

Debunking some myths and misconceptions about indexing

Vanguard research note | April 2014

- The effectiveness of indexing as an investment strategy has clearly taken hold in the industry, as evidenced by the difference in cash flows between active and passive strategies (both equity and fixed income) over the past six years.¹
- The success of indexing is grounded in the theory of the zero-sum game, an economic and mathematical truism that starts with the understanding that at every moment, the holdings of all investors in a particular market aggregate to form that market (Sharpe, 1991).
- Yet despite the theory and publicized long-term success of indexed investment strategies, criticisms and misconceptions remain.

Myth #1: Indexing only works in 'efficient' markets

One of the most persistent myths in the investment industry is that it makes sense to use an index strategy in efficient markets, for instance with large-capitalization stocks, but to use an active strategy in inefficient segments. It's important to note that the term *inefficient* is often used to refer to *informational* inefficiencies. But investors must also consider the full spectrum of costs in those markets deemed less efficient.² The fallacy of the "efficient-market" myth is that the underlying objective of indexing is to own the market (whatever that market may be) and to get the return of that market (minus costs). The indexing concept makes no judgment as to market efficiency, size, or style, nor does it need efficient

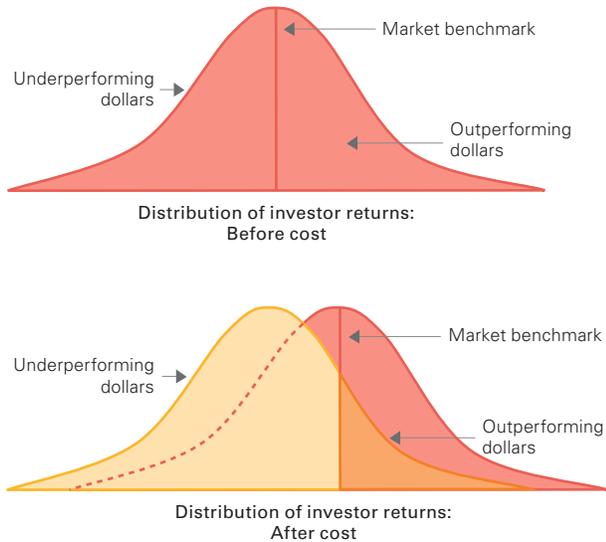
markets to be effective: Every market will always have an average return, whether the market is deemed efficient or otherwise.

Indexing works because of the cost-matters hypothesis (Bogle, 2005), which states that "whether markets are efficient or inefficient, investors as a group must fall short of the market return by the amount of the costs they incur" see (Figure 1 on page 2). Well-managed index funds strive to minimize all the costs of investing in a particular market. Figure 2 (on page 2), specifically the lackluster results of active management for small-cap blend equities and emerging-market equities, demonstrates the advantages of a passive strategy in two markets often considered inefficient.

¹ For the six years ended 2013, passively managed funds including index mutual funds and exchange-traded funds (ETFs) garnered \$1.37 trillion in net new cash flow. Actively managed funds garnered \$429 billion in net new cash flow for that period. (The categories covered include all funds focused on U.S. stocks, non-U.S. stocks, U.S. equity sectors, alternatives, and taxable bonds.)

² Costs include directly observable costs such as expense ratios and (for ETFs) bid-ask spreads, as well as hidden costs such as market impact and the bid-ask spreads of the funds' direct holdings.

Figure 1. Impact of costs on zero-sum game



Source: Vanguard.

Myth #2: Who wants to be ‘average’?

