Do Actively Managed Small-Cap Funds Add Value?

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by Larry Swedroe

Active managers often contend that the market for small-cap stocks is less informationally efficient, thus allowing them to uncover mispriced securities and generate alpha. I will evaluate whether that claim is true.

This article will cover domestic funds; in my next installment, I will analyze international funds.

To begin my evaluation, I have chosen to analyze the performance of the 10 small-cap funds with the largest amount of assets under management (AUM) at the end of 2015. This keeps the list to a manageable number of funds. Later on, I'll take a look at the full universe of active funds with a 15-year track record.

To ensure that I examine long-term results through full economic cycles, I'll analyze the performance for funds over the 15-year period ending December 31, 2015. Furthermore, when there is more than one share class of fund available, I will use the lowest-cost shares obtainable for the entire period.

Before reviewing the results, it's important to note that this methodology creates a substantial bias in the data. I am considering only funds that survived the full period, and about 7% of all mutual funds disappear each year. Second, a fund that has outperformed its benchmark will have its AUM benefit from that strong performance. It will also then benefit from the investor cash inflows, which tend to follow strong performance. Thus, the funds with the strongest past returns will tend to be the largest.

This doesn't mean, however, that investors actually earned the same return as the funds' full-period results since they may not have been invested over the full term. Thus, the results are not truly reflective of what investors in these actively managed funds actually earned; they are biased upward. We should expect the funds with the most AUM to have outperformed (though their large asset size may hinder future performance).

As a result, the real question I will answer is the following: If investors were smart, or lucky, enough to identify these 10 stellar performers ahead of time, by how much did they benefit from utilizing them versus passive alternatives?

Keeping the aforementioned bias in mind, the table below shows the performance data for the 10 largest actively managed small-cap funds as of year-end 2015. As is my practice, I'll then compare the returns of these funds to the returns earned by comparable offerings (based on the Morningstar style categorization) from the leading provider of index funds, Vanguard, and a leading provider of passively managed structured asset class funds, Dimensional Fund Advisors (DFA). (Full disclosure: My firm, Buckingham, recommends DFA funds in constructing client portfolios). The returns data covers the 15-year period ending December 2015.

Fund	Symbol	Expense Ratio (%)	Annualized Return (%)
Small Growth			
T. Rowe Price New Horizons	PRNHX	0.79	9.5
Vanguard Explorer	VEXPX	0.53	6.6
Neuberger Berman Genesis	NBGIX	0.85	10.3
T. Rowe Price Small-Cap	OTCFX	0.91	8.8
Eagle Small Cap Growth A	HRSCX	1.10	8.6
Average		**0.84**	**8.8**
Vanguard Small Cap Growth Index	VISGX	0.23	7.9
Small Blend			
Fidelity Small Cap Discovery	FSCRX	1.06	10.3
Goldman Sachs Small Cap Value	GSSIX	0.94	10.3
Average		**1.00**	**10.3**
Vanguard Small Cap Index	VSCIX	0.08	8.4
DFA Small Cap	DFSTX	0.37	9.0
Small Value			
American Beacon Small Cap Value	AVFIX	0.81	10.7
AllianzGI NFJ Small-Cap Value	PVADX	1.04	10.2
Undiscovered Managers Behavioral Value	UBVLX	1.11	10.7
Average		**0.99**	**10.5**

Vanguard Small Value	VSIIX	0.08	8.9
DFA U.S. Small Cap Value	DFSVX	0.52	10.4

The following is a summary of the results:

- Relative to the Vanguard index fund benchmark, just one of the 10 largest actively managed small-cap funds underperformed. Interestingly, the underperformer was Vanguard's own active fund. When equal-weighting the three fund categories, the average active fund outperformance was 1.5%.
- Relative to DFA's structured portfolios, four of the five largest actively managed small-cap funds outperformed. When equal-weighting the two fund categories for which there were comparable funds, the average active fund outperformance was 0.7%.

Factor analysis

As is my practice, I'll now take a look at the performance of these funds using the analytical tools and data available at Portfolio Visualizer. Factor analysis provides important additional insights into a fund's performance. This is important because Morningstar asset class categories are very broad and actively managed funds can style drift.

