

Introduction

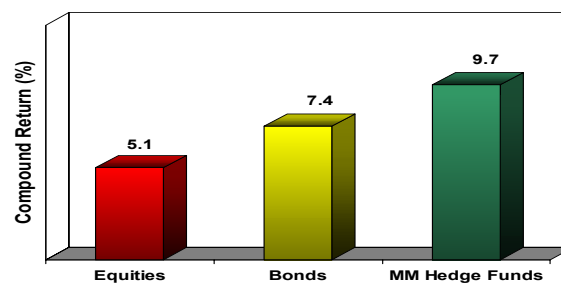
Most rational investors would prefer higher returns for a given level of risk or less risk for a given level of returns. Implicit in this preference is that there is a trade-off between risk and return, i.e. to achieve higher returns, investors need to take greater risk.

Below we examine the relationship between risk and return of three asset classes: equities, bonds and multi-manager hedge funds①.

Returns

We plot on the chart below the annualised rates of return produced by the three asset classes since the beginning of 1990.

1 January 1990 to 31 August 2002



Equities: MSCI World (gross divs), **Bonds:** SSB World Govt Bonds, **MM Hedge Funds:** Zurich Fund of Funds Median for Multi-Manager Hedge Funds

Source: PerTrac Indices, Zurich Capital Markets

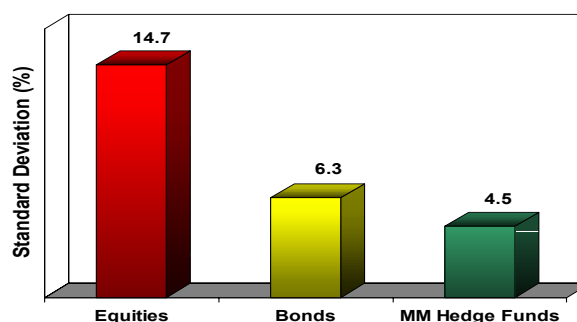
To many the fact that multi-manager hedge funds have produced better returns than both equities and bonds is not particularly surprising as most assume that the superior returns have been achieved as a consequence of greater risk.

We examine whether the higher returns are indeed a result of higher risk by analysing three separate risk metrics below.

Risk

One of the most commonly used measures of risk is the standard deviation of returns②, or the dispersion of returns around the historic mean.

1 January 1990 to 31 August 2002

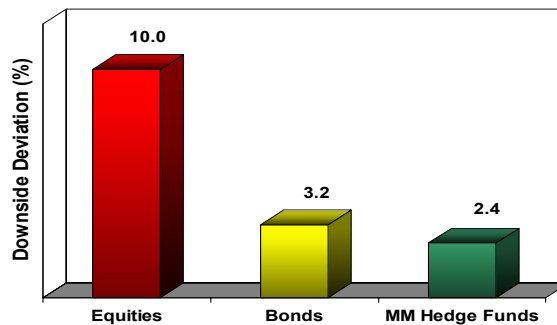


A Case For Multi-Manager Hedge Funds

Multi-manager hedge funds carry the lowest risk (as measured by standard deviation) of the three asset classes.

Many would argue that standard deviation is not an appropriate risk measure, especially for hedge funds. The reason is that hedge funds' return objectives are absolute rather than relative, thus dispersion of returns below a given level is a more accurate measure of the risk of capital loss. Thus downside deviation^③ would be of interest.

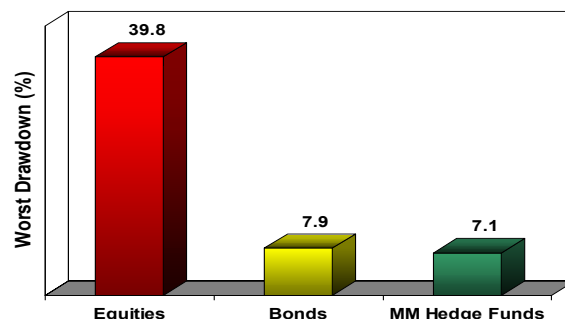
1 January 1990 to 31 August 2002



The downside deviation chart is similar in shape to the standard deviation chart. Multi-manager hedge funds carry the lowest risk (as measured by downside deviation) of the three asset classes.

These risk metrics may be too esoteric for some, therefore we examine one that has universal clarity: the greatest amount of capital that would have been lost had an investor experienced the worst peak to trough decline in value, i.e. the worst drawdown.

