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The Drawbacks with Active Equity Management

Christopher M. Meyer, CFA

Many investors are not satisfied with merely capturing the stock market returns. Therefore, they hire professional managers to conduct extensive research into selecting individual stocks, believing their portfolios will produce returns that outperform the broad indexes. If this approach worked reasonably well, we would be advocates of employing active stock selectors to assist our clients in adding incremental returns. Yet the drawbacks to active management are too large to overcome and consequently preclude us from utilizing these strategies. What are these drawbacks? Specifically, we recognize the following:

1. Most active managers underperform their stated benchmarks
2. We cannot rely on past performance to identify outperforming managers beforehand
3. To gain any advantage with active management (if even possible) requires extraordinary patience

Most Underperform

By definition, most active managers must underperform the “market.” In a 1991 paper titled *The Arithmetic of Active Management*, William Sharpe, a Stanford University professor, one of the pioneers of the capital asset pricing model, and 1990 winner of the Nobel Memorial Prize in Economic Sciences, wrote:

> If "active" and "passive" management styles are defined in sensible ways, it must be the case that:
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> 1. before costs, the return on the average actively managed dollar will equal the return on the average passively managed dollar and
> 2. after costs, the return on the average actively managed dollar will be less than the return on the average passively managed dollar

Thus, the “average” active manager will equal the return of the market, but after costs, must by definition, underperform the market. The costs of an actively managed fund include explicit costs, such as the expense ratio and trading costs, as well as opportunity costs, such as holding some

cash, which is expected to underperform the stock market over the long-term. Considering the average expense ratio (includes the management fee, administrative costs, and custody costs) for an actively managed equity mutual fund is 0.86% (asset-weighted; the simple average is 1.33%)[1], the average annual turnover of a portfolio is roughly 50%[2] (higher turnover, or buying and selling of stocks, drives up the trading costs), and most funds hold some residual cash (i.e., 2-5%, thus driving down the return over the long-term vs. a 100% stock portfolio), the average active stock manager must outperform the benchmark index by at least 1.0-1.5 percentage points before fees in order to match the index return after fees.

Another consideration as to why most active equity managers are unable to consistently outperform their benchmarks is the efficient market hypothesis. This theory states that investors are unable to outperform the market because existing share prices incorporate and reflect all relevant information. As a result, professional managers conducting extensive research are unable to truly identify mispriced securities to buy undervalued stocks and sell overvalued stocks. Although some will outperform and some will underperform, if the market is truly efficient, we cannot attribute the outperformance to skill, nor the underperformance to a lack of skill. Rather, the performance is random, no different than throwing darts at a list of names.

While academic arguments and theoretical conjecture are interesting, what do real world results show? Standard & Poor's reviewed the performance of actively managed mutual funds versus their respective S&P Dow Jones Indices benchmarks. The results demonstrated that most active managers underperformed their respective benchmarks.

Percentage of U.S. Equity Funds Outperformed by S&P Benchmarks
Ten years ended December 31, 2014

	Growth	Core	Value	All Funds
Large	90%	84%	59%	82%
Mid	92%	88%	86%	90%
Small	92%	88%	87%	88%

Source: S&P Dow Jones Indices LLC, CRSP.

How to Identify Beforehand?

What if the stock market is not perfectly efficient, but efficient enough to permit only the most skillful managers to outperform? In this case, how would investors know which managers are skillful? Many would review past performance, believing managers with superior track records will produce superior returns in the future. The problem with relying on past performance is most managers do not have a long enough track record to distinguish whether their returns were the result of skill or luck. Furthermore, studies have demonstrated that performance is not persistent.

Suppose we knew for certain that a manager will outperform the market by an annualized 1 percentage point over the long-term (easily a top decile performer) with a tracking error of 6%. Tracking error is a measure of how closely the manager will track the benchmark. In this case, approximately two-thirds of the time the manager will return between -6 and +6 percentage points of the benchmark return plus the 1 percentage point outperformance, or between -5 and +7 percentage points of the benchmark return. Index funds have tracking errors close to 0% and active managers generally have tracking errors between 4-14%[3]. Based on statistical analysis, we would need a sample size of 138 years of performance in order to be 95% confident that the manager's excess return is not 0%. Not many managers have track records that go back to the Rutherford B. Hayes administration. Thousands have five or 10 years of performance data, but rarely is this long enough to identify skill from luck.

Sample size (years) needed to be 95% confident that outperformance is not 0%

Tracking Error	Outperformance vs. Benchmark (percentage points): 1	2	3	4	5
2%	15	4	2	1	1
3%	35	9	4	2	1
4%	61	15	7	4	2
5%	96	24	11	6	4
6%	138	35	15	9	6
7%	188	47	21	12	8
8%	246	61	27	15	10
9%	311	78	35	19	12
10%	384	96	43	24	15

We also know manager performance is not persistent. There are two reasons why investment managers footnote their performance track record with the disclaimer that "past performance does not guarantee future results." One, their compliance departments require them to do so and two, this statement is true.

