



Quantifying the impact of chasing fund performance

Vanguard research note | July 2014

- Given many investors' goal of maximizing return, it's not surprising that some investors select funds based primarily on the funds' recent performance record. But is that a prudent strategy?
- This research note simulates a performance-chasing strategy among U.S. equity mutual funds for the ten years ended December 31, 2013; we then compare the results with a buy-and-hold strategy over the same period. Our analysis shows clearly that buy-and-hold has been the superior approach.
- For investors using active management, it's critical to understand that short-term performance should not be the sole reason to enter or exit a mutual fund. To improve their chances of succeeding with active funds, investors must be willing and able to avoid the thrill of the chase.

The lure of performance-chasing

The refrain *"Don't just sit there, do something!"* has become part of daily life. The phrase exhorts us to take action to bring about a change. For investors experiencing below-average mutual fund returns, this advice may seem reasonable. The resulting action plan for such investors frequently involves moving assets from one fund to another fund with a stronger performance track record over the past few years. In short, these investors end up chasing performance.

Research has shown that performance-chasing is not restricted to specific groups or subsegments of investors; rather, both retail and institutional clients have shown an inclination to chase performance (Goyal and Wahal, 2008; Bennyhoff and Kinniry, 2013). Given the intuitiveness and popularity of this behaviour, we decided to take a closer look at its underlying assumptions and historical performance.

In theory, performance-chasing succeeds if past performance can predict future performance. In financial terms, performance-chasing may provide a benefit if there is persistent, that is, repeated and prolonged relative outperformance from year to year. By performance-chasing, investors implicitly or explicitly assume that performance persistence is fairly strong. In contrast, investors who follow a buy-and-hold strategy are assuming that performance persistence is fairly weak and that excess returns are not likely to be gained by chasing performance. This research note compares

performance-chasing with buy-and-hold by comparing the returns and risk-adjusted performance of each strategy to determine if taking action based on past performance is worthwhile.

Study sample and ground rules

For our primary analysis we chose the universe of active U.S. equity mutual funds available in any of the nine equity style boxes in Morningstar's database during the ten years ended December 31, 2013. After filtering the database to include only funds in existence for a minimum of three calendar years at some point during the analysis period, we arrived at a study sample of 3,568 funds.

To compare performance-chasing with buy-and-hold, it's essential to define the trading/investment rules governing each strategy through time. We settled on a set of rules (see the box on "Trading/investment rules," on page 2) as a reasonable representation of actual investor behavior related to each strategy. Using these rules as part of a quantitative historical simulation for the period 2004–2013, we examined the performance of each possible path an investor could have taken within the trading-rule guidelines. We performed the analysis separately in each of the nine equity style boxes to control for size or style influences that might affect the results. Our simulation produced a total of more than 40 million return paths.

Trading/investment rules for this analysis

Performance-chasing

Initial investment: At the start of the analysis period, we invested in any fund in existence for the full three-year period from 2004 through 2006 that had an above-median three-year annualized return.

Sell rule: Using three-year rolling periods of returns, we moved forward one calendar year at a time. Funds that achieved below-median three-year annualized returns at any time were sold, as were funds that were discontinued.

Reinvestment rule: After any sale, we immediately reinvested in each fund that achieved an average annualized return within the top-20 performing funds in the style box over the prior three-year rolling period.

Buy-and-hold

Initial investment: Invest in any fund.

Sell rule: Sell only if a fund is discontinued.

Reinvestment rule: Reinvest in the median-performing equity mutual fund within the relevant style box.