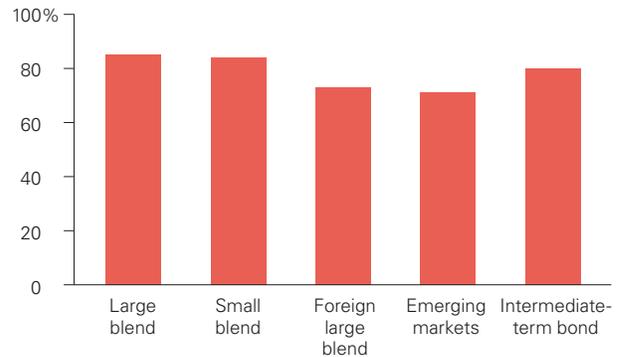
“Indexing is for ‘average’ investors” is an intuitive myth that plays to the fears of the human psyche. Why limit yourself to “average,” the myth says, when you have the chance to be exceptional? The reality, however, is that index funds, in their attempts to deliver the average returns of all investors in a particular market, have delivered far-from-average performance.

An important reason for this is cost. Indexing has proven to be a low-cost way to implement an investment strategy, lending a significant tailwind in producing *above-average* returns over the long term relative to higher-cost active strategies. For example, in Figure 2, 84% of active small-cap blend funds and 71% of active emerging-market funds underperformed low-cost index funds for the ten years through 2013. *Efficiently capturing the average returns of a market is far from “just average” performance when compared with investors’ collective experience.*

Myth #3: You get what you pay for— Higher cost + Higher ratings = Higher returns

The “higher the price, the better the product” myth is another intuitive, everyday maxim. In investing, it would seem to be translated as: “We can expect to enjoy higher returns from expensive or highly rated managers.”

Figure 2. Percentage of active funds underperforming low-cost index funds for ten years ended December 31, 2013



Notes: Index funds are represented by those funds with expense ratios of 20 basis points or less (1 basis point equals 1/100 of 1%) as of December 31, 2013. As shown in Figure 13 of *The Case for Index-Fund Investing* (Philips et al., 2014), an investor’s experience in index funds is directly related to a fund’s expense ratio. As a result, a cutoff of 20 basis points was deemed a reasonable limit for expenses. All performance numbers cover the ten years ended December 31, 2013, and include both surviving and “dead” funds (the latter meaning funds that were merged or liquidated). For this analysis we were limited in our evaluations by the existence of both indexed and active funds within each market. As a result, we focused on large-cap blend stocks, small-cap blend stocks, foreign developed-markets stocks, emerging-markets stocks, and U.S. diversified bonds. Please note that other time periods applied to this study; for further information on the 15-, 5-, 3-, and 1-year evaluations, see Figure 12 of *The Case for Index-Fund Investing*.

Sources: Vanguard calculations, using data from Morningstar, Inc.

However, the reality in investing is that this seemingly common-sense relationship is reversed—you often get what you *don’t* pay for (that is, higher performance is frequently equated with lower cost). Perhaps even more unintuitive is that highly rated funds have actually underperformed their lower-rated peers.

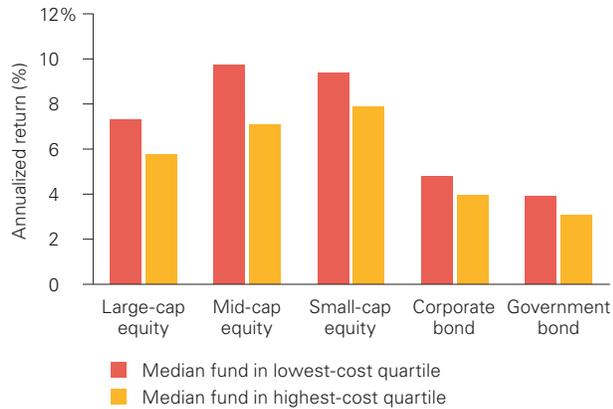
Figure 3 shows the relative performance of mutual funds for the ten years through December 31, 2013, grouped by cost. In each instance, lower-cost funds *outperformed* the higher-cost group. **Figure 4** displays the performance of funds in the three years following a given Morningstar rating: The best-rated funds consistently underperformed the worst-rated funds.

