Schroders

For Financial Intermediaries, Institutional and Consultant use only.
Not for redistribution under any circumstances.

Hedge funds: Diversification at any price?

One of the key drivers of the mass adoption of hedge funds was that they provided a source of uncorrelated returns. With asset class valuations increasingly stretched, this need to diversify risk has remained as pressing as ever, but the net of fee results from hedge funds in general have been mixed. In this context, our view is that multi-asset portfolios may provide a cheaper and simpler way of seeking risk-adjusted returns, leaving risk and fee budget for those hedge fund strategies which may genuinely offer uncorrelated returns.

Johanna Kyrklund, CFA
Global Head of Multi-Asset Investments

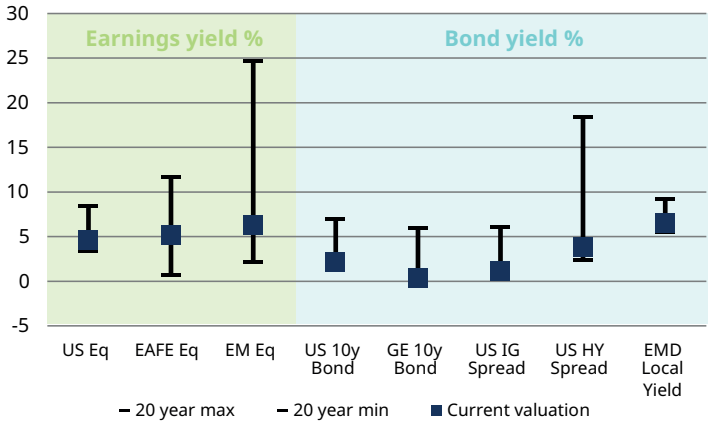
David King
Senior Adviser, Multi-Asset Investments

Whither diversification?

We all know the big picture; after eight years of good returns and rates pinned close to 0%, valuations are stretched across asset classes. The prospective returns on government bonds given starting yields are particularly concerning, especially since bonds have performed a dual role in our portfolios providing return and diversification. Indeed, correlation between global equities and bonds has been historically low, even negative when currency effects are excluded. A pick-up in inflation and possible normalizing of interest rates may lead to a less appealing correlation environment going forward and yields at current levels may mean that the risk for bond markets is skewed to the downside. As a result, many investors could be forgiven for being concerned that they may have seen the last of the "sweet spot" of declining yields and low correlation between equities and bonds.

Given this backdrop, while it would be foolish for investors to shun bond markets altogether, it makes sense for them to look to other sources of diversification and, for many, the answer has been hedge funds. Clearly this strategy is not new and several types of investors have been utilizing hedge funds for many years in the search for diversifying return streams. At this crucial juncture for investors considering how best to diversify, we provide an analysis of potential consequences of the changing dynamics of the hedge fund industry, as well as the return and risk characteristics of hedge funds in the context of portfolio diversification.

Figure 1: Valuations across asset classes



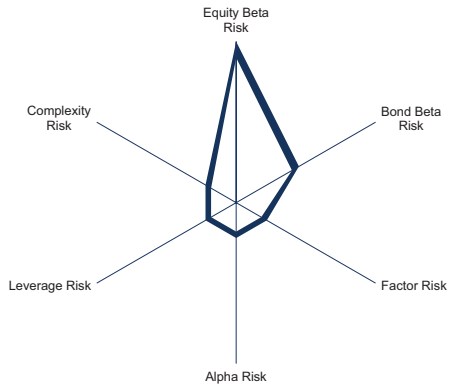
Source: Bloomberg, Schroders, monthly data for the period ending August 31, 2017. Valuation measured as the earnings yield for equities, the nominal yield for DM and EM sovereign bonds and the spread for credit.

Figure 2: Rolling three-year correlations between equities and bonds (local currency terms)

Source: MSCI, Citi, Datastream.

