buy or sell only after careful research satisfies them that a sufficiently attractive mispricing opportunity exists.

Expectations investing is a promising superior-return investment approach for a number of reasons. First, unlike closet indexing, expectations investing is an economically sound stock selection process, not a portfolio structuring technique that aims to track a benchmark index. As a consequence, investors can use expectations

investing to pursue maximum risk-adjusted returns. Second, unlike traditional equity analysis, which employs unreliable accounting-based metrics such as historical or near-term earnings as value benchmarks, expectations investing uses the discounted cash flow model—the essential pricing mechanism for valuing assets in well-functioning capital markets. Third, expectations investing removes the burden of having to forecast long-term cash flows. Instead, it looks for robust buying and selling opportunities by anticipating meaningful changes from today's consensus cash-flow performance expectations. Fourth, expectations investing invokes demanding hurdles, including tax considerations, before a stock is bought or sold. As a consequence, portfolio turnover is relatively low. Low turnover translates into lower transaction costs and taxes. Finally, superior returns go to those who are best prepared to evaluate the longer-term implications of uncertain information subject to alternative interpretations. In other words, expectations investors operate comfortably in a forest full of Darwin's trees.

Performance measurement

Few topics spur more animated conversation in the institutional investment community than performance measurement. The main purpose of performance measurement is to gauge the skill of the investment manager. Specifically, the purpose is to assess whether portfolio returns above or below the chosen benchmark are properly attributable to skill. Individual investors are equally interested in assessing their results**.**

Evaluating performance is no easy task. Calculating the difference between a realized return and a benchmark return such as the S&P 500 is relatively straightforward. However, the simplicity of the calculation can promote a false and misleading sense of security. Here's the dilemma. Performance measures must be timely to be relevant for client decisions about retaining versus replacing investment managers. However, it takes many years before it is possible to tell whether the results were obtained by skill or by luck. The shorter the performance evaluation period, the greater the chances of sampling error—the risk that sample results differ from the "true" long-term results. Statisticians estimate that it takes at least 40 years to confidently determine that returns from a specific portfolio are attributable to skill rather than to chance. In the interim, it is proper to interpret performance statistics as probabilistic approximations of true results. As Ellis[21] concludes, by the time performance statistics are good enough to act on, the time for action is long past. Despite the limitations of investment performance measures, it is reckless to abandon them and fly blindly. Both institutional and individual investors must periodically address the "how am I doing?" question. Probabilistic estimates are better than no estimates.

Before attempting to assess the skill of investment managers, it is important to establish that they are operating according to an agreed upon investment policy. Ellis characterizes investment policy as "the linkage between your long-term objectives and daily work of your investment manager."[22] He suggests three important policy issues. The first is the level of market risk to be taken. This is an asset allocation issue and addresses the question of what percentage of the portfolio should be invested in stocks. The second issue is whether the level of market risk is held constant or varied as markets change. The third issue is the extent to which the portfolio may take aggressive positions in individual stocks and sectors.

Assuming that investment managers follow the prescribed policies, the purpose of performance measurement is to assess their *skill.* Let's begin with the closet indexers. They choose to closely mirror the benchmark rather than to maximize risk-adjusted returns. Closet indexers may have skill but, if they do, their investment strategy is designed to hide it. Consequently, performance measurement is useful if only to show the futility of their strategy relative to lower-cost index funds.

What about investment managers hired to pursue maximum long-term returns using an approach such as expectations investing? If investment policy gives managers

free rein to invest across market sectors, then a broad market index such as the S&P 500 or Russell 2000 is an appropriate benchmark. For investment managers hired to invest in a particular sector or industry, the best benchmark is an index for that sector, or the performance of funds with similar investment objectives. Institutional clients, such as pension funds that hire multiple managers to run their funds, must ultimately evaluate overall performance at the portfolio level. A majority of managers outperforming their peers (who invest in the similar sectors or style categories) is no consolation if heavily weighted sectors or styles underperform the market. So in spite of hiring successful investment managers, the overall return of the fund's portfolio may still underperform the market.

The choice of an appropriate benchmark is essential to meaningful performance measurement. Even more important is *how* that benchmark is used to evaluate performance. Funds obsessed with quarterly results relative to the benchmark induce investment managers to pursue closet indexing rather than maximum long-term returns. If the client focuses on the short term, portfolio managers will invest for short-term results even if investment policy emphasizes a long-term orientation. Even the best-intentioned investment policies are jettisoned when short-term underperformance threatens the perceived tenure of managers. In brief, aligning the interests of managers and owners is central to the value-creation process in investment organizations as well as in corporations.

