

# The role of hedge funds for long-term investors

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## Abstract

Hedge funds have gained popularity for increasing investment returns. We focus on the role of this asset category for long-term investors, with attention to rebalancing a portfolio of diversified assets. An investor must seek out securities with low correlations to traditional assets to maximize asset growth. Current hedge fund returns, as measured by average performance, show dependencies with equity returns. Other limitations and opportunities for hedge funds are discussed.

## The role of hedge funds for long-term investors

### The promise

Hedge funds are defined by the generic description - 'any pooled investment vehicle that is privately organized, administered by professional investment managers, and not widely available to the public' [IMF (2000)]. The hedge fund industry has grown from roughly U.S.\$ 100 billion market value in 1990 to approximately U.S.\$ 750 billion in early 2004. Almost 6000 funds are now available. There are several underlying causes for this growth:

- Institutions and individuals are under severe pressure to generate high returns in order to meet future liabilities and goals, including under-funded U.S. pension plans, university endowments, and state retirement accounts.
- Prominent U.S. institutional investors, such as Harvard, Princeton, and Yale Universities, have achieved superior returns by committing substantial portions of their capital to alternative investments, including hedge funds, in concert with deploying leverage.
- Traditional assets have performed below expectations over the past few years (notwithstanding the recent rise in equities).
- Venture capital investments have wilted during the recent past.
- Hedge funds have held up reasonably well. The average returns for many hedge fund sectors have been noteworthy (see below).
- Current academic research supports the supposition that patterns in returns may be detected by careful analysis (e.g. market micro-structures).
- Successful hedge fund managers have achieved notoriety by their proprietary approach to trading and, on occasion, eye-popping returns.

Should investors put a serious amount of capital into this category? Is the game too late? How can the reader make decisions about investing in hedge funds? We will discuss these issues in this article.

Due to their inflexible structure, short-term investors should mostly avoid hedge funds. Likewise, conservative investors

should take into account their goals and liabilities within an asset and liability study [Ziemba and Mulvey (1998)]. To this point, a pension plan will determine its surplus by computing the market value (assets) - market value (liabilities). Hedge funds may fit within a carefully crafted asset-liability system, but this question lies outside the present discussion.

We will focus on long-term investors who possess a moderate-to-aggressive tolerance for risk. Their goal, and our goal in this report, is to maximize the growth of assets over a substantial time period, while maintaining risks within a specified limit<sup>1</sup>. Naturally, the investment horizon depends upon circumstances - a family trust or pension plan, for example, may set seven to ten years as a sensible planning horizon.

### The reality

Several barriers must be overcome in order to successfully invest in hedge funds. First, despite recent improvements, there are severe informational constraints on reported performance. The historical record, largely, began around 1990 when the hedge fund universe was much smaller and less well established. Not all hedge funds are open regarding their results due to proprietary and related considerations. Likewise, it is difficult to estimate the survivor bias, since hedge funds may stop reporting results when anticipating a meltdown. Studies have estimated the bias at 1.5 % to 3 % or more per year. Also, most hedge funds are relatively small - under U.S.\$ 100 million in capital - thereby inaccessible for many institutional investors.

Second, management costs are higher than traditional mutual funds. This headwind is partially offset by incentive fees that pay a bonus only when the fund achieves results above a designated benchmark. Thus, the goals of the investor and manager are closely aligned.

A third issue involves the ability of an investor to rebalance his portfolio on a regular basis. Hedge funds require lock up periods and other restrictions; it may be difficult to add or subtract money as conditions warrant. This restriction is particularly

<sup>1</sup> For example, the volatility of a target mix such as 70% equity - 30% bonds is reasonable as a start.

## The role of hedge funds for long-term investors

constraining on large institutional investors. We will take up the rebalancing issue below.

Next, to evaluate a portfolio on an anticipatory basis, we must be able to estimate the factors that drive returns. In certain cases, the issue is straightforward. For example, funds in the statistical arbitrage category generate returns that are relatively uncorrelated with economic factors. This independence is, in fact, a prime advantage of a hedge fund. But, in other cases, estimating future returns is complicated by the hedge fund manager's freedom to change direction abruptly. A fund may be 150% long and 50% short in one period, and the opposite in the next period. It is difficult to construct a reliable portfolio system under these changing conditions since we must somehow estimate the manager's decision processes.

