Judging Fund Performance: Part 1

Geoff Considine, Ph.D.

You have probably read that most funds under-perform their respective benchmark indices. The authority in reporting these kinds of statistics is Standard and Poor's via their quarterly scorecard report—often referred to as SPIVA:

http://www2.standardandpoors.com/spf/pdf/index/SPIVA_2007_q1.pdf

The most recent SPIVA report shows, for example, that 72% of all domestic large-cap equity funds have been out-performed by the S&P500 over the past five years (the fraction is 65% over the past three years). Further, 77% of mid-cap equity funds have been beaten by the S&P mid-map 400 index, and more than 77% of small-cap equity funds have been beaten by the S&P Small-Cap index over the past five years. This news is rather sobering because it suggests that about three fourths of equity funds in the U.S. have simply under-performed the broad-based equity classes that they belong to. This is the kind of data that sets the foundation for many advisors to advocate that investors simply purchase very low-cost index funds. The issues at hand are, in fact, more complex than this advice suggests and I will attempt to explain some of the key concepts.

Perverse Incentives for Fund Managers

Comparing mutual fund performance to a benchmark is one of the standard practices in the investing world. Unfortunately, standard approaches to benchmarking and ranking of funds, along with investors' responses to these metrics, create some perverse incentives for fund managers and for fund families as a whole. The term ***perverse incentive*** (for those who have not encountered it before) refers to an incentive that has "an unintended and undesirable effect that is against the interest of the incentive maker."

http://en.wikipedia.org/wiki/Perverse_incentive

In the case of mutual funds, the perverse incentives are created by the ways that fund performance is measures and by the ways in which investors subsequently invest their money. I am not suggesting that fund managers are doing anything wrong—they are simply responding to the incentives that the industry has created.

The basic incentive structure in the mutual fund industry is simple. If you are a fund manager and you want to be successful, you need to manage a fund that generates higher returns than the benchmark index against which it is compared and also ranks high in total return when compared to other funds in its class. Investor dollars overwhelmingly flow into the highest-performing funds.

Investors suppose that managers beat their benchmarks and other members of their style class by picking the best stocks from within the specific universe of the class. The concept is that the top-performing domestic large-cap equity fund must be largely comprised of better selections from within that universe. Managers and fund families have several additional tools that they can use in trying to create "winning" funds, however. First, there is the ability of a fund family to simply shut down or merge funds that perform badly. What this means is that a fund family will do better to create a number of funds with different manager styles, run them for a while, and then shutter the ones that do poorly. This gives the fund families a better apparent record when investors look at their performance reports because the investors can no longer see the poor performers that have been shut down. Second, ***reports like SPIVA compare returns from a fund to a benchmark but do not account for risk levels***. A fund manager therefore has an incentive to take on more aggressive investments, as a whole, than the index against which he will be judged. More risk means more potential return. This means that funds may be more risky than their benchmarks. The third and final perverse incentive that I will discuss is what I call ***style blurring,*** which means that the fund has either substantial sector concentrations or invests in asset classes outside of its benchmark style class. A "domestic" stock fund might have substantial foreign equity holdings, for example. A fund manager can do this fairly aggressively and still stay within a "domestic" classification under Morningstar for example. Why would a manager want to do this? By combining asset classes that are not well correlated to the benchmark index, it is possible to increase return relative to risk—this is the essence of diversification. So, if you can build a fund that is more diversified than the benchmark index, you are essentially guaranteed an advantage.

It is important to understand that these managers are not doing anything wrong—they are simply responding to the system of incentives. The question is whether they are actually generating value to justify your investing in their funds. If all a fund manager is doing to beat the S&P500 is to put 30% of his 'large cap domestic fund' into materials, emerging markets, and energy, you can just the same thing for far less in fees—you just invest in some index funds. You don't need to pay a fund manager's multi-million dollar salary to get these benefits.

I have discussed three 'perverse incentives' for fund managers:

1) Survivorship bias
2) No accounting for risk level
3) Style blurring

Do fund managers exploit these? Yes—very often, as I will show.

