

A Better Way to Spend Your Investment Expense Budget

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A 30-year long skirmish between supporters of active investment management and supporters of indexing has often turned to the differences in the costs between these two approaches. As new research on the topic demonstrates, the true cost of active management is much higher than most people think, and this leads us to an exploration of how an investor can use this insight to structure more effective portfolios.

Active investment management, in which a portfolio manager attempts to beat the market, and indexing, in which a manager attempts to mimic the broad market or a particular market segment, are in theory, diametrically opposed. In reality, the differences are not that dramatic.

The debate is muddled by the fact that many mutual funds, including some of the most popular, are at their core really just index funds “wrapped” by active management and higher fees. They are sometimes cynically referred to as “closet index funds” because their pattern of returns is highly correlated to their relevant index despite (or perhaps because of) their active management decisions.

While closet indexing isn't necessarily a bad thing, investors are paying far more than they realize for the manager's value-added investment expertise -- the active management portion of the closet index. We believe there is a better way for investors to construct portfolios.

Part I: On closet indexing

For the purposes of this article, I will focus on funds that invest in large cap U.S. equities, although the patterns we see here are consistent across most developed equity markets.

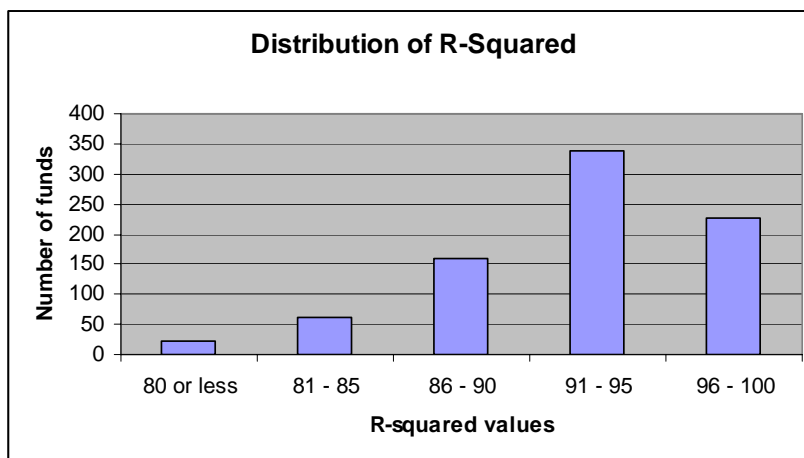
There are a variety of reasons why many funds have become closet index funds over the past 10 –15 years. Some of these reasons are benign and but some are clearly in conflict with the best interests of investors. Let's explore some of these reasons:

1. As rating services such as Morningstar have grown in popularity, their influence over the mutual fund industry has broadened based on their simple yet strict definition of style boxes. The more tightly a box is defined around an index, the less freedom a manager has to stray from the index without going outside a certain style box and suffering potentially negative comparisons to her peer group.

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2. Despite what investment ads may say, for all but a few investment management firms, running a fund company has always been about developing efficient distribution networks to gather as many assets as possible as opposed to just focusing on performance. As a fund grows sufficiently large, it is difficult for an active manager to put all that money to work without inviting index-like returns to come along for the ride.
3. Related to the above point, fund companies are for-profit enterprises that make money based on the size of the assets they manage. The larger the asset base, the more revenue and profit. By closely following an index, a fund is less likely to experience a sharp deviation from expected performance that might lead to a large outflow of assets. The flip side to this of course is that the manager removes the opportunity for out-sized returns.

According to the Morningstar database, there are 1,286 actively managed, diversified large cap U.S. equity funds. Of these, 808 fit with one of three common indices: the S&P 500, Russell 1000 Value, and Russell 1000 Growth. On average, these funds have an R-squared (hereinafter written as R^2) of 0.93 with one of these three indices. R^2 is a measure of how much of a fund's movement is explained by a corresponding index, i.e. with no active management at all. In other words, it is a measure of correlation with 1.0 being perfectly correlated (or perfectly negatively correlated) and 0 implying no correlation at all. Therefore, an R^2 of 0.93 is indicative of a high degree of correlation. Which means that investors in the index and investors in the active fund should expect similar investment experiences.



There are diversified funds that have relatively low correlations to an underlying index and funds that are not highly diversified, such as sector funds or concentrated portfolios. However, most investor money is in funds that are highly correlated to their respective index.

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Part II: Segregating active management from the closet index

One key factor in the ongoing debate between active and passive portfolio management is expenses. Simply put, actively managed funds are more expensive than index funds. But simply comparing the expense ratios of active vs. index funds is only half the story. Using some recent research by Ross Miller of the State University of New York at Albany, we see that there is far more to the cost equation than just expense ratios.

