

Why Hedge Funds?

October 29, 2014

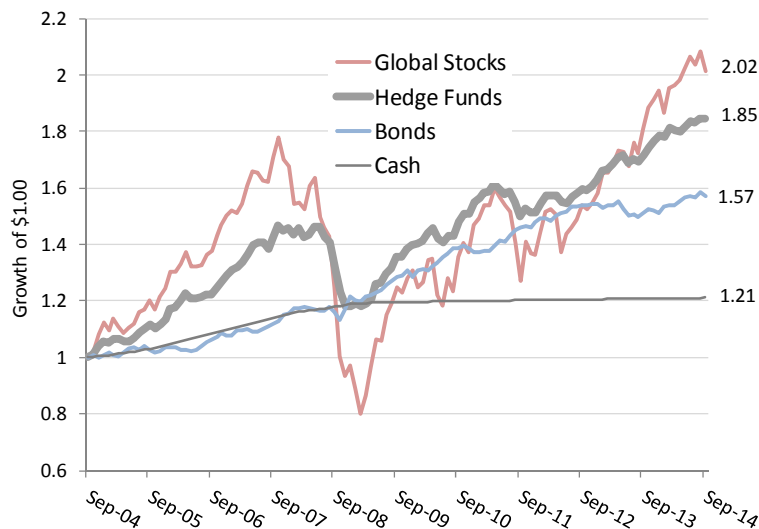
This report provides an overview of hedge funds and their role within a diversified portfolio, a subject we first wrote about in 2004, the year Cliffwater was founded.¹ Our update is not accidental. Calpers' decision to divest its 1.3% (\$4 billion) hedge fund allocation has prompted some institutional investors to reassess existing hedge fund allocations or plans for new allocations.

Our 2004 report identified the beneficial diversification attributes of hedge funds, but also cautioned that attention to hedge fund selection, fees, and portfolio construction were critical in building a successful portfolio of hedge funds.² Those same themes are repeated below. We conclude, as we did a decade ago, that hedge funds can make a significant contribution to a diversified portfolio, though conditional upon selection of top tier managers, the appropriate mix and number of hedge funds, and alignment of interest with respect to fees and terms.

Past Performance

Exhibit 1 shows the performance record for stocks, bonds, cash, and hedge funds for the 10 year period ending September 2014. We selected this period because it is sufficiently long enough to cover the most recent business/market cycle and it represents a time when the hedge fund industry became "institutionalized." We chose not to go back 20 years because the 1994-2003 period was one where hedge funds performed exceedingly well, and some argue that this earlier period is no longer representative of the hedge fund market today.

Exhibit 1: Comparative Asset Class Performance, Ten Years ending Sept 2014



Stocks performed the best over the last 10 years, with a dollar invested at the beginning of the period more than doubling. Hedge funds were second best, with a dollar growing to \$1.85, followed by bonds (\$1.57)

¹ Cliffwater Research, *Hedge Funds and Their Role within a Diversified Investment Portfolio* (November 2004).

² See also Cliffwater Research, *Hedge Fund Fees: Are They Worth It?* (February 2007), and *Constructing a Portfolio of Hedge Funds* (April 2011) for detailed discussion on the topics of hedge fund fees and portfolio construction.

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and cash (\$1.21). Surprisingly high levels of market volatility were characteristic of the last decade, as illustrated in Exhibit 1 and quantified in Exhibit 2 below.

Exhibit 2: Annualized Return, Risk, and Correlations, Ten Years ending Sept 2014 ^{3, 4}

