

### Hedge Funds and Funds of Funds: Rising Sensitivity to Equity Markets

Nearly all research performed on hedge funds underlines the low correlation of hedge fund returns to traditional asset classes (see amongst others Kat (2005), Fung and Hsieh (1999), Liang (1999)). In recent years however a significant increase in the co-movement between Hedge Fund returns and the returns of traditional asset classes has been observed. This has significant implications in terms of the use of hedge funds as diversifiers to traditional asset classes and also the portfolio diversification effects within a fund of hedge funds.

Figure 1 shows that the average correlation between Hedge Fund Style Indices<sup>1</sup> and the MSCI World Index<sup>2</sup> has increased significantly in the last two and a half years. More importantly the average correlation is close to its highest level in this sample (January 1996 – December 2007).

**Figure 1: Average 24 Month Rolling Correlation Between HFRI Style Indices and World Equities (Jan 1996 to Dec 2007)<sup>3</sup>**



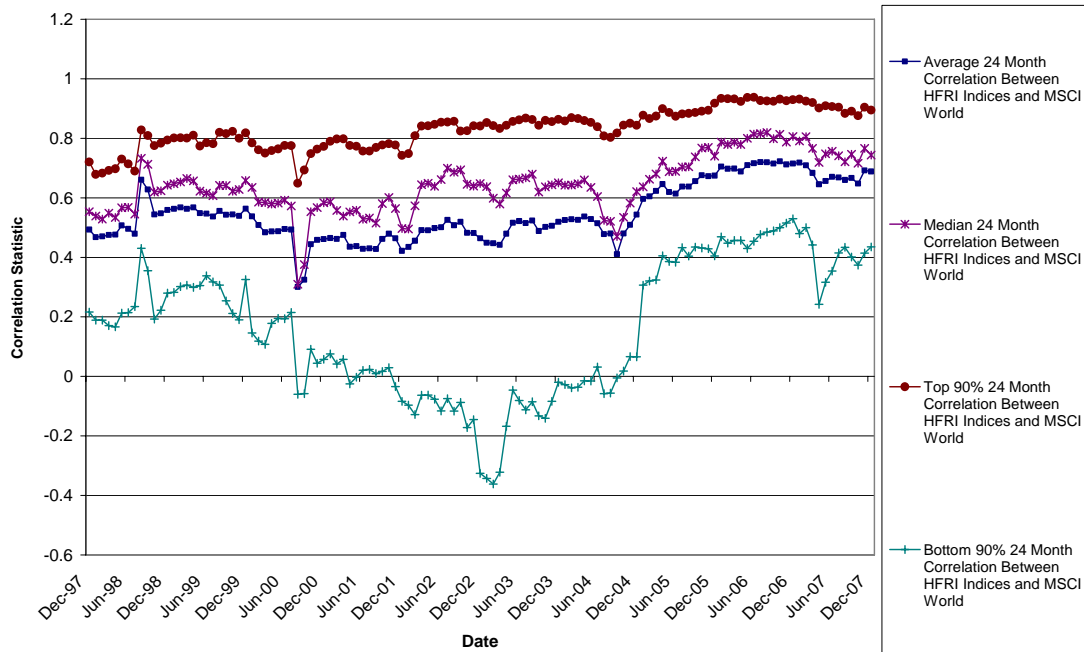
Due to the known problems of the average statistic we also present the median, minimum 90% and maximum 90% of the HFRI Indices correlations in Figure 2. The result of increased correlation in recent years is confirmed even when we examine these measures.