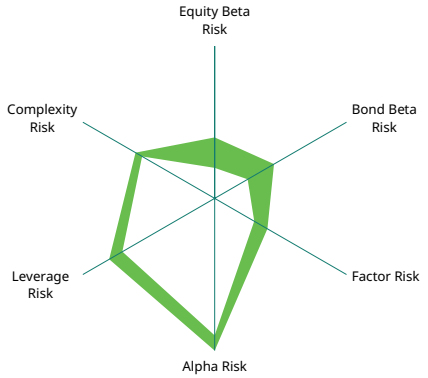
When comparing strategies across asset classes, we also like to use a framework which breaks investment approaches into their major contributing risk factors, providing an assessment in both absolute and relative terms as to what's driving these strategies and what investors should look for and need to understand. The factors that we employ in this framework are equity beta, bond beta, factor risk, alpha risk, leverage risk[1] and complexity risk.[2] Below we compare an illustrative risk loading of a 60% equity/40% bond (60/40) portfolio with hedge funds; hedge funds have provided a source of uncorrelated returns through a combination of alpha, leverage and more exotic risk premia (e.g. convertible arbitrage), with a concomitant rise in complexity. The impact of complexity is hard to quantify, but it should not be ignored in that it may lead to a loss of transparency and often comes hand in hand with higher fees. Interestingly, the decision by the California Public Employees' Retirement System in 2014 to divest its allocation to hedge funds was attributed to their cost and complexity.[3]

Figure 3: 60% equities/40% bonds



Source: Schroders. For illustration only.

Figure 4: Hedge funds



Source: Schroders. For illustration only.

1 This is the risk associated with either creating market exposure greater than the underlying value of the portfolio or creating gross exposure by going long and short different assets. This exposure is usually created via the use of derivatives. The former creates a net long, potentially directional market exposure whilst the latter may rely on relationships such as estimated correlation being maintained 'out of sample' for risk to be managed effectively.

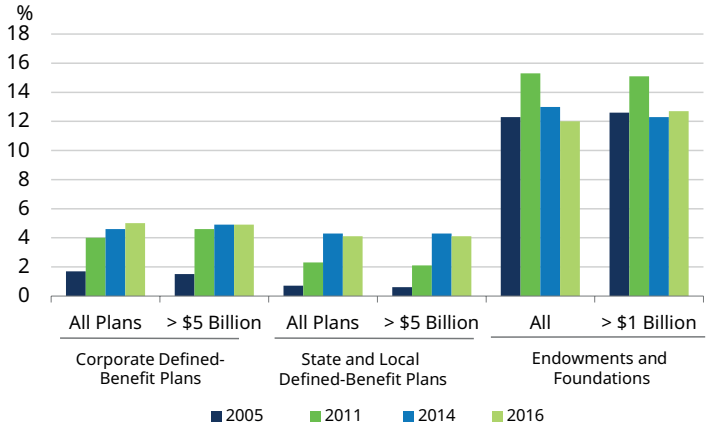
2 Complexity risk might include counterparty credit risk and liquidity risk. In this sense, aspects of complexity risk are not necessarily independent from leverage risk as they are sometimes incorporated within portfolios as a result of employing leverage. Complexity risk might also be described as encompassing exposure to operational and reputational risk. The more a fund employs more 'esoteric' strategies the more complex it becomes in terms of its risk profile.

3 Source: Bloomberg, https://www.bloomberg.com/news/articles/2014-09-15/calpers-to-exit-hedge-funds-citing-expenses-complexity.

Hedge fund industry dynamics – the times they are a changin'...

One consequence of the increased focus of investors on the use of hedge funds within portfolios has been a change in the ownership profile of these strategies. Historically these funds were the preserve of individuals who, presumably, were motivated by the superior return-generating ability of hedge fund managers. Early adopters on the institutional side included endowments and foundations, keen to provide diversification and additional returns to their portfolios. More recently, however, defined benefit plans have been increasing allocations to hedge fund strategies, while endowment and foundation allocations have plateaued somewhat in recent years.

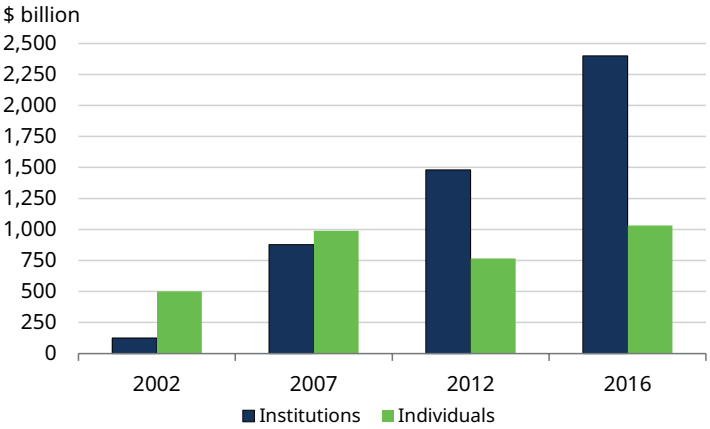
Figure 5: Hedge fund allocations of US pension plans, endowments and foundations



Source: The Future of the Money Management Industry – The Hedge Fund Industry: The Low-Rate Vortex, FMMI Inc., April 2017 (FMMI) and Greenwich Associates.

