MYTH: Higher-cost funds are worth it

REALITY: You don't always get what you pay for in mutual funds and ETFs.

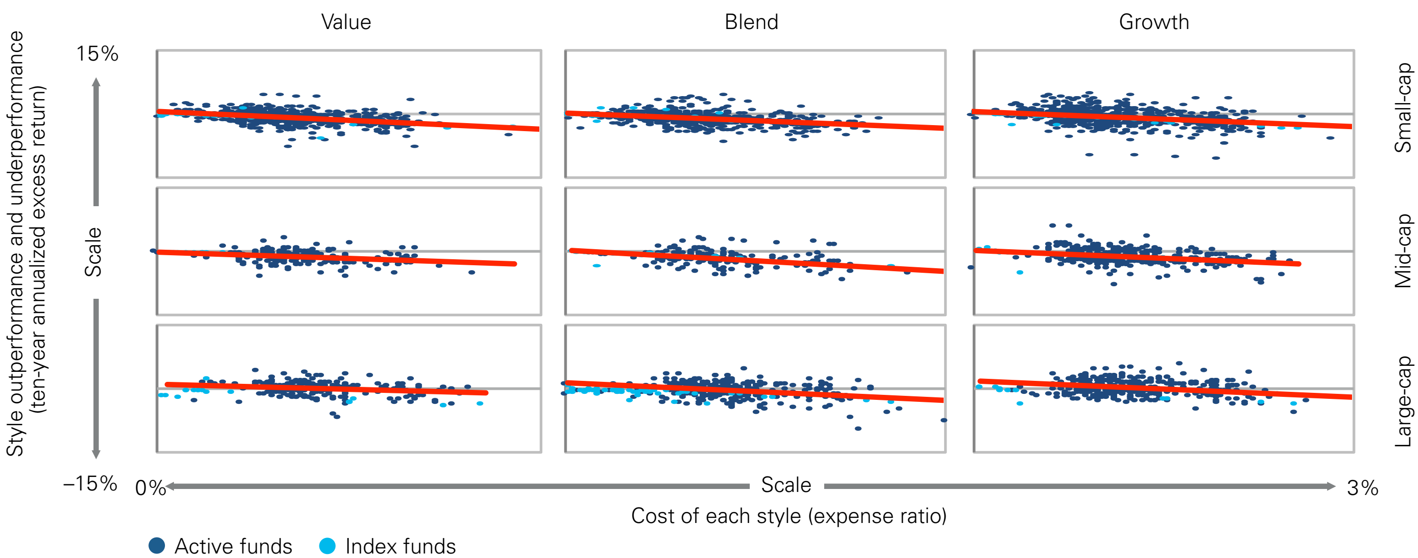
Psychologists have long recognized that we often use mental shortcuts—like price—to help in our decision-making. When the price for a product or a service is higher, we expect it will deliver greater quality and value.[1] The shortcut holds true much of the time: Fine restaurants offer a more tasty dinner than fast-food restaurants. More expensive cars have bigger engines and more luxurious interiors than less expensive cars. Hence, we believe we get what we pay for, and often we do.

But for mutual funds and ETFs, this shortcut doesn't work. In fact, the opposite tends to be true: The more you pay, the less of your investment returns you keep.

Our analysis shows this reality is true for all types of U.S.-listed funds and ETFs, including index-based ones. However, it can be more pronounced among active managers, who typically charge more than index funds. Clients can sometimes believe that more expensive active managers are smarter and will deliver better returns. But that's often not the case.

The graphic below shows scatterplots of index and active mutual funds, grouped into their respective style boxes. Whether it is small-capitalization value stocks or large-cap growth stocks or any of the others, the trend line slopes down. That means the more a fund costs, the lower the average excess return versus its style benchmark.

U.S. equity styles—Regression trend line shows that higher costs tended to lead to lower excess returns



Sources: Vanguard calculations, using data from Morningstar, Inc., as of December 31, 2018.

Notes: Each plotted point represents a U.S. equity mutual fund within the specific size, style, and asset group. Each fund is plotted to represent the relationship of its expense ratio (x-axis) versus its ten-year annualized excess return relative to its stated benchmark (y-axis). The straight line represents the linear regression, or the best-fit trend line—that is, the general relationship of expenses to returns within each asset group. The scales are standardized to show the slopes' relationship to each other, with expenses ranging from 0% to 3% and returns ranging from –15% to 15%. Some funds' expense ratios and returns go beyond the scales and are not shown.