<sup>1</sup> HFRI Convertible Arbitrage Index, HFRI Distressed Securities Index, HFRI Emerging Markets: Asia Index, HFRI Emerging Markets: Eastern Europe/CIS Index, HFRI Emerging Markets: Global Index, HFRI Emerging Markets: Latin America Index, HFRI Equity Hedge Index, HFRI Equity Market Neutral Index, HFRI Equity Non-Hedge Index, HFRI Event-Driven Index, HFRI Fixed Income: Arbitrage Index, HFRI Fixed Income: Convertible Bonds Index, HFRI Fixed Income: Diversified Index, HFRI Fixed Income: High Yield Index, HFRI Fixed Income: Mortgage-Backed Index, HFRI Macro Index, HFRI Market Timing Index, HFRI Merger Arbitrage Index, HFRI Regulation D Index, HFRI Relative Value Arbitrage Index, HFRI Sector: Energy Index, HFRI Sector: Financial Index, HFRI Sector: Health Care/Biotechnology Index, HFRI Sector: Miscellaneous Index, HFRI Sector: Real Estate Index, HFRI Sector: Technology Index, HFRI Short Selling Index.

<sup>2</sup> This is the MSCI World Total Return – Gross Index taken from PerTrac.

<sup>3</sup> All calculations and graphics within this document were generated by Calburn Capital Partners' proprietary quantitative platform, using data from PerTrac and Bloomberg.

**Figure 2: Average, Median, Minimum 90% and Maximum 90% of 24 Month Rolling Correlation Between HFRI Style Indices and World Equities**



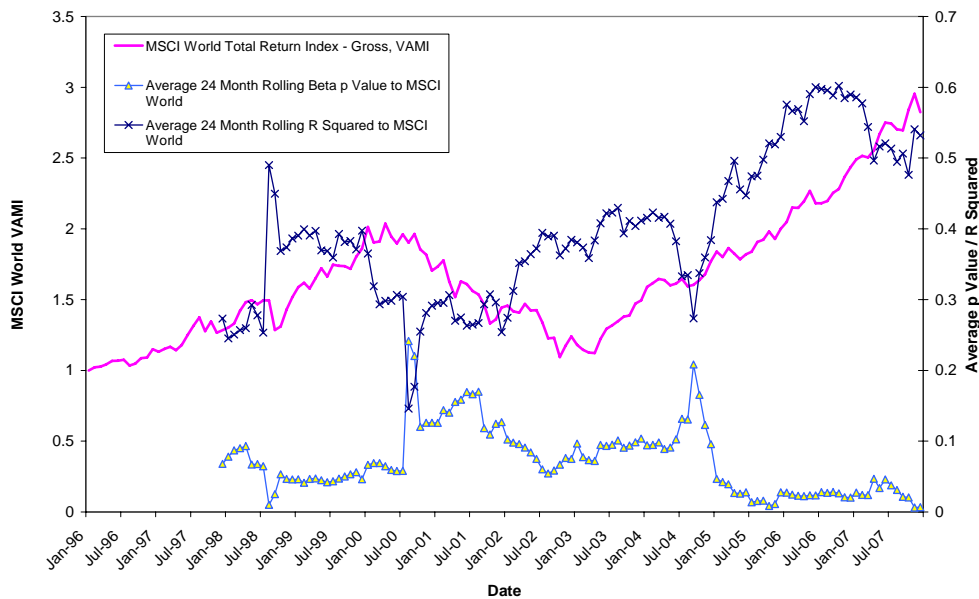
However, there are issues with correlation: it does not take into account the magnitude of the co-movement and it does not imply causality. For these reasons we re-examine the HFRI Indices by running a uni-variate regression of each Hedge Fund Style Index against the MSCI World.

The average beta of the Style Indices is presented in Figure 3. The average beta to the MSCI World historically has increased with a lag when equity markets have been doing particularly well and decreased when markets have been in a bear run. This shows that on average hedge fund managers provide some market timing benefit to the investor since they increase or decrease the amount of market risk they are exposed to, depending on market conditions. Moreover, the average beta to the MSCI World has been in a high range before, in the 1998-2000 period. At first glance this may seem reassuring.