1. Survivorship Bias

One of the very interesting pieces of information that SPIVA tracks is ***survivorship bias*** in fund performance. What this means is that funds that perform poorly are typically shut down or blended with other funds, and the funds that have performed well are continued. Think of it like this. Let's say that your mutual fund firm has two equity mutual funds. One has generated 2% per year and one has generated 15% per year. Nobody wants to invest in an equity fund that has generated 2% per year, so you simply shut it down. Now, your fund track record appears to be represented by just the 15% per year when a prospective investor looks at your track record because fund families do not maintain public access to fund histories once funds have been shut down. ***SPIVA shows that almost 30% of all equity mutual funds have been liquidated or merged into other funds over the past five years***. This means that when you go looking for current investment opportunities, you are going to see the funds that a fund family wants you to see.

2. Taking on More Risk than the Benchmark

When a fund is classified as a 'large cap' fund, for example, and benchmarked against the S&P500, this does not mean that the fund has the same risk level as the S&P500. If you have a fund that is riskier than the S&P500, you expect to get higher returns than the S&P500—that is the basic risk/return issue. This is not a measure of manager skill, but simply that a manager who exposes you to more risk can get you more return. SPIVA does not document risk levels, which is unfortunate, but we can easily look at where the incentives of a fund manager lie. If I were a fund manager and knew that my fund's performance would be judged against the S&P500, I would build a fund that was more aggressive than the S&P500. I would know that investors would tend to buy my fund if it out-performed the S&P500 but not if it didn't. If the fund did really well and attracted lots of new money, I would get a big bonus. If the fund did poorly, I wouldn't have to cover the losses. Nobody would judge my return relative to the risk that I took on—witness the lack of risk measures in SPIVA. Clearly, I have an incentive to build a fund that is more aggressive than the benchmark against which I will be judged. It is easy to check whether this, indeed, occurs (hint: it does).

3. Style Blurring

It may not be obvious if you are not familiar with portfolio theory, but fund managers who blend in assets that are not well correlated to the index against which they are judged are getting some free returns for the same level of risk—i.e. higher returns that are not due to skill. For a detailed explanation of how this works, see the following article:

http://etf.seekingalpha.com/article/24588

The diversification value that a manager who blends assets classes can exploit is not what you want to pay a manager for—you can do this yourself. Further, if you buy a fund in which the manager is doing this, you will have a harder time effectively diversifying your total portfolio.

The Data

As you have read the strategies listed above, you will naturally be wondering if this is really how top fund managers generate their market beating performances. As you will see, to a large extent this is the case. Yahoo! Finance provides lists of the top-performing mutual funds by category. Here, for example, is a list of top performers among mutual funds:

http://biz.yahoo.com/p/top.html

Now select "Large Blend" under the category "U.S. Stock Funds." Let's take a look at the top five-year performers and see what the managers are up to. Bear in mind that a "large blend" U.S. equity fund will typically be benchmarked against the S&P500. The table below lists the Beta and Standard Deviation (SD) in annual return for nine of these top-ten "large blend funds" over the last three years (through June 2007). The S&P500 is also shown in the table below for reference. Of these funds, every single one of them is substantially riskier than the S&P500. The standard deviation in return (SD) is the standard measure of risk and the SD for these funds is much higher for all of these funds than for the S&P500. Beta measures how a fund tracks with the S&P500. Beta is 100% for the S&P500, by definition. Beta higher than 100% means that a fund amplifies the swings in the S&P500. All but one of these funds has Beta greater than 100%.

