SECTION

One

Background

CHAPTER 1

The Evolution of Market Indexes and Index Funds

Before describing the ActiveBeta concepts and indexes, we need to address why we developed the framework in the first place. What needs do ActiveBeta Indexes fulfill? How do our research and findings advance the discussion on the nature of active equity management or the debate on active versus passive management? Are we reinventing the wheel or taking the next evolutionary step in the life cycle of equity portfolio management?

In later chapters, we detail our rationale for pursuing this research and creating the ActiveBeta Methodology. We introduce the issues and paradoxes that currently exist in the management of equity portfolios, and provide solutions to specific problems and gaps in accepted industry practice. First, however, some background is necessary to place the ensuing discussion in its proper context. How did we reach this point in equity investing?

THE EARLY DAYS OF INDEXING

"How's the market doing?" or "Did you see the market today?" are examples of common investing questions that we take for granted in modern society. Rarely do we stop to ask, "What exactly is the market and how is it defined?" Even novice investors recognize the common definitions of the various asset markets (i.e., the well-publicized market indexes accessible via newspapers, magazines, television, or the Internet). Today, equity indexes are commonplace and sophisticated in their construction, but that was not always the case.

Most observers trace the history of equity indexes back to Charles Dow and 1884. A publisher of news bulletins for traders, Dow set out to provide a benchmark for how stocks performed. Given its importance to the U.S. economy, Dow chose the transportation sector for his first index. The Dow

Transportation Average initially consisted of 11 stocks—9 railroads and 2 nonrail companies. Twelve years later, in 1896, Dow produced his first industrial equity index, the Dow Jones Industrial Average, or DJIA. The DJIA consisted of 12 stocks at first, eventually expanding to the 30 names presently held, and became perhaps the most popular equity index in the world.

While the Dow Averages offered investors some basis to answer the questions that opened this section, the Dow methodology had some well-noted deficiencies. To calculate his Averages, Dow simply added up the prices of the constituent stocks at the end of each day. Thus, these indexes were, and remain, simple price-weighted indexes. That is, the index value is determined by summing the prices of the index constituents, while adjusting for splits and other corporate actions. Changes in the index are the changes in the prices of its constituents. One flaw in this methodology is that a $1 price change in a $10 stock has the same effect on the index as a $1 price change in a $100 stock, despite the former experiencing a 10 percent change, while the latter changed by only 1 percent. In addition, for a representation of the broad or overall equity market, considering only share price seems insufficient. To reflect the activity of the overall equity market more appropriately, company size, or market capitalization, needs to be included in the index. Clearly, changes in the valuations of the companies in the market change the value of the overall market. Yet, the Dow Averages capture only price changes, not value changes.

An additional critique of the Dow Averages is their very limited holdings—30 stocks for the Industrial Average and 20 stocks for the Transportation Average. The small number of names calls into question the match between the returns to these indexes and the returns to the overall market. How can 30 large capitalization stocks represent an overall market that includes thousands of stocks across multiple industries and ranges of market capitalization or size? These price-weighting and coverage issues would be addressed by the next generation of indexes, although not for a number of years.

In 1957, Standard & Poor's introduced its S&P 500 Stock Index, a market-weighted index that would eventually become one of the world's most recognized benchmarks for investors. By weighting its constituent stocks according to their market capitalizations, the S&P 500 Index gave greater weight to the movements of large company stock prices compared to those of small company stock prices. The S&P 500 Index considered changes in market value, not just price. Consequently, the S&P 500 Index better reflected the total value of the overall stock market, as well as overall stock market returns.

Over the years, a myriad of stock indexes have emerged, most of them market capitalization-weighted. Stock indexes now exist for virtually every

region, country, sector, or market capitalization range an investor might need. In the United States alone, investors have access to the S&P 500 Index or the Russell 1000 Index for larger stocks, the Russell 2000 Index for smaller stocks, or the Wilshire 5000 Index for all stocks. Globally, index providers such as FTSE and MSCI offer country and regional products across multiple dimensions. With the development of index solutions over the years, particularly during the past decade or two, investors have their choice of tools to answer the question "How's the market doing?" as well as "How are my investments doing compared to the market?" This latter question is important in determining not only personal investment performance, but also the performance of professional investment advisers and mutual funds.

THE INCEPTION OF THE MUTUAL FUND INDUSTRY

For several years starting in the late 1800s, public and private investors in the United States could participate in the pooled vehicles known as investment trusts. These investment trusts traded just as stocks traded, similar to the closed-end mutual funds of today. With a set number of shares and no redemption provision, supply and demand for a given investment trust determined its price. The price could offer a premium or discount to the value of the assets included in the investment trust. While investment trusts did provide access for smaller investors, a lack of controls and securities regulations damaged the reputation of this type of investment vehicle by the 1920s.

