

## **HEDGE FUNDS: HIGH OR LOW RISK ASSETS?**

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### **—Abstract —**

Starting from the 1990s hedge funds gained popularity worldwide. In 2011 the worldwide industry held almost \$2 trillion in assets under management. Over the last decades there was increased diversification in strategies, further widening the concept of hedge fund category.

Hedge funds generally target absolute and/or high returns and strongly use derivative assets regarded as ‘risky’ for the general public. In most regulations hedge funds are not allowed to be sold to the general public considering them as somehow ‘risky’ investments. A high percentage of hedge funds are domiciled in remote islands and in offshore locations exploiting loose regulations.

On the other hand hedge fund managers promise more optimal risk-return profile than classical asset classes. And investors may use them as a tool to reduce their overall portfolio risk exposures.

Analyzing the data of the past 2 decades with periods of extreme ups and downs, a more precise picture can be drawn on the risk-return character of the hedge fund industry.

**Key Words:** *Hedge Fund, Performance, Portfolio,*

**JEL Classification:** G11

## **1. INTRODUCTION**

### **1.1. What is a hedge fund?**

A hedge fund constitutes an investment program whereby the managers or partners seek absolute returns by exploiting investment opportunities while aiming to protect principal from potential financial loss. In this way most hedge funds do target lower risk than classical investments. The first hedge fund was indeed a hedged fund.

Hedge funds do not hedge all risks. If all risks were hedged, the returns would be hedged, too. Hedge funds take risk where they expect to get paid for bearing risk while hedging risks that carry no premium.

Hedge funds are active investment managers. Active investment management is dependent on the willingness to embrace change and, more importantly, to capitalise on it. In active risk management, it is important to apply a skill that carries a reward in the market place within an opportunity set where the risk/reward trade-off is skewed in favour of the risk-taker. The reward from skill is not constant. Profitable ideas, approaches and techniques get copied and markets become immune to the applicability of the skill — that is, markets become more efficient. Skill needs to be dynamic and adaptive — that is, it needs to evolve to remain of value.

Therefore selection of the right investment managers and portfolio construction are equally important for a hedge fund. Initial and ongoing assessment and due diligence of the hedge fund managers is and managing the risk of the hedge fund portfolio are also mission-critical in the hugely heterogeneous and dynamic hedge fund industry. Investors with vast resources for research are likely to continue to have an edge over investors with little or no research capabilities.

### **1.2. Main groups of hedge funds by strategy**

#### *Equity hedge*

The most common type of hedge fund strategy today, Equity Hedge (also known as Long/Short Equity) investing buys stocks that are undervalued and short-sells stocks that are overvalued. This strategy may commonly employ variable exposure as well as the use of leverage.

A fund manager typically attempts to reduce volatility by either diversifying or hedging positions across individual regions, industries, sectors and market capitalization bands and hedging against un-diversifiable risk such as market risk.

In addition to being required of the portfolio as a whole, neutrality may in addition be required for individual regions, industries, sectors and market capitalization bands. There is wide variation in the degree to which managers prioritize seeking high returns (which may involve concentrated and leveraged portfolios) and seeking low volatility (which involves more diversification and hedging).

### *Emerging markets*

Invests in equity or debt of emerging (less mature) markets which tend to have higher inflation and volatile growth. Short selling is not permitted in many emerging markets, and, therefore, effective hedging is often not available, although Brady debt can be partially hedged via U.S. Treasury futures and currency markets.

### *Event driven*

Buying and short selling securities of companies experiencing or involved in substantial corporate changes. Event-driven investing is an investing strategy that seeks to exploit pricing inefficiencies that may occur before or after a corporate event, such as a bankruptcy, merger, acquisition or spinoff.

Event-driven investing strategies are typically used only by large institutional investors, such as hedge funds and private equity firms. That's because these professional investors have the expertise necessary to analyze many corporate events.

### *Relative Value*

Exploitation of mispricings and changing price relationships between related securities.

- Convertible Bond Arbitrage (The investor takes a long position in convertible securities, and takes a short position in the common stock of the same company)
- Fixed Income Arbitrage (Fixed-income arbitrage is an investment strategy that exploits pricing differentials between fixed-income securities.)
- Statistical Arbitrage (Refers to highly technical short-term mean-reversion strategies involving large numbers of securities (hundreds to thousands, depending on the amount of risk capital), very short holding periods - measured in days to seconds - and substantial computational, trading, and information technology infrastructure)

### *Macro*

Aims to profit from changes in global economies, typically brought about by shifts in government policy which impact interest rates, in turn affecting currency, stock, and bond markets. Participates in all major markets -- equities, bonds, currencies and commodities -- though not always at the same time. Uses leverage and derivatives to accentuate the impact of market moves. Utilizes hedging, but leveraged directional bets tend to make the largest impact on performance.

### *Market Neutral – Securities Hedging*

Invests equally in long and short equity portfolios generally in the same sectors of the market. Market risk is greatly reduced, but effective stock analysis and stock picking is essential to obtaining meaningful results. Leverage may be used to enhance returns. Usually low or no correlation to the market. Sometimes uses market index futures to hedge out systematic (market) risk. Relative benchmark index usually T-bills.

