

The (Non) Lessons of History— and the (Real) Lessons of Return Sources and Investment Costs¹

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For virtually my entire career in finance—now more than 61 years—two of the greatest economists of the past century have played a major role in my understanding of the financial markets. One is John Maynard Keynes, the legendary British theorist and author. The other is Paul Samuelson, the prolific generator of ideas and the first American to win (in 1970) the Nobel Memorial Prize in the Economic Sciences.

My own academic credentials are modest to a fault: a bachelor of arts degree (albeit with high honors) from Princeton University in 1951. No M.B.A., no Ph.D. Only an A.B. Despite my limits, I was invited to become a member of the American Philosophical Society in 2004, perhaps because I've stood on the shoulders of these two economic giants during so much of my career. In many respects, the inspiration of Keynes and Samuelson underlies the creation of Vanguard in 1974 and the world's first market index mutual fund in 1975. Day after day, scores of investors assure us that we've given them a new way—and a better way—to put their capital to work.

My first encounter with both of these economists came at Princeton, where in 1948, I was introduced to the study of economics. Our textbook was the very first edition of Dr. Samuelson's *Economics: An Introductory Analysis* (now in its nineteenth edition). My ability to understand what would become my major field of study was no more than, shall we say, adequate. But of all the reading that I did in my field

1 Read 10 November 2012, as part of a symposium on investment. Note: The opinions expressed in these remarks do not necessarily represent the views of The Vanguard Group's present management.

of concentration, it was Keynes's *The General Theory of Employment, Interest, and Money*, published in 1936, that has stayed at the forefront of my mind to this very day.

JOHN MAYNARD KEYNES

Although there's a lot of dense doctrine in that timeless book, I was particularly struck by chapter 12, "The State of Long-Term Expectation." There, Keynes made a critical distinction between the two broad reasons that explain the returns on stocks. The first was what he called *enterprise*—"forecasting the prospective yield of an asset over its entire life." The second was *speculation*—"forecasting the psychology of the market."

Keynes was confident that speculation would dominate enterprise as a market force. In those days, individual investors were the predominant owners of stocks and the major players in the stock market. Because such investors were largely ignorant of business operations or valuations, Keynes explained, their trading would lead to excessive, even absurd, short-term market fluctuations based on events of an ephemeral and insignificant character. Short-term fluctuations in the earnings of existing investments, he argued (correctly), would lead to unreasoning waves of optimistic and pessimistic sentiment. (Keynes was ahead of his time!)

Although competition between expert professionals, possessing judgment and knowledge beyond that of the average private investor, should correct the vagaries caused by ignorant individuals, Keynes added, the energies and skills of the professional investor would also come to be largely concerned not with making superior long-term forecasts of the probable yield of an investment over its whole life (enterprise), but with foreseeing changes in the conventional basis of valuation (speculation) a short time ahead of the general public. Keynes therefore described the market as "a battle of wits to anticipate the basis of conventional valuation a few months hence rather than the prospective yield of an investment over a long term of years."

In my 1951 Princeton senior thesis on the mutual fund industry, I cited Keynes's conclusions. And this callow young kid had the temerity to disagree with the great man. Rather than succumbing to the speculative psychology of ignorant market participants, I argued, these investment professionals would focus on enterprise. In what I predicted—accurately, as it turned out—would become a far larger mutual fund industry, our portfolio managers would "supply the market with a demand for securities that is steady, sophisticated, enlightened, and

analytic, a demand that is based essentially on the [intrinsic] performance of the corporation rather than the public appraisal reflected in the price of its shares.”

Today, although the now-\$12-trillion mutual fund industry holds some 35% of the shares of just about every public corporation in the land, the industry’s focus on speculation has actually increased many times over. Alas, the steady, sophisticated, enlightened, and analytic focus on enterprise that I had predicted from the industry’s expert professional investors has failed abjectly to materialize. I was wrong. Call the score: Keynes 1, Bogle 0. What else is new?

