

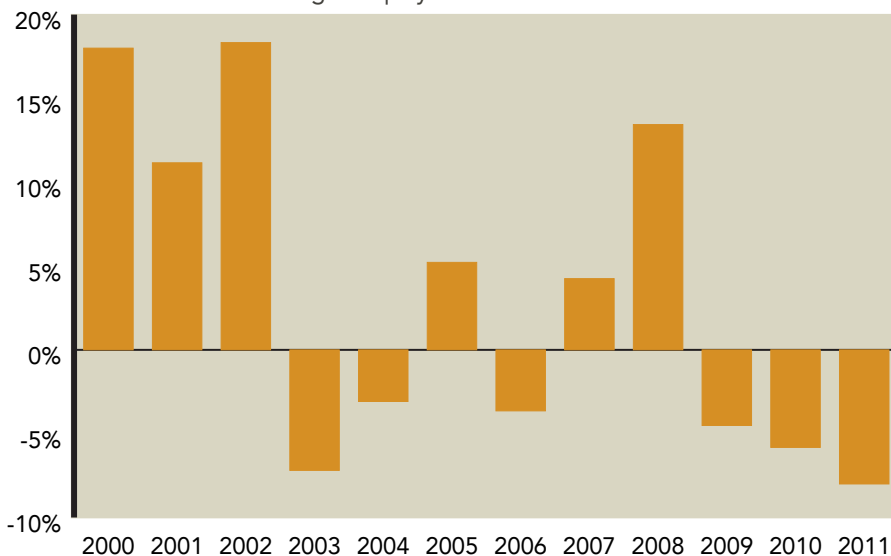
HEDGED EQUITY: WHAT HAPPENED TO THE ALPHA?

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Coming out of a phenomenal period of relative performance during the tech boom and bust, hedged equity performance declined relative to the S&P 500 during the mid 2000's.

However, absolute returns were still strong in risk adjusted terms, and hedged equity offered significant downside protection in 2008. While hedged equity trailed as the stock market rebounded in 2009, returns were high and trailing three-year performance strong. Lately though, even as hedged equity hedge funds have continued to offer risk reduction in terms of lower volatility, weak hedge fund performance has prompted increasing investor concern. Hedged equity underperformed the S&P 500 by 4.6% in 2010, shown below in Exhibit 1. In 2011, while the S&P finished up 2.11%, the HFRI Hedged equity index ended down 8.0%. This was the worst year for hedged equity in relation to the S&P 500 since 1998. Several explanations have been offered for the recent performance woes of hedged equity hedge funds. This article will examine which explanations, if any, are convincing.

Exhibit 1: Annual HFRI Hedged Equity Performance in Excess of S&P 500



Source: Bloomberg

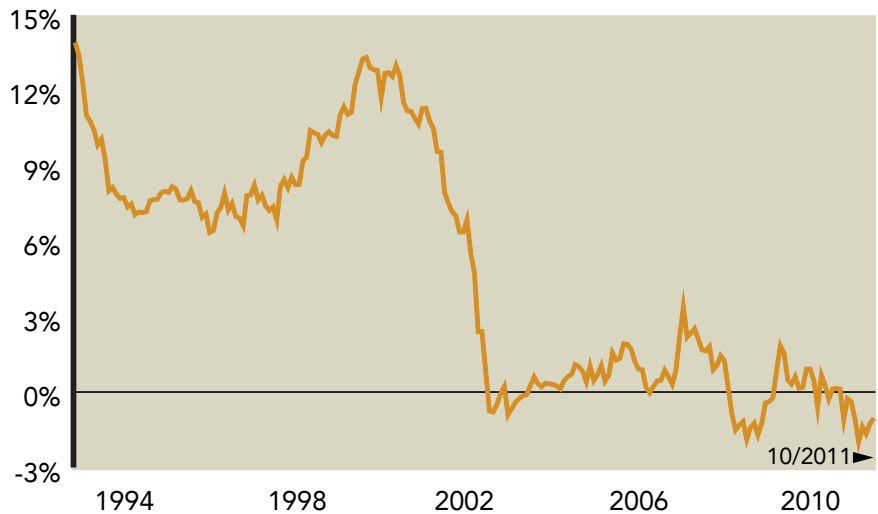
The recent performance of hedge funds is concerning, but hedge funds often underperform when the broader equity markets are up because of their lower net exposure. Even more concerning is the hedged equity 3-year net of fees alpha is substantially negative as of November 2011. Exhibit 2 shows rolling 3-year four factor alpha for the HFRI Equity Hedge Index. Alpha is a measure of asset manager skill, which accounts for underlying passive risk exposures (betas). A common model of equity manager returns is the four-factor model. The four-factor model, which includes the three Fama-French factors (market, size, and value) along with the Carhart momentum factor, explains hedged equity returns well with an R^2 of 0.80-0.90.

