Success In Investment Management: What Can We Learn From Indexing?

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To the Investment Analysts Society of Chicago

Chicago, Illinois

October 26, 2000

Unless you're Peter Bernstein, it will probably be news to you that the year 2000 marks the 100th Anniversary of a truly seminal academic paper. Dr. Bernstein is well known to all of you, I'm sure, both through his bi-monthly publication, *Economics and Portfolio Strategy,* and his books, including his marvelous chronicle of risk, *Against the Gods*. But it was in his *Capital Ideas*, published in 1992, that I first learned of Louis Bachelier's 1900 dissertation, *The Theory of Speculation.* In that paper lay the roots of the huge volume of academic research that we now refer to as Modern Portfolio Theory.

Bernstein—perhaps our preeminent expert on capital markets history—credits Bachelier as the father of MPT and of the Efficient Market Hypothesis as well. At its outset, *Capital Ideas* quotes the French academic's key words—"past, present, and even discounted future events are reflected in market price . . . and it is impossible to aspire to mathematical predictions of [price]"—and then moves on in history.

It is a curious paradox, however, that we don't *require* modern portfolio theory—and we surely don't require the efficient market hypothesis—to understand the wisdom of the simple but profound idea that Bachelier presented (and italicized): *"The mathematical expectation of the speculator is zero."* We now understand that to be the central fact of finance.

Probably the first systematic study of the real-world application of the theory came in a 1933 article in *Econometrica,* reporting the findings of the Cowles Commission. The Commission asked the question: "Can stock market forecasters forecast?" After the study of mountains of evidence, its answer: "It is doubtful." Fast forward now to the 1950-1985 era, and capital market pioneers such as Harry Markowitz, James Tobin, William Sharpe, John McQuown,

Jack Treynor, William Fouse, and Paul Samuelson—that distinguished list of practitioners and academics known to you all—make their extraordinary contributions to the study of finance and investment.

The Theory of Transaction Costs

In Bachelier's 70-page dissertation, he makes no reference to the role costs play in speculation and investment. But costs obviously matter. And costs matter not only in financial markets, but in *all* economic transactions. Yet it is only in the past year that much academic attention has been paid to transaction costs. Just a month ago, in a report on E-commerce, *The New York Times* described a paper on transaction costs entitled "The Nature of the Firm," written way back in 1937, which resulted—but not until 1991—in a Nobel Prize in economics to Professor Ronald Coase of the University of Chicago Law School. In his paper, he showed that it was transaction costs (then prohibitively high) that should determine whether or not a company should produce goods or services on its own, or farm them out to suppliers.

Similarly, a recent paper by Professors Maurice Obstfeld of the University of California at Berkley and Kenneth Rogoff of Harvard has gained important attention. An article in *The Economist* noted their finding that economic puzzles regarding international trade, savings and investment, investors' preferences for domestic portfolios, and the lack of relationship between exchange rates and economic activity all prove to have a common denominator: *The cost of trade.* Trade costs money, they argue. And when trading costs reach 25% of the cost of goods, expected outcomes don't materialize. And so it is in the financial markets as well.

Reality Bites Theory

So, while Bachelier was right that the mathematical expectation of the speculator—and, for that matter, the long-term investor—in outpacing the returns earned in any given segment of the financial markets is zero, that expectation implicitly assumes that costs too are zero. But *after* the costs of speculation (or investing) are taken into account—after all of the fees, the transaction costs, and the hidden costs of financial intermediation—the mathematical expectation is for a loss precisely equal to those costs. (In the mutual fund field, as it happens, costs appear to approach that apparently critical point—25% of the market's returns—a particularly ominous

sign.[1]) So it is only to state the obvious when I say—as I do, one way or another, in almost every speech that I deliver—*the financial markets are not for sale, except at a high price*. By excluding investment costs and taxes, data presenting long-term returns in the stock market—whether using the Standard & Poor's 500 Stock Index or CRSP or the Ibbotson data—reflect the entirely theoretical possibility of cost-free, tax-free investing. Those stated returns, therefore, grossly distort economic reality. When we consider the inevitable costs of investing, *reality bites theory*. And the reality is self-evident and inescapable: *The net return of all investors as a group must fall short of the gross return of the market by the amount of their costs*. Beating the market is a loser's game.