PUTTING NUMBERS ON KEYNES’S DISTINCTION

Although Keynes made no attempt to quantify the relationship between enterprise and speculation in shaping stock market returns, decades later it occurred to me to do exactly that. By the late 1980s, based on my first-hand experience with and research on the financial markets, I realized that equity returns were a combination of these two essential sources: enterprise and speculation. I defined enterprise as *investment return*—the initial dividend yield on stocks plus the subsequent annual rate of earnings growth. I defined *speculative return* as the change in the price investors are willing to pay for each dollar of earnings (essentially, the return that is generated by changes in the valuation that investors place on future corporate earnings).

Simply adding speculative return to (or subtracting it from) investment return produces the *total return* generated by the stock market. For example, with the current dividend yield of 2%, if stocks experience earnings growth at the long-term average of 5% over the coming decade, the *investment return* would total 7% in nominal terms. During the coming decade, I actually expect the price-earnings (P/E) ratio to change little on balance from the present level of about sixteen times. So, my expectation for total stock returns over the next decade is about 7% per year before inflation.

Let’s see how this methodology worked in the past (Chart 1). By relying on it decade after decade over the past century, we can account, with remarkable precision, for the total returns actually earned by U.S. stocks. The investment return on stocks (top line of figures) proves to be remarkably susceptible to reasonable expectations. The *initial dividend yield* (red bar)—a crucial, but wholly underrated, factor in shaping stock returns—is a known number. The steady contribution of dividend yields to investment return during each decade has always been a positive, only once outside the range of 3% to 5%.

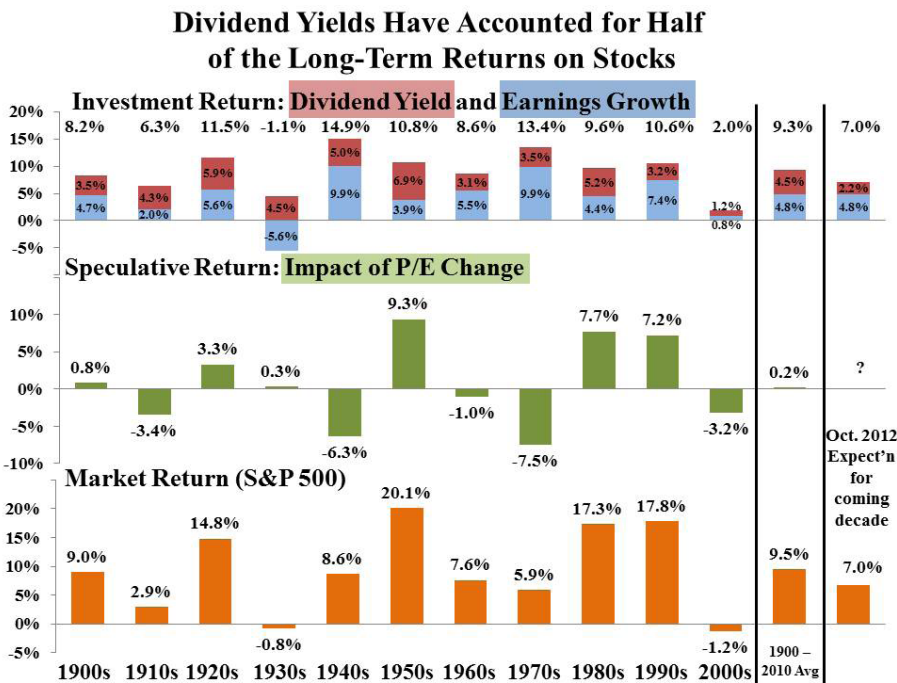


CHART 1.

The secular rate of earnings growth, on the other hand, while hardly certain, is also relatively stable, usually paralleling the growth in our gross domestic product (GDP). Note that, with the exception of the depression-ridden 1930s, the contribution of earnings growth (blue bar) was positive in every decade, usually running between 4% and 7% per year. Total investment returns, then, have been less than 6% annually only twice (in the 1930s and 2000s), and only twice much more than 11%.

