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Lightning Strikes: *The Creation of Vanguard, the First Index Mutual Fund, and the Revolution It Spawned*

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Little did I imagine what lay in store for me when I opened Volume 1, No. 1, of *The Journal of Portfolio Management (JPM)* back in October of 1974. Only 20 days earlier, I had founded a new mutual fund firm—The Vanguard Group—which, after a slow and troubled start, would rise, phoenix-like, from the ashes of a failed merger that had cost me my job.

Among all of the fine articles published in that inaugural edition, one struck me like a bolt of lightning. It was Paul Samuelson's "Challenge to Judgment." In a mere four pages, this distinguished Nobel Laureate in Economic Sciences—using nothing but his canny common sense to recognize the obvious—demolished the myth that "there could exist a subset of [investment] decision makers...capable of doing better than the [stock market] averages on a repeatable, sustainable basis."

In his article, Samuelson called for the creation of "a portfolio that tracks the S&P 500 Index." That resonated with me. I'd often said that "strategy follows structure," and when I read his words—almost contemporaneous with the formation of Vanguard—that phrase leaped out at me. Even as "love and marriage go together like a horse and carriage," our unique shareholder-owned, truly mutual, fund *structure* would go together perfectly with a *strategy* focused on index funds.

The reality was obvious. Whereas the other firms in the money management business sought to earn huge profits for their own *stockholder/owners*, Vanguard would use its inherent cost advantage to enrich our mutual fund *shareholders*. Our *at-cost* structure would enable us to become the low-cost provider in an industry where differences in intermediation costs, finally, marked the difference between success and failure for investors striving to build wealth over the long term.

Vanguard was the logical choice—if not the only choice—to accept Samuelson's challenge. As all S&P 500 index funds would hold exactly the same portfolio of stocks with the same portfolio weights, the primary factor that would differentiate one from another would be costs. Every time the performance measurement community made its calculations of index fund returns, the impact of costs would be obvious. The low-cost provider was guaranteed to win the contest. A nice business platform!

Or not? The business goal of other fund management companies was to increase their revenues and profits for the owners of the management company, so a fund with no advisory fees and no profit potential for its managers was anathema to them. After all, their tacit promise to investors was "You get what you pay for. We charge higher fees because we can beat the market." For decades, that was the perception fund man-

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agers sought to cultivate. But the reality proved to be quite the opposite.

Lightning Strikes!

As I read Samuelson's essay, a bolt of lightning struck. I quickly realized the soundness of this self-evident proposition—costs meant *everything* to index fund investors, whereas active fund managers were primarily interested in their own profitability, and gave the costs borne by their clients short shrift. So although every fund manager had the opportunity to start the world's first index mutual fund, Vanguard alone had both the *opportunity* and the *motive.*

Better yet, the idea of indexing was not entirely new to me. I'd actually touched on it in my 1951 senior thesis at Princeton University, "[Mutual funds] can make no claim to superiority over the market averages." Even more important, all of my near-quarter-century of investment experience since then had done nothing to belie my conviction that, quoting from that thesis, investors should beware of "the expectation of miracles from investment company management."

The publication of Paul Samuelson's article in the inaugural issue of *The Journal of Portfolio Management,* then, was a precipitating force in the creation of the first index mutual fund. Over the past forty years, the low-cost mutual structure and the indexing strategy have proven themselves and have driven Vanguard's growth. We have become the largest mutual fund firm in the world, now with some $2.6 trillion of assets under management. As you rest in peace, Dr. Samuelson, thank you for your inspiring and prescient 1974 article.

JPM—Off to a Great Start

That first issue of *JPM* was replete with the kinds of outstanding articles that have marked its first four decades. Founding editor Peter Bernstein set the stage with a brilliant (no surprise there!) commentary on the dismal record of portfolio management during the prior five years. The 50% crash in the stock market from its high on January 11, 1973, to its low on November 3, 1974, left most professional fund managers wobbling and a bit punch-drunk, their shareholders disenchanted. Peter's introduction was followed by articles contributed by some of the most respected leaders of the day in our profession: Not only Paul Samuelson, but James Vertin, Dean LeBaron, Arthur Zeikel, Fischer Black, Keith Ambachtsheer, and—reaching back to the 1930s—John Maynard Keynes.

Forty years later, that inaugural issue of *The Journal of Portfolio Management* remains required reading for all of us who are concerned about maintaining high standards of professionalism in investing. So, my dear Peter, now gone to your heavenly reward, thank you again for your thoughtful leadership. And my deepest personal appreciation to you for being the carrier of that priceless article by Paul Samuelson, whose impact on my career has been profound. That strike of lightning in 1974 lit up the skies for me, and helped to open the door for the formation of the first index mutual fund.

Yet the index fund is only part—if an essential part—of the Vanguard saga, a story that is a classic example of simplicity, animal spirits, and rebellion against the status quo. There were many other strikes of lightning in our early history, together resulting in a rebellious series of disruptive innovations that began in January 1974.

The Creation of Vanguard

1974. It all happened so quickly. On January 23, 1974, the board of directors of Wellington Management Company (WMC) met and fired me as the firm's chairman and CEO, ending my 23-year career there with a bang. The very next day—January 24, 1974—the board of directors of the Wellington funds, largely unaffiliated with WMC, met in New York. At the meeting, as chairman of each of the mutual funds, I proposed that we declare our independence from WMC, *mutualize* our funds, elect our own officers and staff, and empower them to operate the funds on an at-cost basis. In an industry where the primacy of the management company had never been challenged, such a step would be without precedent.

So the battle was joined. It was long and hard. But finally, on August 20, 1974, after seven months of heated debate, the fund directors unanimously agreed to form a new subsidiary, wholly owned by the mutual funds. The new firm would administer the funds' affairs, but would be precluded from providing either investment advisory services or marketing and distribution services. I recommended that the new firm be named *Vanguard,* and the board—reluctantly, as I recall—approved it.

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On September 24, 1974, the new firm—The Vanguard Group—with high hopes and an uncertain future, was incorporated. The board elected me as its chairman and chief executive, responsible for our then-20-person staff. We had defied precedent, and declared the independence of our mutual funds to operate for the sole benefit of our fund owners. We were on our way. Against all odds, we celebrated our fortieth anniversary on September 24, 2014.

Shortly thereafter, as I was poring over that inaugural edition of *The Journal of Portfolio Management* (Fall, 1974), I came across Paul Samuelson's impassioned paper. In "Challenge to Judgment," he described his vain search for what he called "brute evidence" that equity mutual funds as a group could systematically outpace the stock market. He urged the creation of a low-cost fund that would closely track the market. Once the chaos of Vanguard's creation was behind us, I would have the opportunity to respond to his plea.

1975. On February 19, 1975, the U.S. Securities and Exchange Commission approved our reorganization, and proxy statements were mailed to the fund's shareholders. There, we asked our fund shareholders to approve the proposal to mutualize the funds, and to approve reductions of some 15% in the advisory fee rates paid to Wellington Management Company. (During the next decade, larger fee reductions, ranging up to 90%, would follow.) On April 22, 1975, the shareholders of the funds overwhelmingly approved the proposals. On May 1, 1975, Vanguard commenced operations.

At our Vanguard board meeting on September 23, 1975, my proposal that Vanguard form what would be the world's first index mutual fund—modeled on the S&P 500 Stock Index—was at the top of the agenda. The board was a tad dubious about my (accurate, if perhaps disingenuous) claim that operating the index fund would not violate our agreement with Wellington Management Company that Vanguard would not engage in investment management. ("It isn't managed," I argued.) Again reluctantly, the board approved the proposal.

On December 31, 1975, the Declaration of Trust for First Index Investment Trust was filed in Delaware, with a name that reflected our determination to flaunt our primacy. In April 1981, when our various mutual funds added *Vanguard* to their names, First Index Investment Trust became Vanguard Index Trust-500 Portfolio.

1976. On or about May 1, 1976, I completed at last the assembling of an investment banking syndicate to underwrite the initial public offering (IPO) of First Index shares. The group, led by giant Dean Witter & Co., included Wall Street's four largest retail brokerage firms. Optimism was in the air, buttressed by a feature article in the June 1976 issue of *Fortune* magazine headlined, "Index Funds—An Idea Whose Time Is Coming."[1] It bestowed high praise on the index concept: "Index funds...now threaten to reshape the entire world of professional money management." A target of $150 million was set for the IPO.