Now, 100 long years after Bachelier wrote his paper, this reality has finally taken root, *even among financial market participants who are not among the lowest-cost players in the game*. Consider the recent paper prepared by Merrill Lynch and BARRA Strategic Consulting Group entitled "Success in Investment Management: Building the Complete Firm." Written by senior executives of the two firms—after consultation with as distinguished a list of money managers and powerful fund sponsors as one could possibly imagine[2]—the study reaches this major conclusion: *Management of Embedded Alpha, the frictional costs of running a portfolio, will emerge as an essential contributor to investment manufacturing quality and performance*.

The Merrill Lynch/BARRA Study

For me—and I think for you as investment professionals—the heart of the ML/BARRA study is not its long series of speculations, however intelligent, about the future development of investment management—the business itself, investment *manufacturing* (their off-putting word); distribution; viable business models; and optimal size. Rather, the heart of the study is its clear articulation of what it calls *Embedded Alpha,* the frictional costs that detract from the return that can be theoretically produced by an investment portfolio in a frictionless securities market. In a special appendix, firms are urged to "Manage Embedded Alpha, Cut Those Hidden Costs." The costs are identified in these direct quotations from the study:

[1] Taken to its logical conclusion, the theory suggests that the new bare-bones-cost computerized portfolios (often known as "folios") will represent powerful competition for mutual funds, whose costs are prohibitively high.

[2] Among the firms named as providing assistance and perspective for the study: Fidelity, Putnam, Mellon, State Street, Oppenheimer, Citigroup, and Massachusetts Financial Services. I hope that you will pardon me if I wonder how carefully they considered its sweeping implications.

1. **Tangible Costs** . . . management fees and trading commissions. Each dollar given away for, say, management fees is a dollar explicitly detracted from the portfolio net return.
2. **Managed Costs** . . . unintended risk exposures, tax costs, and Not-Equitized-Cash, an opportunity cost for not keeping funds fully invested.
3. **Invisible Cost** . . . the adverse market impact of trading and the opportunity cost of delaying trade execution.

Result: "Simply put, every incremental basis point increase in rate of return translates into competitive advantage (by which) a firm improves its absolute performance and its ranking relative to its peers." Thus, what the study calls *the Complete Firm,* the firm that "will lead the way . . . will diligently seek to minimize these performance detractors." Thus spaketh, I remind you, not Vanguard/BOGLE, but Merrill Lynch/BARRA. Here is their prescription for curing the disease: "Releasing Embedded Alpha."

1. **Take a Holistic View** (whatever exactly that *is* in this instance). Appoint a single Embedded Alpha champion with the firm.

2. **Take an Alpha Inventory.** Develop a coherent policy, and review all work processes.

3. **Set Priorities**. Widen managerial bandwidth. (Again, I confess my ignorance of the term in this context.)

4. **Develop a Strategic Agenda** that sets goals by which to measure success.

5. **Make It Real on the Shop Floor,** communicating the agenda and aligning incentives accordingly.

6. **Tell the Market.** Make the approach to managing Embedded Alpha credible, then aggressively promote it . . . This approach can improve the probability of superior returns. (I'm not quite sure how aggressive promotion can relate to superior returns.)

Perhaps surprisingly, the study presents no data whatsoever on the dimension of Embedded Alpha. "Purposely," we're told, "the paper does not focus on data and statistics." But, the dimensions of cost are astonishingly large. Since I'm not an expert on the economics of the investment counsel business, let me now turn to the mutual fund business to give you some idea of just how large they loom. Based on my best estimates of the costs currently incurred by mutual fund investors, here is the picture:

Average Equity Mutual Fund	% of Average Assets
1. Advisory Fees	1.1%
2. Other Operating Expenses	0.5
Total Expense Ratio[3]	1.6%
3. Transaction Costs[4]	0.7
4. Opportunity Cost[5]	0.4
5. Sales Charges[6]	0.6
Total	3.3%
6. Taxes[7]	1.6
TOTAL	4.9%

You don't need me to tell you that 330 basis points—490 basis points if we include even a modest estimate of taxes—is a lot of Embedded Alpha.