Hedged equity produced phenomenal alpha for investors in the 1990's and early 2000's. As assets invested in hedged funds increased, alpha dropped precipitously in 2002-2003. However, hedged equity still produced 0 to 3% alpha relatively consistently until mid-2008. Despite significant relative outperformance versus long only equities, hedged equity alpha in late 2008 and early 2009 was negative 1-2%. After rebounding at the end of 2009, measures of hedged equity alpha have been on a downward trend ever since.

Hedge funds have been criticized, often rightly, for the high fees they charge investors. This criticism is especially pertinent given that hedge funds in aggregate have produced low or negative alpha, net of fees, for the last few years. Note that while the net of fees alpha shown in Exhibit 2 indicates that hedged equity investors have received no alpha from their investments, it does not necessarily imply that hedged equity managers, in aggregate, possess no investment skill. Rather, alpha generated by hedged equity managers before fees is consumed by the high fees they charge.

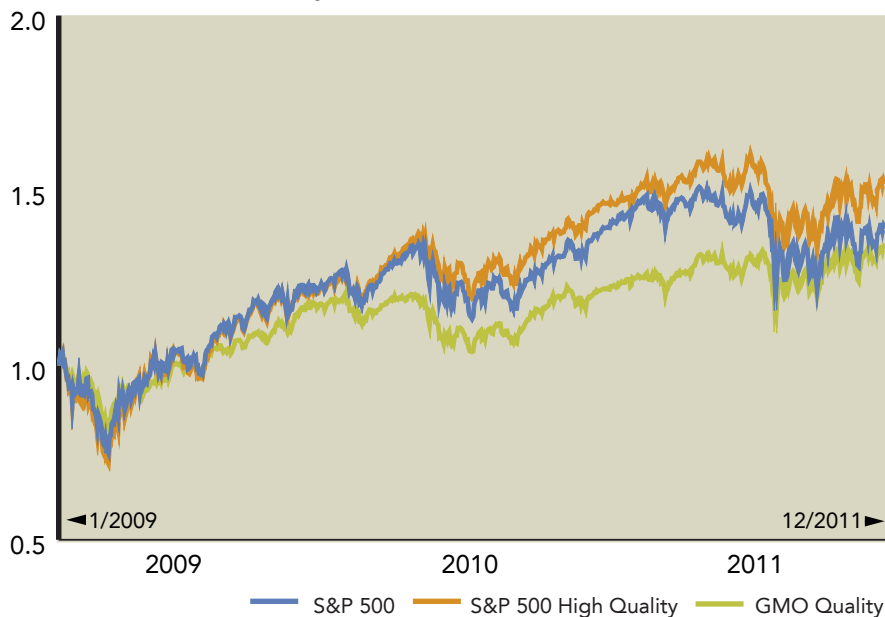
Several explanations have been offered up for recent hedge fund underperformance. One common explanation is that the market has experienced a "junk rally." That is, high quality stocks have tended to underperform, leading to poor performance by bottom-up stock pickers. While there is no standard accepted measure of stock "quality," there is little evidence that poor quality stocks have driven market returns over the past few years as shown in Exhibit 3. Exhibit 3 shows the cumulative performance of the S&P 500 versus the S&P 500 High Quality Index and the GMO Quality mutual fund. The S&P 500 High Quality Index is produced by Standard & Poors and constructed by selecting the subset of quality stocks in the S&P 500 defined as high quality. Standard & Poors defines high quality stocks as stocks that have shown strong growth and stability of earnings and dividends over time. GMO Quality is an active mutual fund that seeks to purchase

