What Can Active Managers Learn From Index Funds?

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In a sense, the year 2000 marks the 100th anniversary of the birth of the idea of market indexing. For it was a century ago when a French academic named Louis Bachelier published his dissertation, *The Theory of Speculation.* In his seminal paper, Bachelier concluded that since "past, present, and even discounted future events are reflected in market price . . . it is impossible to aspire to mathematical predictions of [price]." As a result, Bachelier concluded (and italicized): "*The mathematical expectation of the speculator is zero.*" We now understand that to be one of the central facts of finance.

The Theory of Transaction Costs

In his 70-page dissertation, however, Bachelier made no reference to the role costs play in shaping the returns actually realized by the speculator. But today we understand that the costs incurred by market participants matter . . . and matter a great deal. So while Bachelier was right that the mathematical expectation of the speculator—and, for that matter, of the long-term investor—to outpace the returns earned in the financial markets is zero, that expectation implicitly assumes that the costs of investing too are zero. But *after* the costs of 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 … a loss that is precisely equal to the sum of those costs.

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*. Yet when we present long-term returns in the stock market (whether using the Standard & Poor's 500 Stock Index in the U.S. or the TSE 300 in Canada), we completely exclude investment costs and taxes. As a result, we are in fact presenting only a theoretical construct based on cost-free, tax-free investing. These market returns grossly distort economic reality. Result: When we consider the inevitable costs of investing, reality—a reality that is self-evident and inescapable—bites theory: 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[1]—the study reaches this major, if obvious, conclusion: "*Management of Embedded Alpha, the frictional costs of running a portfolio, will emerge as an essential contributor to investment manufacturing quality and performance.*"

[1] 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.

The Merrill Lynch/BARRA Study

For me—and I think for you as financial service 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. **"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."

The study's conclusion: "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, with our 26-year history of driving investment costs down, but Merrill Lynch/BARRA. As the old saw goes, "there is no one more religious than a convert."

Here is their prescription for curing the disease entitled, "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 exactly what that means in this context.)

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

5. **Make It Real on the Shop Floor.** Communicate the agenda and align 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.)

To my surprise, however, the study presented no data whatsoever—none—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, especially in mutual fund business. Based on my best estimates of the costs currently incurred by investors in U.S. equity funds, here is the picture:

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

As it turns out, Embedded Alpha is even higher in Canada. Consider these figures, for Canadian mutual funds:

Average Canadian Equity Fund	% of Average Assets[7]
1.Advisory Fees	NA
2. Other Operating Expenses	NA
Management Expense Ratio (MER)	2.2%
3. Transaction Costs	1.3
4. Opportunity Cost	0.7
5. Sales Charges (annualized)	0.5
TOTAL	4.7%
6. Taxes	1.0%
TOTAL	5.7%

You don't need me to tell you that the frictional drag from financial intermediation—330 basis points (U.S.) or 470 basis points (Canada)—is a lot of Embedded Alpha. And, if we include even modest estimates of taxes, it quickly rises to 490 and 570 basis points, respectively.

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 by using a U.S. expense ratio weighted by fund assets (a 50 basis point drop); and second, by ignoring the 60 basis points for sales charges (since some funds are available on a no-load basis). By so doing, I've reduced assumed costs to 220 basis points. So let's use that conservative figure as a benchmark for the Embedded Alpha of the average U.S. equity fund.

Next, I'm going to assume that funds earn average returns equal to those of the stock market itself. My own data for the past 15 years suggest that, *before* the deduction of all that Embedded Alpha, the average fund *that survived the period* actually outpaced the stock market (Wilshire 5000 Total Market Index) by about 50 basis points per year. However, only about one-third of all funds in business during that period survived, and it seems reasonable to conclude that it was the poorer performers that failed to