On August 31, 1976, the IPO closed. It was a complete flop. It produced but $11.3 million of investor capital—not even enough to purchase round (100-share) lots of all 500 stocks in the S&P 500. The apologetic underwriters suggested that we cancel the offering and return the investments to their buyers. "No," I recall saying to them, "we now have the world's first index fund, and this is the beginning of something big."

1977. The metamorphosis of the then-tiny Vanguard was not quite over. On February 8, 1977, after a board meeting that lasted beyond midnight, I made a motion that formalized my earlier proposal that we eliminate Wellington's entire supply-driven broker-dealer distribution system and replace it with a demand-driven no-load system operating under Vanguard's aegis. My claim (again accurate, if perhaps disingenuous) was that we were not violating our pledge that precluded Vanguard from engaging in distribution, but were simply *eliminating* distribution. The vote was close, but the proposal was approved. That step completed our transition from a mere fund administrator to a fund manager (through First Index), and then to a distributor of no-load funds.

Every one of our departures from industry norms was without precedent. Each took a strong board leader, with high confidence in my vision. That leadership was supplied by the late Charles D. Root, Jr., chairman of our independent directors. Chuck Root made the difference. Without his support, Vanguard might well never have been born. With his support, in a mere 28 months from our inception we had become the full-fledged mutual fund complex that we remain today. Now the games would begin!

A LONG AND WINDING ROAD

According to fund data provider Morningstar, Vanguard's creation of the world's first index mutual

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fund "...was a seminal event in investing...a steady evolution that continues today." But in the early days, the idea that managers of passive equity funds could outpace the returns earned by active equity managers as a group was derogated and ridiculed. (The index fund was referred to as *Bogle's Folly.*) Wall Street was surfeited with posters showing Uncle Sam canceling index fund stock certificates. The headline read: "*Index Funds Are Un-American. Help Stamp Out Index Funds!*" Our road would be long and winding, and it would not be an easy one.

The Professor, the Student, and the Index Fund

Paul Samuelson's express support of indexing began with his seminal article in *JPM*, but it hardly ended there. I'm not at all sure that Vanguard's board would have approved my index-fund proposal without the backing of that respected, independent, brilliant academic. Indeed, in my proposal to form the new fund, "Challenge to Judgment" was marked as *Exhibit A*. The other main exhibit presented data that I had personally collected from the yearly *Wiesenberger Investment Companies* volumes, which presented annual returns for the 50–60 established mutual funds of that era.

From those data, I simply calculated the annual returns of the average equity fund over each of the previous 30 years, and then the cumulative returns for the full period. I then compared these data with the returns of the S&P 500 Index during the same period. Result:

- Annual returns—Funds 9.7%; Index 11.3%.
- Cumulative returns—Funds +1617%, Index +2540%.
- Final value of a $10,000 initial investment—Funds $171,693, Index $264,042.

I wasn't sure that the $92,000 differential in investment results would be enough to persuade the board. So I changed the assumed initial investment from $10,000 to $1,000,000. Result: Funds $17,169,267, Index, $26,404,161—an advantage of over $9,000,000! (For the record—although in investing the concept barely existed in 1975—the coefficient of determination, or R^2, was 0.96. That meant that 96% of the return of the average fund was explained by the return on the S&P 500 Index, an impressive confirmation of the fairness of the comparison.)

The *Newsweek* Article

Samuelson's strong influence, reflected in my index fund presentation to the board, would soon accelerate. Writing in his *Newsweek* column in August 1976, he expressed delight that there had finally been a response to his earlier challenge to create an index fund "that apes the whole market, requires no load, and keeps commissions, turnover, and management fees to the feasible minimum."

Now such a fund lay in prospect. "Sooner than I dared expect," he wrote, "my implicit prayer has been answered. There is coming to market, I see from a crisp new prospectus, something called the First Index Investment Trust." He conceded that the fund met only five of his six requirements: 1) availability to investors of modest means; 2) proposing to match the broad-based S&P 500 Index; 3) carrying an extremely small annual expense charge; 4) operating with low portfolio turnover; and 5) "best of all, giving the broadest diversification needed to maximize mean return with minimum portfolio variance and volatility."[2]

His sixth requirement—that it be a no-load fund—had not been met but, he graciously conceded, "a professor's prayers are rarely answered in full." As it happened, only six months later, his final prayer would be answered. In February 1977, all of the Vanguard funds made their unprecedented conversion to a no-load distribution system.

A Near Crash on the Long Road

In a curious way, the relationship of this reasonably intelligent but hardly brilliant college student with "the foremost economist of the twentieth century"[3] (as *The New York Times* described Samuelson) had begun long before his 1974 paper. In 1948, at the beginning of my sophomore year at Princeton University, I took my first course in economics. Our textbook was the first edition of Samuelson's *Economics: An Introductory Analysis*. Truth told, I found the book tough going and fared poorly in my first stab at this new (to me) subject, with a low grade that endangered my scholarship and thus my college career.

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But my grades began to improve, and—thanks largely to the high grade that I was awarded for my senior thesis on the mutual fund industry—"The Economic Role of the Investment Company" (a long way from the macroeconomics of Samuelson's book!)—I graduated from Princeton in 1951 with a *magna cum laude* degree in economics. Shortly thereafter, I entered the mutual fund industry, joining Walter Morgan's Wellington Management organization.

A Priceless Endorsement

From that modest beginning in 1948, and then through his 1974 support for that first index mutual fund, my association with Paul Samuelson grew ever closer and warmer. In 1993, I asked him to endorse my first book, *Bogle on Mutual Funds.*[4] He demurred. To my utter astonishment, he then told me that he would prefer to write the foreword. Some excerpts:

> "[Most books on personal finance] may be dangerous to your health. The exceptions are rare. Benjamin Graham's *The Intelligent Investor* is one exception. Now it is high praise when I endorse *Bogle on Mutual Funds* as another... As a disinterested witness in the court of opinion, perhaps my seconding his suggestions will carry some weight. *John Bogle has changed a basic industry in the optimal direction. Of very few can this be said.*"[5]

Paul Samuelson and I met face-to-face only a half-dozen times during our (arguably) 61-year relationship that ended with his death in 2009. At first I was intimidated (of course!), but as time went on I appreciated not only his brilliance but also his warmth, his friendly sense of humor, his patience with a mind far smaller than his own, and his unflinching support. For example, late in June 2005 (dated "mid-summer day") he wrote: "Any small influence on you has been more than offset by what Vanguard has done for my six children and 15 grandchildren. May Darwin bless you!" Our mutual admiration society culminated in my dedication (with his permission) to Paul A. Samuelson in *The Little Book of Common Sense Investing: The Only Way to Guarantee Your Fair Share of Stock Market Returns* (2007). My final words: "Now in his 92nd year, he remains my mentor, my inspiration, my shining light."[6]

Surely Paul Samuelson's highest accolade for the index fund came in his speech at the Boston Security Analysts Society on November 15, 2005:

> "I rank this Bogle invention along with the invention of the wheel, the alphabet, Gutenberg printing, and wine and cheese: a mutual fund that never made Bogle rich but elevated the long-term returns of the mutual-fund owners. Something new under the sun."

That tribute is among the greatest rewards of my long career. Together, the professor and the student joined forces to give the world its first index mutual fund. Economics, one might say, makes strange bedfellows.

WHENCE INDEXING?

Let's begin with two facts that are incontrovertible. 1) In December 1975, Vanguard created the world's first index mutual fund. 2) The Vanguard family of index mutual funds, with assets of $1.7 trillion in mid-2014, represents by far the largest aggregation of index mutual fund assets in the world.

No one could challenge the second claim. But there have been numerous challengers to the first claim. Perhaps the most valid is the near-formation by American Express Asset Management Company of the Index Fund of America in 1974. Designed for institutional investors ($1,000,000 minimum), it aimed to "loosely approximate" the returns on the S&P 500 Index, and carried an expected expense ratio of 0.40%. A prospectus for the fund's IPO was filed with the SEC on February 22, 1974, only to be withdrawn shortly thereafter, the project abandoned. The fund never came into existence.

Other claims to pre-eminence are even less substantive. Milton Friedman is said to have written a letter to the trustees of TIAA-CREF on July 6, 1971, suggesting that the firm eliminate all of its investment analysts and adopt a policy of indexing its stock portfolio to the S&P 500. Once again, no action followed, as TIAA-CREF let the idea languish.