Speculative return (green bar), however, is, well, speculative. It has alternated widely, from positive to negative and back again from one decade to the next. But over the long run, speculation has neither added to nor subtracted from investment return. In fact, when P/E ratios were historically low (say, below 12 times) they have been highly likely (84% probability) to rise over the subsequent decade. And when they were historically high (say, above 20 times), they have been highly likely (87% probability) to decline, though in neither case do we know *when* that change is coming. Of course, certainty about the future never exists nor are probabilities always borne out. But applying reasonable

expectations to investment return and speculative return and then combining them has been a sensible and effective approach to projecting the total return on stocks (orange bar) over the decades.

The point is this: Over the very long run, it is the economics of investing—enterprise—that has been virtually entirely responsible for the total return on stocks. The evanescent emotions of investing—speculation—that are so important over the short run have ultimately proven to be virtually meaningless. In the past century, for example, the 9.5% average nominal annual return on U.S. stocks (second column from right) has been composed of 9.3 percentage points of investment return (an average dividend yield of 4.5% plus average annual earnings growth of 4.8%), and only 0.2% of speculative return.

But don't expect history to repeat itself. When we look to the future, we should largely ignore *historical returns*. Rather, it is the *sources* of past returns (as Keynes told us) that should be our guide: the current dividend yield, prospective annual growth in earnings over the coming decade, and the likely role of speculative returns in augmenting or reducing those investment returns.² Hence, my projection of 7% annual return for stocks (2% current dividend yield, 5% annual earnings growth, with no significant impact from speculative return).

INVESTMENT COSTS

But don't expect to earn that return, for it represents the gross return on the market before the deduction of investment costs. How much do costs matter? Enormously. If we conservatively assume investment costs of 1.5% per year, and begin with a \$1,000 investment when the S&P 500 Index began in 1926 (Chart 2), a cost-free investment would be valued (with reinvested dividends) at \$3.5 million today. But *after* deducting those costs, the remaining value would be about \$1 million, some 70% less. Although investment costs of 1.5% per year may sound inconsequential at first glance, the results are staggering when compounded over an investment lifetime. Note also that the burden of costs accelerates over time, consuming 40% of the S&P 500's return by 1960, 54% by 1980, and 65% in 2000. As I've often observed, the *magic* of compounding long-term returns is overwhelmed by the tyranny of compounding costs.

2 Applying the same methodology to bonds over a decade is even simpler. The current yield when the investment is made largely (90% correlation) determines the total return delivered by the bond. Thus, the current yield of about 2.5% on a combined U.S. Treasury/corporate bond portfolio would represent the return—more or less—that we should expect for the coming decade (Appendix).

Investment Returns—Before and After Costs

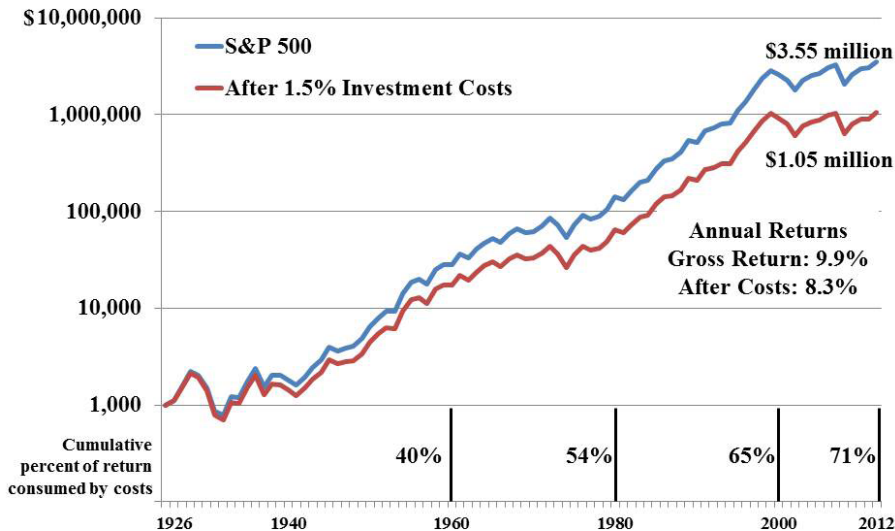


CHART 2.