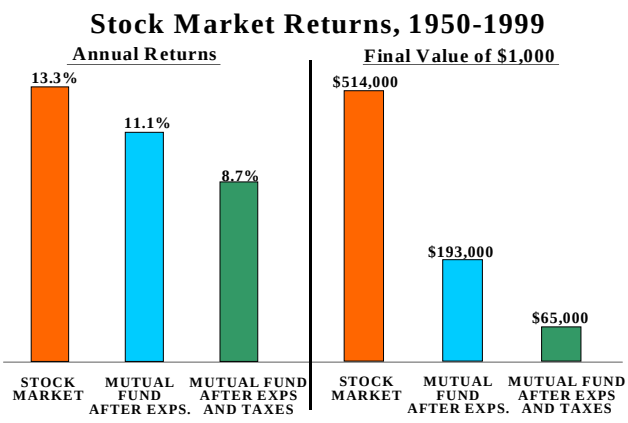
[2] Unweighted mutual fund ratio. The *weighted* ratio is about 1.1%.
[3] Most studies show far higher transaction costs. But since market impact itself must be a *net* zero, (i.e., your aggressive sale creates my bargain purchase), my low estimate reflects how much "The Street" charges for its trading services.
[4] Assuming 12% stock return; 6% cash return; 7% of assets in reserves.
[5] 5% sales charge, amortized over ten-year holding period.
[6] 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.
[7] *The Power of Index Funds*, by Ted Cadsby. See page 73.

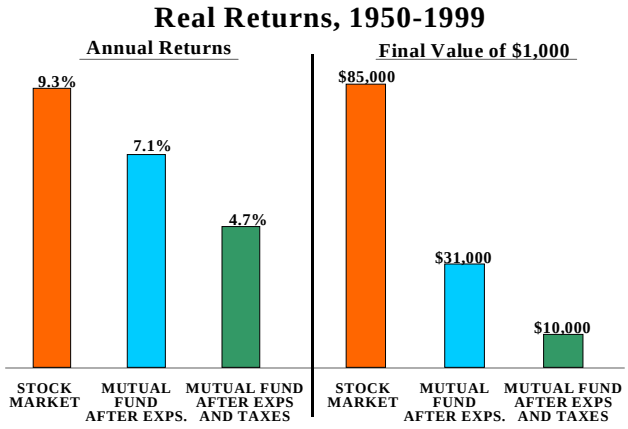
stay the course. So an assumption that the average fund provided a market-matching return seems not only fair, but perhaps even generous.

Now let's look long-term. Despite today's environment of frighteningly short-term investment horizons, most new investors today, starting their programs with their first $1,000 in a Canadian RRSP or a U.S. IRA or 401(k), will still be investing 70 years hence. I'll use just 50 years as a long-term horizon. What toll would a 220 basis point cost have taken on the 13.3% return that the Standard & Poor's 500 Stock Index earned 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—I'll be conservative again, and use 240 basis points, a tax rate of just over 20%—the mutual fund annual pre-tax return of 11.1% drops to 8.7% after taxes. Then, the compounded value falls *another* $128,000 to $65,000. *Just $65,000.*

But there's more trouble ahead. Each year, investors pay their intermediation costs and their taxes in *current* dollars. But they must measure their capital in *constant* dollars. During the past half-century, the inflation rate was 4.0%. Result: *Real* annual return for the investor, 4.7%. *Another* $55,000 reduction in final purchasing power . . . to just $10,000. That *real* total is $504,000 less than the *theoretical* total of $514,000 with which we began. Wow!

Put another way, the mutual fund's real annual return *before* costs was not the 13.3% nominal return earned by the S&P Index, but 9.3%. Result: The 2.2% intermediation cost reduced each year's *real* return, not by 16%, but by 24%. And that 2.4% tax cost *further* reduced the fund's *real* annual return, not by 22%, but by 34%.