Advantages of the methodology

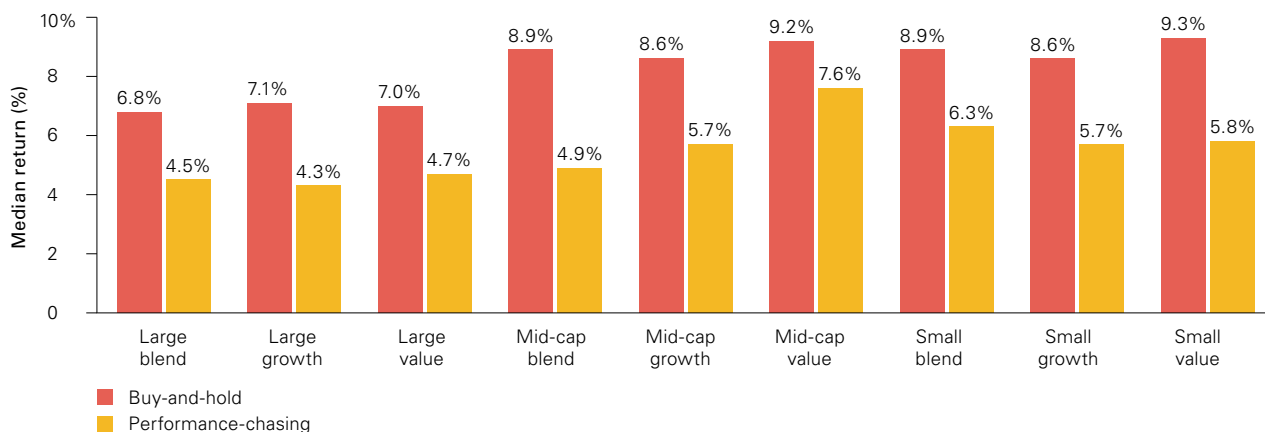
This process of cycling through the performance-chasing and buy-and-hold trading rules generated millions of potential return paths that could have been experienced by investors during the period 2004–2013. Using these return paths, we were able to calculate the median experience as well as the full distribution of potential outcomes for investors engaged in each type of strategy.

One rule in particular, the holding period over which performance is measured, has been the subject of extensive research in terms of performance persistence. We used a three-year rolling performance look-back for the performance-chasing strategy because of the time period's alignment with the approximate equity mutual fund holding period.¹

The clear winner: Buy-and-hold

Once all possible return paths were created for both the performance-chasing and buy-and-hold strategies, we calculated various statistics such as annualized returns and Sharpe ratios for each path during the full ten-year period. **Figure 1** summarizes the basic return results, and **Figure 2** provides more details.²

Figure 1. Buy-and-hold was superior to a performance-chasing strategy across the board: 2004–2013