Interestingly, there has been a marked change in the balance of ownership, with a shift from individuals to institutions, as shown by the following graph.

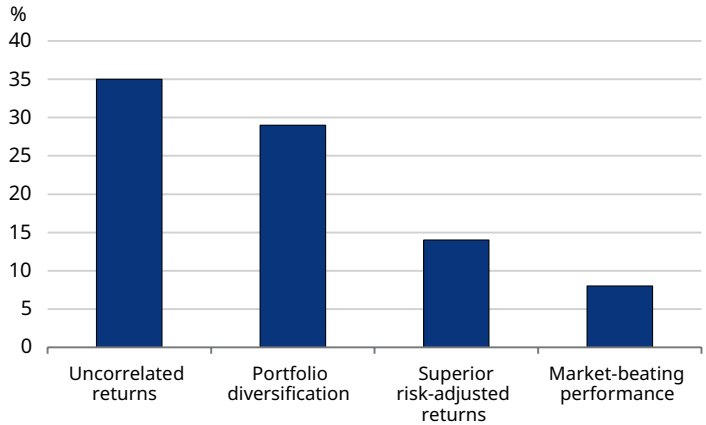
Figure 6: US hedge fund industry assets



Source: Hedge Fund Research, Securities and Exchange Commission, FMMI Inc. Analysis.

Given the shift in ownership structure, it is interesting to examine the expectations that investors have and the reasons for their allocations to hedge funds. The graph below shows the results of a survey of institutional investors as to the factors determining their allocations to hedge funds.

Figure 7: Global institutional investors: reasons for investing in hedge funds, 2016



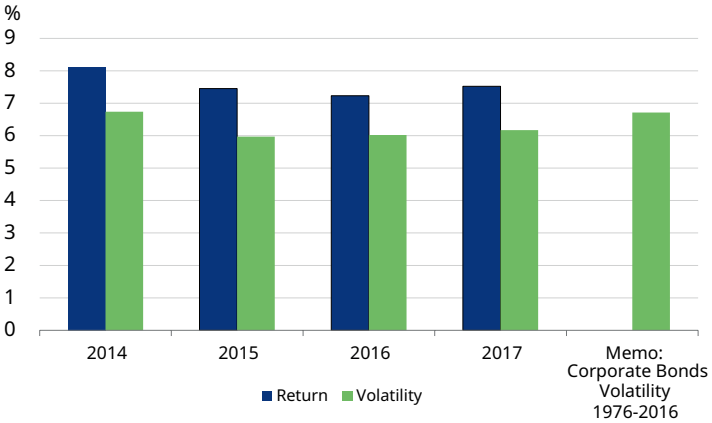
Source: Ernst & Young Global Hedge Fund and Investor Survey, FMMI Inc.

The overriding motivation for an investment in hedge funds, in this survey at least, is a requirement for uncorrelated returns and portfolio diversification. Risk-adjusted returns and market-beating performance are cited as essentially secondary concerns. This combination of requirements is probably fine as long as returns stand up, but as more institutional performance and risk comparisons become the norm it might be that performance-related considerations come more to the fore if hedge funds disappoint.

This survey suggests that, at least in the US, rate of return and funding issues were Institutional Investors top concerns for 2016[4] and we believe that is likely to continue to be the case going forward. If that is so, it is interesting to note that a recent survey of institutional investors, ranging from pension funds to family offices, revealed the expectations for their hedge funds in terms of expected return and volatility.

These aggregate expectations, although they vary among different types of investors, are fairly ambitious given that they target equity-like growth (at a time when prospective returns may be challenged) with bond-like volatility. Taken in conjunction with the requirement for uncorrelated returns, this leads to a demanding set of expectations for hedge fund managers, and an almost inevitable pull towards more complex and expensive solutions, with a high degree of potential for disappointment.