### *Market Neutral – Arbitrage*

Attempts to hedge out most market risk by taking offsetting positions, often in different securities of the same issuer. For example, can be long convertible bonds and short the underlying issuers equity. May also use futures to hedge out interest rate risk. Focuses on obtaining returns with low or no correlation to both the equity and bond markets. These relative value strategies include fixed income arbitrage, mortgage backed securities, capital structure arbitrage, and closed-end fund arbitrage.

### *Short Bias*

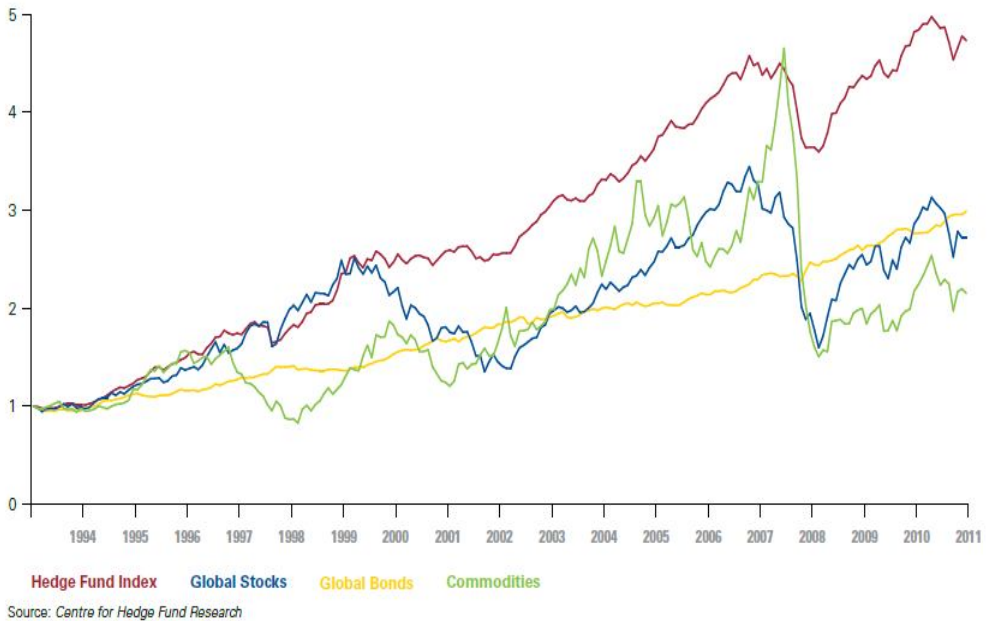
A dedicated short bias is a directional trading strategy that entails taking a net short position in the market, meaning that a larger proportion of the portfolio is dedicated to short positions, rather than to long positions. Being net short is the opposite of being net long; hedge funds that maintain a net long position are dedicated long bias funds. Dedicated short bias funds include instruments such as ProShares UltraShort 20+ Year Treasury, PowerShares DB US Dollar Index Bearish and Short Dow30 ProShares.

## 2. CHARACTERIZATION OF HEDGE FUND PERFORMANCE VS CLASSIC ASSET CLASSES

### 2.1. Performance

Centre for Hedge Fund Research calculates a composed global hedge fund performance index, the HFRI. On Figure-1 chart, cumulative hedge fund returns are compared to stocks, bonds and commodities.

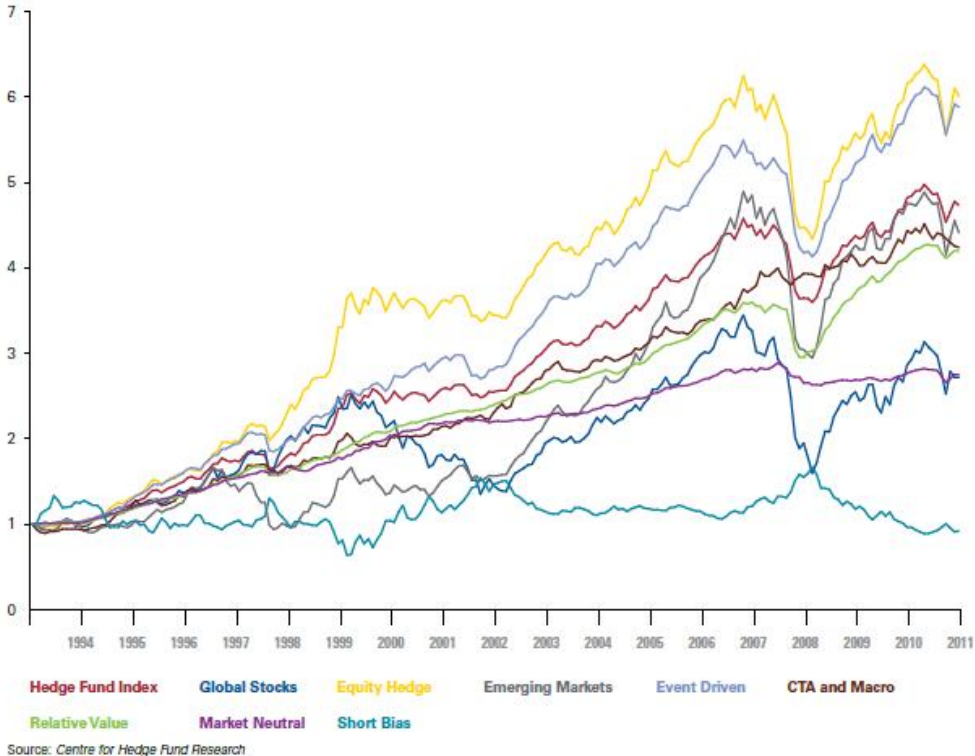
**Figure-1: HFRI index performance vs classic asset indices**