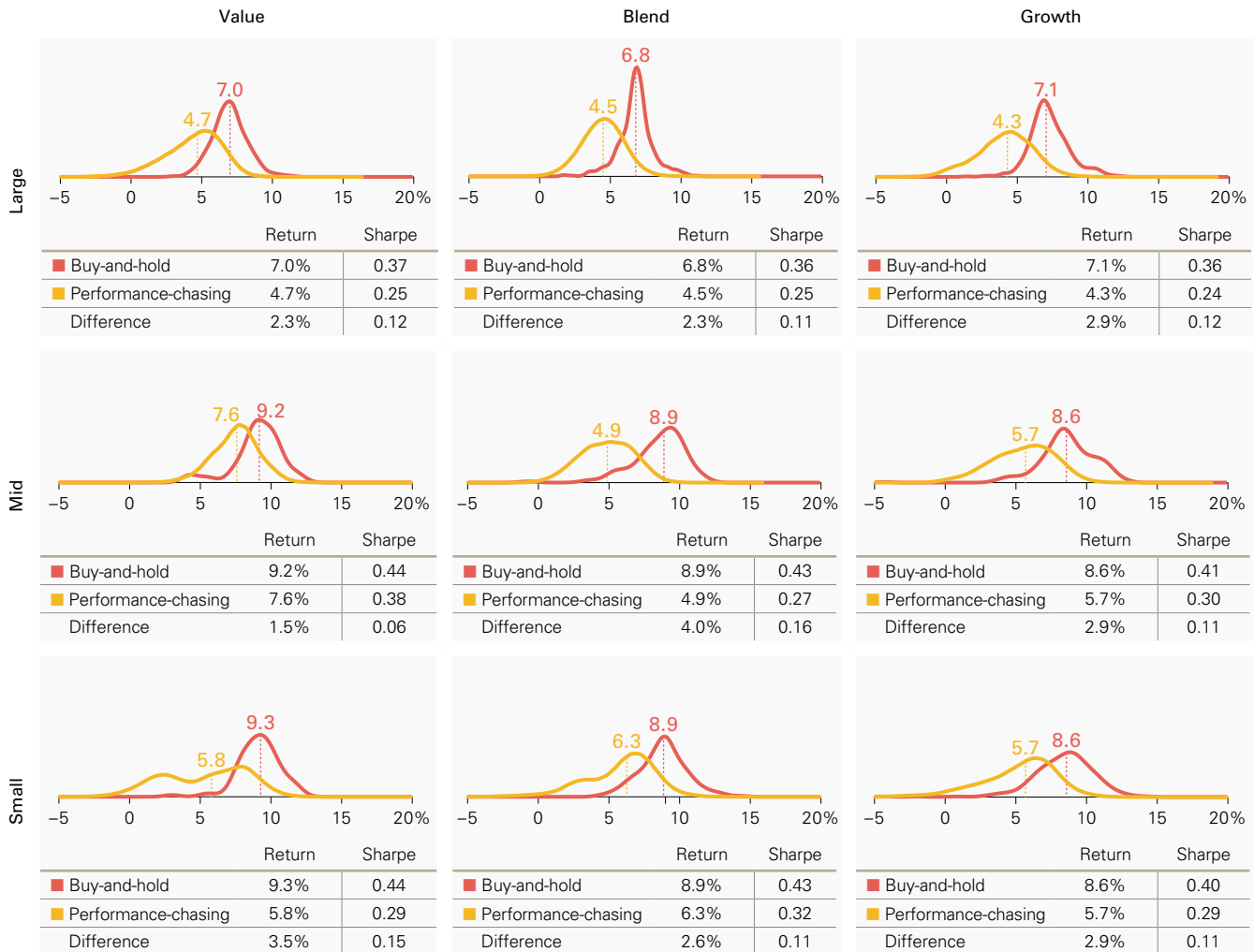


Source: Vanguard.

¹ Using U.S. equity fund redemption data from the Investment Company Institute for the 15 years from 1999 through 2013, we estimated that the average mutual fund holding period just exceeded three years. Admittedly, redemption ratios are an imperfect measure of mutual fund holding periods, but given a lack of direct evidence on the holding periods of mutual fund investors, we believe this is a reasonable proxy.

² Although the results are not displayed in this research note, we performed this analysis using a variety of trading rules and time periods and observed similar outcomes.

Figure 2. Detailed results of buy-and-hold versus performance-chasing strategies: 2004–2013



Notes: All returns and Sharpe ratios shown are median annualized; for “Difference,” numbers may not compute because of rounding. Area under the curves represents frequency of returns realized under either strategy, similar in effect to a histogram. Dotted lines represent median return of the distribution. Investors prefer distributions with higher median returns and less dispersion, or volatility, around the median.

Sources: Vanguard calculations, using data from Morningstar, Inc.’s nine equity style boxes.

In all nine equity style boxes, the returns produced by the buy-and-hold strategy bested those of the performance-chasing strategy (see Figure 2). Even more striking, the buy-and-hold strategy Sharpe ratios (a measure of risk-adjusted performance) also exceeded the performance-chasing Sharpe ratios in all nine equity style boxes. Interpreting these results in relation to our earlier discussion of performance persistence, one can infer that the top-performing mutual funds over a measurement period of three years have demonstrated weak performance persistence in subsequent periods.

We excluded from the analysis the impact of any potential transaction costs or taxes incurred. If included, one could reasonably expect that the results of the active performance-chasing strategy would be even weaker in relation to the

static buy-and-hold strategy. These results underscore that investing in mutual funds solely on the basis of their recent performance record is not likely to improve future returns.

Although it may be possible to tweak the performance-chasing rules and scour the historical data to find situations in which a buy-and-hold strategy has underperformed, our analysis supports the difficulty of succeeding with performance-chasing strategies in general. In Vanguard’s view, buying actively managed mutual funds based on a combination of qualitative and quantitative factors and then maintaining a disciplined approach and long-term perspective despite fluctuations in manager performance has been a simpler and more effective approach for increasing returns than chasing active manager performance.

Conclusion

Investors are naturally drawn to top-performing actively managed funds. The result for many is a performance-chasing approach in which current funds are sold from the portfolio to make room for recent winners. Vanguard research demonstrates that this behavior is misguided, as a buy-and-hold strategy has outperformed performance-chasing over the past decade in all nine Morningstar equity style boxes.

Our research furthermore reaffirms the importance of an oft-cited but frequently ignored legal disclaimer about investing: *Past performance is not necessarily indicative of future results*. This statement certainly appears to hold true among recent top-performing funds, and investors are well-advised to remind themselves regularly of it.

To improve the odds of their long-term investment success, investors should understand that some periods of below-average performance are inevitable. At such times, investors should remain disciplined in their investment approach and avoid the temptation to chase performance.