More modern mutual fund structures also emerged at this time. For example, the first closed-end fund, the Boston Personal Property Trust, was formed in 1893. Then, in the 1920s, Wall Street began to explore how to mitigate problems with the early investment trusts and, to some extent, closed-end funds. In particular, investors needed a vehicle that could better match the price of the trust with its underlying assets. The solution came in the form of the now well-known open-end mutual fund. The redemption at the net asset value feature of these funds basically eliminated the problems with discounts and premiums, as well as the additional issue of price manipulation seen in investment trusts. Since these open-end mutual funds also invested in publicly traded common stock, investors could track the performance and value of the mutual fund, thus providing greater transparency and confidence.

Massachusetts Investors (now MFS) took this new open-end concept to fruition, creating the Massachusetts Investment Trust in 1924. Initially holding 46 stocks and offering redemption at net asset value on demand, the Massachusetts Investment Trust set the stage for a new investment

industry, one that would cater to individual investors. Shortly thereafter, Incorporated Investors produced what is now called Putnam Investors A, and State Street Investment Corporation offered the current State Street Research Investment S. Thus, the open-end mutual fund industry was born.

As the Great Depression approached, closed-end funds still dominated the investment industry, with almost 700 closed-end funds known to exist, compared to 19 open-end funds. The ensuing stock market crash more heavily affected the closed-end side of the business, as these funds tended to be highly leveraged, and thus more vulnerable to a sharp decline in the value of their holdings. Meanwhile, the smaller, unlevered, open-end funds survived.

Once the world moved past the Great Depression and World War II, the open-end fund industry began to thrive. Investors began to revisit the idea of investing in stocks, and over 100 open-end funds existed by the early 1950s. Growth continued through the next two decades, as more and more individual investors embraced the equity markets. Today, investors can choose from literally thousands of open-end mutual fund offerings.

Still, the only alternatives for small investors, prior to mid-1970, were buying individual stocks or investing in mutual funds run by active managers. Already, some had begun to question the efficacy of active equity management. Could active managers consistently beat the market, as defined by the broad indexes? Did active managers actually earn their management fees? Many academic researchers studied these questions in earnest, and their conclusions changed the evolution of the investment management industry.

ENTER ACADEMIA

The nascent active equity management industry almost immediately faced challenges to its basic premise of providing superior performance for a fee. With the onset of the Great Depression, and the massive loss of investor wealth, research contesting the added value of professional management became more relevant. Alfred Cowles, who lost significant money during the market crash, established the Cowles Commission to study economics and securities markets. In 1933, the Commission produced a report titled "Can Stock Market Forecasters Forecast?" The conclusion, after researching 16 financial services firms, was that they could not. The over 7,000 recommendations used in the research performed no better, and perhaps slightly worse, than what would be randomly expected.

As the investment industry evolved, so did the research and theories of economists, or, more specifically, financial academics. In the 1950s,

academic theory focused on the efficiency of markets, in particular, how effectively security prices incorporate new information. Research began to rebut prior beliefs about the power of fundamental or technical analysis. Paul Samuelson of MIT and others conducted significant research on the topic. Samuelson circulated the work of French mathematician Louis Bachelier from 1900, in which, among other things, Bachelier first expressed the idea of an efficient market and the inability of speculators to consistently profit.

The idea that the market reacted quickly to new information and that stocks followed a random walk gained credence over the ensuing two decades. Eugene Fama, coincident with Samuelson, established the Efficient Market Hypothesis (EMH) to provide a theoretical framework around the various empirical studies of the time. One important conclusion of the EMH pertaining to mutual funds was that stock picking could not yield economic profit, on average, after costs were considered, a point essentially noted by Bachelier (1900). Given this conclusion, chasing performance by trying to pick the best active managers seemed futile. The EMH, combined with further studies showing the general underperformance of mutual funds compared to market indexes, suggested that the logical path for investors was to invest in "the market," or index funds.

Meanwhile, Harry Markowitz's development of modern portfolio theory, and William Sharpe's refinement of this theory into the Capital Asset Pricing Model (CAPM), influenced the direction of the mutual fund industry as well. A key point by Markowitz illustrated that investing in a diversified portfolio, as opposed to a single or limited number of stocks, could reduce risk without sacrificing return. Sharpe then broke down risk into systematic risk (i.e., risk related to the movement of the overall market) and unsystematic risk (i.e., risk idiosyncratic to a specific stock). Diversification could basically eliminate unsystematic risk, leaving the investor exposed to only systematic risk. This again led to the idea of investing in indexes, since what could be more diversified than a broad market index?

One problem existed, however. Where were the index funds?