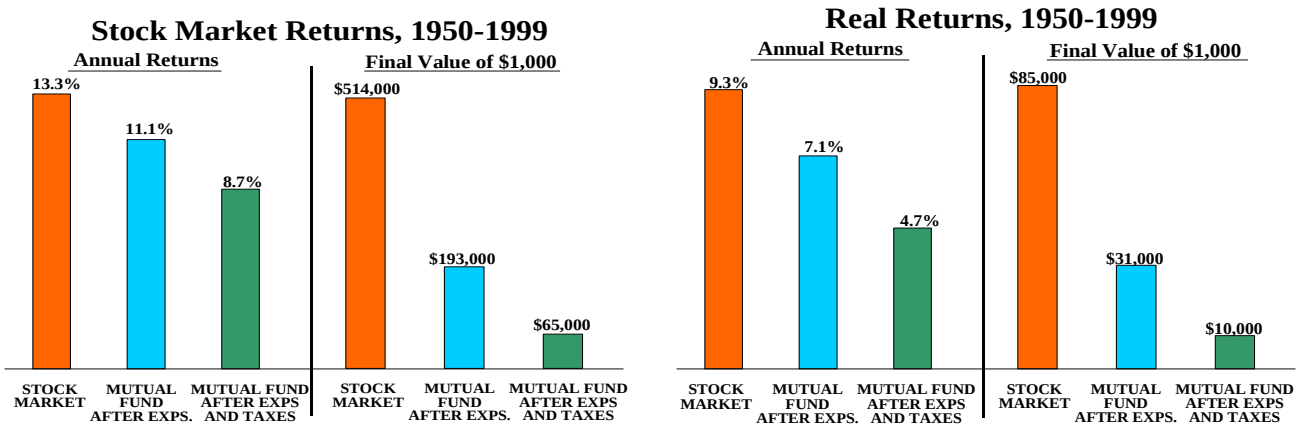
Now let me show you how all of this works out in practice. First, to be conservative, I'm going to slash that 330 basis point charge, first by ignoring the 60 basis points for sales charges (which are ignored in most industry performance data), then by using an expense ratio weighted by fund assets (another 50 basis point drop), reducing costs to 220 basis points. Let's use that conservative figure as a benchmark for the Embedded Alpha of the average fund. Next, I'm going to assume that funds earn average returns equal to those of the stock market itself. Of course, managers have the opportunity to earn higher returns (or, for that matter, lower returns) than those of the market. While my own data for the past 15 years suggest that, before the deduction of all that Embedded Alpha, the average fund actually outpaced the stock market (Wilshire 5000 Total Market Index) by 50 basis points per year, these data include only the records of funds that survived the period. (And, believe it or not, only about one-half survived.) So a market matching return seems not only fair, but generous.

Now let's look long-term. Despite today's environment of frighteningly short-term investment horizons, most investors start their programs with their first $1,000 in an IRA or 401(k) and will still be investing, not 50, but 70 years hence. I'll use 50 years. What toll would a

[3] Unweighted mutual fund ratio. The *weighted* ratio is about 1.1%.
[4] Most studies show far higher transaction costs. But since market impact itself must be a *net* zero, (i.e., your aggressive sale creates my bargain purchase), my low estimate reflects how much "The Street" charges for its trading services.
[5] Assuming 12% stock return; 6% cash return; 7% of assets in reserves.
[6] 5% sales charge, amortized over ten-year holding period.
[7] Assuming 10% fund *after-cost* return, 1% income, 9% capital; 50% of gains realized annually, two-thirds long-term, one-third short-term; maximum tax bracket.

