Presentation Summary
S&P Dow Jones Indices

Commonwealth of Pennsylvania
Public Pension Management & Asset Investment Review Commission

The development of index funds and the rise of passive management must surely rank as one of the most significant development in modern financial history. Within fewer than 50 years, between a quarter and a third of U.S. assets under management have shifted away from active managers to various forms of index funds. Our presentation discusses three topics:

- What evidence led investors to make this shift?
- What underlying factors produced that evidence?
- Are there disadvantages to the continued growth of indexing?

<u>Evidence</u>

The first comparison of active performance versus that of unmanaged indices dates back to 1932, and by the mid-1970s systematic performance measurement had become a standard feature of the investment landscape. S&P Dow Jones Indices produces two major sources of evidence in the active-passive debate:

- **SPIVA** ("Standard and Poor's Index Versus Active"), a study now in its 18th year. This study compares actively-managed mutual funds to an appropriate passive benchmark. The consistent evidence of SPIVA is that most active managers underperform most of the time. For example, in calendar 2017, 63% of large-cap U.S. equity managers underperformed the S&P 500.
- The **Persistence Scorecard** uses the SPIVA database to ask whether managers who were successful (e.g., above average) in one year were also successful in subsequent years. Results vary from period to period, but in general are no better than random – i.e., an investor's chance of picking a manager who will be above average two years in a row is about the same as his chance of flipping a coin and getting two heads in a row.

The SPIVA database focuses on mutual funds, net of fees, and critics sometimes argue that manager underperformance is entirely due to fee levels. It's also fair to observe that institutional asset owners have substantial bargaining power, resulting in lower fees and potentially better performance outcomes than mutual fund investors realize. These objections are technically correct, but not decisive. Even ignoring fees, the majority of active managers still underperform. This is as true for institutional managers as it is for mutual funds.

The burden of SPIVA (and related studies) can be summarized easily:

- Most active managers fail most of the time.
- Historical manager success (whether measured against a peer group or a passive benchmark) is not predictive of future success.

Explanations

These results demand an explanation. After all, active managers are smart people, well-educated and well-trained; they work hard, and they stand to reap tremendous financial rewards if they succeed. Why do so many of them fail? We suggest four reasons:

- **Cost**. Other things equal, index funds charge lower fees than active managers. (The difference in 2016 was approximately 70 basis points annually.) This is an obvious advantage for passive management.

  It's interesting to quantify these cost savings. We estimate that approximately $3.4 trillion is indexed to the S&P 500. A 70 bp fee differential implies total savings of $23.8 billion annually. Of course, such savings would be chimerical if investors lost in incremental performance what they saved in lower fees. But, as SPIVA and related studies consistently document – they don't.

- **Professionalization** of investment management. There is no natural source of outperformance. Active management is a zero-sum game; one manager's outperformance is only possible because of another manager's underperformance. If a substantial majority of assets are managed by professionals, the likelihood is that at least half of them will underperform.

  Professionalization is related to the notion of **market efficiency**. "Market efficiency" for this purpose denotes the notion that market prices are a fair estimate of an asset's true value. To the degree that this is true, active management is fruitless. Indeed, the growth of indexing – by eliminating the least capable active managers – has contributed to market efficiency.

- **Skewed returns**. Stock market returns are not symmetrically distributed – they are skewed to the right, meaning that in most periods the average return is driven by a small number of big winners (e.g. the so-called FANGs last year). Skewed returns mean that most stocks underperform the market average, which is an obvious handicap to managers hoping to add value by stock selection.

- **Innovation**. Indexing has evolved from first generation broad market indices like the S&P 500 to more specialized factor index strategies (often called "smart beta"). Factor indices enable an investor to access a pattern of returns that he formerly would have had to pay active fees to get. "Indicizing" active strategies thus provides an additional benefit to asset owners. Active managers can no longer appear to add value simply because of their factor tilts; rather they must be able to add value by stock selection over and above the benefit of their factor exposures. Factor exposure can now be obtained passively.