The table below shows the results of the six-factor (market beta, size, value, momentum, quality and low beta) regressions. It includes not only alpha but also the t-statistic. Due to data limitations, the regression results cover the period from January 2001 through November 2015. Each t-stat is in parentheses. As a reminder, since the funds we are analyzing are the 10 largest small-cap funds, we should expect to see strong returns relative to the benchmark, and possibly positive alphas.

Fund	Symbol	Alpha
T. Rowe Price New Horizons	PRNHX	2.1 (1.6)
Vanguard Explorer	VEXPX	-1.6 (-1.5)
Neuberger Berman Genesis	NBGIX	0.6 (0.4)
T. Rowe Price Small-Cap	OTCFX	-1.1 (-0.9)
Eagle Small Cap Growth A	HRSCX	-1.2 (-0.8)
Fidelity Small Cap Discovery	FSCRX	-0.8 (-0.4)
Goldman Sachs Small Cap Value	GSSIX	-0.7 (-0.6)
American Beacon Small Cap Value	AVFIX	-0.4 (-0.4)
AllianzGI NFJ Small-Cap Value	PVADX	0.4 (0.3)
Undiscovered Managers Behavioral Value	UBVLX	2.2 (1.1)

Average		**-0.1**

Just four of the market's 10 largest small-cap funds produced positive alphas, and not one of them was statistically significant at the 5% level. And the average alpha was slightly negative. Given that these are the leading funds, the result is not only surprising, but serves to demonstrate how hard it has become to generate alpha once exposure to common factors is incorporated.

The trends that explain why generating alpha has become persistently more difficult are the subject of my book, co-authored with Andrew Berkin, *The Incredible Shrinking Alpha*.

Thanks to Standard & Poor's, it's possible to take a deeper dive into the pool of actively managed small-cap funds. I'll do just that by reviewing the results of the 2015 year-end S&P Indices Versus Active (SPIVA) Scorecard.

SPIVA scorecard results

The SPIVA scorecard has the benefit of eliminating survivorship bias. The longest period for which the report provides performance data is the 10-year period ending December 2015. Thus, the data below reflects that period's results. The following is a summary of its key findings:

- Of actively managed small-growth, small-blend and small-value funds, 92%, 89% and 86%, respectively, underperformed their benchmark index.
- Just 55%, 66% and 75%, respectively, of actively managed small-growth, small-blend and small-value funds that existed at the start of the period managed to survive the full period. This demonstrates that there is large survivorship bias if one is only looking at surviving funds (as Morningstar does in their performance rankings).
- On an equal-weighted basis, the average actively managed small growth fund returned 6.5% per year, underperforming the benchmark S&P 600 Growth Index by 2.3% per year. On an asset-weighted basis, the underperformance was 1.4% per year.
- On an equal-weighted basis, the average actively managed small blend fund returned 6.1% per year, underperforming the benchmark S&P SmallCap 600 Index by 1.9% per year. On an asset-weighted basis, the underperformance was 1.6% per year.
- On an equal-weighted basis, the average actively managed small value fund returned 5.9% per year, underperforming the benchmark S&P 600 Value Index by 1.3% per year. On an asset-weighted basis, the underperformance was 1.1% per year.

A deeper dive

Using Morningstar's database, I'll now take a look at the full universe of actively managed small-cap funds with 15-year track records for the period ending December 2015. Unfortunately, unlike the SPIVA data, Morningstar's data includes only live funds. That creates a problem with survivorship bias, which should be kept in mind as you review the results. As is my practice, I'll again compare the returns to both Vanguard and DFA funds.

Small-blend funds

There were 89 active funds in this category. The average return of the 89 funds was 7.7%. There are two Vanguard funds in this category, Vanguard Small Cap Index I (VSCIX), which returned 8.4%, and Vanguard Tax-Managed Small Cap I (VTSIX), which returned 9.0%. The average return for the two Vanguard funds was 8.7%, or 1% greater than the return of the average actively managed fund.

Investors are concerned not only with the odds of outperformance (or underperformance), but also with the amount that they might outperform (or underperform). Twenty-nine (32.6%) of the actively managed small-blend funds outperformed the average of the two Vanguard funds, with the average outperformance being 1.2%. However, the 60 (67.4%) actively managed funds that underperformed did so by a much greater average underperformance of 2.1%. This finding -- that underperforming funds tend to underperform by a larger amount than outperforming funds tend to outperform -- is consistent with results from other studies. In this case, the risk-adjusted odds against outperforming the Vanguard funds were 2.7:1.