In addition, certain strategies will produce consistent winners within a rather narrow size limit - e.g. index arbitrage. When a large number of well-placed investors work in an area, the large excess returns that initially characterized the area will fall to a more modest level. Again, it is difficult to reliably estimate this relationship within an anticipatory framework.

### A partial solution - fund-of-funds

A funds-of-funds (FOFs) is an entity that invests in a narrow or more commonly a broad segment of the hedge fund universe. The FOF conducts the time consuming task of due diligence for the clients and produces a diversified portfolio of individual hedge fund managers. Thus, the implosion of any single fund will cause a minor or temporary distortion to the overall portfolio.

In several ways, the FOF performs a service that is similar to a mutual fund by selecting individual fund managers (as compared with stock selection). This service is particularly helpful for investors who are unable to spend adequate time or resources on the selection tasks. Of course, the investor must pay for the help, thus reducing benefits, and the fund-of-fund must be chosen from a number of providers.

FOFs have achieved good results over the historical period, as compared with traditional assets, and as measured by the mean return of reporting funds. We are assuming zero survivor bias in these discussions; the reader should carefully factor this issue into future projections, however.

The annual returns and volatilities of asset categories for the past 13 years (January 1990 to August 2003) are shown below and plotted in Figure 1.

	Geo returns	Std (returns)
Real Estate Trusts (REIT)	10.7 %	12.0 %
S&P500	10.1 %	14.5 %
Fund of Funds	9.6%	4.4 %
U.S. T-bonds	9.1 %	8.5 %
U.S. T-bills	5.3 %	0.9 %
International Equity (EAFE)	2.0 %	17.4 %

The FOF performance is slightly below the S&P500 index with a much lower volatility. This performance is consistent with the mean returns for sub-sectors in the hedge fund universe achieving the following results [Dow Jones & Co. (2004)]:

	Geo return	Std (returns)	Corr.S&P500
Event driven	11.9 %	4.5 %	.487
Global emerging	13.0 %	15.7 %	.493
Global international	11.4 %	6.9 %	.51
Global established	14.5 %	9.0 %	.763
Global macro	12.9 %	6.7 %	.43
Market neutral	10.6 %	1.5 %	.323

## The role of hedge funds for long-term investors

But again, we warn readers that this data does not adjust for survivor bias or the size effect mentioned earlier. Schneeweis, Kazemi, and Martin (2001) discuss this hedge fund sub-sector performance.

### Evaluating historical performance within a portfolio context

Any serious asset allocation study for a long-term investor, such as a pension plan or family trust, begins with reviewing historical performance. We all know, of course, that historical results are no guarantee of future returns. But there are important lessons to be learned.

Unfortunately, reliable data on hedge funds is unavailable before 1990. Thus, we must be particularly careful when evaluating this data for long-term projections. Also, as mentioned, several issues complicate the task - including survivor bias and size limits. But to start, we turn to Figure 1. Here, returns and risks are shown for the six aforementioned assets over the period 1990 to 2003.

First, observe the three U.S. assets - equity (S&P500), government bonds (T-Bonds), and CASH (T-Bills) display the traditional lineup - from conservative with low returns to more aggressive with higher returns; see the drawn efficient frontier. Below this line are two assets - EAFE and GSCI - due to the abysmal return of Japanese equities and the gradual decline in interest rates, inflation, and commodity prices since 1990. Above the line are the superior assets (from the 13-year perspective) - real estate investment trusts (REITs) and FOFs.

To calculate the best combination, we could solve an optimal portfolio problem as is commonly done. But our purposes are more modest. We focus on two simple portfolios as equal-weighted combinations of three assets. We call these blended portfolios. To achieve a blended portfolio, the investor rebalances his assets at the beginning of each month to the desired ratio. Each asset begins the month at one-third of the investor's wealth. Two sets of blended assets are noteworthy. First, we combine S&P500, REITs, FOFs (point ABD). The FOF

returns are quite good on a standalone basis - showing 9.56% returns, and 4.4% volatility. The blended portfolio achieves a solid return equal to 10.5%, and 8.0% volatility.