Even earlier, a paper published in the January/February 1960 issue of the *Financial Analysts Journal* made a case for indexing ("The Case for an Unmanaged Investment Company").[7] Under the pen name John B. Armstrong, I responded with a riposte in the May/June

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1960 issue.[8] I pointed out that a Dow-Jones-Average-based index fund simply wouldn't work. In retrospect, the earlier *FAJ* article had compared a deeply flawed *price-weighted* stock index with a pretty good (low-cost, middle-of-the-road) fund industry. When I started Vanguard's index fund in 1975, I compared an excellent *market-capitalization-weighted* index with a now-flawed fund industry, dominated by funds with high volatility and much higher costs. As John Maynard Keynes reportedly said, "When the facts change, I change my mind. What do you do, sir?"

Wells Fargo's Adventures in Quantitative Analyses

The question of "who created the concept of *indexing?*" (as distinct from who created the first *index mutual fund)* presents a more complex tapestry. The main claimant is Wells Fargo Investment Advisers. Its inspiring leader, John ("Mac") McQuown, a mechanical engineer from Georgetown, working with computer programming colleagues from MIT, developed systems for stock valuation before McQuown moved onto Wells Fargo's Management Sciences Division in 1964.

McQuown worked with some of the investment legends of the day, including Fischer Black, Myron Scholes, Michael Jensen, Harry Markowitz, Jack Treynor, William Sharpe, and James Vertin, his boss at Wells Fargo. Later, he was joined by computer expert William Fouse. (Vertin described McQuown's team as "guys in white smocks with computers whirring.")

Stagecoach Fund

One of Wells Fargo's early efforts was the first iteration of its Stagecoach Fund, designed to invest in a passively managed portfolio of low-beta stocks. In 1974, the idea was abandoned. Even earlier, in July 1971, Wells Fargo had begun to manage the $6 million pension plan of Samsonite Corporation, using an indexing strategy. Alas, those brilliant mathematicians chose a flawed stock index as the standard for the Samsonite plan—the New York Stock Exchange Index, with equal dollar amounts invested in each of 1,500 listed stocks. As it turned out, matching the equal-weighted index was a "bean-counting...nightmare."[9] In 1976, Wells Fargo folded the plan's assets into a pension account tracking the S&P 500 Index.

With all of the intellectual ferment in the air during a (sort-of) new era in investment analysis, a few other investment professionals were also working on index approaches. In 1973, Dean LeBaron and Jeremy Grantham of Batterymarch began to offer index-based pension accounts and attracted their first client in December 1974. (*Pension and Investments* presented Batterymarch with the Dubious Achievement Award in 1972, even before it launched its index-based program. At least I wasn't the only one who was derogated for indexing!) It soon abandoned the strategy.

Another one of the of the early calls for indexing came from a 1973 book that I did not read until some years later: *A Random Walk Down Wall Street,* by Princeton University Professor Burton S. Malkiel.[10] Malkiel suggested, "a new investment instrument: a no-load, minimum-management-fee mutual fund that simply buys the hundreds of stocks making up the market averages and does no trading." He urged that the New York Stock Exchange sponsor such a fund and run it on a nonprofit basis, but if it "is unwilling to do it, I hope some other institution will." In 1977, Dr. Malkiel joined the Vanguard funds' board of directors.

In 1974, American National Bank of Chicago created a common trust fund ($100,000 minimum investment) modeled on the S&P 500. In 1984, the bank was acquired by Bank One, which itself was gobbled up by JP Morgan in 2004. Historical data on the trust fund are elusive, perhaps nonexistent—one more early advocate of the concept of indexing, now lost in the dustbin of history.

The Quantitative School and the Pragmatic School

Vanguard's claim to fame as creator of the first index mutual fund sends a few messages: We operated under a different structure than our peers. We loved innovation. We stayed the course. We dealt successfully with the tough regulatory structure applicable to all mutual funds and with the challenges of daily valuations and daily cash flows. Above all, we brought missionary zeal to spreading the gospel of indexing and endlessly explained its simple rationale. Result: assets of the two series of that original $11 million S&P 500 Index Fund of 1976 (including one for institutional investors) reached a record total of $336 billion in mid-2014. Assets of its sister fund, Vanguard Total [U.S.] Stock Market Index

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Fund (with 80% of the portfolio matching the stocks in the S&P 500, and 20% in mid- and small-cap stocks) totaled $366 billion—together, $702 billion in broad-market index funds, by far the largest such pool of assets in the mutual fund industry.

But there is another critical difference. Vanguard's path was pragmatic, simple, and evidence-based, and not based on the quantitative path taken by our peers. The *brute evidence* had made it clear that this simple mathematical equation is all that is required as the intellectual justification for the low-cost, broad-market index fund: Gross return in the stock market, minus the costs of financial intermediation, equals the net return earned by investors as a group.

It follows from this simple syllogism that the returns of low-cost index funds are certain to outpace the aggregate returns of investors using active managers. Since both index investors and active investors in the aggregate receive the same market return before costs, index investors must outperform after costs are deducted.

The likes of Paul Samuelson and yours truly were the apostles of simplicity, following "the relentless rules of humble arithmetic," a phrase used long ago in a different context by U.S. Supreme Court Justice Louis Brandeis. Humble arithmetic is all that the "Cost Matters Hypothesis" (CMH) demands. The pragmatic indexers relied on the essential need for rock-bottom investment costs. Those brilliant quantitative indexers, on the other hand, relied on the efficient markets hypothesis (EMH), using their energies and their enormous intellectual and financial resources to study past stock returns, the volatility of individual stocks, regression analysis, and more, all part of so-called modern portfolio theory (MPT). They developed strategies based on complex index concepts, many of which ultimately failed. Examples of success were, unsurprisingly, rare and inconsistent.

The efforts of *the quants* doubtless enriched the understanding of the stock market's innate complexity by the academic community and by the growing number of money managers who relied on sophisticated computer programs. But although the concepts of most quants were sound enough, their innovative products rarely lived up to their advance billing, and they are unlikely to do so in the future. It's reasonable to assume that today's generation of money managers, will, on average, produce average returns (minus, of course, the costs of playing the game). Yet it is the Quantitative School of Indexing, with all of its near-infinite complexities and varieties, that seems to have captured the attention of the investment community. But it is largely the Pragmatic School and its brute-evidence-based simplicity that has moved indexing forward to its increasingly dominant position in investors' portfolios.

Amid all the controversy about who deserves credit for the origination of indexing, I'll let David Blitzer, chairman of the Standard & Poor's Index Committee, have the last word. "As the theoretical idea of indexing in the total stock market began to attract attention in the 1960s, it was Jack Bogle who made whole-market indexing a reality for investors..."[11]

GREAT OAKS FROM LITTLE ACORNS GROW

In the mutual fund industry, indexing was slow to catch on. It wasn't until 1984, almost a full decade after Vanguard's ground-breaking creation of the first index mutual fund, that the second index fund, Wells Fargo's Stagecoach Corporate Stock Fund, was created. A third index fund was launched a year later in 1986, only to be liquidated in 1993. Growth was, generously put, glacial. By 1987, assets of traditional index funds (TIFs) following the original Vanguard model—broad-market diversification, minimal costs, and focused on long-term fund shareholders—totaled but $1.2 billion, rising to $30.8 billion in 1994—substantial, but still only 2% of the total assets of equity mutual funds.

During the bull market atmosphere of the 1990s, index funds proved to be performance leaders. During the decade, assets of TIFs grew at an astounding rate of 60% per year, reaching a remarkable total of $356 billion as 2000 began. Other major fund managers, fearful of being left behind, were dragged, kicking and screaming, into the fray. Fidelity, whose chairman Edward D. Johnson, III, publicly disparaged the idea in 1975, leaped in with its own index funds. Fidelity is now the second-largest provider of TIFs, with $160 billion in indexed assets. Other providers include Charles Schwab, T. Rowe Price, Merrill Lynch, and TIAA-CREF. This industry acceptance helped drive the continued robust growth of TIFs, and by mid-June 2014, their assets had grown to $1.7 trillion.

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Index Funds as Vehicles for Traders

Late in the twentieth century, a new kind of index fund emerged. The exchange-traded fund (ETF) was simply an index fund that investors could "trade all day long, in real time," as an early ETF advertisement boasted. The first ETF was the SPDR (Standard & Poor's Depository Receipts), offered by State Street Global Investors in 1993. It was followed by Barclays's iShares series of ETFs in 1996. (iShares was later acquired by BlackRock.) In 2001, Vanguard entered this new index fund game, adding ETFs to its giant TIF line-up.