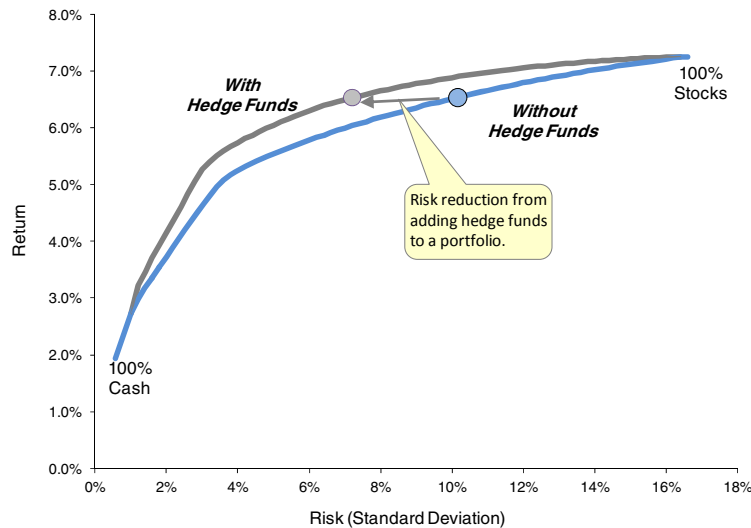
| | Global Stocks (MSCI ACWI) | Hedge Funds (CS) | Bonds (Barclays Aggregate) | 3 Month Libor |
|---------------|------------------------------------|------------------------|----------------------------------|------------------|
| Return | 7.26% | 6.33% | 4.63% | 1.94% |
| Risk | 16.62% | 5.88% | 3.24% | 0.58% |
| Correlations: | | | | |
| Global Stocks | 1.00 | 0.83 | 0.09 | -0.06 |
| Hedge Funds | | 1.00 | 0.01 | 0.00 |
| Bonds | | | 1.00 | 0.01 |
| 3 Mo. Libor | | | | 1.00 |

The relationships between the four asset classes displayed are generally consistent with what most investors expect. Stocks perform the best over time but are also the most risky. Bonds return far less but at much lower level of risk, and cash is the lowest returning asset class over time.

Hedge funds are thought to earn a return close to stocks but at a risk level closer to bonds. That view was borne out over the past 10 years with hedge funds returning 6.33%, annualized, at a 5.88% standard deviation. Some investors might be surprised with the somewhat high 0.83 correlation between hedge funds and global stocks.⁵

Exhibit 3 diagrams the “efficient frontier”⁶ of portfolios based upon the returns, risks, and correlations of the past 10 years (Exhibit 2).

Exhibit 3: Efficient Frontier with/without Hedge Funds, Ten Years ending Sept 2014



³ MSCI ACWI is the capitalization weighted Morgan Stanley Capital International All Country World Index of stocks; CS is the Credit Suisse Hedge Fund Index, representing approximately 500 large hedge funds, weighted by assets under management, and net of management fees; and Barclays Aggregate Index is a capitalization weighted index of U.S. investment grade bonds.

⁴ For comparison, Exhibits 1 and 2 are repeated in Appendix A, substituting US stocks (Russell 3000) for global stocks.

⁵ We believe that hedge fund indices will overstate the correlations that most investors in hedge funds actually experience. This is because correlations increase with the number of hedge funds included in the index or portfolio. The reason is because the return from alpha declines – alpha is diversified away – but not the return from beta, consequently increasing the correlation to stocks. Our own experience suggests that a correlation with stocks closer to 0.70 is more typical of actual portfolios of hedge funds.

⁶ “Efficient frontier” is the set of portfolios that provide the highest possible return at a given level of risk.

The lower blue line represents the historical efficient frontier assuming no allocation to hedge funds, while the upper gray line represents the efficient frontier with hedge funds.

Most investors use hedge funds to maintain return while reducing risk. The left pointing horizontal arrow between efficient frontiers represents the level of risk reduction that can be achieved by adding hedge funds to traditional asset classes. Risk, or volatility, over the past 10 years could have been reduced 30% by including hedge funds to a portfolio of stocks, bonds, and cash. However, the hedge fund allocation necessary to achieve the 30% risk reduction is an impractical 85% of total assets.

Still, even modest allocations to hedge funds would have resulted in meaningful reductions in overall portfolio risk. Exhibit 4 compares the performance of three portfolios over the last 10 years, each having the same 6.54% annual return but with differing allocations of hedge funds.

Portfolio A is the traditional 60/40 stock/bond mix, with no hedge funds. It would have returned 6.54% over the last 10 years with a 10.20% standard deviation. Its Sharpe Ratio, a measure of risk-adjusted return, equals 0.45.⁷

Exhibit 4: The Impact on Portfolio Risk from Hedge Fund Allocations of 0%, 10%, and 20%
Ten Years ending Sept 2014

| | Portfolio A | Portfolio B | Portfolio C |
|---------------|-------------|-------------|-------------|
| % Stocks | 60% | 54% | 49% |
| % Bonds | 40% | 36% | 31% |
| % Hedge Funds | 0% | 10% | 20% |
| Total | 100% | 100% | 100% |
| Return | 6.54% | 6.54% | 6.54% |
| Risk | 10.20% | 9.66% | 9.24% |
| Sharpe Ratio | 0.45 | 0.48 | 0.50 |

Portfolios B and C have 10% and 20% allocations to hedge funds, respectively. Stock and bond allocations have been adjusted downward to provide the same level of return as Portfolio A so benefits are measured solely in overall portfolio risk. The standard deviations for Portfolios B and C are 9.66% and 9.24%, respectively, which represent risk reductions of 5% and 9%, respectively, compared to Portfolio A. Because risk declines with higher hedge fund allocations, the Sharpe Ratio increases.