Exhibit 2: Rolling HFRI Four-Factor Alpha



Source: Bloomberg, Ken French Data Library

Exhibit 3: S&P 500 vs. Quality

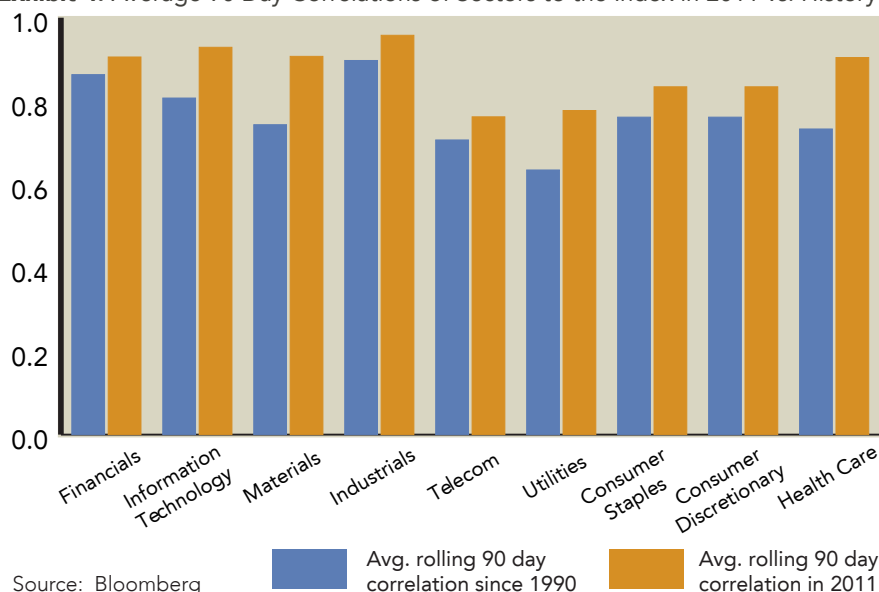


Source: Bloomberg

quality stocks. GMO defines quality as companies with high and stable profitability, and low debt. As Exhibit 3 shows, GMO Quality has slightly underperformed the S&P 500, with less volatility. The S&P 500 Quality Index has cumulatively outperformed the S&P 500 by 12.7% over the past three years. Both of these "benchmarks" outperformed the S&P in 2011.

Another common explanation given for poor hedge fund performance is the rising correlations between stocks. As hedge fund managers take both long and short positions, rising correlations make it difficult for them to exploit price differentials between over and undervalued companies. It is true that correlations in 2011 between stocks were very high. Additionally, correlations between sectors in 2011 were also much higher than they had been in the past, shown in Exhibit 4.

Exhibit 4: Average 90 Day Correlations of Sectors to the Index in 2011 vs. History



Source: Bloomberg

However, the argument that high correlations are driving poor hedged equity performance is unconvincing. It is true the correlations are higher between stocks now than they have been historically. However, correlation measures co-movement between stocks, not return differentials. As an example, assume there are only two companies in the investment universe, Company A and Company B. Assume both stocks move in the same direction every year, and because Company A is a better stock, returns to investing in Company A are typically much higher than investing in Company B. Thus, a good investment strategy may be to go long Company A stock, and short Company B stock. Exhibit 5 shows an example of this scenario.

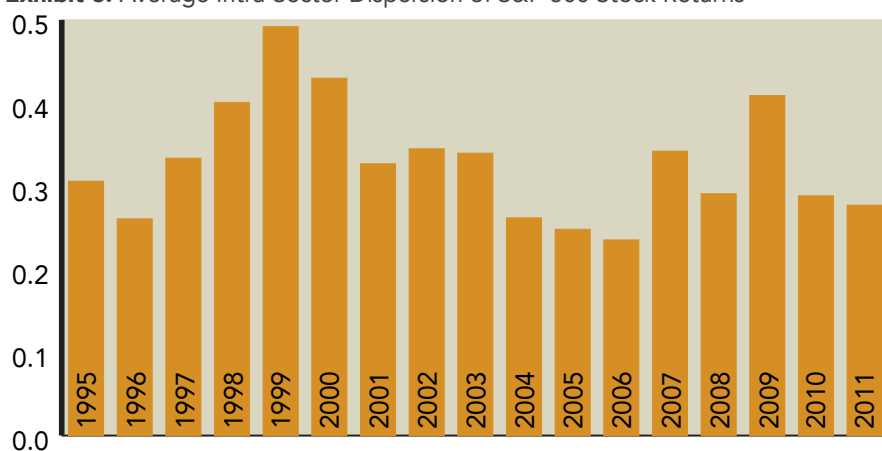
Exhibit 5: Correlation Example

Year	Company A	Company B	Manager Return
1	25%	2%	23%
2	-4%	-8%	4%
3	-20%	-25%	5%
4	3%	1%	2%
5	22%	13%	9%
6	35%	20%	15%
7	3%	1%	2%
8	1%	2%	-1%
9	8%	2%	6%
10	-4%	-15%	11%
Return			7.4%