With assets of TIFs and ETFs approximately equal at $1.7 trillion in mid-2014, it is clear that the mantra of the original index fund—"buy the U.S. stock market and hold it forever"—is being challenged by a new mantra—"buy segments of the world stock market and trade them with carefree abandon." The ETF is surely the greatest *marketing* innovation in finance so far in the twenty-first century. It remains to be seen whether it is the greatest *investment* innovation.

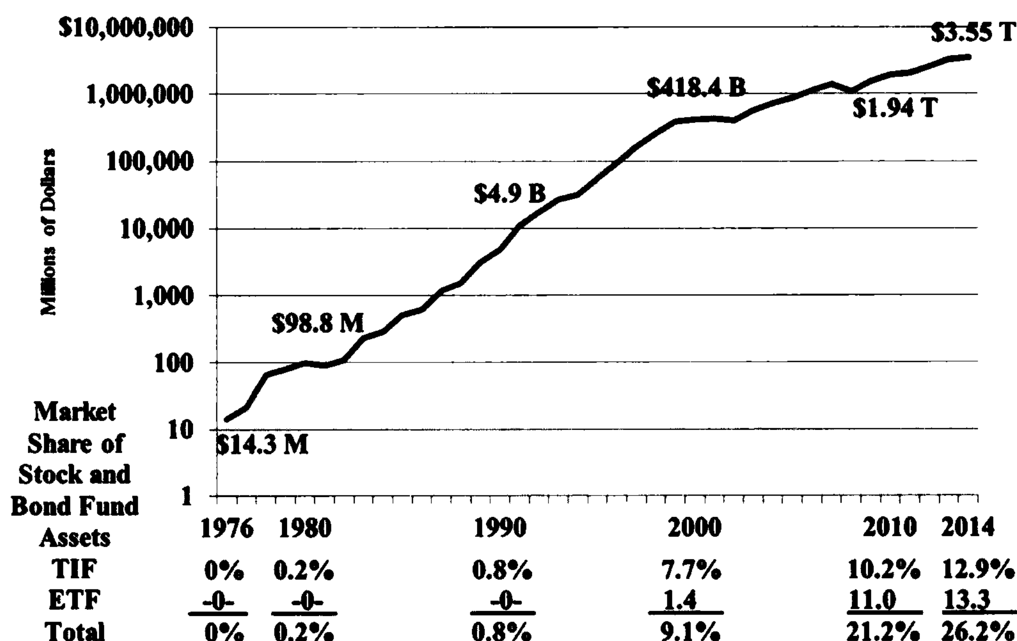
I have my doubts, for I see no value-added whatsoever that can be created for investors who engage in high rates of trading in anything, let alone index funds. Unsurprisingly, the data tell us that short-term speculation in ETFs continues to be a loser's game for investors—but not for fund entrepreneurs, fund managers, and fund marketers.

The remarkable growth of ETFs has driven index fund momentum upward. Combined assets of TIFs and ETFs grew from $390 billion when 2000 began to $3.5 trillion in mid-2014. The index fund share of assets of stock and bond mutual funds rose from less than 1% in 1990 to 9% in 2000, and now stands at 26%—a surge in market share that is unparalleled in the 90-year history of the mutual fund industry (see Exhibit 1). Equity index funds alone account for an even higher share of stock fund asset—31%.

For better or for worse, the acceleration of index fund growth continues. During 2006-May 2014, investors have *added* $700 billion to their holdings of passively managed U.S. equity index funds and *withdrawn* $500 billion from their holdings in actively managed U.S. equity funds, a $1.2 trillion swing in investor preferences. That trend shows little sign of abating, and the acceptance of index funds by investors seems destined to increase.[12]

EXHIBIT 1

Index Funds: Assets and Market Share of Index Funds



Market Share of Stock and Bond Fund Assets	1976	1980	1990	2000	2010	2014
TIF	0%	0.2%	0.8%	7.7%	10.2%	12.9%
ETF	-0-	-0-	-0-	1.4	11.0	13.3
Total	0%	0.2%	0.8%	9.1%	21.2%	26.2%

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Vanguard and Indexing

Vanguard's index-driven strategy was reinforced by the firm's low-cost mutual structure and its focus on rock-bottom costs. That symbiotic relationship would be the prime force in carrying total assets of the Vanguard mutual funds to an all-time high of $2.6 trillion in mid-2014. The $1.7 trillion in index funds (two-thirds of our asset base) now includes 75 index funds and 17 funds-of-funds investing in those index funds—including broad-market U.S. equity funds; objective-based equity funds (large-, mid-, and small-cap funds focused on growth, value, or a blend of the two); international stock funds; defined-maturity bond funds; and even index funds focused on narrower segments of the U.S. stock market (health care, technology, energy, and so forth).

Indexing has been the chief cornerstone of Vanguard's remarkable rise to industry leadership. The firm's assets under management have grown from $1.4 billion at inception in 1974, to $10 billion in 1984, to $130 billion in 1994, to $818 trillion in 2004, and to $2.6 trillion in mid-2014, a compound annual growth rate of 20% over four decades (see Exhibit 2).

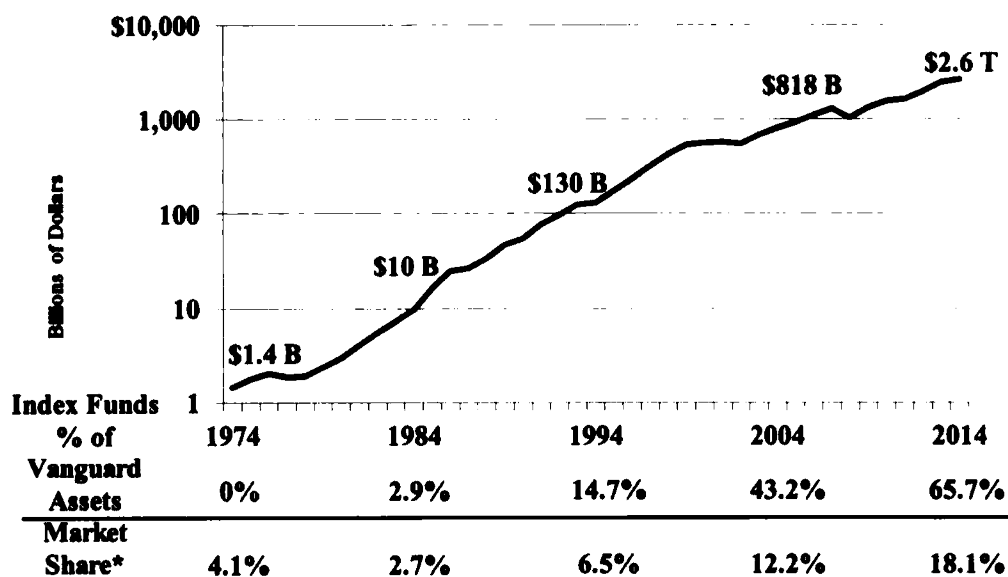
Most of this growth came at the expense of our mutual fund peers. After the firms' early growing pains, Vanguard's market share of total stock and bond fund assets of 2.7% in 1984 rose almost without interruption, soaring to 18.1% in mid-2014. No firm in our field has ever before held such a dominant position. But I'm the kind of leader who regularly reminds my colleagues, "uneasy lies the head that wears the crown."

Indexing and Beyond

The importance of our pioneering index fund concept goes far beyond the index funds themselves. From the outset, I was conscious of the threat—thanks to what I am persuaded is the eternal nature of reversion to the mean—that *hot* performance by our fund managers would almost inevitably be followed by *cold* performance. So I emphasized that one of our overriding goals was to minimize both the hot and the cold (as it were) by striving to achieve *relative predictability* in the returns that Vanguard funds generated for our investors—not only in our passive index funds, but in our actively managed funds as well.

Our corporate and municipal bond funds, with broad diversification, low portfolio turnover, and (of course!) low expense ratios, were designed to match the returns in their various market segments. We pioneered

EXHIBIT 2
Vanguard: Assets Under Management and Market Share



**Vanguard's market share of stock and bond mutual fund assets.*

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the *defined-maturity* bond strategy: a long-term portfolio, a short-term portfolio, and, yes, an intermediate-term portfolio. (No guessing at changes in interest rates allowed!) Investors could decide which portfolio best fit their yield and volatility preferences. World-changing investment innovations don't need to be complicated.

Further, the Vanguard funds that are not purely index-based are managed largely by external advisers who operate under fairly tight strategic reins. Indeed, many of our managed equity funds are multi-manager funds, some relying on as many as eight separate money managers. The whole idea is to avoid wide variations from the average results achieved by our mutual fund peers having similar objectives, and therefore to minimize the counterproductive swings in cash flows that characterize mutual fund investors—cash flows pouring in *after* returns are outstanding, flows pouring out *after* returns turn sour.