Demonstrating that hedge funds have added value to a portfolio in the past is not a sufficient reason for including them in a portfolio. There is no investable index portfolio that permits investors to achieve the results measured by hedge fund indices. Consequently, executing a portfolio of hedge funds that mirrors or, better yet, exceeds the performance of the hedge fund indices is equally important. We turn now to implementation issues that will equally influence a decision to invest in hedge funds.

Hedge Fund Selection

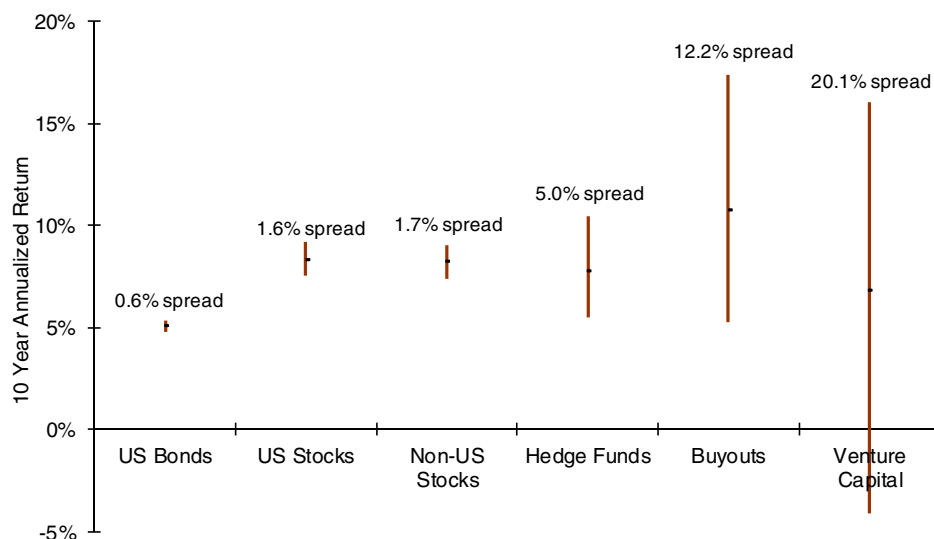
Investors in hedge funds experience markedly different outcomes due to manager selection, which is much more important in selecting hedge funds than in selecting traditional long-only stock and bond managers.

Exhibit 5 illustrates this point. It displays the range of returns among individual managers across different asset classes. The measurement period used in the Exhibit is ten years. We selected this length of time because it represents roughly the holding period for managers among institutional investors. It is also long enough to give validity to returns reported by asset classes (buyouts and venture) whose valuation is less reliable over shorter time periods.

Exhibit 5 shows the spread of return between the 25th percentile return (top quartile) and the 75th percentile return (bottom quartile), as well as the 50th percentile return (median). Understand that in choosing these markers 25% of manager outcomes are above the bar displayed and 25% of manager outcomes are below the bar. The middle 50% range shown is not meant to measure the full range of outcomes but instead is a measure by which to compare the importance of manager selection across asset classes.

⁷ Sharpe Ratio equals total portfolio return, minus the cash return, divided by total portfolio risk.

Exhibit 5: 25th - 75th Percentile Dispersion of Active Management Returns,
Ten Years ending Dec 2013



The importance of manager selection grows proportionally with the spread of return. For example, the 5.0% manager spread in hedge fund performance is over 3 times the spread in US and non-US stock manager performance. Consequently, we would expect that investors who select hedge funds will themselves have a greater disparity in their own portfolio returns in comparison to investors in stocks.

Looked at a different way, hedge fund selection represents a risk but also represents an opportunity and highlights the potential value that investors could offer a portfolio if they can indeed select and gain access to top quartile managers.

Portfolio Construction

Just as strong individual hedge fund selection can add to performance, poor portfolio construction can detract from performance.