**Figure 3: Average 24 Month Rolling Beta Between HFRI Style Indices and World Equities (Jan 1996 to Dec 2007)**



**Figure 4: Average 24 Month Rolling Beta p Value and R-Squared-Bar Between HFRI Style Indices and World Equities (Jan 1996 to Dec 2007)**



Nevertheless, as indicated by the rolling p Value shown in Figure 4, the average beta is now more statistically significant than during any time in the history of the time series, and has been for the past 2 years. Furthermore, the average percentage of variability of returns (R-squared) that can be explained by global equity market risk (MSCI World), although reduced in the last year, is significantly higher than in the period prior to 2006<sup>4</sup>. This implies that, on average, hedge funds are more directional and carry significantly more equity market risk than before. This observation has two main implications:

1. The diversification benefit of including hedge funds in a traditional portfolio has decreased.
2. The average diversification within a fund of hedge funds portfolio has decreased.

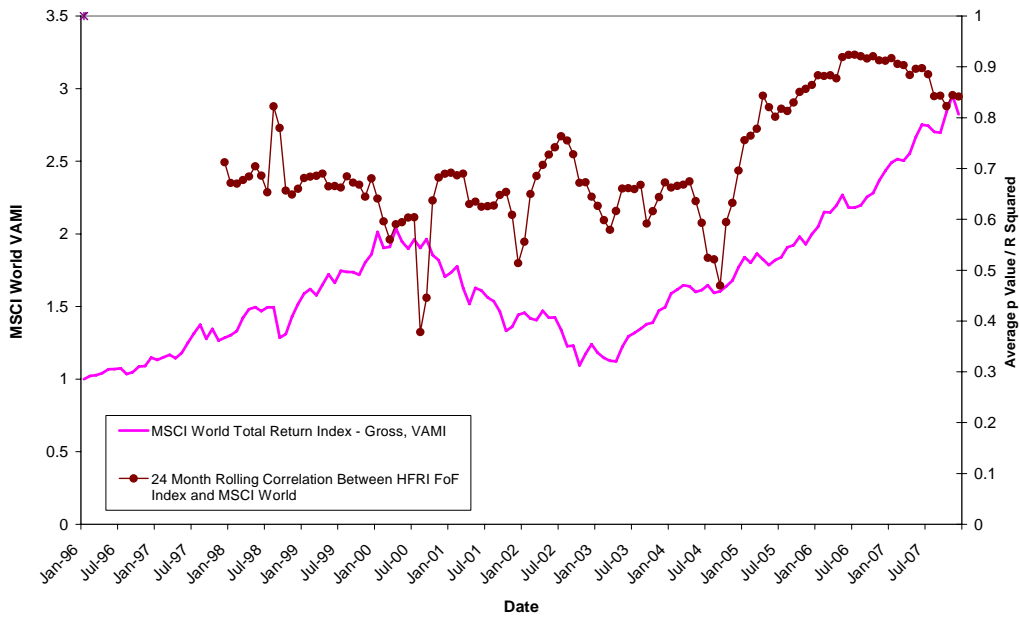
<sup>4</sup> Due to the well known problems of using an average to analyse data we present summary statistics on the regression results in the Appendix which confirm the increased beta sensitivity and statistical significance of the result in recent years.