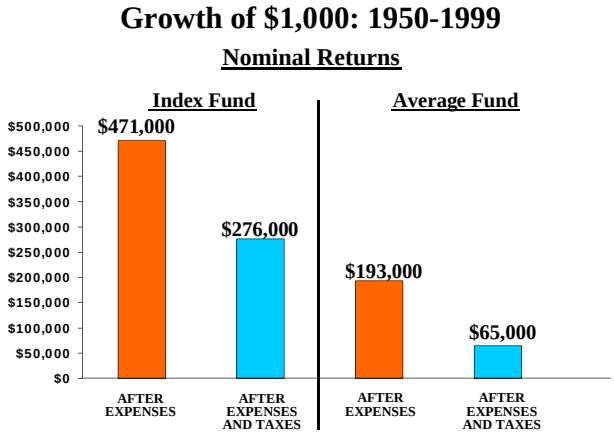


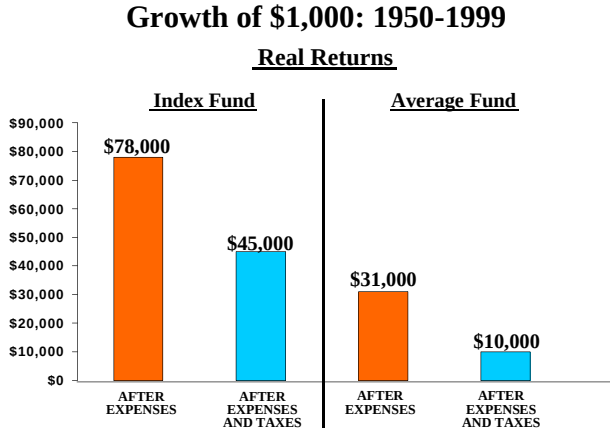
When we consider that annual data through the remarkable magnifying glass we call *compounding*, we can describe the investment returns earned by the fund—on cost and tax assumptions that I think we can all agree are hardly excessive—as shocking. The investor lost 63% of the market's cumulative return to the intermediaries, 66% of *that* to taxes, and 85% of *that* to inflation, ending up with just $10,000, or less than 2% of the $514,000 compound market return. Yes, the U.S. mutual fund industry is an expensive home for long-term investors..

Now, let's compare the fund returns with those that would have been achieved by investing in an index *fund* modeled on the Standard & Poor's 500 Index. To be sure, such a fund would have fallen short

of the Index itself, for it must operate in the real world, paying operating costs and being subject to taxes. But by holding those costs to the bare-bones minimum, it would have performed quite a remarkable service relative to the average mutual fund.

Assuming all-in costs of 20 basis points, the index fund would have provided a 13.1% annual return, compounding to $471,000 vs. $193,000 for the active 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 have been $276,000 vs. $65,000 in current dollars. In constant dollars, the index fund final value would have been cut by inflation to $45,000, vs. $10,000. The reality: 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 Can Active Managers 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 taken the trouble to make these calculations of annual Embedded Alpha, and 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 truly confiscatory nature of intermediation costs and taxes.

Given the dramatic differences of long-term returns I've just presented, my recommendations on controlling costs, and my strategies 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.) So I urge investment professionals to accept these conclusions:

1. **Accept the Mathematical Reality.** Explicitly recognize and acknowledge that investment success—not just in the long-run, but every day—is defined by the apportionment of market returns between investors on the one hand and financial intermediaries on the other.

2. **Lower Expense Ratios.** Management expense ratios (MERs) on funds must be substantially reduced.

3. **Don't pay for past performance.** Reward future performance through incentive fee structures that reward the successful manager—and penalize the unsuccessful manager. (In the U.S., this structure must be symmetrical.)

4. **Be wary of costly marketing programs**. Advertising expenses (usually plumping high—and unsustainable—returns) are ultimately paid by fund shareholders. Special note to the U.S. mutual fund industry, where some firms' annual advertising budgets exceed $50 million, and even $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. **Demand information on transaction *costs.*** Equally important, demand information about fund *transactions*. Fund managers, fund intermediaries, and fund clients alike ought to know whether transaction activity has enhanced or detracted from the net returns a fund has realized for its shareholders.