Controversy

As implied above, the economics of indexing are daunting for the active management community. We estimate that the S&P 500 alone saves investors more than $20 billion annually.

So it's not surprising that active managers have been creatively diligent in criticizing index funds. Their substantive criticisms include:

- Common ownership: Index funds own stakes in many of the competitors in most industries. Does this encourage or facilitate collusive behavior?
- Stewardship: Do index funds exercise proper diligence over the management of the companies in which they invest?
- Bubbles: Do flows into passive vehicles exacerbate, or even cause, market bubbles?
- Market efficiency: Passive investors are "price takers" who buy a stock because it's in an index, not because they think the stock is cheap. Does price taking impede market efficiency?

<u>Common Ownership</u>

- The study most frequently cited by active managers alleges that the prices of U.S. airline tickets are higher than they would otherwise be because of common ownership. There is in no sense an academic consensus that this view is correct; it confuses causation and correlation. The critics' data on airline ticket prices span 2001-2014. Ticket prices may have risen, and the importance of index funds has certainly increased, but without a clearly identified causal mechanism, it's advisable to be cautious in attributing the first effect to the second.
- One company's revenue is another company's expense. Airlines accounted for 0.5% of the market capitalization of the S&P 500 as of year-end 2017. Even if index funds could cause airline executives to raise prices, why would they do so? Why increase the profits of 0.5% of your portfolio and raise the expenses of the other 99.5%?

<u>Stewardship</u>

- Each of the big three indexers (BlackRock, Vanguard, State Street) has increased governance staffing and been publicly vocal about their stewardship efforts.
- Index funds will hold every stock in an index, regardless of their view of its fundamental merits. They don't have an option to sell a holding with whose management they're uncomfortable. Because they're essentially permanent capital, index investors have a greater incentive to engage with corporate managements, not a lesser incentive.

<u>Bubbles</u>

- When new assets flow into an index fund, each index constituent is bought in proportion to its *pre-existing* index weight. Index buying (or selling) does not distort relative valuations.
- Critics sometimes argue that funds flowing into index funds exaggerate the importance of high-momentum stocks. This effect would occur if there were no index funds, since generally underperforming (low-momentum) active managers are replaced by outperforming (high-momentum) active managers. But if the effect exists, indexing reduces its magnitude, since index funds are more diversified than active portfolios.

<u>Market Efficiency</u>

- Passive managers are indeed price-takers, but so are most economic actors most of the time (unless they live in a barter economy). N.B. This is not true of factor indices, which buy and sell securities in response to the same variables that influence active managers.

- When index funds are offered in a market for the first time, where do the passive assets come from? If some active managers are more skillful than others, and their skill is manifested in outperformance, presumably the least skillful active managers lose the most assets. Indexing thus has the effect of culling the worst active managers. The ability level of the average active manager goes up. If the quality of active managers rises, market efficiency is enhanced.
- Active management's share of trading is far higher than its share of assets; it is trading that sets prices and drives market efficiency.
- The most frequently-traded security in the U.S. is an ETF tracking the S&P 500, and S&P 500 futures are among the world's most actively-traded derivative contracts. The active trading of these passive vehicles is itself an expression of investor sentiment and thus contributes directly to price discovery. Thanks to arbitrageurs, that discovery is then reflected in the index's component securities. Index vehicles therefore help to set prices at a macroeconomic level.

Summary

The flow of assets from active to passive management shows no sign of slowing, for some of the reasons we've cited. We speculate that, at some future date, a rough "equilibrium" between passive and active might come about. We suspect that the shape of this equilibrium will require that the majority of surviving active managers underperform by a relatively small amount, thus enabling a minority of active managers to outperform by a relatively large amount.

In the meantime, our conclusions remain:

- Most active managers fail most of the time.
- The rise of indexing has saved asset owners billions of dollars in management fees, without requiring that they accept a concomitant reduction in investment performance.
- Passive alternatives, both first-generation and factor-based, have created a difficult and challenging environment for active managers.
- Indexing has the ability to grow considerably beyond its current size without damaging capital market efficiency.