Myth #4: Market-cap weighting overweights the overvalued

The misconception that market capitalization is an invalid methodology for structuring an index has gained traction with the rise of alternatively weighted index funds and exchange-traded funds (ETFs).³ In fixed

³ For an in-depth evaluation of alternatively weighted indexes see Philips et al. (2011) and Thomas and Bennyhoff (2012).

Figure 3. Average annual returns for ten years ended December 31, 2013



Note: See Appendix for methodology.

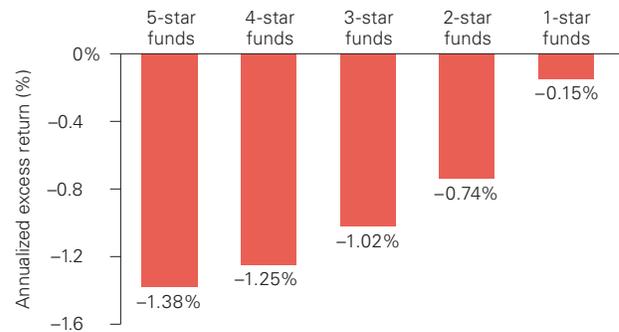
Sources: Vanguard calculations, using data from Morningstar, Inc.

income, for example, fears of investing in “the most indebted firms or nations” have led many to question the validity of market-cap-weighted indexes.

The reality, however, is that cap-weighted indexes fully reflect, at any point, the aggregate view of every investor in a particular market, as duly “voted on” by investors’ actual dollars. This is the only true, unbiased measure of a market’s “beta” (that is, the systematic risk of the market itself). Market cap is determined by the number of shares (or bonds) times the price of the security. Price is the critical variable, reflecting all market participants’ collective views and beliefs. As new information arises, the market price adjusts to reflect the risks and prospects of that security. Any deviation from a market-cap approach to index weighting therefore presumes that the collective valuation processes used by investors in the market are flawed. These deviations often lead to a concentration of risk exposures in one or more market segments, increasing risk relative to the market index.

The challenge in deviating from the market portfolio consistently over time is that the public capital markets are highly transparent and liquid, with numerous highly sophisticated participants seeking to capitalize on perceived mispricings on a forward-looking basis (hindsight is *always* 20/20). The evidence presented in Figure 2 would seem to undermine the claim that simply altering the weights of securities can generate outperformance, because the job of an active manager

Figure 4. Median excess returns of funds versus style benchmarks for 36 months following the Morningstar rating



Note: See Appendix for methodology.

Sources: Vanguard calculations, using data from Morningstar, Inc.

is to differentiate his or her fund from a benchmark in the pursuit of *alpha* (that is, a fund’s risk-adjusted excess return versus its effective benchmark.)

Myth #5: Index funds underperform in bear markets

We often hear that a benefit of active management is that the manager can move into cash or defensive positions to curb portfolio losses during market downturns or bear markets. In reality, the probability that these managers will move fund assets at just the right time is very low. Most events that result in major changes in market direction are unanticipated.

However, even when anticipated events come true, success can be difficult to capture. Since yields bottomed in 2009, many have forecast a rise in interest rates; yet, rates did not rise until 2013, and, unfortunately, a significant majority of actively managed fixed income funds underperformed their own benchmarks that year (Philips et al., 2014).

Equity funds have fared no better. Vanguard research has shown that since 1970, a majority of actively managed funds underperformed the market in four of the seven bear markets. Further, studies on performance persistence roundly refute the idea that a given manager can be expected to outperform consistently across market cycles.⁴

⁴ For documentation of points in this paragraph, as well as a summary of studies on performance persistence, see Philips et al. (2014).

References

Bogle, John C., 2005. The Relentless Rules of Humble Arithmetic. In *Bold Thinking on Investment Management: The FAJ 60th Anniversary Anthology*. Charlottesville, Va.: CFA Institute, 127-43.

Philips, Christopher B., and Francis M. Kinniry Jr., 2010. *Mutual Fund Ratings and Future Performance*. Valley Forge, Pa.: The Vanguard Group.