Although gross stock market returns are interesting, such data are tragically flawed. Nonetheless, these data are the *lingua franca*, in their naiveté, of market statisticians, economists, journalists, and pension fund advisors. But they fail because they ignore the self-evident fact that we investors, as a group, do not, cannot, and will not capture 100% of the stock market's returns. As we saw in Chart 2, those seemingly modest annual fees can consume the overwhelming majority of our investment return over the long term. Simply looking at market return data ignores the many costs of investing—fees paid to advisors; the costs of trading stocks; all those marketing costs; and the administrative, accounting, and legal costs imbedded in our financial system. No matter what the return on stocks, it is the croupiers of Wall Street who are enriched as investors feverishly swap stocks with one another in an inevitably costly and fruitless game that we investors *as a group* are destined to lose.

Think about it this, perhaps cynical, way: The mutual fund industry can be said to be the only industry in the world in which, collectively, we investors are guaranteed not to get what we pay for. Indeed, we get only what we *don't* pay for. So the less we pay to earn the market's return, the more of the return we, in fact, get. Conclusion: If we pay nothing, we get everything. This mathematical tautology is what I call

the CMH—the *Cost Matters Hypothesis*—and it explains why the return of the low-cost, all-stock-market index fund consistently outpaces the returns achieved by costly active managers. That is why the hedgehog beats the fox. As Archilocus wrote so many years ago: “The fox knows *many* things, but the hedgehog knows one *great* thing.”

THE INTELLECTUAL BASIS FOR INDEXING³

Indexing—owning all of the stocks in the U.S. market—is that one great thing. It works, as it must. At the outset, the intellectual basis for indexing was the EMH—the *Efficient Market Hypothesis*—which suggests that by reflecting the informed opinion of the mass of investors, stocks are continuously valued at prices that accurately reflect the totality of investor knowledge and are thus fairly valued. But the reality is that sometimes the stock market is efficiently priced, and sometimes it is not. But few—if any—investors can consistently tell which is which. But whether or not markets are efficient, investors as a group must fall short of the market return by the amount of the costs they incur.

Therefore, we don’t need to accept the EMH to be index-fund believers. There is a better reason for the triumph of indexing, and it is not only more compelling but also unarguably universal. As I mentioned earlier, I call it the CMH—the *Cost Matters Hypothesis*—and it is all that we need to explain why indexing must work and does work, and it, in fact, enables us to quantify with some precision *how well* it works. Investors, in totality, are the market. On average, those investors must be, well, average. But investors fail to match the market’s return precisely by the total of their investment costs. By matching the market with only minimal costs, indexing is mathematically certain to win. Whether or not the markets are efficient, the explanatory power of the CMH holds.

ENTER PAUL SAMUELSON

More than one century has passed since Louis Bachelier, in his Ph.D. thesis at the Sorbonne in 1900, wrote, “Past, present, and even discounted future events are (all) reflected in market price.” Nearly half a century later, when Nobel laureate Paul Samuelson discovered that long-forgotten thesis, he confessed that he “oscillated . . . between regarding it as trivially obvious (and almost trivially vacuous), and regarding it as remarkably sweeping.” But the words of Bachelier and

3 What, one might ask, is the intellectual basis for active management? I know of none.

others seem to have lit a spark of interest that would lead to Dr. Samuelson's intense study of the financial markets.

In essence, Bachelier's conclusion was, as far as he went, right: "The mathematical expectation of the speculator is zero." But to be tested in practice, his theory has to be taken one step further. The mathematical expectation of the speculator is *not* zero—it is a loss equal to the amount of transaction costs incurred. So, too, the mathematical expectation of the long-term investor must fall short of whatever returns our financial markets are generous enough to generate for us—or mean enough to inflict upon us.

From its lowly beginning in 1948 with my struggle to absorb his *Economics* textbook, my association with Paul Samuelson had a wonderful turnaround. Although I had hinted at the merit of an index fund in my Princeton thesis (mutual funds "can make no claim to superiority over the market averages"), I ignored that important finding for years. But in mid-1975, I decided that the time was ripe for the world's first index fund—because of Paul Samuelson's inspiration.

