

Europe
Alternative Investments

November 2000

Funds of Hedge Funds

An Introduction to Multi-manager Funds



Martin Fothergill
(44) 20 7547 1523
martin.fothergill@db.com

Carolyn Coke
(44) 20 7547 6532
carolyn.coke@db.com

November 2000

Funds of Hedge Funds

An Introduction to Multi-manager Funds

Managed funds of hedge funds offer investors exposure to a wide range of alternative investment styles and strategies that can produce consistent absolute returns with low levels of risk. Funds of funds can realistically offer targeted returns of 12% to 15% per annum net of fees, with bond type risk. Historically, the EACM 100 Hedge Fund Index has returned an average of 15% per annum since 1990, with volatility of just 4.3%. This includes positive returns during periods of extreme trading conditions when bond and equity markets have underperformed.

- Although hedge funds have long been popular with high net-worth private investors, we are now seeing an increased interest in this new asset class of managed funds of hedge funds, from both the retail market and major institutions. This growing interest reflects the increased demand for alternative investments as diversification tools against progressively correlated and volatile equity markets.
- Investors are learning that by combining hedge funds in diversified portfolios, overall risk can be reduced while still achieving double-digit performance. Although the risks associated with holding just one or two hedge funds can be extreme, industry research has shown that a broadly diversified portfolio of 15 to 20 hedge funds can reduce risk to bond levels and maintain steady returns of 12% to 15% per annum.
- The managed fund of funds structure can provide a more transparent and liquid platform than direct hedge fund investment. It can relieve investors of many of the potential investment problems of direct hedge funds, such as the time consuming processes of due diligence and the expertise required for fund selection. Funds of funds also provide exposure to hedge funds through a relatively low minimum investment and can provide higher levels of disclosure.
- Hedge funds are extremely varied, encompassing a broad range of different investment objectives and styles. The managers of hedge funds have enormous flexibility, compared to their traditional equity fund counterparts. They have the ability to invest in virtually any instrument and to employ a variety of trading and investment techniques. As a result, there is no typical hedge fund, but a range of greatly differing risk/return profiles and little correlation between funds, or to financial markets.
- This report explains the nature of hedge fund investing and the growth of the market over recent years. We discuss the case for investing in a diversified portfolio of hedge funds and the need to employ expert management skills. We also examine the structural advantages of investing in a fund of funds structure, from the point of view of transparency, due diligence, access and liquidity.

Contents

Hedge Funds – An Introduction	3
Growth of the Hedge Fund Industry.....	4
Hedge Fund Investor Profile	6
Hedge Fund Strategies	8
Overview.....	8
Example Strategies.....	9
Diversification of Hedge Fund Investment.....	12
Funds of Hedge Funds.....	14
Structural Advantages.....	14



Hedge Funds – An Introduction

“To Hedge – To secure against loss” – Oxford English Dictionary

Hedge funds are an often-misunderstood asset class, which has not helped their image

The hedge fund industry has attracted a lot of publicity over the past few years. This was triggered by the 1998 financial crisis, and the resulting problems of a few, high-profile hedge funds, and was exacerbated by a lack of understanding of what hedge funds actually are, and what they aim to achieve. In a financial context, the term ‘to hedge’ refers to protecting an asset against adverse price movements. However, investing in a hedge fund does not automatically insure against market falls. Hedge funds aim to minimise directional market risk, while maintaining steady returns.

Efficient markets theory is the basis for traditional investing.

Historically, there have been two competing theories of investment. The first is the traditional efficient markets theory, which states that share prices fully reflect market information and therefore only temporary mispricing occurs. It is therefore impossible for investment managers to continue to make excess profits over the long term without undue levels of risk. This theory is the basis for traditional buy/hold equity and bond investing, which benefit predominantly from market direction. The second theory argues that greater inefficiencies occur, and therefore opportunities can arise that enable investors to exploit mispriced securities without incurring excessive levels of risk. This is the principal argument behind hedge fund investing.

Hedge fund investing is based on an alternative theory that significant mispricing does occur.

There is a wide range of strategies and instruments that can be used by hedge funds

Hedge funds encompass a wide range of different investment objectives, strategies, styles, techniques and assets, offering a wide spectrum of risk/return profiles. As a result, some hedge funds are very high risk, offering high volatility with a correspondingly high return. These are the funds that are at most risk of default, and are most commonly focused on by the media.

There are various definitions of hedge funds, sometimes contradictory, such as the heterogeneous nature of the asset class. A general, albeit all-encompassing definition is given by Dr Phillipp Cottier, a hedge fund advisor.

“All forms of investment funds, companies and private partnerships that use derivatives for directional investing and/or are allowed to go short and/or use significant leverage through borrowing. ”

Hedge fund investment involves more varied disciplines and strategies to traditional funds

The approach of hedge fund managers is very different from that of traditional long equity managers. Hedge funds aim to achieve steady absolute returns with low risk, rather than relative performance against a stated benchmark index, typically the goal of traditional buy/hold managers. This is a key difference for many small or private investors, for whom an absolute return ‘benchmark’ may be more relevant than an index benchmark. Will investors be happy that a fund has outperformed its index benchmark by 2% when the index is down 20%?