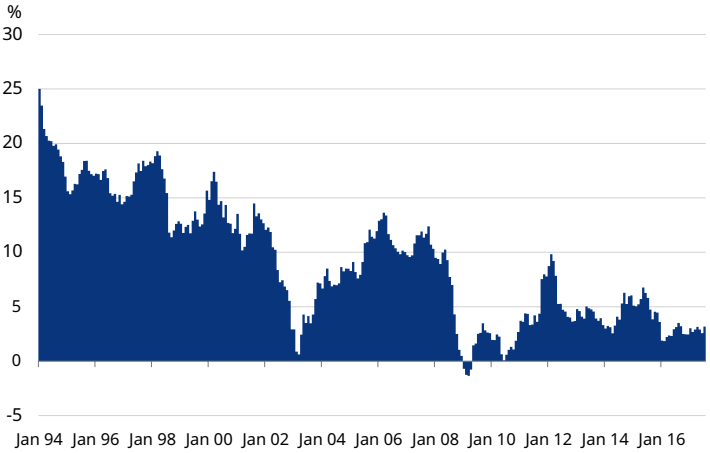
Figure 8: Global institutional investors' return and volatility targets for hedge fund portfolios



Source: Deutsche Bank Alternative Investor Survey, FMMI Inc.

Given the expectations outlined above, we examined historical return characteristics of hedge funds over long term and recent time periods. We used the HFRI fund-weighted composite. We recognize that there is no perfect choice of index to measure the performance of hedge funds and each has its own set of characteristics. The HFRI index is widely used, however, and is a popular measure for studies of this kind. The graph below shows hedge fund returns over rolling three-year periods.

Figure 9: Rolling three-year hedge fund returns (annualized*, USD terms)



*Average monthly returns annualized by multiplying by twelve, Source: HFR, Datastream, Schroders. Past performance is no guarantee of future results.

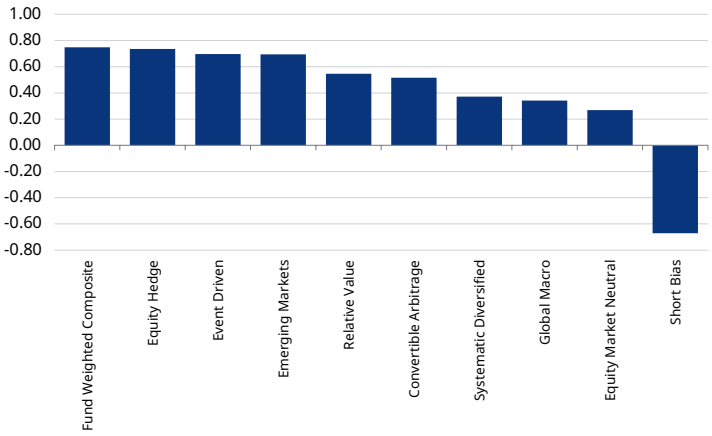
During the early period covered by the graph, hedge fund returns were relatively healthy, showing positive, double-digit growth. This has declined through time, however, to the extent that over recent periods returns have been relatively disappointing, with low single-digit growth.

If returns have disappointed (at least recently), a natural question to ask given investors aspirations for these kinds of strategies is, have hedge funds at least provided investors with diversification benefits?

On the basis of correlation, the answer varies depending upon the strategy – see Figure 10 on the next page.

4 Source: Greenwich Associates, FMMI Inc

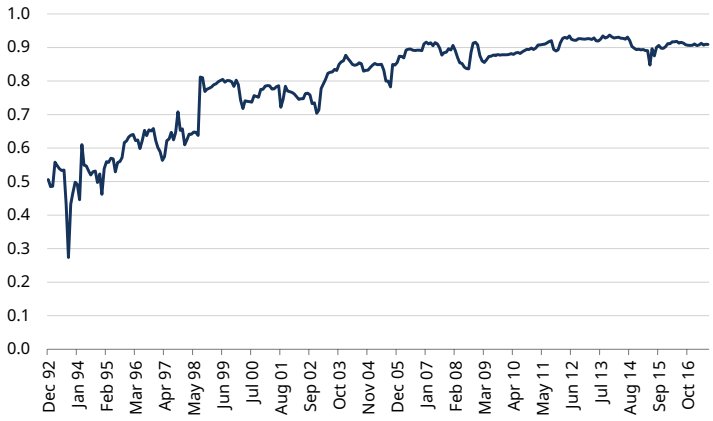
Figure 10: Hedge fund correlation with global equities



Source: HFR, MSCI, Datastream, Schroders; Jan 1990 – Jul 2017.

In terms of the dynamics, at least for the overall hedge fund composite, correlation has been increasing over time, as shown by Figure 11.