However, a similar pattern can be achieved by replacing the FOF with T-Bonds, giving a blend with - S&P500, REITs, and T-Bonds (point ABC). Even though, FOFs dominate T-Bonds on a stand-alone basis, the T-Bond volatility works to the advantage of the long-term investor. Rebalancing gains are higher when an asset has higher volatility and good expected returns [Mulvey, Lu, and Sweemer (2001); Mulvey, Pauling, and Madey (2002)].

Additionally, two practical issues arise when placing FOFs within a blended portfolio. First, institutional constraints with hedge funds<sup>2</sup> prevent much of the monthly rebalancing. In fact, FOF's low volatility reduces rebalancing gains even if the transactional constraints are dropped. Second, of course, historical returns may not be accessible for future investors.

### What to expect and recommendations

Hedge funds are likely to continue growing in popularity, due to the increased demand for customized products by institutional investors, wealthy individuals, and family trusts. And the large potential fee structure will attract entrepreneurial asset managers. Given this trend, we expect that the area will receive greater attention from investors and researchers alike.

Surprisingly, perhaps, novel investment opportunities have become accessible for individuals with modest means. Take the case of exchange traded funds and single stock futures. We are seeing a split between inexpensive standardized products, and the high-cost, high potential value-added services such as hedge funds. This pattern is evident in other domains such as retail merchandise - Wal-Mart and Sam's Club on the one hand, and expensive food-stores such as Wegman's that supply superior service and customized prepared foods, on the other hand (often in the same shopping center). Our recommendations are as follows. While hedge funds data exists since 1990, these funds have not been fully battle tested.

<sup>2</sup> Such as lock up periods.