They have great flexibility to invest in different asset classes, instruments and markets

Despite the flexibility of not having an index benchmark, hedge funds still generally adhere to an investment strategy detailed at the launch of the fund. Although hedge funds have the flexibility and freedom to invest in a wide variety of markets and instruments, most funds choose to specialise in specific asset classes, strategies or markets. The range of investments available to hedge funds includes equities, currencies, interest rates and commodities. Generally, all markets are available for investment, including the US, Europe, Japan and, to a lesser extent, Emerging Markets. Investment instruments and techniques include cash, futures and options, derivatives, short selling, stock borrowing and lending and leverage.

Growth of the Hedge Fund Industry

Assets under management in the hedge fund industry have grown to \$450 billion

The hedge fund industry has grown rapidly during the past ten years. Fuelled by a large rise in the number of affluent and sophisticated investors, coupled with the asset class's favourable risk/return profile and low correlation with traditional assets, the 1990s have proved to be a strategic inflection point¹ for the hedge fund industry. It has been conservatively estimated by industry studies that assets under management have grown from \$20 billion in 1990 to over \$450 billion today. This represents an annualised growth rate of approximately 36%.

The first hedge fund was set up over 50 years ago by Alfred Jones

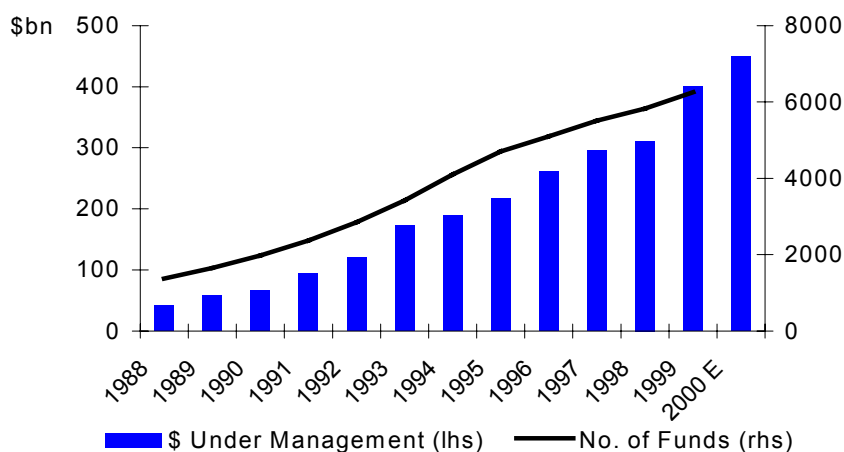
The First Hedge Fund

Hedge funds are not new. On the contrary, the industry can trace its origins back to 1949 and the establishment of a private partnership by the US-based Australian, Alfred W Jones. He ran his fund for nearly ten years, generating profits through superior stock picking, hedging out market risk by short selling, while applying leverage to magnify the returns of these hedged positions. He also introduced a performance-based compensation arrangement, earning a percentage of the profits generated by the fund, similar to performance fees seen throughout the industry today.

The first fund of hedge funds began in 1969

The first fund of hedge funds began in 1969. The hedge fund industry continued to grow steadily throughout the 1960s, largely on the back of the success of Jones. In 1969 the first fund of hedge funds, Leveraged Capital Holdings, was established. Growth slowed during the early 1970s following the oil crises, before resuming a steady pace throughout the 1980s. As Figure 1 shows, growth during the 1990s has been dramatic.

Figure 1: Growth of Global Hedge Fund Universe



Source: Van Hedge Fund Advisors

We estimate that there are up to 6,000 hedge funds with total assets of \$450 billion

The hedge fund industry is a largely private and unregulated industry, which means that the reporting of data is voluntary, creating immediate disclosure problems. Estimating the current size of the market is therefore difficult, as is calculating the growth in number of funds or the average fund performance. Based on various industry studies, we estimate that there are currently as many as 6,000 hedge funds with assets approaching \$450 billion. One industry forecast sees the global sector increasing to \$1.7 trillion over the next eight years.

Table 1: The History of the Hedge Fund Industry

1949	First hedge fund established by Alfred W. Jones
1968	140 hedge funds are recognised by SEC
1969	Leveraged Capital launches first Fund of Hedge Funds. George Soros launches the Quantum Fund.
1970	Hedge funds enter their first crisis as equity markets fall. Industry studies estimate that hedge fund assets under management fell by 70%.
1986	Julian Robertson established the Jaguar Fund, the first global macro fund. The growth of the sector continues.
1992	Hedge funds attract widespread media attention as the British pound is forced out of the ERM.
1994	Many hedge funds suffer heavy losses as the Fed unexpectedly increases US interest rates.
1995-98	With strong equity markets, hedge funds achieve spectacular returns, thereby attracting hundreds of new managers to the industry
1997	Hedge funds blamed for triggering the Asian currency crisis. In Europe, the number of funds grows at a rapid pace. The major investment banks establish prime brokerage services.
1998	The hedge fund boom comes to an end as market liquidity drives up and equity markets correct. The Fed negotiates a bailout of Long-Term Capital Management.
1999	Despite generating strong returns, the industry remains out of favour. Growth, however, continues apace.
2000	On the basis of industry studies, we estimate that there are currently around 6,000 hedge funds, with assets approaching \$450 billion.