Ticker	Beta	Annual SD in Return	Average Annual Return
JSVAX	144%	12%	26%
CGMFX	96%	19%	27%
HIACX	140%	14%	9%
USCGX	139%	12%	20%
HIBCX	140%	14%	9%
HCAYX	117%	10%	19%
FCLIX	133%	11%	19%
FCLAX	133%	11%	19%
ITHAX	117%	10%	18%
S&P500	100%	7%	13%

Trailing three year Beta, SD, and average return for top-performing U.S. equity large-cap blend funds

The top two funds (JSVAX and CGMFX) are also the highest in this category over the most recent three years. What these statistics suggest is that these top-performing U.S. large-cap equity funds are beating their standard index (at least partly) by being more risky—which is not a sign of manager skill. Note that HIACX and HIBCX have generated average annual returns of only 9% per year over the past three years—despite having been in the top ten for the five year period. This is a good indication that they were pursuing risky strategies that performed well early on but that have gone sour in recent years. If you are looking at high-performing funds over three years that are not high-performers over five (or vice versa), this is a sign that a fund was simply a high-risk play—especially when that is confirmed by looking at volatility (i.e. SD) or Beta.

Now, how about for the funds that seem to have some persistent high returns? Consider the Janus Contrarian Fund (JSVAX). With a standard deviation of 12% and Beta of 144%, this portfolio is much riskier than the S&P500. JSVAX has a large holding in foreign equities—fully 37% of its equity holdings are international:

http://quicktake.morningstar.com/Fundnet/Portfolio.aspx?Country=USA&Symbol=JSVAX&fdtab=portfolio

Further, there are substantial concentrations—well beyond the percentages in the S&P500-- in utilities (2x their weight in the S&P500), materials (1.7x their weight in the S&P500), and media. Note that a substantial amount of the equity holdings are mid-cap, rather than large-cap. Over the three years through June 2007, JSVAX has generated an annual average return of 26%--which is great—but the real question is whether the investors are being properly compensated for the fairly high risk that they are bearing.

The same phenomena will be seen if you look at CGMFX:

http://quicktake.morningstar.com/Fundnet/Portfolio.aspx?Country=USA&Symbol=cgmfx&fdtab=portfolio&t1=1184269234

CGMFX has 17.8% of its portfolio in energy (1.7x the exposure in the S&P500) and 36.2% of its portfolio in industrial materials (2.9x the exposure in the S&P500). CGMFX also has 43% of its assets in foreign (i.e. non-U.S.) stocks.

Bringing it all together

So , let's pull these themes together. Over the past three years, 65% of large-cap domestic equity funds have been beaten by the S&P500. But, among the 35% that did beat the S&P500, how many of those were simply taking on more risk to beat the index? How many of these were simply exploiting strategic diversification beyond the index? How many are really taking heavy sector bets? As an investor, you don't want to pay a fund manager to simply beat the market by taking on more risk than the broader market or by being highly concentrated (unless it's a sector fund, of course). SPIVA does not account for these effects. When we look at the top-ranked large-cap domestic equity funds (such as JSVAX), we often find that they are doing just this---taking on riskier assets. Further, they often hold assets beyond their broad classification. There is nothing wrong with this, but this type of 'style blurring' tends to make active funds look better than they perhaps deserve because they are being compared to a benchmark that is, in fact, too easy to hit. If we analyzed active large-cap domestic equity funds and included a risk adjustment, how many would beat the S&P500? I don't know, but it is a fair bet that it would be a lot fewer.

An additional problem with these effects in mutual fund portfolios is that investors who choose funds based on performance may end up with portfolios that are considerably riskier than they expect, as well as being more heavily concentrated in certain sectors than they realize. If the top-ranked "domestic" equity funds have substantial assets in foreign funds, an investor who invests both in these domestic funds and in foreign mutual funds may end up with too much exposure to foreign developed and emerging markets, for example. Investors simply may not be getting the diversification benefits that they expect.

In a follow-up article, I will show how an investor can compare the relative merits of a mutual fund against a representative mix of ETF's or other index funds with the same risk and sector concentrations as the active fund. The results suggest that it is fairly straightforward to gain the same performance and broad sector exposure as a high-performing mutual fund but without paying so much in fees. Further, by building a portfolio from index ETF's, index mutual funds, and stocks, an investor can make sure that he or she is not simply loading up on risk to get these higher returns.

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