That inspiration came when I read his lead essay in the inaugural edition of the *Journal of Portfolio Management* (Fall 1974). In his essay "Challenge to Judgment," Dr. Samuelson explicitly called for those who disagreed that a passive index would outperform most active managers to produce "brute evidence to the contrary." (None was forthcoming.) He pleaded "that, at the least, some large foundation set up an in-house portfolio that tracks the S&P 500 Index—for the purpose of setting up a naïve model against which their in-house gunslingers can measure their prowess."

Confronted with his express challenge for somebody somewhere to start an index fund, I could no longer stand back. It now seemed clear that the newly formed Vanguard Group (then only a few months old) ought to be "in the vanguard" of this new and logical concept, so strongly supported by the data on past fund performance, and so well accepted in academia but so little acknowledged by fund industry leaders. *It was the opportunity of a lifetime*: at once to prove that the basic principles enunciated in Samuelson's "Challenge to Judgment" could be put into practice and work effectively, and to mark this upstart of a firm as a pioneer in a new wave of industry development. With the inspiration of Keynes and Samuelson, and even a touch of foresight, luck, and hard work, the idea that had begun to germinate in my mind in my ancient senior thesis could finally become a reality.

The initial press reception to the announcement of Vanguard's filing of the groundbreaking index fund IPO had been reasonably good but bereft of a single hint that the index fund represented the beginning of a new era for the mutual fund industry. In fact, the reaction was best



FIGURE 1. Courtesy of the Leuthold Group.

illustrated by a cartoon of Uncle Sam stamping out index funds, captioned “Index Funds are un-American” (Figure 1). The only positive reaction came from Professor Samuelson himself. Writing in his *Newsweek* column in August 1976, he expressed delight that there had finally been a response to his earlier challenge.

Now such an index 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” (the original name of what is now the Vanguard 500 Index Fund). He noted that the fund met five of his goals: (1) it was available to investors of modest means; (2) it proposed to match the broad-based S&P 500 Index; (3) it carried an extremely small annual expense charge; (4) it offered extremely low portfolio turnover; and (5) “best of all, [it gave] the broadest diversification needed to maximize mean return with minimum portfolio variance and volatility.” Although our IPO almost failed (the goal was \$150 million; the capital finally raised came to but \$11 million), we began operating our tiny index fund in August 1976.

MUTUAL ADMIRATION

Paul Samuelson and I met face-to-face perhaps only a half-dozen times during our (arguably) 61-year relationship. But he often sent me notes and must have made at least a score of telephone calls to me in my office. But as time went on, I appreciated not only his brilliance but also his warmth and patience with a mind far smaller than his own. When I wrote my first book in 1993 (*Bogle on Mutual Funds*), I asked him if he would be willing to endorse it. He said no. But to my utter astonishment, he offered to provide the foreword. A few excerpts: “[Ninety-nine] out of 100 books written on personal finance are dangerous to your health. The exceptions are rare. Benjamin Graham’s *The Intelligent Investor* is one. 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.”

Surely Dr. Samuelson’s highest accolade for the index fund came in his speech at the Boston Security Analysts Society on 15 November 2005, only a few years before his death in 2009: “I rank this invention along with the invention of the wheel, wine and cheese, the alphabet, and Gutenberg printing: a mutual fund that never made Bogle rich but elevated the long-term returns of the mutual-fund owners. Something new under the sun.” Those words from a giant—“the foremost academic economist of the 20th century”, according to *The New York Times*—mean much to me, but it is the intellectual challenge, the friendship, and the unfailing support of this fine human being that I shall miss most profoundly.

Equity Index Fund Market Share

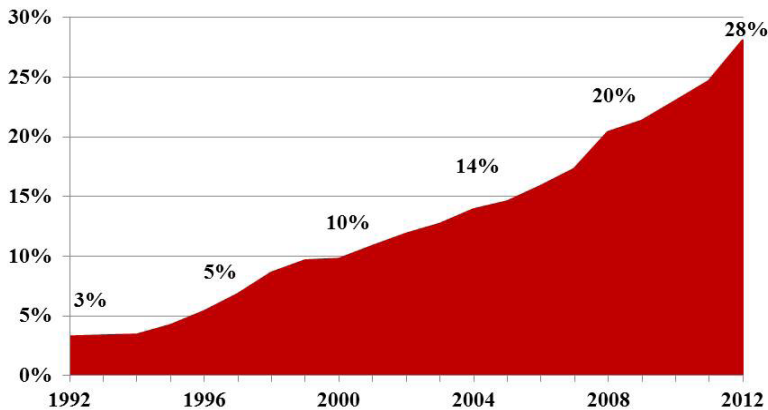


CHART 3.