The two companies in Exhibit 5 have extremely highly correlated returns (0.90). However, the hypothetical return to an investment manager long Company A and short Company B is still high, at 7.4%.¹

From this example, it is clear that long/short equity managers should be less concerned about the co-movement of stocks and more concerned about the dispersion of stock returns. As long as the returns of “good” stocks are high compared to “bad” stocks, there is potential to generate alpha.

Exhibit 6: Average Intra-Sector Dispersion of S&P 500 Stock Returns



Source: Bloomberg

Exhibit 6 shows the average intra-sector dispersion² of the S&P 500. Average sector dispersion is used as opposed to S&P 500 dispersion because it is more common for pair trades to be put on between stocks in the same sector. However, results are very similar for dispersion of the S&P 500 as a whole. Exhibit 6 shows that while dispersion was relatively low in 2011, it is not significantly lower than it had been in the past. Thus while this may be a more difficult environment for hedged equity managers to outperform, low dispersion is not an adequate explanation for subpar manager performance.

Another possible explanation for lackluster hedge fund manager performance is poor market timing. In aggregate, perhaps hedge

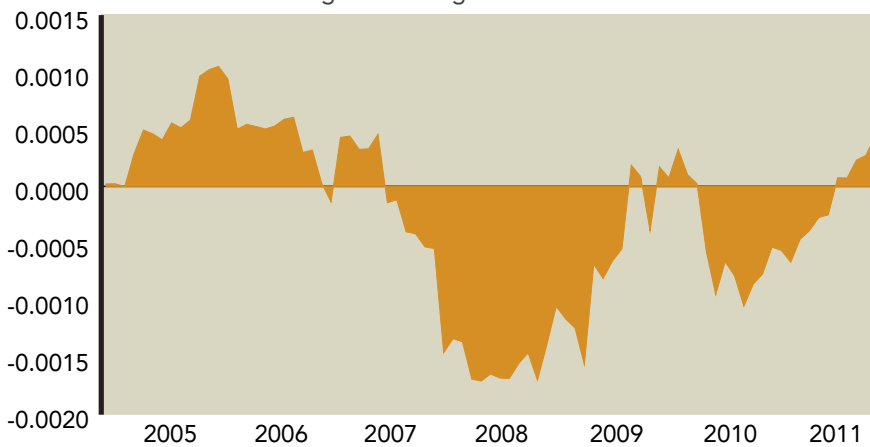
¹This assumes no friction costs

² Inter-quartile range is used here due to the non-normality of stock returns. The graph looks very similar if standard deviation is used. Inter-quartile range = Q1 – Q3

fund managers pick good stocks, but alter their market betas at inopportune times. Monthly hedged equity beta can be estimated based on the daily returns of the HFRX index. Note that there are index construction issues with the HFRX Index compared to the HFRI: as the HFRX is weighted based on asset value in the fund, larger funds tend to dominate the index. Still, because the HFRX provides daily data, it is used here.³

If hedge funds in aggregate have negative returns due to market timing, changes in monthly beta should have negative covariance with future S&P 500 returns. Put another way: if hedged equity managers decrease beta during the month and the following month the market has positive returns, the manager has exhibited poor market timing. Exhibit 7 shows the rolling covariance of changes in hedged equity beta with the following month's S&P 500 returns. This measure will be positive when managers tend to increase their beta in advance of a market rally, and negative when managers tend to increase their beta in advance of market declines. Managers showed some evidence of positive market timing ability in the middle of the decade. However, market timing ability based on this measure turned substantially negative in the time surrounding the financial crisis and for most of 2010. While this measure has been flat to slightly positive more recently, Exhibit 7 does provide some evidence that poor performance of hedged equity managers over the past few years may have been driven by poor market timing.