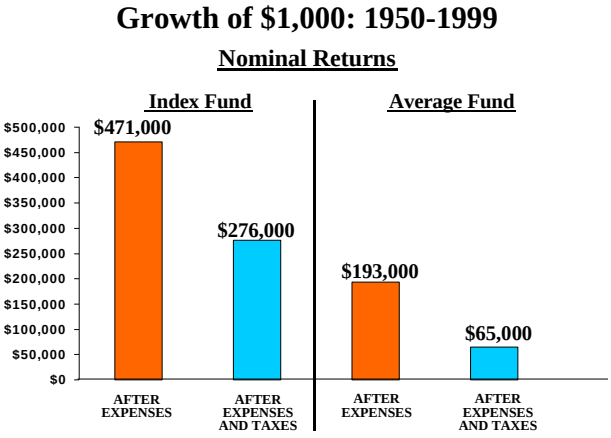
220 basis point cost have taken on the 13.3% return earned on the Standard & Poor's 500 Stock Index over the past 50 years? The fund would earn 11.1%, or 2.2% less. When compounded, $1,000 in the S&P Index itself would grow to $514,000; the fund, after costs, would grow to $193,000—a $321,000 loss to the financial intermediaries. When we include taxes in the equation—given the high market returns of the past 50 years, I'll use 240 basis points, a conservative tax rate—the mutual fund annual pre-tax return of 11.1% drops to 8.7% after taxes, and the compounded value falls *another* $128,000 to $65,000.

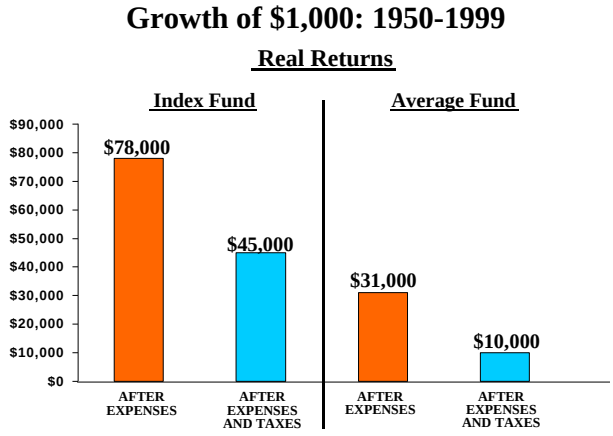
But there's more trouble ahead. Each year, intermediation costs and taxes are paid in *current* dollars, while the investor's final capital must be measured in *constant* dollars. During the past half-century, the inflation rate was 4.0%. Result: *Real* annual return for the investor, 4.7%. The final purchasing power was reduced *another* $55,000 to $10,000. Wow!



Put another way, the mutual fund's real annual return *before* costs was not the 13.3% earned by the S&P Index, but 9.3%, so the 2.2% intermediation cost reduced each year's *real* return, not by 16%, but by 24%. And that 2.4% annual tax cost *further* reduced the fund's net return, not by 22%, but by 34%. When we apply to the annual data that remarkable magnifying glass called compounding, we can describe the investment returns earned by the fund—on cost and tax assumptions that I think we can all agree are hardly excessive—as shocking. The investor lost 63% of the market's cumulative return to the intermediaries, 66% of *that* to taxes, and 85% of *that* to inflation, ending up with just 2% of the compound market return we calculate from all of those annual return data that the fund industry publishes.

In fairness, an index *fund* modeled on the Standard & Poor's 500 Index would also have fallen well short of the index itself, but still performed quite remarkably relative to the mutual fund. Assuming costs of 20 basis points, its 13.1% return would have compounded to $471,000 vs. $193,000 for the fund; after a 120 basis point charge for taxes (index funds are typically about twice as tax-efficient as ordinary funds), its net total value would be $276,000 vs. $65,000. And the Index fund total would have been cut to $45,000 after inflation, vs. $10,000. That too may seem like a far cry from $514,000, but it's hardly realistic to eliminate taxes from the real world of investing. The important reality is that the Index fund would have provided 2.4 times the after-cost value of the mutual fund, 4.2 times the fund's after-tax value, and 4.5 times the fund's *real* terminal value. Yes, Embedded Alpha is a powerful destructive force.





What Active Managers Can Learn From Indexing

Paraphrasing the Greek philosopher Horace, I fear that, like the mountains, the financial giants and fund managers who developed the ML/BARRA study have "labored and brought forth a mouse." Had they made their own calculations of annual Embedded Alpha, then compounded the resultant return over the long-term, and then considered the reality that costs and taxes are paid in *current* dollars but long-term returns are received in *real* dollars, they would have realized the enormity of the issue. Having done so myself, my recommendations on controlling costs, and my strategy for doing so, would be less cliché-ridden, more blunt, and surely more difficult for managers to swallow. If you don't accept my thesis, of course, feel free to ignore them:

1. **Remember that the mathematics are immutable.** Explicitly recognize and acknowledge that investment success—not just in the long-run, but every day of every week, and every month of every year—is defined by the apportionment of market returns between investors on the one hand and financial intermediaries on the other.