In this modern age, the *concept* of relative predictability has been succeeded by the *mathematics* of relative predictability, measured by R^2 (the coefficient of determination, mentioned earlier), which measures the extent to which a mutual fund's returns are explained by the returns of an appropriate market average. Looked at from that perspective, our index funds have normally carried R^2s of 1.00, just as one would expect. Under Vanguard's tight rein, nearly all of our actively managed equity funds—many of which use multiple managers—maintain R^2s ranging from 0.95 to 0.99. It is not unfair to describe them as "virtual index funds"; and our municipal bond funds are designed to reflect the returns in their segments of the municipal bond market. High correlations are hardly exclusive to our multi-manager active funds. Under Vanguard's aegis since 1978, Wellington Fund, with a single manager (Wellington Management Company), carries an R^2 of 0.98 relative to its target balanced fund index.

With 70% of Vanguard's stock-and-bond-fund assets consisting of index funds, 21% virtual index funds, and 4% municipal bond funds, the returns earned on some 95% of the firm's current asset base are almost entirely market-determined. (Even the equity funds constituting the remaining 5% of assets generally carry R^2s of 0.91 or higher.) Relative predictability writ large!

Here again, it's all about the link between structure and strategy. If a fund is average among its peers *before* costs, it can win simply by operating with low (or no) advisory fees, minimal operating expense ratios, rock-bottom turnover costs (minimal trading activity), and low distribution costs (that is, no sales loads, reasonable fees charged by registered investment advisors).

In rough terms, investors in index funds and very low-cost managed funds can earn as much as an extra 1½ percentage points per year versus conventional peers. So if a goal of average return before costs is achieved by a given Vanguard fund, its cumulative performance advantage over peer funds, without assuming extra volatility risk, could, compounded over a decade, lead to a 15% enhancement in investor capital; over an investment lifetime (say, 50 years), the enhancement could balloon to as much as 100%.[13]

The SEC Speaks...

Building Vanguard has been no easy task. After our creation in 1974, investors withdrew, on balance, almost $500 million from our initial asset base of $1.4 billion of assets under management. Holding expenses down (and morale up!) during those tough years was our prime responsibility, and determination and optimism, along with a touch of patience, had to be unremitting.

As we neared the completion of Vanguard's structure—a full-fledged combination of administration, investment management, and distribution—one major obstacle remained. In 1978, the Securities and Exchange Commission (SEC) rejected our plan to take over share distribution. Fortunately, after making a few small, even inconsequential, modifications to our distribution plan, we were able to win SEC approval of the plan in 1981. After four long years with the sword of Damocles suspended over "the Vanguard experiment" in mutual fund governance, our long battle for independence was finally won.

The very language that the commission used in its approval on February 25, 1981, justified all of the challenges, pains, setbacks, and adversities that followed our 1974 founding. All of our trials and tribulations were washed away by the powerful—and, as it turned out, prescient—words in the commission's approval:

> "The Vanguard plan is consistent with the provisions, policies, and purposes of the [Investment Company Act of 1940]. It actually furthers

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> the Act's objectives by ensuring that the Funds' directors...with more specific information at their disposal concerning the cost and performance of each service rendered to the Funds are better able to evaluate the quality of those services.
>
> ... [T]he plan clearly enhances the Funds' independence... The plan also benefits each fund within a reasonable range of fairness. Specifically, the Vanguard plan promotes a healthy and viable mutual fund complex within which each fund can better prosper; enables the Funds to realize substantial savings from advisory fee reductions; promotes savings from economies of scale; and provides the Funds with direct and conflict-free control over distribution functions. Accordingly, we deem it appropriate to grant the application before us."[14]

The decision was unanimous.

...So Does the Investor

The achievement of independence for the Vanguard mutual funds and their shareholders, minimizing most of the conflicts of interest that other fund managers face, was an important accomplishment that would ultimately change the mutual fund industry. But the whole purpose of our structure—serving our shareholders as their trustee and fiduciary—is the ultimate goal. So the best way to conclude this saga of Vanguard and indexing is with this striking example of how a single shareholder has fared, one who, because he believed in our low-cost index fund strategy, purchased 1,000 shares of First Index Investment Trust in its 1976 IPO.

I happen to know that investor. He has never added to his original stake and has reinvested all of his dividends since the offering. His initial investment was $15,000. Its value in mid-2014 is $784,644. That may sound like a miracle, and perhaps it is. For as I have so often said, investment success is the result of "the miracle of long-term compounding of returns, while avoiding the tyranny of long-term compounding of costs."

Yes, over those 38 years the stock market obliged us with outstanding returns, 11.1% per year for the S&P 500—good fortune writ large. The rest of that remarkable success simply represents the relentless rules of humble arithmetic—a strategy that allows investors to earn their fair share of whatever returns—positive or negative—that the U.S. stock market delivers. (To be fair, if the stock market's annual return had been a more modest 7% during that period, the final value would have come to $193,000.)

Yes, it seems simple. And it *is* simple. Elementary mathematics; a few innovative ideas, well-implemented; common sense; determination; evangelism; and the inspiration of Paul Samuelson's "Challenge to Judgment," fortuitously published in that inaugural issue of *The Journal of Portfolio Management* 40 years ago, only moments after The Vanguard Group of Investment Companies was founded in September 1974, at the very bottom of a painful bear market.

GIVING BACK TO *JPM*

With the benefit of the lightning strike that hit me when I read "Challenge to Judgment" back in 1974, I have strived to honor my obligation to *The Journal of Portfolio Management* by periodically offering papers for publication. Since 1991, twelve of my papers have been published (not including this current essay):

1. "Investing in the 1990s, Remembrance of Things Past, and Things Yet to Come," Spring 1991
2. "Investing in the 1990s: Occam's Razor Revisited," Fall 1991
3. "Selecting Equity Mutual Funds," Winter 1992
4. "The 1990s at the Halfway Mark: Occam's Razor Is Tested," Summer 1994
5. "The Implications of Style Analysis for Mutual Fund Performance Evaluation," Summer 1999
6. "An Index Fund Fundamentalist Goes Back to the Drawing Board," Spring 2002
7. "A Question So Important that It Should Be Hard to Think about Anything Else," Winter 2008
8. "A Tribute to Peter Bernstein," Summer 2009
9. "The Fiduciary Principle: *No Man Can Serve Two Masters*," Fall 2009
10. "The Clash of the Cultures," Spring 2011
11. "'Big Money in Boston': *The Commercialization of the Mutual Fund Industry*," Fall 2013
12. "No Speed Limits: *High-Frequency Trading and Flash Boys*," Summer 2014.

Given the length of the first section of this article and the constraints on the length of this essay, I feel

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compelled to limit my discussion of these articles in this second section. But, curious as it may seem, all of them—sometimes tacitly, sometimes expressly—can be said to have been inspired by my conviction that an all-market, low-cost, buy-and-hold index strategy represents the most effective means for investors—not only individual investors, often with modest amounts to invest, but also giant institutions such as pension funds and thrift plans, many with assets measured in the billions—to build wealth over the long term.

Reasonable Expectations for Market Returns

Three of my first four papers focused on establishing reasonable expectations for future returns on stocks and bonds over the decades. My central thesis was, first, that "the performance of individual securities is unpredictable, period. Second, the performance of [diversified] portfolios is unpredictable on any short-term basis...and [third] when we look at [diversified] *portfolios* of securities on a *longer-term* basis, the unpredictable becomes far more predictable."

In the 1991 paper ("Investing in the 1990s"), I presented a matrix showing dividend yields and earnings growth (I would define that combination as "investment return"), and various price/earnings multiples (changes in which account for what I defined as "speculative return"). Together, investment return and speculative return account for the actual total return delivered by the stock market (using data for the Standard and Poor's 500 Stock Index). Conclusion: the most likely scenario for stocks during the 1990s was that "stocks will have their work cut out for themselves to have returns of 8% to 12% during the 1990s, perhaps averaging 10% annually."

Although that first paper was focused on establishing reasonable expectations for future returns on stocks, I also discussed the optimal means of capturing the stock market's returns, whatever they might prove to be. Here, I warned that "the evidence is consistent and overpowering that 'beating' the stock market is an extremely difficult challenge for any equity portfolio manager." I showed that the annual returns earned by the average mutual fund during the two decades ending December 31, 1989, averaged 9.4%, compared to 11.5% for the S&P 500, noting (of course!) that such a difference closely approximated the annual costs incurred by the funds.