1 January 1990 to 31 August 2002



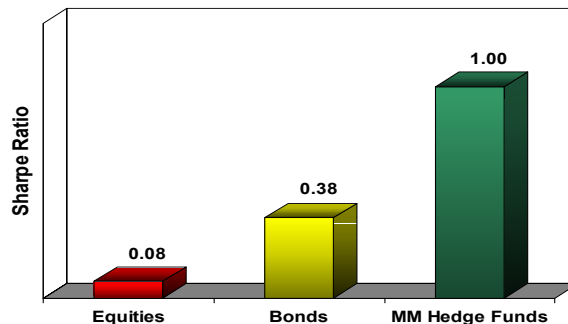
A similar picture emerges. Multi-manager hedge funds carry less risk (measured by worst drawdown) than equities and bonds.

A Case For Multi-Manager Hedge Funds

Risk-Adjusted Returns

A direct comparison between investment options that have different risk and return characteristics is made simple by the use of two measures of risk-adjusted returns. The first of these is the Sharpe Ratio^④, which uses as its risk metric the standard deviation of returns.

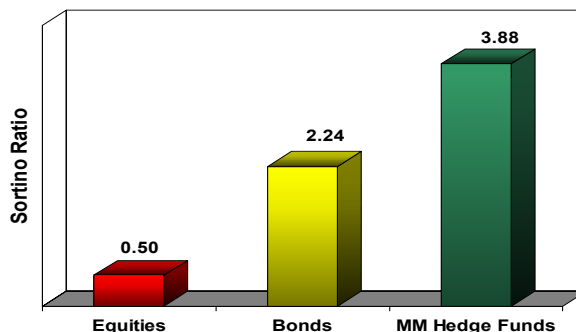
1 January 1990 to 31 August 2002



Unsurprisingly, because multi-manager hedge funds deliver better returns than equities and bonds and they do so with lower standard deviations, multi-manager hedge funds have superior Sharpe Ratios to the traditional asset classes.

If one preferred not to use the standard deviation of returns as one's measure of risk, one could substitute it with downside deviation, thereby deriving the Sortino Ratio^⑤. (It is only in this respect that the Sharpe and Sortino ratios differ).

1 January 1990 to 31 August 2002



A similar picture emerges, i.e. that multi-manager hedge funds are superior to traditional asset classes in delivering greater excess returns per unit of risk.

The effect of this series of charts is to turn conventional investment wisdom on its head. The conventional wisdom is that investors need to take greater risk to achieve greater returns. Clearly, this is not necessarily the case. Investors can achieve greater returns while taking less risk by investing in multi-manager hedge funds.

Correlations

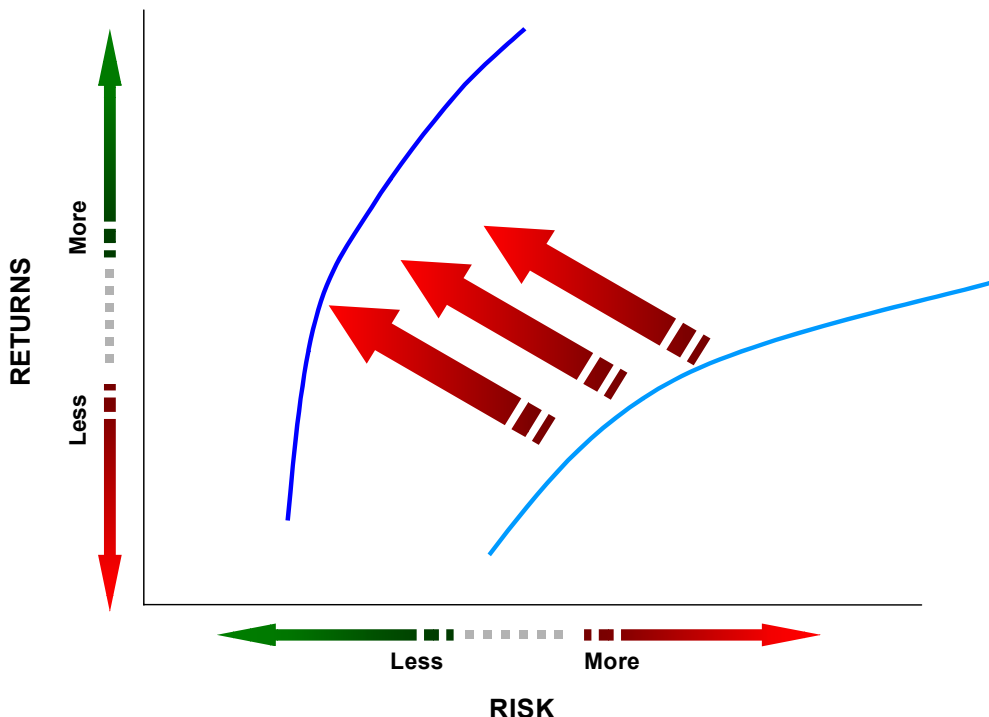
Most rational investors, if forced to choose only one vehicle, would choose multi-manager hedge funds over equities and bonds on the basis of this powerful argument. However, in reality most investors would feel uncomfortable disregarding traditional asset classes entirely. What is more likely is that, if they agreed with the case made above, they would add multi-manager hedge funds to existing portfolios of equities and bonds.