DFA also has two funds in the small-blend category, DFA U.S. Micro Cap I (DFSCX), which returned 9.9%, and DFA U.S. Small Cap I (DFSTX), which returned 9.0%, producing an average return of 9.5%. Twenty (22.5%) of the actively managed small-blend funds managed to outperform the average return of the two DFA funds, with an average outperformance of 0.8%. The 69 (77.5%) actively managed funds that underperformed did so on average by a much greater -2.5%. Thus, the risk-adjusted odds against outperformance were 9.3:1.

Small-growth funds

There were 116 actively managed funds in this category. The average return was 6.4%. Twenty-two (19%) of these small-growth funds outperformed the 8.5% return of the Vanguard Small Cap Growth Index Fund (VSGIX). The average outperformance was 0.9%. The 94 (81%) funds that underperformed did so on average by a much greater -2.8%. The risk-adjusted odds against outperformance were 13.3:1.

Small-value funds

There were 45 actively managed funds in the small-value category. The average return was 9.0%. Twenty-three (51.1%) of these active funds outperformed the Vanguard Small Cap Value Index Fund (VSIIX), which returned 8.9%. The outperformance on average was 1.2%. The 22 (48.9%) funds that underperformed did so by a similar average of 1.0%. In this case, the risk-adjusted odds of outperformance were 1.25:1, with a slight advantage to the actively managed funds.

Compared to the DFA U.S. Small Cap Value Fund (DFSVX), just 13 (28.9%) of the active funds outperformed. Those that outperformed did so by an average of 0.7%. And the 32 (71.1%) funds that underperformed did so by a much wider margin of -1.6%. The risk-adjusted odds against outperformance were 5.7:1.

Both the SPIVA and the Morningstar data clearly show that active management is just as much a loser's game in the supposedly inefficient asset class of U.S. small stocks as it is in large-cap stocks. While it certainly may be possible to outperform comparable passively managed funds, the odds of doing so are so poor that it's simply not prudent to try.

Also, keep in mind that all of the results shown above are on a pre-tax basis. The research shows that for taxable investors, the largest cost of active management isn't typically the expense ratio of the fund, or its trading costs. Instead, taxes are often the largest expense. So, for taxable investors, the odds of winning are dramatically lower than indicated in the above results.

Summary

The above analysis demonstrates that if you could identify which funds would be the largest actively managed funds at the end of a 15-year period, it's likely that you would outperform passive strategies. But, even with such foresight, those funds were unable to generate sufficient alpha to overcome their expense ratios and other costs, with the 10 largest funds producing a slightly negative average alpha.

That being said, even low-cost, passively managed funds should generate negative alphas roughly equal to their expense ratios plus trading costs. For example, DFSVX, with an expense ratio of 0.52%, produced a six-factor alpha of -0.6. Thus, a small negative alpha should be viewed as a good accomplishment, because all strategies have at least some implementation costs.

Unfortunately, lacking perfect foresight, there is no evidence that investors, even sophisticated institutional investors with far more resources than most individuals, have been able to identify the few future winners in advance. In fact, the research shows that managers fired by pension plans due to poor performance tend to go on to outperform the managers that were hired to replace them.

Given that the vast majority of actively managed small-cap funds underperform – and when they do so, they tend to underperform by much greater amounts than the winners are able to outperform – there's little to no evidence of persistence in performance beyond the randomly expected. Additionally, the research shows that successful active management leads to inflows of capital that ultimately undermine the ability to outperform.

Thus, the winning strategy is to choose low-cost funds – either pure index funds or well-designed passively managed funds that provide investors with the desired amount of exposure to the investment factors (such as size, value, profitability/quality and momentum) to which they want capital allocated.

Larry Swedroe is director of research for the BAM Alliance, a community of more than 150 independent registered investment advisors throughout the country.

Disclosure: *The corresponding portfolios are provided for informational purposes only. The returns data included is from Morningstar, and the factor analysis tool was provided by* Portfolio Visualizer*.*

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