2. **Reduce basic advisory fees**, but endeavor to maintain firm revenues by incorporating incentive/penalty fees. These actions will reward the successful firm and penalize the unsuccessful. (They will, of course, reduce the *total* level of industry-wide advisory fees.)

3. **Cut operating and administrative costs.** This may mean less awesome views of America's most magnificent skylines and harbors, less lavish entertainment, fewer client junkets, fewer seminars in Bermuda, less glossy presentations, less first-class travel, and more modest wine cellars . . . *the whole nine yards*.

4. **Reduce marketing expenses to the bare-bones level.** Advertising is expensive! Special note to the mutual fund industry, where some firms' annual marketing budgets exceed $100 million: Those expenses raise serious questions of fiduciary duty, questions about whether the *investment* interests of fund clients are playing second fiddle to the *marketing* interests of the adviser.

5. **Take a hard line on transaction *costs.*** Even more importantly, *take a hard line on transactions*. Carefully and regularly evaluate whether your transaction activity has enhanced or detracted from the returns you have realized for your clients.

6. **Taxes are the largest single detractor from Embedded Alpha.** If your clients are taxable, *evaluate your managers on after-tax returns* and use after-tax returns as the basis for incentives. If you have both taxable and tax-deferred accounts, offer separate funds for each.

7. **Eliminate opportunity cost.** Cash, to be sure, is fine when raised just before a market decline. But you know as well as I that there's simply no evidence of firms that have been successful at market timing. Thus, the return-*enhancing* characteristic of cash in down markets is inevitably a small fraction of its return-*reducing* characteristic in the rising markets that are far more common.

8. (For mutual funds only.) **Get rid of 12b-1 fees**, those sales commissions that are built into expense ratios. They make your reported returns look *terrible;* they usually entail heavier costs to the investors you serve; and simply, by being hidden, they raise serious questions about your candor and integrity.

While together these steps will change the nature of institutional investing, given the influence of Embedded Alpha on long-term returns, I believe it is only a matter of time before clients will demand change. Forewarned is forearmed.

The S&P 500 Index

You'll note that I've used the S&P Index in my market measure for the past 50 years. While it was the only good standard available in 1950, it remains the most widely accepted standard and, most importantly, continues to provide an excellent if imperfect measure of the stock market. You may have heard—and even believed!—the apocryphal story about the bumble bee: After carefully examining its aerodynamics, weight, and size, an expert group of scientists proved beyond doubt that the bumblebee can't fly. Yet fly it does. It occurs to me that a similar fable is applicable to the Standard & Poor's 500 Stock Index. It doesn't look like it should work, but it obviously does. One only has to consider a few anecdotal examples to understand why it can provide outstanding relative performance.

Consider first the S&P 500 fifty years ago, then as now an index of large-cap stocks in a large-cap dominated market. (Well, *not* the S&P *500*; it was the S&P 90 from 1926 through 1957.) In 1950, it represented a highly concentrated tribute to industrial America. Although I don't recall anyone examining the composition of the index with the kind of attention lavished on it today, General Motors, its largest holding, represented 13.6% of its weight. Standard Oil of New Jersey was next at 9.3%, and the top ten holdings accounted for 51.3% of its weight, making it more than twice as concentrated as the 24% weight of the top ten today. (IBM, which was to be the star performer of the subsequent two decades, didn't join the Index until 1957.) Surprisingly, AT&T, with a market capitalization larger than General Motors', was conspicuous by its absence. Despite its initial "Old Economy" base, the S&P Index dominated the active fund managers during the era that followed.