## The role of hedge funds for long-term investors

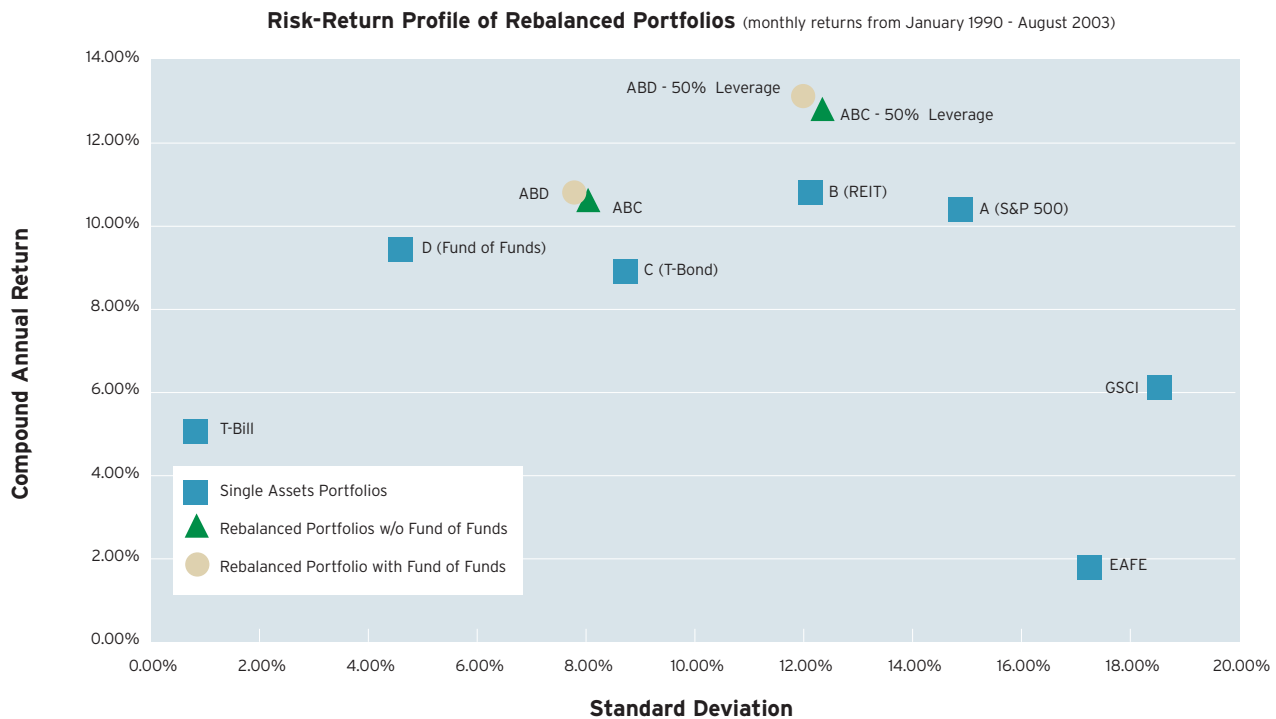


Figure 1: Historical performance of selected assets (1990 to 2003)

Thus, many long-term investors should wait for the category to become more seasoned, especially as the size of the industry grows, before committing a substantial percentage of assets. As discussed, hurdles must be overcome - lack of transparency, difficulty to pick the better funds (too much survivor bias and extra costs), and for FOFs the need to generate returns with lower correlations with market returns. Investors may put a portion of their assets in hedge funds in order to gain experience with this asset class. However, a large commitment is risky at present for novice hedge fund investors.

There are several items that would assist in generating increased interest in hedge funds from long-term investors such as pension plans. These include:

- Further evidence that hedge fund returns will do well when traditional assets are performing poorly - to hedge in a meaningful manner. The correlation of absolute return hedge funds with the S&P500 should be close to zero.
- Greater flexibility to move money into and out of this category as conditions warrant (strive for re-balancing gains).
- Some reduction in fees if investor stays with a fund for a longer time period and the manager is relatively successful.
- Greater reliance on multi-strategy funds that take advantage of opportunities across hedge fund tactics.

In conclusion, as with all new technologies, the early implementers take on increased risks. But indeed opportunities exist for superior performance as seen by the results of top U.S. University endowments.

## The role of hedge funds for long-term investors

A critical concept for generating superior returns for long-term investors is to discover novel ways to diversify their portfolio, thus reducing volatility, and then to leverage the widely diversified portfolio to an acceptable risk tolerance. Harvard University implements this concept as well as anyone [Dow Jones & Co. (2004)]. Their portfolio consists of a wide range of assets - timber, inflation linked bonds, hedge funds, venture capital, etc. In this context, the primary requirement is to generate good returns with relatively low correlation to the other assets. To illustrate this point, see Figure 1 for leveraging the two blended portfolios by 50% - generating mixes with 13% annual returns and 12 % volatility.

Hedge fund managers and potential/actual investors in alternative investments should take note of these complementary goals.

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### Appendix

A description of the sub-sectors of the CISDM/MAR database is listed below.

**Event driven:** The investment theme is dominated by events that are seen as special situations or opportunities to capitalize from price fluctuations. They specialize either in risk arbitrage (merger arbitrage) or distressed securities.

**Global emerging:** In this type of hedge funds, managers invest in less mature financial markets. Because shorting is not permitted in many emerging markets, managers must go to cash or other markets when valuations make being long unattractive. They focus on specific regions.

**Global international:** Here, the manager pays attention to economic change around the world (except U.S.); bottom-up-oriented in that they tend to be stock-pickers in markets they like. They use index derivatives much less than macro managers.

**Global established:** They focus on opportunities in established markets. (U.S. opportunity, European opportunity, Japanese opportunity). This type of hedge funds can be sub classified as Growth, Small-Cap, and Value Global Established.

**Global macro:** They are the classic opportunistic funds investing anywhere they see value. They use leverage and derivatives to enhance positions, which will have varying time-frames from short (less than 1 month) to long (more than 12 months).

**Market neutral:** They attempt to minimize market risk by using such strategies as convertible arbitrage, stock arbitrage, and fixed-income arbitrage or by taking both short and long positions in different stocks.

**Fund of funds:** They are funds, which allocate capital among other investment funds, including hedge funds. They can either be diversified, which allocate capital to a variety of fund types or niche, which allocate capital to a specific type of fund.