In that original paper, I had simply analyzed the returns from stocks during six consecutive decades—the 1930s through the 1980s. Critics (correctly) took offense at that simplicity, so I quickly wrote "Occam's Razor Revisited," published in the *JPM* later in 1991. Here, I examined data for each of the 54 overlapping ten-year periods from 1928–1937 through 1981–1990, with expectations for each subsequent decade based on the initial dividend yield, historic ten-year earnings growth, and mean-reverting P/E multiples. The R^2 relating projected and actual stock returns was an impressive 0.54. Even more impressively, the R^2 during the post-World-War II decades 1949–1990 leaped to 0.79.

In 1995, I evaluated my earlier projection for the full decade ("The 1990s at the Halfway Mark") and (sort of) patted myself on the back. For the actual return on stocks during 1990–1995 proved to be 8.4%, remarkably close to my 10% central projection for the decade. I also reiterated my warning about the inability of fund managers—because of their heavy costs—to match the returns of the stock market.

Five years later, when the decade ended, the annual return on the S&P 500 during the 1990s proved to be, not 10%, but 18.2%, embarrassingly wide of the mark. Why? How did that happen? Because I had projected a stable P/E multiple of about 15 times earnings, but the 500 closed 1999 at 30 times. As I had warned in the conclusion of the 1995 paper, "...risk premiums are subject to wide and largely unpredictable gyrations."

I prepared a *mea culpa* for publication in the Summer 2000 edition of *JPM*, but somehow my paper fell by the wayside and was never published. But in an address to the Investment Analysts Society of Chicago on June 5, 2003 ("The Policy Portfolio in an Era of Subdued Returns"), I dealt with my failure head-on. That timing proved fortuitous, for by then the technology/information age/New Economy bubble in the stock market had burst, and the market returned to reality. The P/E, which began the decade at 15, doubled to 30 during the 1990s, then fell back to 28 times by mid-2003, reducing the speculative return from 7.5% to 5.2% for the full 13-year period. Add to that the initial dividend yield of 1.2% and earnings growth of about 3.7%, and the total return on stocks came to 10.2% (see Exhibit 3). So my 10% central projection of 1990, if three years late, was remarkably close to the mark. If there is a better example of projecting *what* will happen in the market, but not knowing precisely *when*, someone will have to show it to me.

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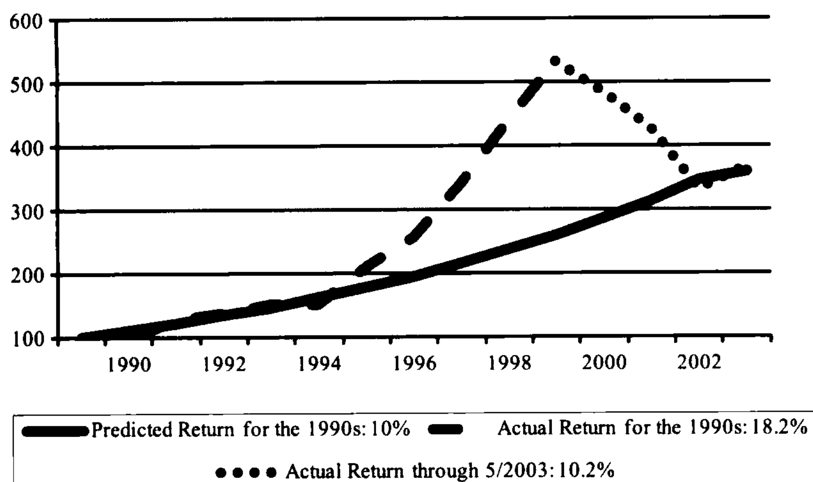
EXHIBIT 3
Predicting Stock Returns in the 1990s



How to explain that shocking lag between rational expectations and subsequent reality during the 1990s? Happily, my first article had acknowledged that the return could be "just like the 1980s"—17.5%—but only if we assumed aggressive earnings growth and "unusually optimistic sentiment," although such a "substantial overvaluation [however, would likely be] corrected by a market decline." Still, I was appropriately needled for my "system." Nonetheless, the idea that speculative returns are mean-reverting should never be ignored.

Ever willing to take a stand, I suggested in that 2003 lecture in Chicago that during the following decade (2003–2013) reasonable expectations for returns on stocks might center on 7½% annually. The actual annual return on stocks was 7.7% during the decade that ended on June 30, 2013. I continue to believe that my analysis of the sources of stock returns is a highly useful, if inevitably imperfect, tool.

Although recognition of the utility of this simple formula by investment professionals and academics has hardly been overwhelming, its methodology has gained a few impressive supporters. In *Corporate Financial Review*, May/June 2007, Professor Javier Estrada strongly endorsed the approach in his paper, "Investing in the Twenty First Century: With Occam's Razor and Bogle's Wit."[15] Writing in Barclays's *Investment Insights* in July 2002, Dr. Kenneth Kroner and Dr. Richard Grinold used a similar methodology.[16] Drs. Benson, Bortner, and Kong also used what they dubbed "the Bogle model" in the Fall 2011 issue of *JPM*.[17]

In the spring of 2014, Morgan Stanley's respected veteran economist and certified quant Martin Leibowitz cited these three *JPM* papers, as well as my June 2003 speech to the Financial Analysts of Chicago, in three of his regular portfolio strategy papers, "P/E-Based Horizon Returns,"[18] "P/E Tents and Horizon Returns,"[19] and "Style-Base P/E's and Horizon Returns."[20]

Actively Managed Mutual Funds and Stock Market Indexes

Three of my early papers—in 1992, 1999, and 2002—were directly focused on the growing evidence of the superiority of passive indexing to active equity managers. The first of these three papers, "Selecting Equity Mutual Funds" (Winter 1992), pointed out the profound flaw in using the past performance of funds to select future winners. There, I ranked the top 20 performers during the 1970s, and compared them with the top 20 during the 1980s. I found that only one fund repeated its ranking among the top 20 funds. During the first decade, the top 20 performers (obviously) earned an average rank of 10. But during the subsequent decade, their average rank fell to 137 (out of 309 funds), only slightly above average.

I concluded the paper by making these three points:

1. "Picking *the* winning fund is virtually impossible, because reliance on past performance is of no apparent help."
2. "Picking *a* winning fund is made easy by selecting a passive all-market index fund, or perhaps by successfully engaging in thorough research and careful analysis."
3. "Intelligent investors simply cannot disregard the heavy burden of costs endemic to most actively managed funds, and clearly should consider index funds for at least a core portion of their equity holdings."

My paper on "The Implications of Style Analysis...." (Summer 1999) was a delight to write. Its subtitle suggests why: "Starring TIC-TAC-TOE. Also featuring: Pascal, God, Chess, and 'War Games.'" Here, I com-

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mented on the new Morningstar rating system in which diversified U.S. equity fund returns were evaluated in a matrix of nine separate boxes—across the horizontal axis, value, blend, and growth fund strategies; across the vertical axis, large-cap, mid-cap, and small-cap portfolios. The resultant matrix resembled a game of tic-tac-toe (or in today's lingo, a hashtag).

This fine-tuned model of mutual fund investment styles was a positive (but still over-simplified) step in evaluating mutual fund performance, far better than comparing a fund's returns with a total market index or an all-equity fund average. The standard evaluation process became more rational and more, if you will, testable. In each of the nine boxes, my long-time thesis held: low-cost funds consistently outpaced high-cost funds, and the stock indexes in each category consistently assumed lower risks and delivered higher returns. I concluded that, just like a game of tic-tac-toe, competition between experts managing mutual funds must end in a draw, but only before costs are deducted. The positive implications for low-cost index funds in this article (and in my two earlier articles in this series) are too obvious to be reiterated here.

The final paper in this group, "An Index Fund Fundamentalist Goes Back to the Drawing Board" (Spring 2002), included a brief review of my five earlier *JPM* papers, with considerably more depth and length. Here, I again took on the critics of index funds, and emphasized that published mutual fund returns are consistently overstated. Why? First, the returns are nearly always survivor-biased, considering only the (inevitably better-performing) funds that survived over an extended period. Second, "some fund returns are inflated" by the use of "hot" IPOs during the embryonic stage. Third, because of their high portfolio turnover, actively-managed funds incur far larger tax liabilities than index funds. And, finally, fund sales charges ("loads") are ignored in most fund comparisons.