**Diversification Benefits of Adding Hedge Funds to Traditional Portfolios:**

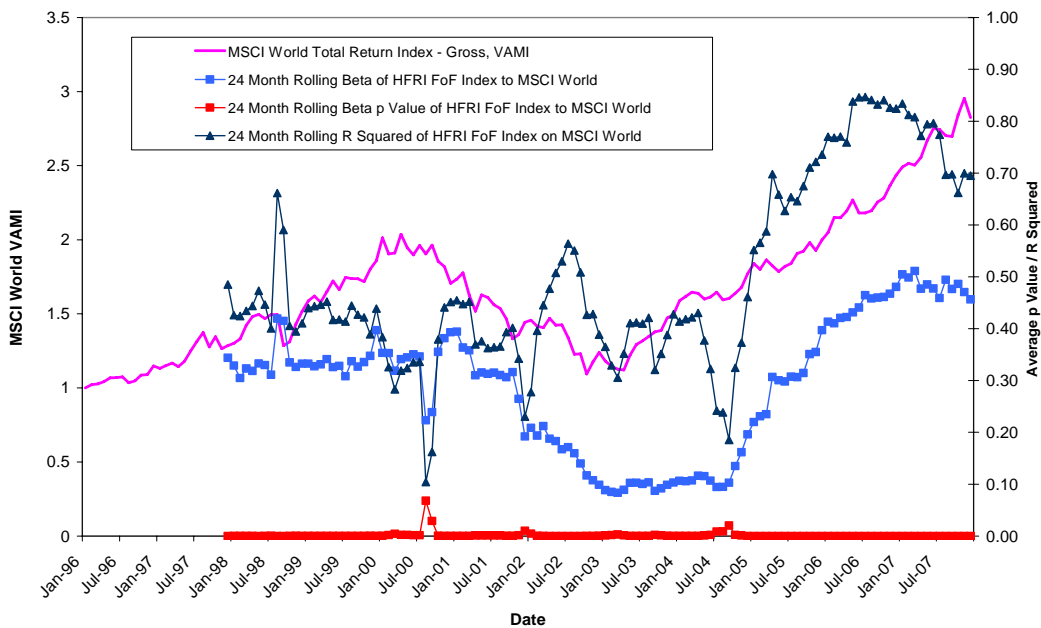
If statement 1 is correct then we should observe that the correlation of fund of hedge funds to the MSCI World index has increased on average and the benefits of adding a portfolio of hedge funds to a traditional portfolio should have decreased.

Figure 5 shows that in the last two and a half years the rolling 24 month correlation between the HFRI Fund of Fund Index and the MSCI World has increased significantly, and Figure 6 confirms that, on average, funds of hedge funds are now significantly more directional and carry a larger percentage of market risk than before.

**Figure 5: 24 Month Rolling Correlation Between HFRI Fund of Fund Index and World Equities (Jan 1996 to Dec 2007)**



**Figure 6: 24 Month Rolling Betas of HFRI FoF Index to World Equities and Related Statistics (Jan 1996 to Dec 2007)**



### **Implications for the Institutional Investor**

In Calburn Capital Partners' view, the above findings do not negate the general benefits of fund of hedge funds for institutional investors, but place extra importance on the process of understanding a fund of fund manager's true added value.

We believe that exposure to equity markets on the part of a fund of hedge fund should be the result of a well-structured, well-resourced and active decision making process. Furthermore, the precise types of equity risk taken should be very carefully considered by the investment professionals running the fund of hedge fund. Institutional investors should query the investment manager to determine if the equity exposure is active or passive, and the rationale for the exposure. Has the fund's upside capture sufficiently compensated for the extra exposure to equity risk?

Lastly we believe that institutional investors are well advised to investigate the fund of hedge fund manager's exposure over recent time periods to detect creeping directionality and to avoid a false sense of comfort from low exposure levels in the past.

An initial way for investors to address some of these questions is to examine a manager's exposure to broad equity markets versus a proxy for the fund of hedge funds industry. Included below is such an examination for the Calburn Strategic Fund over the two year period ending December 2007:

	Beta to MSCI World <sup>5</sup>	Annualised Alpha to MSCI World	R-squared
Calburn Strategic Fund <sup>6</sup>	0.52***	8.74%**	0.47
HFRI Fund of Funds Composite Index	0.45***	2.75%	0.69

*In the alpha and beta columns, no stars indicates an insignificant variable; \*\* denotes significance at the 95% confidence level and \*\*\* denotes significance at the 99% confidence level*

What can be taken away from this analysis is that for a similar exposure to broad equity markets (MSCI World Index), the Calburn Strategic Fund delivered significantly more alpha per annum than the industry, as represented by the HFRI Fund of Fund Composite Index. We believe this is a direct result of Calburn Capital's strategic asset allocation process, whereby the Investment Committee, a team of experienced market practitioners, uses rich information flows from best of breed hedge fund managers to shape careful exposure to compelling opportunity sets.

### **References:**

Fung, W. and Hsieh D. A. (1999): "A Primer on Hedge Funds", Journal of Empirical Finance, Vol. 6, No. 3.