Now advance the calendar to 1964. AT&T, now part of the index, had a 9.1% weight, followed by General Motors at 7.3%, Standard Oil of New Jersey at 5.0%, and IBM at 3.7%. The "top ten" then accounted for 39% of the index, again far higher than today's top ten weight of 24%. But even this continued reliance on the Old Economy of autos, chemicals, oils, and utilities—together, 52% of the index—failed to diminish its sharp advantage over the average mutual fund during the subsequent decade, despite the surge of the "go-go" concept stocks during the middle of the period.

Just one more example. In 1980, with the quantum surge in oil prices and high expectations for the petroleum industry, the energy sector's weight rose to an all-time high of 32%. It would have seemed, I suppose, foolish to own such a single-industry-dependent index fund back then, and in fact during 1976-1985, the index didn't, well, fly very impressively. Nonetheless, the long-term record of the S&P 500 over the past half-century, as we have seen, brooks no apologies. Like the bumble bee, the index *can* fly. And on long trips, it can *soar*.

Today, of course, the index has an equally heavy weighting in the "New Economy," including an important dependence on technology stocks (32% as year 2000 began, now 27%). I admit that concentration unnerves me a bit. But I'm such a believer in the magic of indexing that I remain unshaken in my conviction that, no matter what the short-term holds, indexing continues to represent the best way to invest for the long-term. Finally, broad diversification, low cost, minimal portfolio turnover, and tax-efficiency conquer all.

Is the S&P Really "The Market"?

For all of its well-known idiosyncrasies, the S&P 500 has proven it can be an excellent representation of the stock market itself. Composed solely of large-cap stocks, it represents about three-quarters of the market's total capitalization; its returns have maintained a fairly stationary correlation (R^2) of 0.97 with the total market; and its performance has been virtually identical to that of the Wilshire 5000 Total Equity Market Index over the nearly three full decades in which both indexes have been available.

That is not to say the S&P is an easy target for an investor—or even an average index fund manager—to track. Change it does! Indeed in the past 20 years there have been an astonishing 489 changes in the 500 Stock Index. These are not trivial changes; on average during that period, each year has resulted in the addition of stocks accounting for 2.8% of the index's capitalization—an aggregate two-decade replacement equal to 58% of its value. Typically, these changes are represented by mergers; the few stocks deleted from the index for other reasons typically have very small market caps.

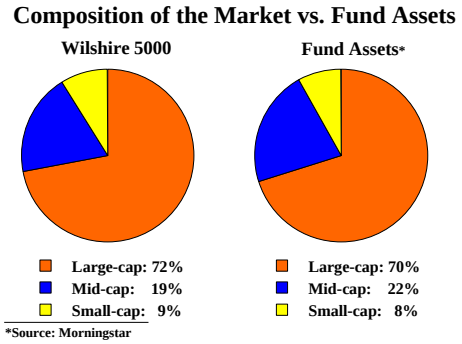
In essence, we have a process in which old stocks are deleted from the Index at a rate of about three percent per year, meaning that the weightings of each of the other holdings is reduced by about three percent per year. I estimate that had the 500 Index remained unchanged over the

past six years, Microsoft, Cisco, and Intel, for example, would have apparently represented, not the 4.9%, 2.8%, and 2.3% of the Index that they represented as 2000 began, but 5.5%, 3.2%, and 2.5%. While these are not to be taken as hard numbers, they do suggest that a strategy of *gradually* selling winners may have helped to marginally improve the performance of the index. Active managers may want to take note.

No similar adjustments are required in the Wilshire 5000 Total Stock Market Index, which includes not only the large-cap stocks in the S&P 500, but mid- and small-cap stocks as well. Yet despite modest short-term variations, it has tracked the S&P 500, as I noted, with virtual perfection over the long-term. Stocks normally come into the index when they are very small and there is no reason to remove them when they hit an arbitrary size. And they are held *forever* . . . or at least until they are merged into another corporation. It is largely for these reasons that I favor the all-market index fund as the best choice for most investors.