I concluded this essay with what had become an article of faith for me: "Efficient markets or inefficient, active mangers—good and bad combined—lose. Such is the nature of financial markets." Reread more than a decade later, this visionary paper seems vaguely "old hat." For in that relatively short period, its subjects of active versus passive, the powerful role of costs, and the need to evaluate returns over decades or even longer periods (never single years), are now taken for granted and quantified to the nth degree, part of the conventional wisdom of our day.

It's been a delight to see Morningstar place so much emphasis on costs and for the *New York Times* to applaud their position. Summarizing his 2014 study on the importance of fees in mutual fund performance, Morningstar's Russel Kinnel wrote, "Fees matter in bull markets and bear markets. In growth and value markets, fees still matter.... [E]xpenses are just so dependable that it makes sense to make them an initial screen in your process. To quote from the book of Bogle: You get what you don't pay for."[21] Reviewing the Morningstar findings in his June 2014 article, Jeff Sommer of the *New York Times* agreed: "[A]ll things equal, you will be a lot better off if hefty fees aren't eating up your returns. When fees are low, the chances are much greater that an overall investment portfolio will outperform its peers."[22]

From Focus on the Data to Focus on the Profession

As we moved into the 21st century, my focus turned from reasonable expectations for stock market returns and the analysis of mutual fund data (at one point, I was known as "Beta Bogle, the data devil") to a focus on the role of the investment profession in our society. That focus has dominated my writing sever since. The titles of my four post-2002 *JPM* papers reflect this shift and are about improving our profession.[23] Although my evangelism about low costs and indexing have hardly been abandoned in these papers, they are near-jeremiads in their demand for reform. Interestingly, two of these four papers ("A Questions So Important ..." and "The Fiduciary Principle") received the Bernstein Fabozzi/Jacobs Levy Award for "outstanding articles" of 2008 and 2009.

In these articles, I think you'll find my passion for bringing the erroneous perceptions of investors into line with the reality of the "brute evidence" that Paul Samuelson demanded in these pages in 1974, evidence that has piled up *en masse* during the four decades that followed. Using Theodore Roosevelt's formulation, one could easily call these later years the *bully pulpit* phase of my long career. Freed from both the rights and responsibilities of managing Vanguard, I was able to speak out with more objectivity than ever, and did so with frequency and with my usual fact-founded conviction.

My ideas for reform have been well received by the academic community, endowment and pension fund managers, and the press. Never more so than when, in

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2008, the *New York Times* Pulitzer-prize-winning columnist Gretchen Morgenson described me as a "financial philosopher," a rare source of "wisdom" and "moral authority," one of the "few voices of reason and integrity left in this upside-down world."[24]

Some industry participants have described me as a *statesman*. I'm not so sure. But my approach continues to build public awareness of financial literacy and the need for financial reform. Readers will also observe a powerful strain of idealism in my search to build a better financial system that serves long-term investors as its highest priority.

"A Question So Important ..." (Winter 2008), was inspired by a quotation from Nobel laureate Dr. Robert Lucas. Here, I railed against, not only the excessive costs of mutual funds, but the grossly excessive costs of our U.S. financial system. My final paragraph sums it up:

> "The efficient functioning of our nation's system of financial intermediation is just such a question. It's high time not only to think about it but also to study it in depth, to calculate its costs and its benefits, and ultimately to demand that it function far more effectively than it does today, in the national public interest and in the interest of investors."

The main message in "The Fiduciary Principle" (Fall 2009) can be summed up by its subtitle: "No Man Can Serve Two Masters," Here, I note that we have ignored the 1934 warning of U.S. Supreme Court Justice (later Chief Justice) Harlan Fiske Stone about "the [incalculable] harm done [during the 1920s and early 1930s] to a social order founded upon business and dependent upon its integrity." The "crisis of ethic proportions" that we faced during the run-up to the great economic crash and accompanying stock market crash of the 2007–2009 era simply ignored that warning. "Deja vu all over again," as it is said. I concluded that the then-75th anniversary of Justice Stone's landmark essay should remind all of us engaged in the profession of investment management how far we have departed from "those standards of scrupulous fidelity" and that we must "build a better financial world."

It's been difficult to get the attention of the investment and academic communities to focus on this vital issue, so I took great heart when John Rogers, CFA, former president of CFA Institute, called for a new era of "fiduciary capitalism" in a recent editorial. Here's how he describes it: "[F]*iduciary capitalism* is gathering strength and needs to become the future of finance. An era of fiduciary capitalism would be one in which *long-term-oriented institutional investors* shape behavior in the financial markets and the broader economy. In fiduciary capitalism, the dominant players in capital formation are institutional asset owners; these investors are legally bound to a duty of care and loyalty and must place the needs of their beneficiaries above all other considerations."[25]

"The Clash of the Cultures" (Spring 2011) also served as the title of my 2012 book, with the added subtitle, "Investment vs. Speculation." The paper expressed my concern about, "today's ascendance of [short-term] speculation over [long-term] investment in our financial markets...[and] the ascendance of a culture of science—alchemy, instant measurement and quantification—over a culture of the humanities—of steady reason and rationality."

Our financial system, I emphasized, *subtracts* value from the wealth created for investors by our nation's public corporations. The more casino-like the character of the system, the worse. This is not a parochial issue, as I emphasize in my closing quotation from Lord Keynes: "When enterprise becomes a mere bubble in a whirlpool of speculation, and [when] the stock market takes on the attitude of a casino, the job of capitalism is likely to be ill-done." None of us can afford to let that happen.

My fourth paper in this phase of idealistic reform was "'Big Money in Boston': The Commercialization of the Mutual Fund Industry" (Fall 2013), which appeared in a special section of *JPM* entitled, "The Profession." Here, I went all the way back to my roots in this industry, with the main title a repeat of the title of an article that I came across quite by accident when reading the December 1949 issue of *Fortune* magazine. When I read that article, I was a junior majoring in economics at Princeton University. I had never heard of a mutual fund (nor even a stock or a bond). I was looking for a topic for my senior thesis that would cover new ground. So when the fund industry was described as "tiny...but contentious," I knew that I had found my topic.

My thesis was titled "The Economic Role of the Investment Company." It impressed Walter L. Morgan, industry pioneer and founder of the Wellington Fund. He offered me a job and I took it. He became my great mentor. The rest, I suppose, is history. The thesis led

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to my now 63-year career in the fund industry, first at Wellington, and then at Vanguard, whose 1974 founding I described earlier in this article. Yes, just like *JPM*, we're now celebrating our fortieth anniversary.

In that 2013 *JPM* article, I describe the fund industry's sad metamorphosis from profession to business as its central tenet, but even more, its focus on the wealth of its own managers rather than the wealth of its mutual fund clients. I closed with this quotation about the perils of this focus, which directly contravenes the wisdom of the principle that Adam Smith set out in *The Wealth of Nations*:

> "The interest of the producer ought to be attended to, only so far as it may be necessary for promoting that of the consumer...the interest of the consumer [must be] the ultimate end and object of all industry and commerce."

In our nation's financial system, our fiduciary duty to our consumer/clients, to say nothing of our long-term self-interest, demands that the focus on serving investors will become—must become—triumphant.

ENDNOTES

An appreciation to the *JPM* editors with whom I've worked: Peter Bernstein was a legend (in the world of financial economics), a workhorse, and a benefactor to all of us in the investment profession who have learned from his wisdom. Frank Fabozzi is also a legend (in the fixed-income world), a workhorse, and a benefactor to all of us in the investment profession. Both of these men have been generous in their appraisal of the ideas and writings of this far less intellectual soul, regularly willing to publish the papers that I have submitted, and gracious in their comments. I consider both of them as friends.

My debt to these mentors is incalculable. I can offer only my profound gratitude.

[1]Ehrbar, A.F. "Index Funds—An Idea Whose Time Is Coming." *Fortune*, June 1976.

[2]Samuelson, P. "Index-Fund Investing." *Newsweek*, August 16, 1976.

[3]Weinstein, M. "Paul Samuelson, Economist, Dies at 94." *New York Times*, December 13, 2009.

[4]Bogle, J. *Bogle on Mutual Funds*. Chicago, IL: Irwin, 1994.

[5]Italics added.

[6]*The Little Book*...has been the No. 1 mutual fund book purchased on Amazon for the vast majority of the time since its publication in 2007, with only brief, periodic drops to No. 2. Dr. Samuelson would have been delighted.