THE TRIUMPH OF INDEXING

Through the intellectual inspiration of Lord Keynes and the brilliance, moral support, and friendship of Dr. Samuelson—and huge amounts of good luck!—the simple logic and elementary mathematics of indexing are beginning to reshape the way investors think about the financial markets that confront us today. They are a mess! The folly of short-term speculation has crowded out the wisdom of long-term investing, giving us a financial system in which millions of investors have lost their trust.

Indexing has become the counterculture to the speculative culture that has shaped our markets in the recent era. Its triumph is a humble confirmation of the famous maxim of William of Occam. Writing 700 hundred years ago, he postulated that when there are multiple solutions to a problem, the simplest choice is the best. “Occam’s Razor” has proved itself in many areas of intellectual focus, and it has surely done so in the world of investing.

Indexing is now a major force in investing. Today it represents about 25% of the assets of America’s \$5 trillion in pension assets and almost 30% of the \$6 trillion assets of our equity mutual funds (Chart 3). Those percentages are bound to grow. Over the past 5 years alone, for example, more than \$500 billion of investor dollars has poured *into* equity index funds, whereas \$370 billion has been cashed *out of* active-managed funds (Chart 4). This difference offers nearly \$1 trillion worth of proof that investors are starting to “get it.” And the final triumph is yet to come.

Equity Fund Cash Flow Since 2008

Index funds have taken in over \$500 billion;
active funds have lost almost \$400 billion

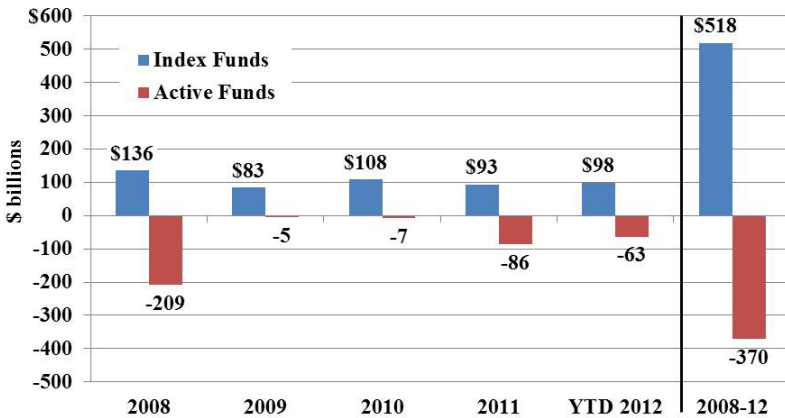


CHART 4.

WRAPPING UP

It was Bernard of Chartres who said in the twelfth century that a dwarf standing on the shoulders of a giant may see further than the giant himself.⁴ And so this plain-thinking, commonsense-reliant, mutual fund veteran stood on the shoulders of Lord Keynes and Professor Samuelson in his efforts to cut through the fog surrounding the foxes of Wall Street and focus on the great idea of the hedgehog. The clear message: history often teaches us the wrong lessons about the financial markets. The past, truth told, is rarely prologue to what lies ahead. The real lessons of sound investment strategy depend on focusing on the sources of stock and bond returns, and minimizing to the *n*th degree the costs extracted by our bloated investment system.

So, my fellow members of the American Philosophical Society, you thoughtful and intelligent movers and shakers of American thought, please think about the implications of indexing for the financial markets in the years ahead. And while you're about it, consider whether you should rely significantly on indexing in your own investment programs. That's important, too!

⁴ Perhaps this idea was the inspiration for the following acknowledgement by Sir Isaac Newton in 1676: "If I have seen further, it is by standing on the shoulders of giants."

APPENDIX