Figure 11: Rolling three-year correlation of the HFRI fund weighted composite to MSCI World



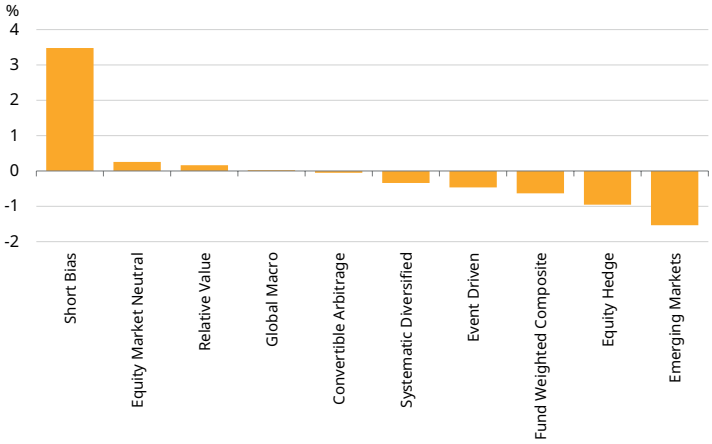
Source: HFR, MSCI, Datastream, Schroders.

One of the issues with correlation as a measure of diversification is that it treats "upside" returns with equal importance to "downside" returns whereas in reality investors are mainly concerned with diversification benefits in "down" markets or conditions of stress. Figure 12 shows average performance of hedge fund strategies in equity down markets and during selected stress periods commonly employed by risk management divisions. On this basis, it does seem that selected hedge fund strategies have shown some potential for downside protection.

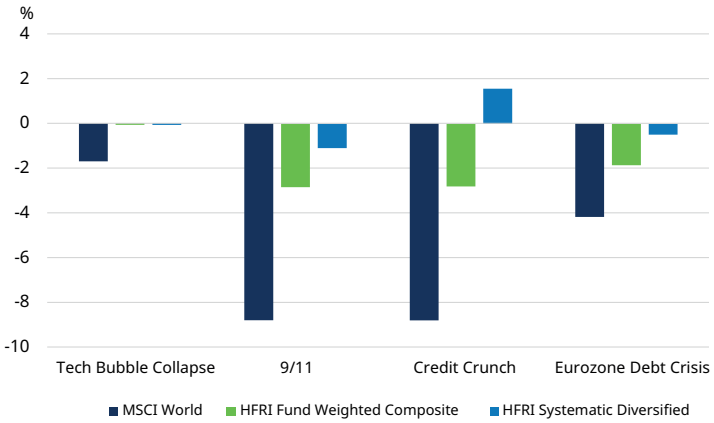
All in all, however, the lackluster returns of recent years and the correlation to equities do not appear to justify the elevated fees charged by the hedge funds.

Figure 12: Average monthly returns:

...in equity down markets



...in stress test scenarios



Source: HFR, MSCI, Datastream, Schroders. For illustration only. Past performance is no guarantee of future results.

Define alpha...

Hedge fund managers will presumably point to their ability to generate alpha as part of the justification for charging higher fees than the typical asset manager. While there may be other factors that contribute to higher fee levels in the industry, the expectation of positive alpha should be one of the most important. The problem is that defining alpha is difficult enough at the best of times. In its simplest form, alpha is sometimes defined as the excess return of a portfolio relative to its benchmark. However, this doesn't take into account any differing risk levels taken by the manager relative to the benchmark. This has led investors to define alpha in a risk-adjusted fashion, initially by calling upon the Capital Asset Pricing Model (CAPM) framework and adjusting risk using the portfolio's beta relative to the overall market.

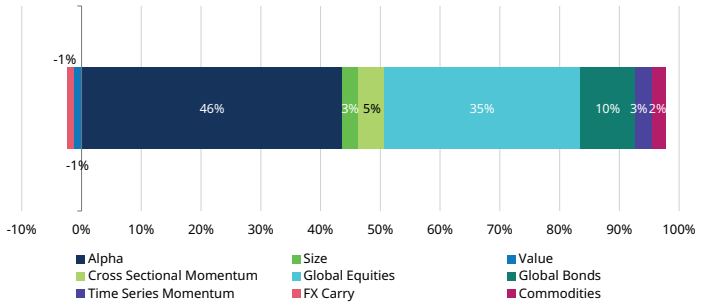
Further innovations in asset pricing theory gave credence to the idea that there may be more than one "factor" that is relevant for explaining, and hence risk adjusting, the performance of a portfolio. This led to the use of multi-factor models as a tool for measuring risk and hence also for measuring alpha as the risk-adjusted returns of a portfolio once its exposures to risk factors have been taken into account. This multi-factor framework is appealing as a tool for measuring the performance of hedge funds, especially as there may not be agreement as to the natural benchmark for a hedge fund strategy. We attempt to analyze the alpha of hedge funds using a combination of traditional and alternative risk premia by employing a factor analysis approach.