6. **Get the facts about taxes**. In this great bull market, taxes have been the largest single component of Embedded Alpha. *Evaluate fund managers on after-tax returns*, and consider separate funds for taxable and tax-deferred accounts.

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

In short, if actively-managed funds are to meet the challenges posed by Embedded Alpha, they will have to begin to adopt some of the characteristics that have given passively-managed funds their remarkable advantage. If active managers do not adapt to a world of smarter, better-informed, more cost-conscious, and more tax-aware investors, the acceptance of index funds will simply accelerate even more rapidly. *Finally, the client will be—must be!—served.*

The S&P 500 Index

You'll note that I've used the S&P 500 Index as 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 long-term—if imperfect short-term—measure of the entire stock market. Yet it's a peculiar index in some respects. 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*. A similar fable might be 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 might be a poor measure of market 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 (now ExxonMobil) was next at 9.3%, and the top ten holdings accounted for 51.3% of its weight, twice as concentrated as the 23% 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. Over the ensuing 50 years, two companies were dropped from the Index, two others were merged, and the original 51.3% weight falling by 92% to just 4.2% as the 1950 "Old Economy" base dwindled in importance. Despite this remarkable handicap, the S&P Index dominated the active fund managers during the era that followed.

S&P 90: Top Ten Stocks in 1950

Company	Weight	
	1950	2000
1. General Motors	13.6%	0.2%
2. Standard Oil of N.J.	9.3	2.8
3. Union Carbide	5.3	0.1
4. Standard Oil of Calif.	4.4	0.5*
5. Sears	4.2	0.1
6. Texas Company	3.8	0.3*
7. U.S. Steel	3.7	0.1
8. Kennecott Copper	2.8	-0-
9. Eastman Kodak	2.2	0.1
10. Chrysler	2.0	-0-
Total	51.3%	4.2%

*Merged Company

Now advance the calendar to 1964. AT&T has now joined the Index, with a weight of 9.1%. Next largest is General Motors at 7.3%, then Standard Oil of New Jersey at 5.0%, and IBM at 3.7%. The "top ten" then accounted for 38.5% of the index, again far higher than today's top ten weight of 23%. Since then, the weight of these Old Economy leaders has tumbled to barely 10% of the Index currently, but even their fall from grace failed to diminish the sharp advantage of the 500 Index over the average mutual fund during the 36 years that followed.

S&P 500: Top Ten Stocks in 1964

Company	Weight	
	1964	2000
1. AT&T	9.1%	0.6%
2. General Motors	7.3	0.2
3. Exxon	5.0	2.8
4. IBM	3.7	1.5
5. Texaco	3.1	0.3*
6. DuPont	2.9	0.4
7. Sears	2.2	0.1
8. General Electric	2.2	4.1
9. Gulf Oil	1.6	-0-
10. Eastman Kodak	1.4	0.1
Total	38.5%	10.1%

*Merged Company

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%. I suppose that it would have seemed foolish to own such a single-industry-dependent index fund back then. And in fact the index didn't, well, fly very impressively relative to active funds during 1977-1983. Nonetheless, the

splendid long-term record of the S&P 500 during the years that followed, as we now know, brooks no apologies. Like the bumble bee, the index *can* fly. And on long flights, it *soars*.

Today, of course, the Index has an equally heavy weighting in the "New Economy," including an important dependence on technology stocks (34% at its high in March, now 25%—a pretty good wallop!). I admit that even the current 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 may hold, 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.

Index Sector Weightings

	S&P 500			Wilshire 5000
	12/1990	3/2000	11/2000	11/2000
Basic Materials	7%	2%	2%	2%
Capital Goods	10	8	9	8
Communication	9	8	6	6
Cons. Cyclicals	10	8	7	8
Cons. Staples	17	10	12	12
Energy	14	5	6	5
Financials	7	13	15	16
Health Care	11	9	13	13
Technology	9	34	25	25
Transportation	2	1	1	1
Utilities	6	2	4	5