A recurring error in hedge fund portfolios has been the inclusion of too many funds. Some pension plans have found themselves with literally hundreds of hedge funds in their portfolio after hiring what was perceived to be a reasonably few funds-of-funds. Just as multiple active stock managers can produce a “closet” index fund, so too can multiple funds-of-funds eliminate potential alpha. Our own research and experience suggest that a portfolio containing as few as 15-20 hedge funds best balances the goals of diversification and (alpha) return.

Another construction error is a lack of strategy diversification in a portfolio of hedge funds. Some investors allocate to only one or two hedge fund strategies. Hedge fund strategies often have their own market cycles and investors take unnecessary risk when they embrace only one strategy. They are also vulnerable to the “buy high” effect if past performance drives strategy selection. We catalogue seven major hedge fund strategies that have demonstrated strong alpha over time and recommend including most of them in a diversified portfolio.

Fees

Years of academic study of mutual fund performance indicate that long term performance is negatively correlated to fees. The same finding does not necessarily apply to hedge funds. Our own studies, and research by others⁸, show that higher performing hedge funds often have higher fees. Therefore, applying an arbitrary fee limit might result in sub-optimal hedge fund selection. Instead, investors should look for *value* in examining fees. Our own approach is to estimate what fraction of gross hedge fund alpha is going to the manager in the form of fees.

⁸ See for example, Hedge Fund Research, Inc., *HFR Market Microstructure Hedge Fund Industry Report*, 2013, page 65.

Conclusion

Hedge funds have contributed positively to the return and risk profile of diversified stock and bond portfolios and we expect that they will continue to do so, particularly given the low returns projected for traditional fixed income.

However, investors must consider the risks associated with hedge fund selection and portfolio construction, which, if improperly executed, can result in high fees but little value added. Our own experience over the past 10 years suggests that hedge fund investing has been and will continue to be a rewarding component to overall portfolio management.

We addressed hedge funds in this paper as a single entity, an “asset class” which many observers rightly point out they are not. Current trends suggest that hedge fund investing will take new forms; for example, as part of stock or bond allocations. Their success in these new applications will rest on many of the same observations made above.

Stephen L Nesbitt
snesbitt@cliffwater.com
212-317-4370

Appendix A: Adding Hedge Funds to a U.S.-Only Portfolio

Exhibit 1A: Comparative Asset Class Performance, Ten Years ending Sept 2014

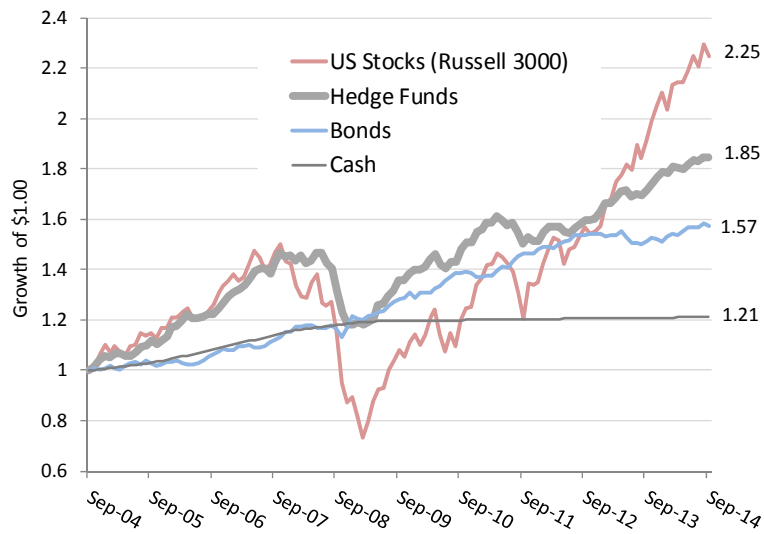


Exhibit 2B: Annualized Return, Risk, and Correlations, Ten Years ending Sept 2014

| | US Stocks (Russell 3000) | Hedge Funds (CS) | Bonds (Barclays Aggregate) | 3 Month Libor |
|---------------|--------------------------------|------------------------|----------------------------------|------------------|
| Return | 8.44% | 6.33% | 4.63% | 1.94% |
| Risk | 15.30% | 5.88% | 3.24% | 0.58% |
| Correlations: | | | | |
| US Stocks | 1.00 | 0.75 | 0.03 | -0.13 |
| Hedge Funds | | 1.00 | 0.01 | 0.00 |
| Bonds | | | 1.00 | 0.01 |
| 3 Mo. Libor | | | | 1.00 |