Philips, Christopher B., Francis M. Kinniry Jr., David J. Walker, and Charles J. Thomas, 2011. *A Review of Alternative Approaches to Equity Indexing*. Valley Forge, Pa.: The Vanguard Group.

Philips, Christopher B., Francis M. Kinniry Jr., Joshua M. Hirt, and Todd Schlanger, 2014. *The Case for Index-Fund Investing*. Valley Forge, Pa.: The Vanguard Group.

Sharpe, William F., 1991. The Arithmetic of Active Management. *Financial Analysts Journal* 47(1): 7-9.

Thomas, Charles J., and Donald G. Bennyhoff, 2012. *A Review of Alternative Approaches to Fixed Income Indexing*. Valley Forge, Pa.: The Vanguard Group.

Appendix. Methodology for Figures 3 and 4

Figure 3 methodology

All mutual funds in each Morningstar category were ranked by their expense ratios as of December 31, 2013. They were then divided into four equal groups, from the lowest-cost funds to the highest-cost funds. Figure 3 shows the ten-year annualized returns for the median funds in the lowest-cost and highest-cost quartiles.

Connect with Vanguard® > vanguard.com > research@vanguard.com

Vanguard research authors

Christopher B. Philips, CFA®
Joshua M. Hirt

For more information about Vanguard funds, visit vanguard.com, or call 800-662-2739, to obtain a prospectus. Investment objectives, risks, charges, expenses, and other important information about a fund are contained in the prospectus; read and consider it carefully before investing.

All investing is subject to risk, including the possible loss of the money you invest.

Vanguard ETF® Shares are not redeemable with the issuing fund other than in Creation Unit aggregations. Instead, investors must buy or sell Vanguard ETF Shares in the secondary market with the assistance of a stockbroker. In doing so, the investor may incur brokerage commissions and may pay more than net asset value when buying and receive less than net asset value when selling.

Morningstar data: ©2014 Morningstar, Inc. All Rights Reserved. The information contained herein: (1) is proprietary to Morningstar and/or its content providers; (2) may not be copied or distributed; (3) does not constitute investment advice offered by Morningstar; and (4) is not warranted to be accurate, complete, or timely. Neither Morningstar nor its content providers are responsible for any damages or losses arising from any use of this information. Past performance is no guarantee of future results.

CFA® is a trademark owned by CFA Institute.

U.S. Patent Nos. 6,879,964; 7,337,138; 7,720,749; 7,925,573; 8,090,646; and 8,417,623.

Returns are net of expenses, excluding loads and taxes. Both actively managed and indexed funds are included, as are all share classes with at least ten years of returns. Funds that were liquidated or merged were excluded from this analysis.

Figure 4 methodology

Morningstar ratings are designed to bring returns, risks, and adjustments for sales loads together into one evaluation. To determine a fund's star rating for a given time period (three, five, or ten years), the fund's risk-adjusted return is plotted on a bell curve. If the fund scores in the top 10% of its category, it receives five stars; in the next 22.5%, four stars; in the middle 35%, three stars; in the next 22.5%, two stars; and in the bottom 10%, one star. The overall rating is a weighted average of the available three-, five-, and ten-year ratings.

To calculate the median performance, Vanguard first assigned each fund a representative benchmark according to both size and style (growth versus value). We then compared the performance of each fund with the results of its style benchmark for each 36-month period since June 1992. We grouped funds according to their star ratings and then computed the median relative return for each rating versus the style benchmark for the subsequent 36-month period. More information is available in the Vanguard research paper *Mutual Fund Ratings and Future Performance* (Philips and Kinniry, 2010). Data are through December 2013.



Vanguard®

Vanguard Research

P.O. Box 2600
Valley Forge, PA 19482-2600

© 2014 The Vanguard Group, Inc.
All rights reserved.
Vanguard Marketing Corporation, Distributor.

ISGDSM 042014