A Moving Target

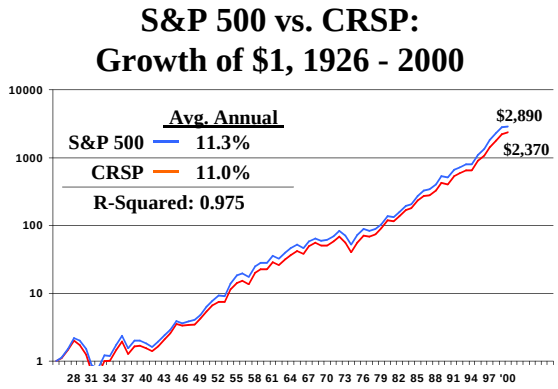
That is not to say the S&P is an easy target for an investor—or even an average index fund manager—to track. Change it does! Indeed in the past 20 years there have been an astonishing 489 changes in the 500 Stock Index. These are not trivial changes; on average during that period, each year has resulted 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 had very small market caps.

In essence, then, today's S&P 500 Index is the result of a process in which old stocks have been 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 that same three percent per year. Had the 500 Index remained unchanged over the past six years for example, Microsoft, Cisco, and Intel would have represented, not the 4.9%, 2.8%, and 2.3% of the Index that they represented as 2000 began, but about 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* paring back winners may have helped to marginally improve the performance of the Index. Active managers may want to take note.

The S&P 500 = The U.S. Stock Market

For all of its idiosyncrasies, the fact is that the S&P 500 has been a virtually perfect representation of the total U.S. stock market. The best long-term measure we have for the stock market is the CRSP index, calculated by the Center for Research in Security Prices at the University of Chicago. A line chart comparing the cumulative returns of the S&P 500 Index and the CRSP Index since 1926 presents two lines that are virtually indistinguishable, with the S&P 500 having a compound annual return of 11.3% and the CRSP Index a return of 11.0%. What is more, looking at modern history—since 1953—

both returns have averaged an identical 12.8%. The correlation coefficient (R^2) between the two has been a remarkable 0.975—about as close as the law allows.



To be sure, an index fund covering the entire stock market has some important potential advantages. It owns *everything*, including mid- and small-cap stocks, and thus manifests more purely the theoretical justification of indexing: *Own the entire market, and by holding costs and taxes to the bare bones minimum beat the lion's share of market participants*. There is even lower turnover, for stocks come into the index when they are very small and there is no reason to sell them when they reach an arbitrary size. They are held *forever* . . . or at least until they are merged into another corporation. So while a choice between an index fund based on the S&P 500 or one based on the Wilshire 5000 Total Stock Market Index (more accessible than the CRSP data, and with an historical R^2 of 0.995) appears indifferent, I continue to favor the total market index as the ideal form for the U.S. stock index fund.

"O, Canada!"

The TSE 300 has its idiosyncrasies too. While it represents a larger proportion of the Canadian equity market (85%) than the S&P 500 does in the U.S. (73%), it is considerably more concentrated. Currently, 44% of the weight of the TSE 300 rests in its largest ten stocks, versus 25% for the S&P 500. This concentration is almost entirely the result of the remarkably-successful Nortel, presently 19% of the TSE weight, with the next largest holding (BCE) representing less than 4%. The other top-ten holdings roughly parallel the 2% to 3% weights of their top-ten peers in the S&P 500.