Simply on the basis that multi-manager hedge funds achieve greater returns with less risk, this would be a sound re-allocation. But the argument is even more favourable than one might initially believe because there are real benefits that accrue when investors achieve proper diversification⁶. The reason is the degree to which these three asset classes are uncorrelated⁷ with one another.

1 January 1990 to 31 August 2002

	Equities	Bonds	MM Hedge Funds
Equities	1.00	0.24	0.52
Bonds	0.24	1.00	-0.08
MM Hedge Funds	0.52	-0.08	1.00

The degree to which portfolio efficiency is enhanced is magnified by this lack of correlation. The efficiency gains can best be seen by comparing the efficient frontier⁸ created by a two asset portfolio of equities and bonds with the efficient frontier created by adding multi-manager hedge funds to that traditional portfolio.



Most rational investors would prefer to invest in a portfolio on the most “north-westerly” efficient frontier as that is where they would be able to achieve greater returns for a given level of risk. Put another way, to ignore multi-manager hedge funds is to prefer a sub-optimal portfolio.

Conclusion

Multi-manager hedge funds are attractive because they have the following characteristics:

- Returns: higher
- Risk: lower
- Correlation: low

Consequently multi-manager hedge funds should form a cornerstone of diversified investment portfolios.

Notes

❶ Multi-manager funds are simply investment portfolios constructed by allocating capital to a number of underlying fund managers who in turn invest directly in securities. The structure is also known as a fund of funds. There are broadly two types of multi-manager funds, those that allocate capital to traditional, long-only managers and those that allocate to hedge fund managers.

A hedge fund can be defined as a privately organised pooled investment vehicle that invests primarily in publicly traded securities and derivatives. It uses short and long exposure, and sometimes leverage, to reduce reliance on movements in the broad market and to focus on profiting from security selection. Short exposure is achieved by borrowing securities and selling them in the market with a view to buying them back at a lower price and then returning them to the lender. Traditional long-only funds, by contrast, are generally precluded from using material short exposure and are therefore more reliant on rising markets for positive returns.

❷ Standard deviation: In Modern Portfolio Theory risk is synonymous with volatility. Volatility is most frequently measured by standard deviation. The method of calculating an asset's standard deviation is by taking the square root of the return's squared variance from its historic mean. It has become somewhat controversial to think of risk purely in these terms, i.e. the more volatile an asset's returns are, the more risky it is considered to be. It is probably more correct to think of volatility as a proxy for the complex notion of risk than a pure measurement of risk. However, it does make sense as a proxy. Volatility has embedded in it the degrees of uncertainty an investor has about the outcome of an investment.

❸ Downside deviation: Post-Modern Portfolio Theorists argue that upside volatility in an asset's returns is not unwelcome to holders of that asset and that it is only downside volatility that constitutes risk. Although upside volatility is pertinent to the complete understanding of risk, it is the risk of losing capital that one ought to be most concerned with. In fact, we see the job of a money manager, albeit a difficult one, as being to make money for investors rather than attempting to lose less than the market when it falls. In other words, delivering absolute returns rather than relative returns. And this is something that more and more investors are rightly demanding. Naturally this is a goal that traditional long-only managers are largely incapable of achieving because they lack the tools to do so, unlike hedge fund managers.

❹ The Sharpe Ratio measures the excess return earned per unit of risk. It is calculated by subtracting the risk-free rate from the return and then dividing by the standard deviation.

❺ The Sortino Ratio also measures the excess return earned per unit of risk. It is calculated by subtracting the risk-free rate from the return and then dividing by the downside deviation.

⑥ The benefits of diversification: The closest thing to a free lunch that most investors are ever likely to experience is tied to the concept of correlation (see note 7) and its apparently dull cousin, diversification. Investors tend to undervalue diversification although it is something that is understood intuitively; putting all one's eggs in one basket is accepted as being risky. But what if a prudent person split his eggs between two baskets that were affected in equal ways, i.e. they would be dropped at the same time for the same reason? Clearly, this attempt at diversification would be illusory. For there to be some benefits to be derived from diversification those baskets would have to respond in different ways to the same event.