Kat, H. M. (2005): "Integrating Hedge Funds into the Traditional Portfolio", Alternative Investment Research Centre, Working Paper Series, Working Paper #0022,

Liang, B. (1999): "On the Performance of Hedge Funds", Financial Analysts Journal.

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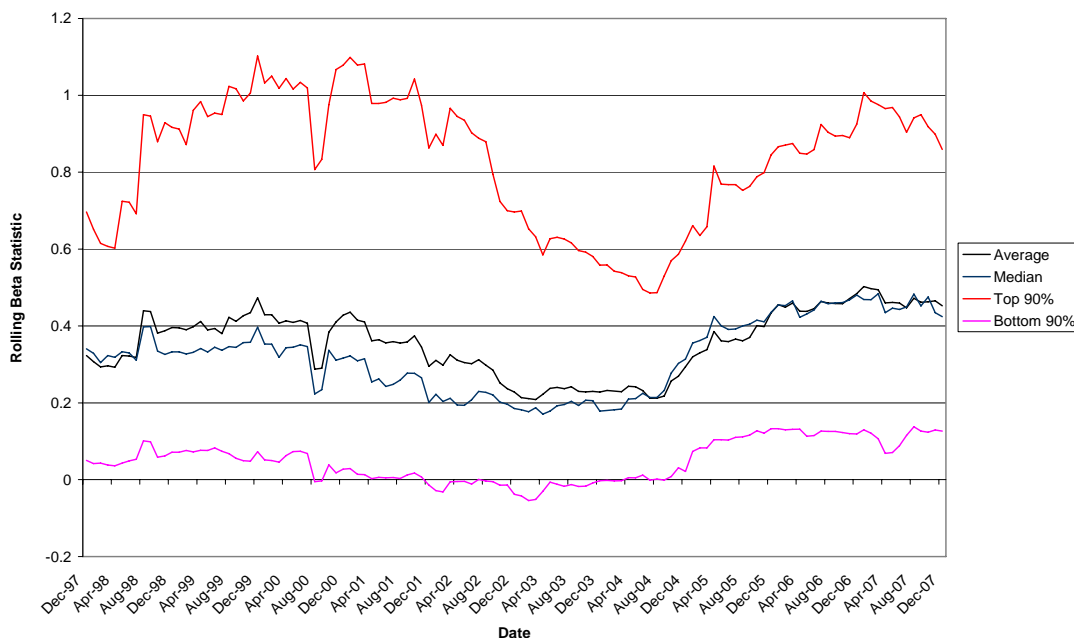
<sup>5</sup> MSCI World Total Return – Gross Index. Source: PerTrac

<sup>6</sup> Net of fees track record. Inception date of live performance is June 2006, inception date of simulated performance is January 2006. Simulated performance is from an actively managed model portfolio run prior to the launch of the fund in June 2006. Source: Calburn Capital Partners