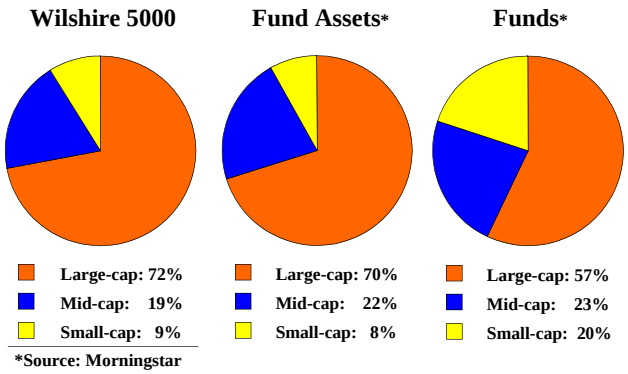
Such a substantial weighting, of course, presents a significant diversification issue, recently manifested by the sharp 40% drop in Nortel's price from late September through mid-November. Its weight in the TSE Index dropped from 28.5% on September 30 to its recent 19% total. To be sure, investors as a group holding the entire Canadian stock market suffered a similar decline, and the central principle of indexing—"beat the market's participants in the aggregate simply by owning the market itself and minimizing costs"—remains intact. Yet, at some point, we ought to consider developing indexes that meet certain pre-established diversification standards (say, no more than 10%-15% of assets in any one stock) irrespective of the weightings of the largest companies. Surely Finland would be an interesting place to begin, with Nokia currently representing 72% of the value of the Helsinki All-Shares Index. But I believe such situations will prove rare and ephemeral, and the present construction of the TSE Index should continue to serve as an effective standard for long-term investing.

Annual Variation in Returns

While the S&P 500 is clearly an excellent long-term proxy for the total U.S. stock market, there will inevitably be individual years when it diverges. In 1991-1993, it *lagged* the Wilshire 5000 Index by nearly three percentage points per year. In 1996-1998, it *led* by three percentage points annually. And so far this year it is ahead by about two points. But what accounts for most of the periodic annual divergences in the percentage of U.S. mutual funds outperformed by the S&P 500 is *not* how the Index differs from the stock market in total. Rather, it is the peculiar characteristics of the mutual fund industry.

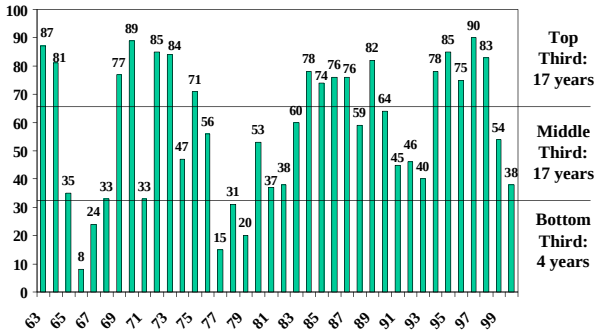
In terms of *assets*, the large-cap stocks like those represented in S&P 500 represent about 72% of the market's capitalization. Similarly, large-cap stocks represent about 70% of the *assets* of the mutual fund industry. But when counting—as we do—the *number* of individual funds, some 57% are large-cap, 23% mid-cap are and 20% are small-cap, a motley mix indeed. So, "percentage of funds outperformed" provides but a crude measuring stick by which to judge the short-term success—or failure—of the 500 Index.

Composition of the Market, Fund Assets and Funds



As a result of these structural differences, it's been a relatively common occurrence for the 500 Index to look *better* than it really *is* in some years (the late 1990s, when it outperformed 85% of active funds on average) and worse than it really is in others (the early 1990s, when it outperformed less than 45% of funds). Indeed, in 1977-1980, the first three full years in the life of Vanguard's pioneering 500 Index Fund, the Index outpaced only 22% of all equity funds. (It wasn't much fun, but we kept the faith!) As this next chart shows, there's a lot of reversion to the mean in the Index's returns relative to the performance of U.S. equity funds. But the key to success is basically the ability of the Index to stay out of the lower one-third of funds—it appeared in that group in only four years out of 38, or about one in ten. *Who wouldn't be happy with any fund that could do that!* It will hardly surprise you to know that the fact that the 500 Index is outpacing but about 38% of all U.S. mutual funds so far in 2000 has not shaken a whit my confidence in the merits of indexing.