Vanguard recently conducted a study analyzing the persistency of actively managed U.S. equity mutual funds by dividing the funds into quintiles based on their 5-year performance as of December 31, 2009. Thus, the top 20% of performing funds were classified as first quintile, the next 20% as second quintile, and so on. They then reviewed performance of these funds over the subsequent five years, while also tracking funds that merged or closed, in order to eliminate any survivorship bias. If top performing active stock selectors displayed persistency, we would expect most to remain in the top quintile. If performance was actually random, we would expect the top performers to be disbursed evenly across the five quintiles, assuming no closings or mergers. The results for the subsequent five year period did not appear to be too dissimilar from random. In fact, funds in the top quintile had a higher probability of being in the bottom quintile than remaining in the top quintile. Furthermore, of the over 5,000 funds that were analyzed, only 3% achieved top quintile performance over both five year periods (2009 and 2014), proving how unlikely a fund will rank in the top quintile for two consecutive five year periods.

			Quintile ranking in subsequent nonoverlapping 5-year period ended 12/31/2014 (percentage of funds)						
Quintile	No. of Funds	Excess return ranking (5 years ended 12/31/2009)	Highest quintile	High	Medium	Low	Lowest quintile	Merged/ closed	Total
1	1,091	Highest quintile (1)	13.5%	16.6%	20.3%	16.2%	23.5%	9.9%	100.0%
2	1,083	High (2)	12.4	13.5	16.0	20.6	15.5	22.1	100.0
3	1,084	Medium (3)	14.9	13.9	14.2	17.7	13.4	25.9	100.0
4	1,085	Low (4)	13.8	15.1	11.0	12.3	10.0	37.9	100.0
5	1,032	Lowest quintile (5)	13.8	11.5	10.9	10.6	8.7	44.6	100.0

Notes: The first two columns rank all active U.S. equity funds within each of the Morningstar style categories based on their excess returns relative to their stated benchmarks during the period cited. The shaded columns show how the funds in each quintile performed over the next five years.

Sources: Vanguard and Morningstar, Inc.

Because a five year time period is too short to identify a skillful manager and studies demonstrate a lack of persistency in fund performance, investors would be wise to not place too much emphasis on short-term track records.

Active Management Requires Patience

If an investor believes that only a select few professional managers are skillful (possibly true) and also believes there are ways to identify skillful managers beforehand (unlikely), the investor must be extraordinarily patient to realize the benefits of active management. Most investors are unwilling

to tolerate long periods of underperformance and therefore terminate the manager, usually at the most inopportune time (when their performance has bottomed and they are due to rebound). Let's go back to our hypothetical manager who will outperform the benchmark by an annualized 1 percentage point over the long-term. How often would this manager underperform the benchmark over certain time periods? Based on statistical analysis, we would expect this manager to underperform the benchmark over 35% of five year periods and 30% of ten year periods. Thus, investors able to select superior managers beforehand would still need to be willing to accept underperformance over five and ten years (a time period many consider long-term). Few investors are willing to tolerate five years of underperformance, let alone ten years without making some changes.

Conclusion

Investment theory, academic studies, and real world results demonstrate that active equity managers have difficulty outperforming their benchmark returns. Even if there are skillful managers, investors would have difficulty identifying these managers beforehand (although some outspoken advocates of active management have no problem identifying them afterwards). Relying on past performance is not a reliable measure of a manager's skill, as most do not have track records long enough to distinguish skill from luck and past performance is not a reliable indicator of future performance. Moreover, those investors who are confident in their ability to select superior managers are rarely patient enough to withstand the invariable performance slumps all active managers eventually experience.

As fiduciaries, we believe our clients' interests come before our own. Rather than invest in a manner that appears glamorous and allows us to offer erudite commentary in order to validate our worth, we employ a disciplined, evidence-based approach to investing. Therefore, we invest with index funds and other low cost strategies that consistently and efficiently capture desired market factors. By focusing on portfolio construction and disciplined rebalancing to diversify and mitigate risk, and eliminating the often unpredictable results from active management, we believe we serve our clients' best interests and improve the probabilities that they can attain their investment objectives.

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[1] Investment Company Institute, 2015. *2015 Investment Company Fact Book: A Review of Trends and Activities in the U.S. Investment Company Industry*, 55th Edition.

[2] Dimensional Fund Advisors, 2015. *The US Mutual Fund Landscape*.

[3] Petajisto, Antti, 2013. *Active Share and Mutual Fund Performance*, Financial Analysts Journal (69) 4.