THE ADVENT OF INDEX/PASSIVE MUTUAL FUNDS

Burton Malkiel wrote *A Random Walk Down Wall Street*, published in 1973, making an early call for a publicly available index fund in light of the underperformance of actively managed mutual funds. Samuelson furthered the effort in a 1974 article for the *Journal of Portfolio Management* titled "Challenge to Judgment." Samuelson suggested that, at the very least, some respected entity should establish an S&P 500 Index tracking strategy, thus offering a real-world benchmark for active equity managers. Shortly

thereafter, some would take up Samuelson's challenge and help reshape the investment management industry.

As the works of Malkiel and Samuelson were published, early attempts were made to establish an index-tracking or broad-market equity portfolio. The initial efforts focused on the institutional marketplace. Wells Fargo Bank, under the leadership of John McQuown and William Fouse, designed a strategy in 1971 for Samsonite Corporation. The idea was to buy equal-weighted positions of the stocks on the New York Stock Exchange, which sounded very simple and straightforward, but ended up being a nightmare to manage.

The next moves toward index tracking used the S&P 500 Index as a benchmark. Batterymarch Financial Management in Boston pursued this avenue starting in 1971, but, despite the academic research, their idea lacked institutional support until 1974. Meanwhile, American National Bank created a high-minimum ($100,000) common trust fund that also tracked the S&P 500. Still, the industry awaited an index-tracking solution for the individual investor.

INDEX MUTUAL FUNDS FOR THE PUBLIC

John Bogle provided this solution in 1976, offering an index fund for the masses. Bogle had begun considering the concept in the late 1940s/early 1950s as a Princeton undergraduate. His senior thesis, "The Economic Role of the Investment Company," had several recommendations for the fund industry. The most relevant for our purposes was that funds should "make no claim for superiority over the market averages" nor create "expectations of miracles from management." As Bogle himself has noted, this thesis marked the start of the journey that culminated in the Vanguard S&P 500 Index Fund.

By 1975, Bogle was chairman of a new firm, Vanguard Group. Given Bogle's aversion to making any claims of outperformance, Vanguard unsurprisingly focused much of its attention on reducing costs and fees. Bogle then set out to create the first low-cost index fund for the public. The First Index Investment Trust (the "Trust"), an S&P 500 Index fund, opened for business on August 31, 1976. This fund later changed its name to the well-known Vanguard S&P 500 Index Trust in 1980.

Initially, the Trust was sold through brokers with a front-end load charge, although a lower charge than was customary at the time. Still, the front-end load fell short of the low-cost goal. In addition, any extra fees weighed upon performance and, thus, made the Trust less of the true index alternative craved by academics. In February 1977, distribution of the Trust

was moved away from the commissioned broker network, and the Trust became a no-load fund.

The investing public, thus, had a real chance to decide between active and passive management. What had been a nice theoretical discussion now had empirical evidence. Which fund performed better, index tracking or actively managed? Samuelson's challenge to the industry had been taken on by Vanguard, and an entire index fund industry would soon develop as a result.

Active managers, of course, did not see the attraction of this new index fund concept for the masses. Outperformance was the name of the game in their minds, since no one wanted to be just "average." In fact, Fidelity Chairman Edward C. Johnson III said at the time, "I can't believe that the great mass of investors is going to be satisfied with just receiving average returns."

The initial reaction by investors was tepid at best, as the Trust had only $17 million in assets by mid-1977. Performance didn't help, either, as the S&P 500 Index trailed most mutual funds from 1977 to 1979. Acceptance, however, was just around the corner. By 1982, the Trust surpassed $100 million in assets, and by 1986 the Trust was in the top quintile of equity funds by size. This success was clearly just the beginning, as the Vanguard 500 Index Investor (the current name) now includes assets of over $87 billion (as of October 31, 2009).

Today, virtually every market, region, sector, or style that can be benchmarked has an index fund alternative. Many major investment firms run index portfolios, including former critic Fidelity. In fact, a Pensions & Investments/Watson Wyatt report listed Barclays Global Investors, State Street Global Advisors, and Vanguard Group, all noted managers of index-tracking mutual funds, among the top nine largest international money managers at the end of 2008.

CONCLUSION

Clearly, the rise in popularity of index mutual funds over the past three decades demonstrated the need that existed in the marketplace. Investors and academics wanted a vehicle to understand how their active managers performed, as well as an alternative to high active fees. With the advent of low-cost index mutual funds, investors had an obvious benchmark by which to gauge the results of active managers. This passive investment alternative provided a choice. No longer were investors faced with having to decide between active management and no management. Today, individuals as well as institutions can opt for low cost or seek out superior skill. They can implement Samuelson's challenge on their own portfolios.

While this chapter walked us through the path to the pervasive indexing seen today, one key topic was left untouched. What if simple, straightforward ways exist for managers to beat market indexes? What if the EMH is incomplete and other sources of systematic risk/return exist and can be captured? Index mutual fund providers have an alternative for this as well. In the next chapter, we discuss the evolution of style indexes and how they may or may not better reflect the actual portfolio construction processes of active managers.