During the past two decades, hedge funds have been able to produce higher average annual returns than classic asset classes, like bonds, stocks and commodities. HFRI Index shows 12.61% of annualized gross returns, which means 9.07% net returns to the investor after the deduction of fees and costs. Hedge funds have been capable of delivering performance persistence, and it seems that they can keep on performing well.

Centre for Hedge Fund Research calculates a separate global hedge fund performance index for each main hedge fund strategy group. On Figure-2 chart we can see how successful the different strategies have been relative to each other, the HFRI and the classic asset classes (bonds, stocks and commodities).

**Figure-2: Performance comparison of hedge fund strategies, the HFRI index and classic asset indexes**



If we look at the average performance on a yearly bases (Figure-3) we can see that Equity Hedge and Event Driven have been the most successful strategies. Emerging Markets, Macro and Relative Value strategies' returns are quite close to the HFRI index as well.

## 2.2. Risk

We can easily calculate the standard deviation of performance data. Volatility based on standard deviation calculation is a generally accepted indicator of risk levels. On Figure-3 we can see that the less volatile (less risky) funds are using Market Neutral and Relative Value strategies, and Short Bias and Emerging Market funds are on the other extreme. I remark here, that all strategies have lower volatility than the S&P500 index!

**Figure-3: Performance, standard deviation of hedge fund strategies**

Strategy/ Performance	Equity Hedge	Emerging Markets	Event Driven	Macro & CTA	Relative Value	Market Neutral	Short Bias
Avg p.a.	10.58%	9.60%	10.32%	8.39%	8.23%	5.73%	1.04%
Std p.a.	9.49%	14.25%	6.97%	6.69%	4.35%	3.30%	18.96%

### 2.3. Correlations

Correlation with other investments in different market environments is very important factor for strategic investors. Based on accepted portfolio theories low correlation assets are the best candidates to be diversification components in mixed portfolios, decreasing overall risk without changing expected return significantly.

We can see on Figure-4 that hedge fund strategies has varying, sometimes negative correlations with most asset classes. This clearly shows the diversification potential of hedge funds.

**Figure-4: Correlation matrix: hedge fund strategies/ classic asset classes**

Strategy/ Asset Class	Equity Hedge	Emer. Markets	Event Driven	Macro & CTA	Relative Value	Market Neutral	Short Bias
Global Stocks	0.79	0.71	0.76	0.37	0.61	0.31	-0.69
Global Bonds	-0.06	-0.09	-0.08	0.20	0.01	0.03	0.08
Commodities	0.42	0.35	0.36	0.29	0.41	0.33	-0.19

In the extreme collapse of the markets in 2008 it was noticed that generally highly uncorrelated assets behaved highly correlated. So it is interesting to examine correlations in recession periods. (1999-2002, 2008). Figure-5 shows that some strategies has weakening diversification effect (increased correlation) in these periods. But Macro&CTA, Market Neutral and Short Bias strategies actually get less positive or higher negative correlation.

**Figure-5: Correlation matrix in recessions: hedge fund strategies/ classic asset classes**

Strategy/ Asset Class	Equity Hedge	Emer. Markets	Event Driven	Macro & CTA	Relative Value	Market Neutral	Short Bias
Global Stocks	0.91	0.86	0.81	0.07	0.72	0.10	-0.84
Global Bonds	0.09	0.13	0.08	0.13	0.14	-0.05	0.04
Commodities	0.73	0.71	0.73	0.36	0.68	0.52	-0.35

### 3. CONCLUSION

In this review of hedge fund performance, we demonstrated that hedge funds provided superior risk-adjusted returns since 1994, and this was true even during recessions. In particular, the analysis shows that hedge funds outperformed the main asset classes such as global stocks, bonds and commodities in terms of average returns. Importantly, hedge funds' ability to generate superior performance is not associated with significant risk-taking as measured by volatility. Indeed, we found that hedge fund volatility is reasonably low across investment strategies compared to conventional asset classes. The only exception is the risk level for global bonds, which have a lower risk than hedge funds. However, global bonds deliver significantly lower returns, suggesting that hedge funds' risk-taking is compensated by higher average return.

This is supported by our empirical findings, since we document a We found relative low correlation of hedge fund returns with other asset classes such as bonds, equities and commodities over the business cycle. Low correlation and the superior performance of hedge funds implies that they can have important role in portfolio diversification. Even the performance of some hedge fund strategies including CTA , macro and short bias is often counter-cyclical.

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