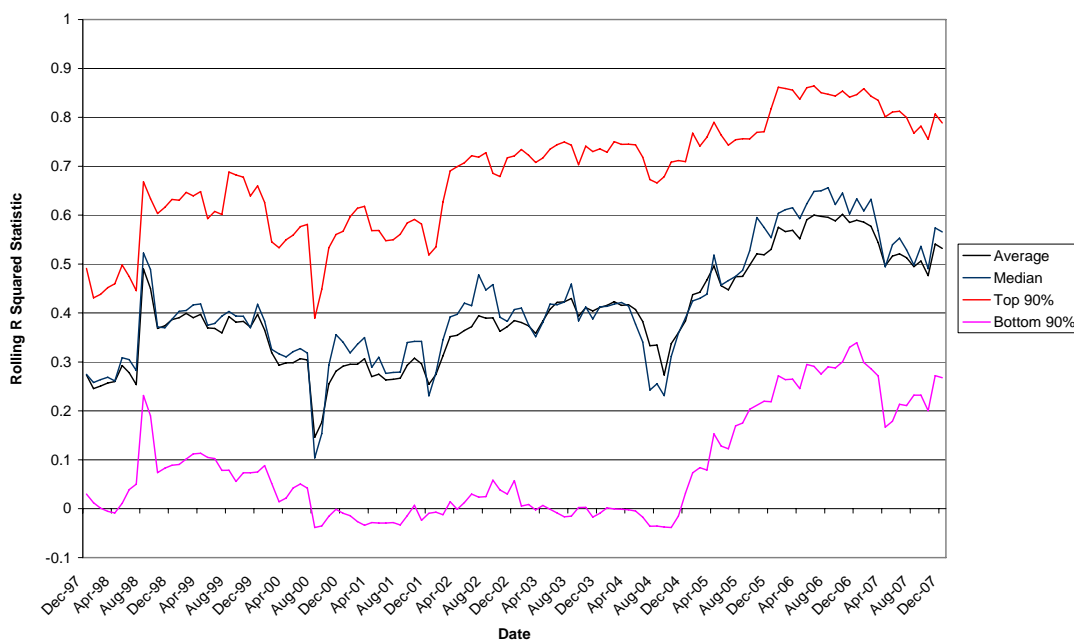
**Appendix:**

**Summary Statistics on HFRI Indices vs. MSCI World Rolling Regression:**

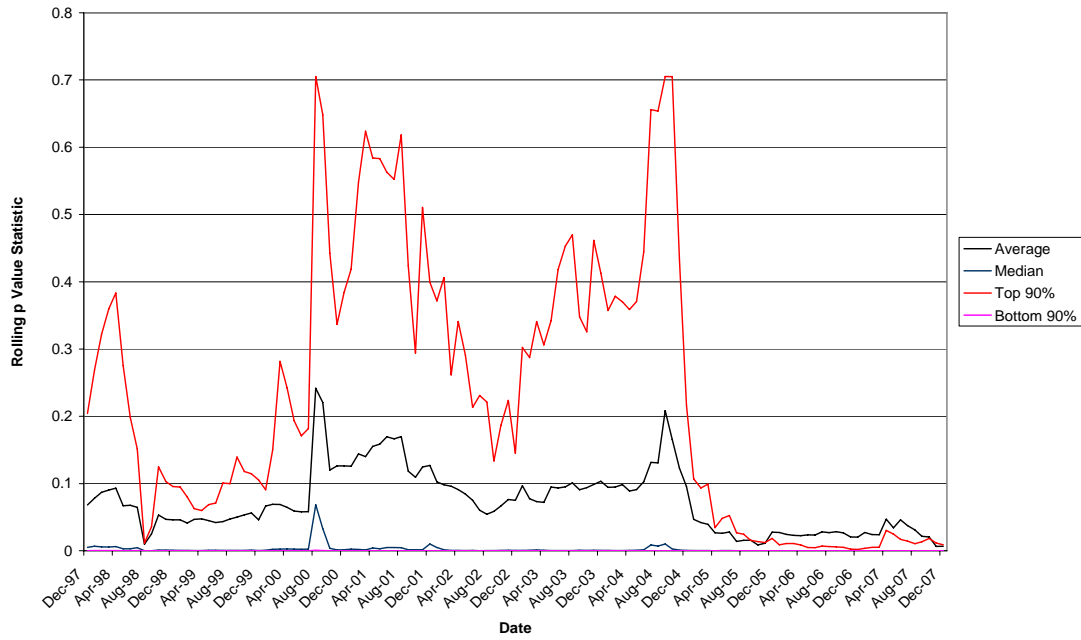
**Figure 7: Average, Median, Minimum 90% and Maximum 90% of 24 Month Rolling Beta of HFRI Style Indices on World Equities**



**Figure 8: Average, Median, Minimum 90% and Maximum 90% of 24 Month Rolling R-Squared of HFRI Style Indices on World Equities**



**Figure 9: Average, Median, Minimum 90% and Maximum 90% of 24 Month Rolling Value of beta of HFRI Style Indices on World Equities**



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