"Benchmarking"

The compelling data I've presented shows a substantial shortfall in the long-term returns of mutual funds despite cost and tax assumptions that are remarkably conservative. I've also assumed that domestic funds as a group can be fairly compared with the S&P 500 Stock Index, which closely tracks the total U.S. stock market. And fund portfolios, weighted by assets, closely resemble the configuration of the market, with about the same proportions of large-(70%), medium- (22%), and small-cap (8%) stocks as the market itself. Further, over the very long run, the returns of the various investment styles (small-cap vs. large-cap; growth vs. value, etc.) tend to revert to the market mean, with interim variations ironed out over time. I've also assumed that the long-run objective of *any* equity mutual fund, whatever its style, is, at least implicitly, to "beat the market." (Some funds may hold themselves out as endeavoring to provide a higher "risk-adjusted" return, but I'll not deal with that issue today.)



Nonetheless, I can accept, if a bit grudgingly, the current fashion of "benchmarking"—comparing the return of a small-cap growth fund, for example, with the return of an index of small-cap growth stocks. As a short-term tool for ascertaining whether or not the manager is investing in accordance with his own proscriptions (and, assumedly, those of his clients), benchmarking seems reasonable enough. But over the long-run, it seems to me obvious that *the fairest comparison of return is with the all-market index, not the style index*. It is difficult to imagine that a client seeking a particular style—and a manager offering that style as representative of his or her particular area of expertise and comparative advantage—does not make that selection because it is expected to enhance long-term returns. "What gaineth the client," one might say, "if he wineth the style derby, but loseth to the whole stock market."

For all of the scientific computerized data we see presented with grand precision—comparative returns, risk-adjusted returns, Alpha and Beta (with Omega not yet on our horizon), measured over short periods and long, and taken out to two decimal points and sometimes more—I think we in the profession have the duty, simply as a matter of fair and complete disclosure, to present *both* sets of comparisons—the style benchmark and the all-market benchmark—to our clients. Let's let narrow style benchmarking dictate neither our investment decision-making nor our standard for appraising long-term accomplishment.

Variations on Long-Term, All-Market Indexing

If the all-market index standard should—finally, must—be the long-term standard for equity accounts of all stripes, what use is served by the scores of index variations on this basic theme over the past decade-plus? I confess that, with the passage of time, I have become increasingly concerned about the utility of these variations, and I owe this audience the professional courtesy to tell you what bothers me and why it does so.

First, confession being good for the soul, it was primarily because of my own drive and conviction that Vanguard became the pioneer in index funds. We formed the first S&P 500 Index fund in 1975, and then in 1987 pioneered the *completion* ("Extended Market") index fund, tracking the small- and mid-cap stocks unrepresented in the S&P 500. The idea: To enable investors to make a commitment to the *entire* stock market, which I consider as the full fruition of the index fund concept. But adjustment of stocks between the two index funds was required as

stocks moved in and out of the 500, creating portfolio turnover and potential tax-inefficiencies. So, in 1992 we created the all-in-one Total (U.S.) Stock Market Index Fund. That same year, when Standard & Poor's/BARRA answered my public prayer and developed a growth index and a value index—each regularly adjusted to represent one-half of the weight of the 500—we started our Growth Index and Value Index Funds. I stated then—and reiterate now—my expectation that the long-term *total* returns were unlikely to differ significantly. The idea was to allow more aggressive long-term investors to hold the growth index fund for lower taxable income, higher tax-efficiency, and higher likely volatility. More conservative investors could hold the value index fund (for higher retirement income and lower volatility, at the cost of some tax-efficiency).

Still earlier, in 1989, we converted a tiny actively-managed Vanguard small-cap fund into a passive Russell 2000 Index fund, creating the industry's first small-cap index fund. And a few years ago, my successors at Vanguard added three more index funds—mid-cap (S&P 400), small-cap growth (half of the Standard & Poor's 600), and a small-cap value fund (the other half). Over their histories, the segment funds formed before 1992 have done quite respectably—if largely unspectacularly. The newer funds, in even narrower market segments, have not been around long enough to fairly evaluate.

If the longer-run past results of our market-segment index funds are at least respectable—and given the survivor bias that significantly *overstates* the achievements of actively-managed small-cap and mid-cap mutual funds, they are doubtless far better than that—what's my concern? First, my instinctive feeling is that the use of segment funds is unlikely to add long-run value to the total market return. Second, I believe too many investors are using these funds to shift among market segments based on past performance, a formula apt to result in failure. Given the market trends that have favored growth stocks during the past five years, for example, the assets of our Large-Cap Growth Index Fund currently total $14 billion, compared to $3½ billion for its Value Index counterpart. (Surprise!) Third, segment funds carry far higher portfolio turnover: Small-Cap Growth and Small-Cap Value, each about 80% last year; Small-Cap (total), 42%; Large Value, 41%; Large Growth, 33%; and even Extended Market, 26%.