Performance measurement for the individual investor follows the same guidelines as those for institutional investors. Investor objectives and risk tolerance drive the most appropriate investment policies, which in turn determine portfolio decisions. Appropriate benchmarks are those that best mirror the scope of the investor's portfolio. For example, for investors who choose to limit their holdings to relatively large-capitalization stocks, the S&P 500 is a better benchmark than the Russell 2000.

It is always tempting for investors to focus on the successes and failures of individual stocks. But to assess their skill as stock pickers, individuals should focus on the performance of their portfolio rather than on individual stocks. Finally, and most important, remember the longer the period that performance is evaluated, the more confidence individuals can attach to the significance of their performance. Drawing serious inferences from just a year or two of performance statistics is bound to undermine longer-term objectives.

Unlike professional investment managers, individuals need not fear termination by others. However, individuals who manage their own portfolios wear two hats. They serve both as investment managers and clients. If in your client role you evaluate performance through a short-term lens despite articulated long-term objectives, you will induce short-term behavior in your investment manager role. Just as with institutional investors, *how* you evaluate performance will drive investment strategy and results. Investors who panic when they underperform their benchmarks in a given quarter or year are no less benchmark-addicted than professional managers. As will become clear, those who wish to pursue longer-term investment approaches such as expectations investing have to overcome benchmark addiction.

Performance measurement remains vital, even if it is difficult to implement. Investment policy is an important starting point in determining an appropriate portfolio for an individual. The complexion of the portfolio, in turn, dictates an appropriate benchmark for measuring performance.

We can now define superior performance as generating better returns than an appropriate benchmark over a sustained time period. A minimum of a three- to five-year horizon is appropriate for long-term investors. But make no mistake: the term “superior returns” is a probabilistic statement. The only way we can increase our confidence in performance measurement results is to lengthen the time over which we assess performance.

[1] Eugene F. Fama, "The Behavior of Stock Prices," *Journal of Business,* January 1965, pp. 34-105. A shorter and less technical version "Random Walks in Stock Prices" appeared in the September-October 1965 issue of the *Financial Analysts Journal*, pp. 55-59.
[2] Robert J. Shiller, *Irrational Exuberance* (Princeton University Press, 2000).
[3] James K. Glassman and Kevin A. Hassett, *Dow 36,000* (New York: Times Books, 1999).
[4] See Shiller, pp. 179-90.
[5] Jeremy J. Siegel, *Stocks for the Long Run* (New York: McGraw Hill, 1998) pp. 253.
[6] Andrei Shleifer, *Inefficient Markets: An Introduction to Behavioral Finance* (Oxford University Press, 2000) pp. 13-14.
[7] Burton G. Malkiel, *A Random Walk Down Wall Street* (New York: W. W. Norton & Company, 1999) pp. 269.
[8] We share this belief with Bill Miller of Legg Mason's Value Trust, who outperformed all other active fund managers during the 1990s. See Dean LeBaron and Romesh Vaitilingam, *Ultimate Investor* (Dover, New Hampshire: Capstone, 1999) pp. 22.
[9] "Why the Efficient Market Offers Hope to Active Management," *Journal of Applied Corporate Finance*, Summer 1999, pp. 129-36.
[10] Of course, stock prices represent an "equilibrium" in the sense they are the intersection between supply and demand. Equilibrium as we use it here suggests that all agents have access to all information, and that they interpret that information identically.
[11] Jack L. Treynor, "Long-Term Investing," *Financial Analysts Journal*, May-June 1976, pp. 56.
[12] Op. Cit., pp. 133.
[13] Ibid. pp. 134.
[14] Charles D. Ellis, *"Winning the Loser's Game,"* Third edition (New York: McGraw Hill, 1998) pp. 5.
[15] Op. Cit., pp. 272-7.
[16] "Where, Oh Where Are the .400 Hitters of Yesteryear," *Financial Analysts Journal*, November-December 1998, pp. 6-14.
[17] *Common Sense on Mutual Funds* (New York: John Wiley & Sons, 1999) pp. 92.
[18] There is another cost that is less obvious. As the size of their fund increases, portfolio managers incur market impact costs. Market impact is the difference between an execution price and the posted price for a stock. For large volume purchases or sales, the market impact may make the transaction not economically feasible. Therefore, a manager may be forced to hold stocks he no longer wants, which prevents him from buying stocks he does want to own. For further discussion, see Ben Warwick, *Searching for Alpha* (New York: John Wiley & Sons, 2000) pp. 36-8.
[19] Ibid. pp. 283.
[20] Robert G. Hagstrom, *The Warren Buffett Portfolio* (New York: John Wiley & Sons, 1999) p. 2.
[21] Charles D. Ellis, *Winning the Loser's Game, Third edition* (New York: McGraw-Hill, 1998) pp. 73.
[22] Ibid. pp. 64.