Before we begin though, it will be helpful to introduce another piece of terminology, Alpha. Alpha is that portion of a fund's performance that cannot be explained by the index. It is the active manager's unique contribution.

For example, if an index returns 5 percent over the risk-free rate and an active manager returns 6 percent over the risk free rate, the Alpha is 1 percent (we set aside a discussion of beta for another day). We'll keep the rest of the discussion relatively simple, but the above concepts and nomenclature should prove helpful.

Academic studies and empirical data support the position that asset allocation (i.e., how an investor chooses to distribute her assets across different asset classes and sub-classes) is the primary determinant of portfolio performance. This implies that the investor, in order to get pure asset class exposure, should prefer index funds for this portion of her portfolio. Other studies have demonstrated that fund expenses have an inverse correlation to future long-term fund performance. In other words, the higher the expenses, the more likely the fund is to under-perform.

But just how expensive is active mutual fund management?

Using the same average data from above, the typical diversified US large cap actively managed fund has an expense ratio of 1.39 percent (not including sales loads). Low cost, no-load S&P 500 index funds are substantially less expensive (the Fidelity Spartan 500 Index fund costs 0.13 percent and the Vanguard 500 Index fund costs 0.18 percent). There are even lower cost options available through the ETF market, or with larger investments.

It should be no surprise to anyone that active fund management costs more than passive fund management. Here's the real kicker, though. As stated earlier, actively managed funds have, on average, an R^2 of 0.93. This means 93 percent of the fund's variance is explained by its underlying index and only 7 percent comes from the efforts of active management.

When an investor invests in an actively managed fund, she gets the active and passive components bundled together for one fee. However, if we could separate the portion of the assets that drive the 7 percent "active" variance from the portion driving the index-like returns, we could gain a better understanding of how much the investor is paying for the active management portion.

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To calculate the active and index portions of a fund, we need some simplifying assumptions and some basic math. The key is to convert the R^2 to a portfolio weight for the active and index components (since an investor invests dollars not variance).

The formula¹ for calculating the weight of the active portion of the portfolio is:

$$\frac{\sqrt{1 - R^2}}{(\sqrt{R^2}) + (\sqrt{1 - R^2})}$$

To calculate the weight of the portfolio ascribed to the index, just subtract the active weight from 100. (Note to interested parties: The R^2 for a fund is available for free over the Internet from services such as Morningstar or Yahoo! Finance or from the fund company's web site.) With the R^2 in hand, you can convert the above equation into a Microsoft Excel formula to calculate the active weight of any fund as follows:

$$=SQRT(1 - R^2)/(SQRT(R^2) + SQRT(1 - R^2))$$

Let's take the T. Rowe Price Growth & Income fund as an example. The fund's expense ratio is 0.78 percent (cheap compared to the average) and it has an R^2 of .97 (higher than the average). For the sake of this analysis, let's use the Vanguard index fund at 0.18 percent as our sample index fund. The active weight of the portfolio using the above formula is 15 percent. The passive or index weight then is 85 percent (100 percent minus the active weight).

Next we can apply the fund's excess expenses of 0.60 percent (the cost of the fund over the index expense) to the active weight, resulting in the total cost for active management. The implied cost of active management in this example is 4.19 percent. In short, the higher the R^2 , the higher the implied cost of active management and the higher the fund's expense ratio, the higher the implied cost of active management.

Part III: A better way to construct portfolios

The above discussion represents more than just an academic exercise. Rather than paying for a bundled active and passive investment, the investor could invest the passive weight of her portfolio in an index and the remainder in a separate, uncorrelated investment, such as a hedge fund or a mutual fund with low R^2 (that may or may not employ hedging strategies). As long as that investment costs less than the expense for the bundled active management (4.19 percent in the above example above), the investor is saving on investment expenses.

Alternatively, the investor has the ability to strategically redeploy her expense budget by adding additional asset classes or sub-classes to her portfolio. If done properly, this

¹ For a full description of the derivation of this formula, please see "Measuring the True Cost of Active Management by Mutual Funds" by Ross Miller, State University of New York at Albany, August 2005.

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would have the effect of reducing overall portfolio volatility with an index-only portfolio. The key here is that it should be the investor's choice, not the fund manager's, as to how to allocate investment expenses between active and passive management.

What are the implications of the excessive cost of institutional investments? For institutional and individual portfolios, it suggests that prudence demands a core portfolio based on passively managed investments complemented with carefully chosen, non-correlated active management. Blue Prairie Group practices this methodology through a careful consideration of portfolio design, including rigorous asset class and manager selection.

For the ERISA plan sponsor, the high cost of institutional investments supports the Blue Prairie Group approach to plan design; our focus is on driving down plan costs as a fundamental duty of the investment committee in the course of discharging its fiduciary duty.