Our approach is to take the broad hedge fund index (HFRI fund-weighted composite) and regress the returns of this index against the risk premia factors. The factors used are equity, bond and commodity beta factors, cross sectional equity size, value, and momentum as well as FX carry and time series momentum. The regression coefficients are essentially the "betas" of the strategy to the factors, which can then be multiplied by the returns to the factors in order to calculate a performance attribution of the hedge fund index to the factors. The intercept of the regression can be interpreted as the "alpha" of the hedge fund index.

Figure 13 shows the results of the performance attribution using this methodology, decomposing the overall average return into contributions from the various factors.

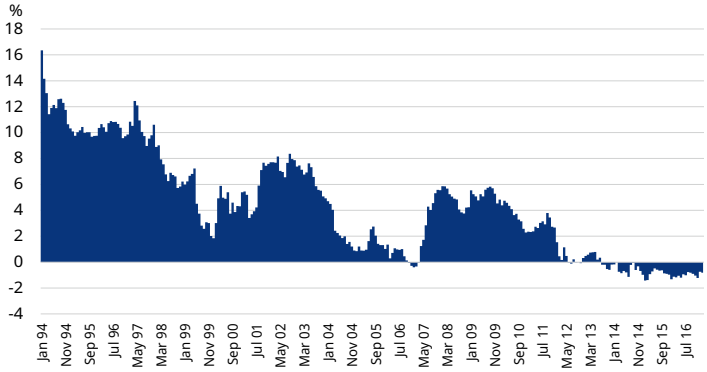
Over the long term, hedge fund managers will no doubt be pleased to learn that, based upon this methodology at least, they have generated a positive alpha contribution. While the long-term picture is interesting, we always find it instructive to look at shorter-term dynamics at the same time in order to identify emerging trends and changing relationships. To this end we repeated our factor return decomposition using a rolling three-year window. Figure 14 depicts the rolling three-year annualized alpha contribution on this basis.

Figure 13: Global hedge fund (HFRI) factor-based return attribution February 1991 – July 2017



Source: Schroders. Risk Premia Factors Used in Regression Analysis: Equity = MSCI World (local currency terms); Bond = Citi World Government Bond Index (local currency terms); Commodities = BBG Commodity Index; Equity Size, Value, Momentum = Fama-French Global factors (Source: http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html); Carry = Schroders Calculated Global FX Carry Index; Time Series Momentum = AQR Capital Management, LLC TSMOM factor. Attribution shown is for illustrative purposes only, not a recommendation to buy or sell any security. Factors referenced above reflect those that the authors believe reflect an appropriate representation of typical market factor exposures. Actual risk attribution may vary from the results shown above. Past performance is no guarantee of future results.

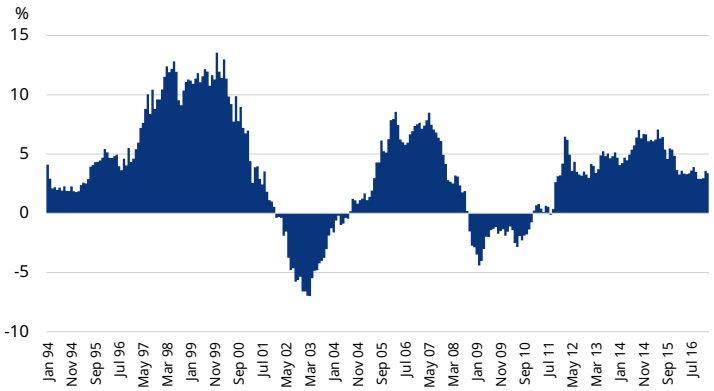
Figure 14: Rolling three-year alpha contribution for the hedge fund composite (annualized)



Source: Schroders, January 31, 1994 to July 31, 2017.

There has been a clear decline in the alpha of hedge fund on this basis to the extent that it has become almost negligible over the last couple of years. So if alpha has declined, what has been the most important factor explaining returns? One of them is the global equity factor that we used.

Figure 15: Rolling three-year equity contribution for the hedge fund composite (annualized)



Source: Schroders, January 31, 1994 to July 31, 2017.

Another interesting bi-product of this analysis is that we can calculate the overall "explanatory power" of the regressions to gauge how much of hedge fund return variation can be explained by movements in the risk premia factors that we have used. The graph below shows this for the rolling three-year regressions and reveals a steady increase in the explanatory power of the risk factors.