Exhibit 7: Covariance of Changes in Manager Beta with t+1 S&P 500 Returns



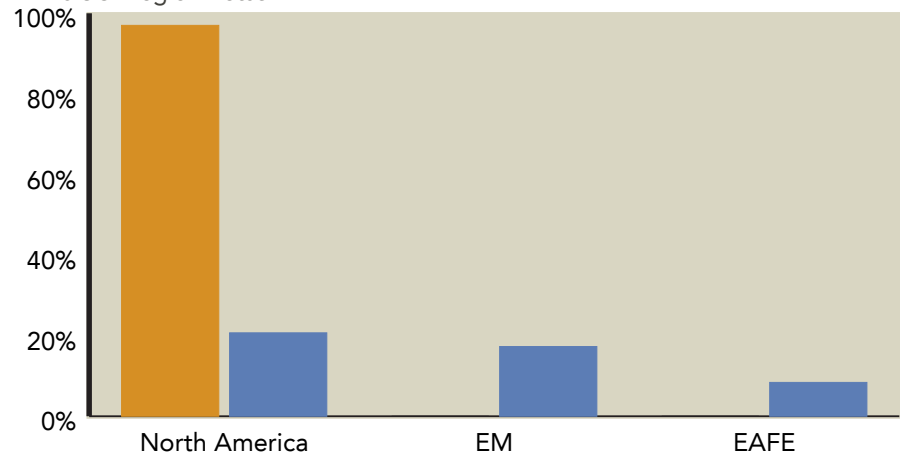
Source: Bloomberg

A fourth possible explanation offered for poor hedged equity performance is that the types of stocks these funds invest in have underperformed broader markets. Specifically, small stocks, value stocks, and international stocks all underperformed in 2011. Given the broader investment mandate of hedged equity hedge funds, the underperformance of stocks outside the S&P 500 may be driving the negative alpha shown in Exhibit 2. Interestingly, the factor analysis performed in Exhibit 2 indicates that hedged equity managers in aggregate have only a slight bias to small caps, and a negative bias to value stocks. The most recent small and

value three-year betas for the HFRI Equity Hedge Index are 0.07 and -0.19, respectively. Thus, the underperformance of small stocks and value stocks on the balance should have little effect on aggregate hedge fund returns. However, because these factors are computed using domestic equity data, it is possible that a bias toward international stocks could be unaccounted for in the four-factor model. Holdings based data is of no help either. While hedge fund are required to disclose their long equity positions in 13-F filings with the SEC, this disclosure requirement only applies to domestic stocks.

Exhibit 8 shows the results of a factor analysis conducted on the S&P 500 and HFRI Hedged equity indices using regional MSCI Index returns as factors. R² values are high, 99% for the S&P 500 and 94% for the HFRI. Exhibit 8 shows that while S&P 500 returns are completely explained by the returns of North American stocks, hedged equity returns are best explained by relatively high weightings to emerging markets and Europe. These biases almost certainly hurt returns in 2011 as fears regarding the Eurozone crisis rippled throughout global markets.

Exhibit 8: Region Betas



Source: Bloomberg

Legend: S&P 500 (Orange), HFRI Hedged Equity (Blue)

In sum, not all reasons offered for hedged equity hedge fund underperformance in

³The HFRX is weighted based on assets as opposed to equally weighted as in the HFRI, and thus may not be as representative of what the average investor earns in hedged equity. However, it does provide daily returns since 2003, which are required for these calculations.

2011 are convincing. In the past year, quality stocks have actually outperformed, discrediting the “junk rally” hypothesis. Small and value stocks have underperformed, but hedge funds in aggregate appear to have little net exposure to these factors. Correlations are higher than they have been historically, but dispersion between stock returns is not significantly less than it has been in the past. The two largest contributors to aggregate hedged equity underperformance in recent years have likely been poor market timing and exposure to international stocks. While there is evidence of poor market timing ability in 2008 and 2010, this measure improved in 2011. Exposure to international equities is likely the main contributor to hedged equity underperformance in 2011. Importantly, even if high correlations are not the cause of hedge fund underperformance, they may be a symptom of a market that does not favor bottom-up stock pickers. If stock prices continue to be largely driven by changes in expectations of global economic events, it could continue to be difficult for hedged equity managers to generate alpha.

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