Chart reflects all of the U.S. Equity and Fixed Income funds that fall into those style categories, according to Morningstar.

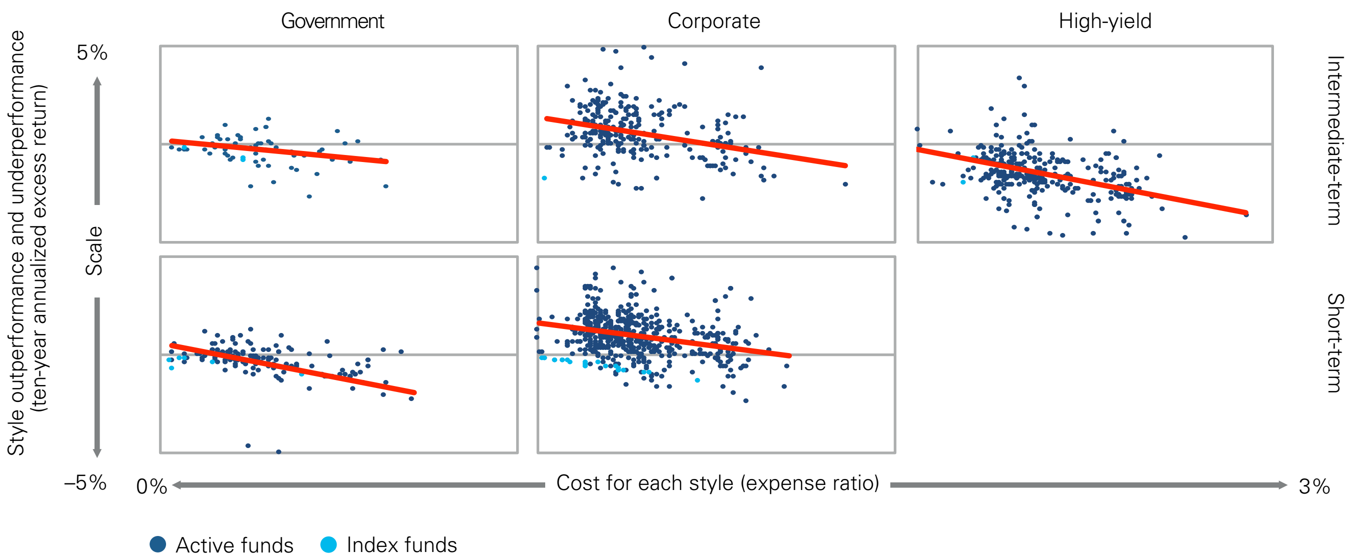
1 Francis M. Kinniry Jr., CFA; Colleen M. Jaconetti, CPA, CFP®; Donald G. Bennyhoff, CFA; Michael A. DiJoseph, CFA, 2016. *Reframing investor choices: Right mindset, wrong market.* Valley Forge, Pa.: The Vanguard Group.

Whether the fund invested in U.S. Treasuries or high-yield corporate bonds, the more that a fund charged, the worse it was likely to perform relative to its stated benchmark. At a time when yields are still low by historical standards, high expenses could siphon off a large portion of a fund's potential return.

Finding alpha

Alpha is a measure of risk-adjusted outperformance. Beating the market and doing better than you might otherwise expect is exciting. Investors may have a preference to invest in funds that attempt to generate alpha, but our research shows it is difficult to capture it. Even though it's an imperfect correlation, cost is one of only a few variables that can help forecast performance.[2] When shopping for alpha, you often get what you don't pay for.

U.S. fixed income styles—Regression trend line shows that higher costs tended to lead to lower excess returns



Sources: Vanguard calculations, using data from Morningstar, Inc. All data as of December 31, 2018.

Notes: Each plotted point represents a U.S. fixed income mutual fund within the specific duration, style, and asset group. Each fund is plotted to represent the relationship of its expense ratio (x-axis) versus its ten-year annualized excess return relative to its stated benchmark (y-axis). The straight line represents the linear regression, or the best-fit trend line—that is, the general relationship of expenses to returns within each asset group. The scales are standardized to show the slopes' relationship to each other, with expenses ranging from 0% to 3% and returns ranging from –5% to 5%. Some funds' expense ratios and returns go beyond the scales and are not shown.