[7]Renshaw, E., and P. Feldstein. "The Case for an Unmanaged Investment Company." *Financial Analysts Journal*, Vol. 16, No. 1 (January/February 1960), pp. 43-46.

[8]Armstrong, J.B. "The Case for Mutual Fund Management." *Financial Analysts Journal*, Vol. 16, No. 3 (May/June 1960), pp. 33-38.

[9]The full story of Wells Fargo and its "quants" is told by Peter Bernstein in Chapter 9 of his fine book on the development of capital market theory, *Capital Ideas* (Bernstein [2002]).

[10]Malkiel, B. *A Random Walk Down Wall Street*, 1st ed. New York, NY: W. W. Norton & Company, 1973.

[11]Blitzer, D. "Keeping It Simple and Making It Work." *Journal of Indexes*, March/April, 2012.

[12]About 84% of the assets of TIFs are invested in equity funds (and balanced funds), and 16% in bond funds. Those percentages are exactly the same for ETFs.

[13]If an investment of $10,000 earned a return of, say, 7% for a low-cost fund and 5.5% for an average-cost fund, the low-cost fund's value would grow to $19,700 over 10 years and $294,600 over 50 years, compared to $17,100 and $145,400 for the higher-cost fund.

[14]Slater, R. *John Bogle and the Vanguard Experiment*. Chicago, IL: Irwin, 1997.

[15]Estrada, J. "Investing in the Twenty-First Century: With Occam's Razor and Bogle's Wit." *Corporate Finance Review*, May/June, 2007.

[16]Grinold, R., and K. Kroner. "The Equity Risk Premium: Analyzing the Long-Run Prospects for the Stock Market." *Investment Insights*. Vol. 5, No. 2 (July 2002), pp. 7-25.

[17]Benson, E., B. Bortner, and S. Kong. "Stock Return Expectations and P/E10." *The Journal of Portfolio Management*, Vol. 38, No. 1 (Fall 2011), pp. 91-99.

[18]Leibowitz, M., and A. Bova. "P/E-Based Horizon Returns." *Portfolio Strategy*, Morgan Stanley, May 12, 2014.

[19]Leibowitz, M., and A. Bova. "P/E Tents and Horizon Returns." *Portfolio Strategy*, Morgan Stanley, June 12, 2014.

[20]Leibowitz, M., A. Parker, A. Bova, and B. Hayes. "Style-Base P/Es and Horizon Returns." *Portfolio Strategy*, Morgan Stanley, July 10, 2014.

[21]Kinnel, R. "Lower Your Fees, Boost Your Returns." Morningstar, May 22, 2014, http://news.morningstar.com/articlenet/article.aspx?id=648646.

[22]Sommer, J. "Rules of the Fund Road: Watch the Fees, and Don't Look Back." *New York Times*, June 1, 2014.

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[23]I think it not necessary to comment further on my "Tribute to Peter Bernstein," nor my editorial on High-Frequency Trading and *Flash Boys* (*JPM*, Summer 2014).

[24]Morgenson, G. "He Doesn't Let Money Managers Off the Hook." *New York Times*, April 11, 2009.

[25]Rogers, J. "A New Era of Fiduciary Capitalism? Let's Hope So." *Financial Analysts Journal*, Vol. 70, No. 3 (May/June 2014).

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Disclaimer

The opinions expressed in this article do not necessarily reflect those of Vanguard's present management. The dates and decisions from board meetings during Vanguard's formative years are based on my best recollection. I attempted to verify this information by reviewing the actual board minutes, but I was unable to obtain permission from Vanguard to do so.

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The Journal of Portfolio Management

INTRODUCTION: WHAT LIES AHEAD FOR THE ASSET MANAGEMENT INDUSTRY 1

MOHAMED A. EL-ERIAN

Having benefited from strong multidecade structural tailwinds, the asset management industry faces tricky challenges ahead. Some relate to the environment in which it operates, including the extent to which this is changing due to both structural and policy forces. Others speak to the importance of being more inclusive and engaging better with a demographically and socially evolving client base. And all involve integrating much better the enormous strides made in information technology, the Internet, social media, predictive analytics, and behavioral finance. To navigate all this well—and it is far from a simple task—the industry requires a more robust combination of agility and resilience. To do so, it will also need to incorporate insights from the research community, existing and new, on a much more timely basis.

BEHAVIORAL FINANCE: *Peter Bernstein and The Journal of Portfolio Management* 24

MEIR STATMAN

Behavioral finance is under construction as a solid structure of finance. It substitutes normal people for rational people in standard finance, behavioral portfolio theory for mean-variance portfolio theory, and behavioral asset pricing models for the CAPM and other models where expected returns are determined only by risk. Behavioral finance also distinguishes rational markets from hard-to-beat markets in the discussion of efficient markets and examines why so many investors believe that beating the market is easy. Peter Bernstein encouraged and guided the author of this article as he contributed to the construction of behavioral finance in the pages of *The Journal of Portfolio Management (JPM)*. The JPM's fortieth anniversary, the first ten-year anniversary without Peter, is an opportunity for the author to express his gratitude to Peter once more and describe his work published in *JPM*.

LONG LIVES AND NEW STRATEGIES 38

ROBERT S. KAPITO

What is the greatest single investing challenge in today's markets? Longevity. Investors today need to save more and get higher returns from their investments to pay for longer lives. Adding to the burden is a particularly difficult investment environment precipitated by the financial crisis. Fortunately, there are solutions to these challenges, and the asset management industry is undergoing some significant changes in order to meet the demands and needs of investors. There are two broad trends: first, the rise of index investing and, second, a shift in actively managed funds toward unconstrained and outcome-oriented strategies.

LIGHTNING STRIKES: *The Creation of Vanguard, the First Index Mutual Fund, and the Revolution It Spawned* 42

JOHN C. BOGLE

"Lightning Strikes" tells the story of how Vanguard founder John C. Bogle came to create a unique *mutual* mutual fund structure in 1974, and how the index fund strategy almost inevitably followed. Paul Samuelson's essay in the first issue of *The Journal of Portfolio Management* was published at almost the same moment that Vanguard began.

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The Journal of Portfolio Management

In "Challenge to Judgment," Samuelson urged that somebody, somewhere, somehow form an index fund. Inspired, Mr. Bogle accepted the challenge, and in 1975 created the world's first index mutual fund. Vanguard's two disruptive innovations—mutuality and indexing—have combined to make Vanguard the largest firm in the mutual fund industry. In the second part of the essay, Mr. Bogle summarizes 10 of the 13 essays he has written for *The Journal of Portfolio Management* and provides a perspective on his works.

Ten Investment Insights that Matter 60

Bruce I. Jacobs and Kenneth N. Levy

Over more than 30 years of research and portfolio management, the authors developed 10 key insights that inform their investment process. These insights all stem from the realization that the market is a complex system and that it is this very complexity that offers investors the opportunity to outperform. Creating a successful investment practice requires examining a wide array of issues, from a philosophical inquiry into the nature of financial markets to the fine details about the definition of earnings. Early empirical research by the authors indicated that, contrary to the prevailing belief in efficient markets, the equity market is not totally efficient. Opportunities for profitable active investment existed and continue to exist despite the rapid evolution of financial markets. Detecting and exploiting these opportunities to achieve excess returns at reasonable risk requires continuous research to keep up with an ever-changing world. However, research alone will not ensure success. With more than 30 years of experience managing portfolios, the authors have gained many insights into the nature of the markets and the investing process that they describe in this article.

Dimensions of Popularity 68

Roger G. Ibbotson and Thomas M. Idzorek

Popularity is a broad concept that can help explain valuation and the permanent market premiums (for example, the equity risk premium, size, value, liquidity, and so on). Liquidity is popular, whereas risk is unpopular. The authors explain how popularity can also help explain temporary mispricing (for example, stocks that the market gets overly excited about). In general, the less popular a security, the lower the valuation but the higher the expected return.

Fact, Fiction, and Momentum Investing 75

Clifford Asness, Andrea Frazzini, Ronen Israel, and Tobias Moskowitz

It's been more than 20 years since the academic discovery of momentum investing, yet much confusion and debate remains regarding its efficacy and its use as a practical investment tool. In some cases "confusion and debate" is our attempting to be polite, because it is nearly impossible for informed practitioners and academics to still believe some of the myths uttered about momentum—but that impossibility is often belied by real-world statements. In this article, the authors aim to clear up much of the confusion by documenting what we know about momentum and disproving many of the often-repeated myths. They highlight 10 myths about momentum and refute them, using results from widely circulated academic papers and analysis from simple publicly available data.

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