Figure 16: Rolling three-year percent of hedge fund return variation explained by risk premia factors

Source: Schroders, January 31, 1994 to July 31, 2017.

All in all, this analysis suggests that hedge fund alpha is on the decline and more of the return fluctuations can be explained by risk premia. It is also important to note that, to the extent a hedge fund is delivering true sustainable alpha, the existence of this alpha is difficult to identify *a priori.*

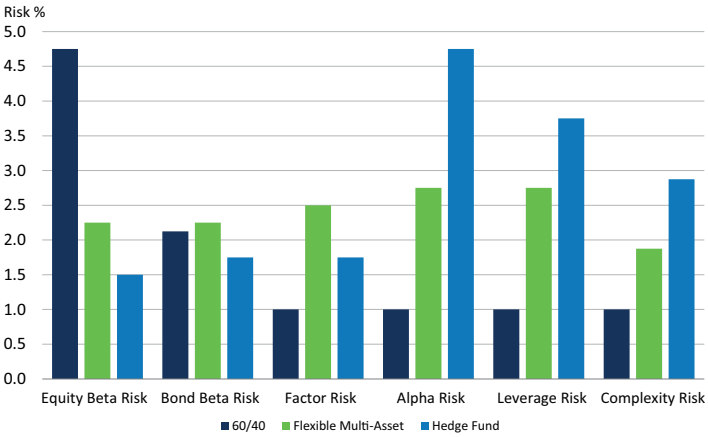
An alternative to the Alternatives?

As we have seen, there are specific hedge fund strategies that can offer benefits, such as diversification potential but our analysis suggests that, at an aggregate level, hedge fund returns are becoming more reliant on risk premia factors these days at the expense of alpha. If that is the case, a natural question to ask is whether there is a cheaper, potentially more transparent, alternative to using hedge funds. One possibility is multi-asset funds.

Traditionally, multi-asset funds have been fairly static, balanced funds, combining equities and bonds. The multi-asset landscape has exploded in recent years, however, with a wide range of strategies and approaches now available to investors. On the face of it, these more flexible multi-asset strategies have similarities to some types of hedge funds in the sense that they generate returns through investing their portfolios across different asset classes and strategies, eschew the use of benchmarks in portfolio construction in favour of outcome-oriented objectives, and are focused on generating strong risk-adjusted returns with a lower reliance on traditional equity beta. To highlight the potential difference between hedge funds and multi-asset strategies, we return to our risk-based framework, using 60/40 as a simple comparator.

Not surprisingly, a standard 60/40 strategy is primarily exposed to equity beta risk, and has the lowest reliance upon factor, alpha, leverage or complexity risks. Flexible multi-asset strategies may reduce the reliance on equity beta by casting their net as widely as possible across a range of return sources and then dynamically managing the exposures on a one-to-three year time horizon to take

Figure 17: Risk characteristics of multi-asset and hedge funds

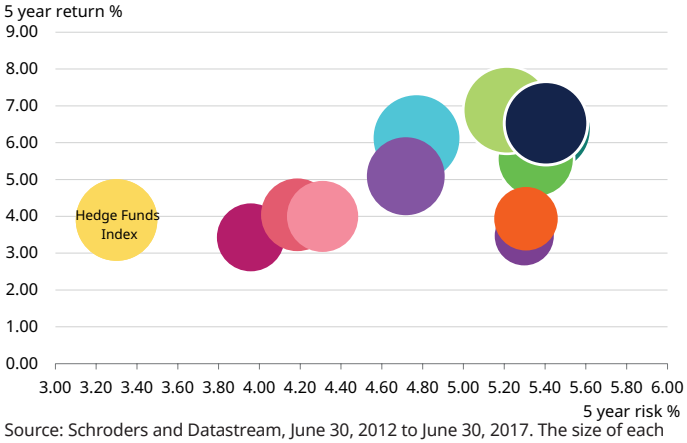


Source: Schroders. For illustrative purpose only. Reflects an example of the variations across factor exposures based on an indexed 60/40, and both representative hedge fund and flexible multi-asset samples that the authors believe seek to achieve broadly applicable risk/return objectives. Actual risk exposures would vary.

account of valuation and cyclical risks. The case for hedge funds is that they can generate more alpha and/or provide access to more exotic risk premia, which reduces the reliance on equity beta at the expense of greater leverage and complexity.