References

- Bennyhoff, Donald G., and Francis M. Kinniry Jr., 2013. *Advisor's Alpha*. Valley Forge, Pa.: The Vanguard Group.
- Berk, Jonathan B., and Richard C. Green, 2004. Mutual Fund Flows and Performance in Rational Markets. *Journal of Political Economy* 112: 1269–95.
- Bollen, Nicolas P., and Jeffrey A. Busse, 2005. Short-Term Persistence in Mutual Fund Performance. *Review of Financial Studies* 18: 569–97.
- Brown, Stephen J., and William N. Goetzmann, 1995. Performance Persistence. *Journal of Finance* 50: 679, 698.
- Carhart, Mark M., 1997. On Persistence in Mutual Fund Performance. *Journal of Finance* 52(1): 57–81.
- Elton, Edwin J., Martin J. Gruber, Sanjiv Das, and Christopher R. Blake, 1996. The Persistence of Risk-Adjusted Mutual Fund Performance. *Journal of Business* 69: 133–57.
- Goetzmann, William N., and Roger G. Ibbotson, 1994. Do Winners Repeat? Patterns in Mutual Fund Performance. *Journal of Portfolio Management* 20: 9–18.
- Goyal, Amit, and Sunil Wahal, 2008. The Selection and Termination of Investment Management Firms by Plan Sponsors. *Journal of Finance* 63(4): 1805–48.
- Grinblatt, Mark, and Sheridan Titman, 1992. The Persistence of Mutual Fund Performance. *Journal of Finance* 42: 1977–84.
- Hendricks, Darryll, Jayendu Patel, and Richard J. Zeckhauser, 1993. Hot Hands in Mutual Funds: Short-Run Persistence of Performance, 1974–1988. *Journal of Finance* 48: 93–130.
- Wallick, Daniel W., Brian R. Wimmer, and James D. Martielli, 2013. *The Case for Vanguard Active Management: Solving the Low-Cost/Top-Talent Paradox?* Valley Forge, Pa.: The Vanguard Group.
- Wimmer, Brian R., Sandeep S. Chhabra, and Daniel W. Wallick, 2013. *The Bumpy Road to Outperformance*. Valley Forge, Pa.: The Vanguard Group.



Connect with Vanguard™ > vanguardcanada.ca

Vanguard research authors

Brian R. Wimmer, CFA
Daniel W. Wallick
David C. Pakula

Commissions, management fees and expenses all may be associated with investments in a Vanguard ETF™. Investment objectives, risks, fees, expenses, and other important information are contained in the prospectus; please read it before investing. ETFs are not guaranteed, their values change frequently, and past performance may not be repeated. Vanguard ETFs™ are managed by Vanguard Investments Canada Inc

The views and opinions of the individual strategists are as of the original publication date, are subject to change and may not necessarily represent the views of The Vanguard Group Inc.'s portfolio management teams and/or Vanguard Investments Canada Inc. The individual strategists may not necessarily update or supplement their views and opinions whether as a result of new information, changing circumstances, future events or otherwise. No implied or express recommendation, offer, or solicitation to buy or sell any ETFs or to adopt any particular investment or portfolio strategy is made in this material. This report is not investment and/or tax advice and it is not tailored to the needs or circumstances of individual investors.

Any security, fund, index, portfolio or market sector mentioned in this report was done so for illustrative purposes only. No representation is made regarding the advisability of investing in third-party products that utilize the indices mentioned herein. The case studies and examples in this report are designed for illustrative purposes only and do not depict actual performance. The performance of an index or fund group average is not an exact representation of any particular investment, as you cannot invest directly in an index or fund group average. The index returns do not reflect the deduction of any fund expenses, brokerage fees or bid/ask spreads which would have reduced returns.

This information has been compiled from proprietary and non-proprietary sources believed to be reliable, but no representation or warranty, express or implied, is made by The Vanguard Group, Inc., its subsidiaries or affiliates, or any other person (collectively "The Vanguard organization") as to its accuracy, completeness, timeliness or reliability. The Vanguard organization takes no responsibility for any errors and omissions contained herein and accepts no liability whatsoever for any loss arising from any use of, or reliance on, this report.

This material is provided for educational purposes only to Financial Advisors and Institutional Investors. Vanguard ETFs are managed by Vanguard Investments Canada Inc. and are available across Canada through registered dealers.

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

CFA® is a registered trademark owned by CFA Institute.

© 2014 Vanguard Investments Canada Inc.
All rights reserved.

ISGNQFPC 082014