In fairness, the extraordinary index fund management strategies of Vanguard's skilled director of Quantitative Management, Gus Sauter, have resulted in virtually *zero* net cost for all of these purchases and sales, and each fund has tracked its appointed index with extraordinary precision. But compare those double-digit turnover figures with our S&P 500 Index Fund (6%)

and our Total Stock Market Fund (3%!) and you'll clearly see *what a difference a benchmark makes*. Tax impacts too have been nicely constrained. But if our shareholders move their money around rapidly in less generous markets than these, or heavily withdraw substantial assets in a bear market, the roadblocks to maintaining that excellence will be formidable.

Nonetheless, I have not lost all hope for the market-segment index fund, for most of these problems could be solved by the creation of better market-segment *indexes*—indexes with new definitional concepts that offer less sensitivity to stock substitutions, and therefore lower portfolio turnover—and the imposition of redemption fees to reduce short-term trading in these funds. For those investors who cannot resist the urge—which they probably should resist!—to overweight or underweight one market segment or another, such funds may well provide the most sensible approach.

In any event, indexing of all types continues to grow. But much of the growth is coming, not through conventional index funds, but through novel index funds known as ETFs (exchange-traded funds), an acronym that trips from the tongues of almost every industry maven worth his or her reportorial salt, if only of a small subset of market speculators. The assets of these funds, I read in *The New York Times* last Sunday, totaled $53 billion at mid-year, and they are aggressively promoted. But—make no mistake about it—few of their holders are long-term investors. This year, the *Spiders* (SPDRS) are being turned over at an annualized rate of 1415%, and the NASDAQ 100 *Qubes* at a rate of 5974%: Respective average holding periods: 26 days, and six days. Why not? They are not only being *used* for short-term goals, but *promoted* as short-term investments. A full-page advertisement for SPDR index shares in *BARRON'S* magazine dated September 18, 2000, is headlined: "Buy and sell the S&P 500 just as easily as you trade a single stock." (Then adding, "with real time pricing, you can trade your position throughout the trading day.") Yet Sunday's *Times* also reported this statement by a SPDRs executive: "Our customers are *long-term* investors." (Italics added.) That doesn't seem consistent with either the facts or the ad. So, lest we forget, I reiterate: There is a critical difference between designing a *product* to sell to customers and creating an *investment* to serve its owners.

Indexing: Losing its Way?

Today, changes are swirling all around those of us in the investment community. The soaring volumes, the volatile markets, the heightened public interest in financial matters, the intense media coverage, a mutual fund industry whose excessive expenses and increasingly short-term focus have combined to create an insuperable Embedded Alpha, and an unsound departure from the proper use of index funds—still the best way I know to fully capture the returns of the financial markets. Have we forgotten that the most productive investing is the most peaceable investing, the lowest-cost investing, the most tax-efficient investing—investing with the most consistent strategies and over longest time horizon? I hope that for you who are here today, the answer to that question is a resounding, "No!"

If that is your answer, the profession of managing the accounts of substantial (especially, the management of taxable) individual investors holds great opportunity. Your mutual fund competitors and your i-Share competitors are hell-bent down a road that, unless it turns, may even give you a near-monopoly on the management of the accounts of investors of both moderate and substantial means. You can learn and profit from their weaknesses. But you won't get there by ignoring the timeless truth of the financial markets. Whether it is Louis Bachelier speaking, or a group of Nobel Laureates, or Malkiel or even Bogle, now buttressed by the Embedded Alpha paper of Merrill Lynch/BARRA, *the mathematics of the markets are eternal.* The investment success of investors in the aggregate is defined—not only over the long-term but every single day—by the extent to which market returns are consumed by financial intermediaries. So capitalize on the failures of so many other managers that I've laid out before you today, and learn from the simple reasons behind the success of the index fund. Opportunity beckons!