Risk exposures are one part of the comparison process but what about performance? A natural question to ask, for instance, is: has the universe of multi-asset funds recently delivered on the kinds of performance expectations that institutional investors are demanding? Figure 18 shows, over the last five years, a return-risk comparison of these types of strategies.

Figure 18: Comparison of multi-asset universe with hedge funds



Source: Schroders and Datastream, June 30, 2012 to June 30, 2017. The size of each bubble represents the Sharpe ratio. Hedge fund Index represented by the HFRI Total Return Index. Sharpe ratio is calculated using the 3 month sterling LIBOR as the risk-free rate. Strategies shown reflect Multi-Asset funds that the Team believes are an appropriate representation of the universe relative to the HFRI Index. For illustrative purposes only. Not intended to serve as a recommendation to buy or sell any security. Past performance is no guarantee of future results.

While delivering a higher level of risk, selected multi-asset mangers have historically achieved returns more consistent with the requirements of investors outlined earlier.

Conclusion

The ownership structure of hedge funds is changing towards a more institutional investor base. This could lead to different demands upon hedge fund managers in terms of performance expectations which go beyond simple return-seeking behavior. Our concern is that the expectation of equity-like returns with bond-like volatility and low correlations with existing asset classes may be too much of a stretch and almost inevitably leads to more complex and expensive solutions.

Taken with our observations that, at an aggregate level, hedge fund correlations with equities have increased, hedge funds are finding alpha to be more elusive, and risk premia factors explain more of their returns, we believe that hedge fund fees are increasingly hard to justify. In this context, multi-asset portfolios may provide a cheaper and simpler way of pursuing an improvement in risk-adjusted returns with less reliance on equity beta, leaving risk and fee budget to be focused on those hedge fund strategies which may genuinely offer uncorrelated returns.

Schroders

Schroder Investment Management North America Inc.
7 Bryant Park, New York, NY 10018-3706

schroders.com/us
schroders.com/ca
@SchrodersUS

Important information: The views and opinions contained herein are those of the Schroders Multi-Asset Investments Team and do not necessarily represent Schroder Investment Management North America Inc.'s (SIMNA Inc.) house view. These views and opinions are subject to change. Companies/issuers/sectors mentioned are for illustrative purposes only and should not be viewed as a recommendation to buy/sell. This report is intended to be for information purposes only and it is not intended as promotional material in any respect. The material is not intended as an offer or solicitation for the purchase or sale of any financial instrument. The material is not intended to provide, and should not be relied on for accounting, legal or tax advice, or investment recommendations. Information herein has been obtained from sources we believe to be reliable but SIMNA Inc does not warrant its completeness or accuracy. No responsibility can be accepted for errors of facts obtained from third parties. Reliance should not be placed on the views and information in the document when making individual investment and / or strategic decisions. The opinions stated in this document include some forecasted views. We believe that we are basing our expectations and beliefs on reasonable assumptions within the bounds of what we currently know. However, there is no guarantee that any forecasts or opinions will be realized. No responsibility can be accepted for errors of fact obtained from third parties. While every effort has been made to produce a fair representation of performance, no representations or warranties are made as to the accuracy of the information or ratings presented, and no responsibility or liability can be accepted for damage caused by use of or reliance on the information contained within this report. All investments involve risk, including the risk of loss of principal. No investment strategy or technique can guarantee returns or eliminate risk of loss of principal. Past performance is no guarantee of future results.

SIMNA Inc. is registered as an investment adviser with the U.S. Securities and Exchange Commission and as a Portfolio Manager with the securities regulatory authorities in Alberta, British Columbia, Manitoba, Nova Scotia, Ontario, Quebec and Saskatchewan. It provides asset management products and services to clients in the United States and Canada. Schroder Fund Advisors LLC ("SFA") is a wholly-owned subsidiary of SIMNA Inc. and is registered as a limited purpose broker-dealer with the Financial Industry Regulatory Authority and as an Exempt Market Dealer with the securities regulatory authorities in Alberta, British Columbia, Manitoba, New Brunswick, Nova Scotia, Ontario, Quebec and Saskatchewan. SFA markets certain investment vehicles for which SIMNA Inc. is an investment adviser. SIMNA Inc. and SFA are indirect, wholly-owned subsidiaries of Schroders plc, a UK public company with shares listed on the London Stock Exchange. Further information about Schroders can be found at www.schroders.com/us or www.schroders.com/ca. Schroder Investment Management North America Inc. (212) 641-3800.

WP-HEDGEFUNDS