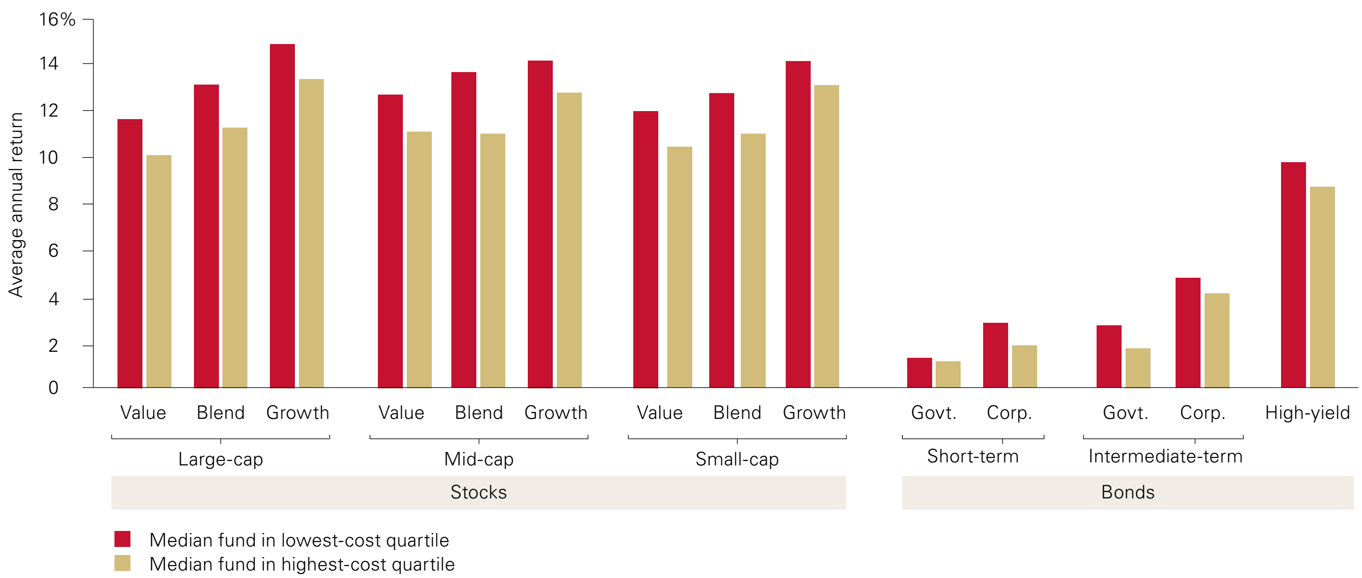
How to succeed with active

Vanguard believes that actively managed funds can play an important role in building a diversified portfolio. Sorting funds by cost is an effective way to begin a search for an active manager, but, ultimately, manager selection requires a robust qualitative and quantitative talent evaluation for the best chance of achieving alpha.[2] To succeed with active managers, you need to identify and have access to top talent at a low cost and then practice patience through the inevitable ups and downs in the financial markets.

Effective active management can be both art and science, but as you can also see from the graphic on the opposite page, on average, investing in lower cost funds leads to better returns.

Lower costs can support higher returns

Average annual returns over the ten years through 2018



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

Notes: All mutual funds in each Morningstar category were ranked by their expense ratios as of December 31, 2018. They were then divided into four equal groups, from the lowest-cost to the highest-cost funds. The chart shows the ten-year annualized returns for the median funds in the lowest-cost and highest-cost quartiles. Returns are net of expenses, excluding loads and taxes. Both actively managed and index funds are included, as are all share classes with at least ten years of returns.

2 Daniel W. Wallick, Brian R. Wimmer, and James J. Balsamo, 2015. *Keys to improving the odds of active management success.* Valley Forge, Pa.: The Vanguard Group

For more information about Vanguard funds or Vanguard ETFs, visit advisors.vanguard.com or call 800-997-2798 to obtain a prospectus or, if available, a summary 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 investments are subject to risk, including the possible loss of the money you invest.

Prices of mid- and small-cap stocks often fluctuate more than those of large-company stocks.

Bond funds are subject to the risk that an issuer will fail to make payments on time, and that bond prices will decline because of rising interest rates or negative perceptions of an issuer's ability to make payments. Investments in bonds are subject to interest rate, credit, and inflation risk.

While U.S. Treasury or government agency securities provide substantial protection against credit risk, they do not protect investors against price changes due to changing interest rates. Unlike stocks and bonds, U.S. Treasury bills are guaranteed as to the timely payment of principal and interest.

High-yield bonds generally have medium- and lower-range credit quality ratings and are therefore subject to a higher level of credit risk than bonds with higher credit quality ratings.

Past performance is no guarantee of future returns.

There may be other material differences between products that must be considered prior to investing.

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