Percentage of General Equity Funds Outperformed by the S&P 500 1963 - 2000



"Benchmarking"

Nonetheless, the S&P 500 (or the CRSP, or the Wilshire 5000; it doesn't matter a great deal) *must* remain the ultimate benchmark for all fund portfolios no matter whether the market capitalization sizes—large, medium, small—they represent, and no matter what investment style—growth, value, blended—they emphasize. 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). But it seems to me obvious that *the fairest comparison of return over the long-run is with an all-market index, not a 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 winneth the style derby, but loseth to the whole stock market." So I think we in the investment world 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 clients. Let's let narrow style benchmarking dictate neither our investment decision-making nor our standard for appraising long-term accomplishment. In the long run, for better or worse, investing is all about capturing as much of the market's total return as we can.

Simplicity in an Era of Complexity

Today, changes are swirling all around all of us in the investment community. Astride this great bull market, the Information Revolution has presented us with more facts and figures than we can possibly absorb, along with soaring volumes, volatile markets, heightened public interest in financial matters, and intense media coverage of almost every stock and every mutual fund under the sun. Excessive and growing expenses and an increasingly short-term focus, however, have combined to create an insuperable Embedded Alpha in the mutual fund industry.

These trends have opened the door to index funds—still the best way I know to capture substantially all of the annual returns earned in the financial markets—although index funds still represent barely 10% of U.S. equity fund assets. But whether we subscribe to index dogma or not, we must remind ourselves once again 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, over the longest possible time horizon.

If you agree with these premises, the opportunities for the sound management of individual investment accounts through mutual funds hold great opportunity. But it's up to true investment professionals to place far more emphasis on the stewardship of the assets entrusted to them by their clients and far less emphasis on responding to transitory stock market trends and seemingly-compelling near-term marketing opportunities. There is a line between the *profession* of investing other people's money and the *business* of marketing financial products. That it is an invisible, subtle line, however, doesn't mean it is non-existent. And when we cross that line, we have a lot to answer for.

The best way for the true professional to keep from crossing that line is to pay simple homage to the timeless truth of the financial markets. Whether it is Bachelier speaking, or Bogle, or 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. Index funds need not be the only answer, for there is no reason that managed funds that model their strategies, shape their portfolios, moderate their transaction activity, and improve their pricing cannot take advantage of the simple disciplines that have served index investors so well. Such firms, I believe, will better serve their clients, and in the long run better serve themselves. Even in this era of ever more abundant information and ever growing complexity, the professional firm that decides to emphasize simplicity and stewardship will soon find that opportunity beckons!

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. In 1992 we created the all-in-one Total (U.S.) Stock Market Index Fund. That same year, we also started our Growth Index and Value Index Funds. Still earlier, in 1989, we had 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 in recent years we've added three more index funds—mid-cap, small-cap growth, and a small-cap value fund. That's a lot of market segment funds!

Over their histories, the Vanguard segment funds have done quite respectably—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, not to fill gaps in their portfolio structure, but to move assets around based on past performance, a formula apt to result in failure.

What is more, these segment funds carry far higher annual portfolio turnover—last year, 40% to as high as 80%—many times the turnover of our S&P 500 Index Fund (6%) and our Total Stock Market Fund (3%!). *What a difference a benchmark makes!* While so far trading costs and tax impacts have been nicely constrained, 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 the tracking excellence we've demonstrated will be formidable.

Many of these problems could be solved not by the creation of better *funds*, but by the creation of better market-segment *indexes*—indexes with new definitional concepts offering 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 doubtless should resist!—to overweight or underweight one market segment or another, such funds may well provide the most sensible approach.

While indexing of all types continues to grow, much of the recent growth has come, not through conventional index funds, but through novel index funds known as ETFs (exchange-traded funds). The assets of these funds totaled $53 billion at mid-year, compared with $350 billion in standard index mutual funds. But they are used primarily, not by long-term investors, but by speculators. 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 *promoted* as short-term investments. A full-page advertisement for SPDRs recently proclaimed: "Buy and sell the S&P 500 just as easily as you trade a single stock . . . with real time pricing, you can trade your position throughout the trading day." ETFs so far at least have been developed as products for marketers and not for long-term investors. 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.

Note: The opinions expressed in this speech do not necessarily represent the views of Vanguard's present management.