This brings us back to the concept of correlation. If the same event caused both baskets to be dropped at the same time, the behaviour of the baskets would be highly correlated. If the event caused only one basket to be dropped and the other to remain safe, their behaviour would be uncorrelated. But there is more to it than this overly simplistic basket-of-eggs analogy.

Some forty years ago Harry Markowitz developed his Modern Portfolio Theory (MPT), an elegant and then revolutionary piece of work that ultimately earned him the Nobel Prize. The basis of MPT is that it is possible to create a relatively "unrisky" portfolio from a collection of risky assets. What's more, this can be achieved without unduly compromising returns. This looks remarkably like a free investment lunch. The catch is that for this to occur, the individual risky assets need to be uncorrelated with one another. Put another way, the baskets of eggs need to behave independently.

Benefits of Diversification			
	Return	Standard Deviation	Sharpe Ratio
Scenario 1: $r=+1$			
Asset A	15%	5%	
Asset B	35%	15%	
Portfolio	25%	10%	2.0
Scenario 2: $r=0$			
Asset A	15%	5%	
Asset B	35%	15%	
Portfolio	25%	8%	2.5
Scenario 3: $r=-1$			
Asset A	15%	5%	
Asset B	35%	15%	
Portfolio	25%	5%	4.0
<i>Assumed risk-free rate: 5%</i>			

The table above illustrates the extraordinary notion that risk can be reduced without necessarily reducing return. In this simple example, we begin with a single asset (A) that has a return of 15% and standard deviation of 5%. We then construct a two-asset portfolio by adding asset B to asset A and weighting them equally. Asset B is three times as volatile or risky as asset A but has better returns.

The table contains three scenarios, each with a different "r" or correlation co-efficient. In Scenario 1 these two assets are perfectly positively correlated with one another (correlation co-efficient of +1), i.e. they rise and fall together. In this scenario, the portfolio risk and the portfolio return are simply the average of the two constituents. There's not much benefit gained because, by adding B to A, the return has risen but so has the risk. The portfolio's Sharpe is 2.0.

But what if the two assets were not perfectly positively correlated? Scenarios 2 and 3 indicate how portfolio efficiency is enhanced when the assets that comprise it are uncorrelated. Where there is no relationship between the two assets ($r=0$) the portfolio's Sharpe rises from 2.0 to 2.5 because, although the portfolio's return remains 25%, the portfolio's risk declines to 8% from 10%. Where the assets are perfectly negatively correlated ($r=-1$) the Sharpe improves to 4.0 as the portfolio risk falls to 5%.

Most investment professionals know this piece of basic theory. Why, then, do they not avoid the avoidable? The answer is that traditional, long-only investment provides little scope to capture the full benefits of diversification because of its correlated nature. Portfolios that are long-only tend to be correlated with the markets they invest in and with other long-only portfolios in the same market. Thus, by combining such portfolios into a traditional multi-manager fund, the result tends to be one where the constituents are correlated with one another and the combination is correlated with the market. The avoidable is not avoided.

A word on geographical diversification is not out of place here. Historically, the chief means of achieving diversification by long-only investors has been by doing so along geographical lines. However, as the world has become a smaller place, geographic diversification has become less useful. It could be argued, e.g., that Coca-Cola is no longer really an American company and Sony is no longer a Japanese company. Both are multi-nationals whose fortunes are inter-linked and increasingly affected by the same events. In a simple two-asset portfolio, a limited degree of diversification is achieved by investing in these two companies that are notionally located in different parts of the world and which are in different industries. In fact, Coke and Sony have a correlation co-efficient of around 0.6.

⑦ The correlation co-efficient (r) measures the degree of association between the two asset prices. Its value can range between +1 and -1. If the correlation co-efficient is between 0 and +1 it means that the prices of A and B change in the same direction and if it's between 0 and -1 it means that A and B change in opposite directions. If the correlation co-efficient is 0 there exists no linear relationship whatsoever between A and B.

⑧ In a simple two-asset world, one could create a range of portfolios, each with a different risk and return profile, by simply weighting those two assets differently in each portfolio. If one plotted the resulting portfolio profiles on a chart with a return axis and a risk axis, one would produce a scatter diagram. However, many of the points on the scatter diagram are "inefficient", i.e. no rational investor with a given risk tolerance would choose a portfolio with lower returns over a portfolio with higher returns, holding risk constant. Thus the only asset combinations that one should consider would be those that lie on the so-called efficient frontier, depicted by a line on the north-west edge of the scatter diagram. The rational investor would choose the point on the efficient frontier that corresponds with his risk tolerance and required return. Further, the efficient frontier itself is not static. It can be shifted by adding additional uncorrelated assets to the existing portfolio.