Source: Deutsche Bank

Growth in the 1990s was strong, helped by inflows from high net worth individuals

The hedge fund industry generated positive returns throughout the 1990s. Primarily, fund inflows rather than organic growth have driven expansion. There are three principle reasons behind this flow:

- strong growth of the high net-worth individual and more sophisticated private client investor;
- increasing empirical and academic evidence showing that hedge funds can offer superior returns while displaying a low correlation to other asset classes.
- Increased respectability and acceptance of alternative investment vehicles in general, including hedge funds, private equity and venture capital, as a recognised and separate asset class.

Hedge Fund Investors

The importance of the institutional investor is growing

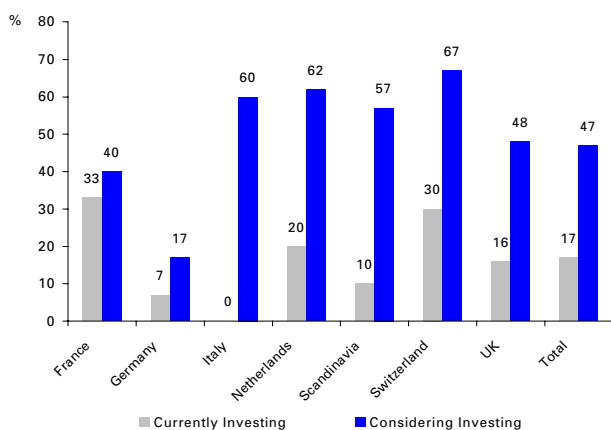
Disclosure has improved

Over 50% of European institutions invest or are looking to invest in hedge funds

Although research² confirms that the single most important hedge fund client remains the high net worth individual, the importance of other groups of investors, including Pension Funds, Charitable Foundations, and Endowments, is growing. As a result, increased levels of transparency have already been noted in terms of information on leverage, liquidity, portfolio composition and performance attribution. The implementation of websites has also greatly improved transparency and the speed of disclosure.

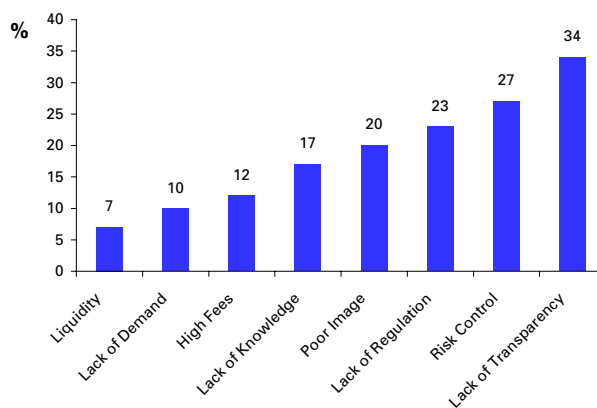
Demand from institutions is also coming from the expanding fund of funds sector, with a number of large institutions recognising the potential of attracting wealthy individuals and small institutions through low-risk products. A recent survey³ revealed that 56% of European institutions either currently invest institutional money into hedge funds, or were looking to do so. Figure 2 shows the percentage of institutions by country that currently invests in hedge funds and those that intend to do so.

Figure 2: Percentage of European Institutions Currently Investing in Hedge Funds



Source: Ludgate Communications

Figure 3: Main Problems Cited by European Institutions Regarding Hedge Fund Investing



Source: Ludgate Communications

The 1998 crisis has prompted the industry to review its risk controls

Ludgate Communications' survey asked what was preventing institutional investment. The most frequently cited problem was lack of transparency, with risk controls and lack of regulation also prominent (Figure 3). Numerous respondents mentioned the collapse of LTCM. However, the LTCM default, and events dating back to the 1997 Asian crisis, have prompted a review of risk management procedures – specifically credit, market and operational risks – by both hedge fund managers and investors.

Potential Growth of the Industry

Growth of the mutual fund industry is an indicator of the potential growth pattern to be expected from the hedge fund industry

An analogy can be made of the growth pattern of the hedge fund industry to that of mutual funds ten years ago. It could be argued that the growth of the mutual fund industry is an indicator of the potential growth pattern to be expected from the hedge fund industry. Research⁴ shows that lifecycle theory can be applied to both industries, albeit mutual funds are over ten years ahead of hedge funds. In the early 1980s, mutual funds began to attract significant investor attention, rapidly growing into a multi-trillion dollar industry. In its early days, the mutual fund industry was largely unregulated, with little information available on performance, strategy and fees. It was also largely restricted to the more sophisticated investor.

European Hedge Fund Market

European hedge funds are now at the leading edge of the industry's growth

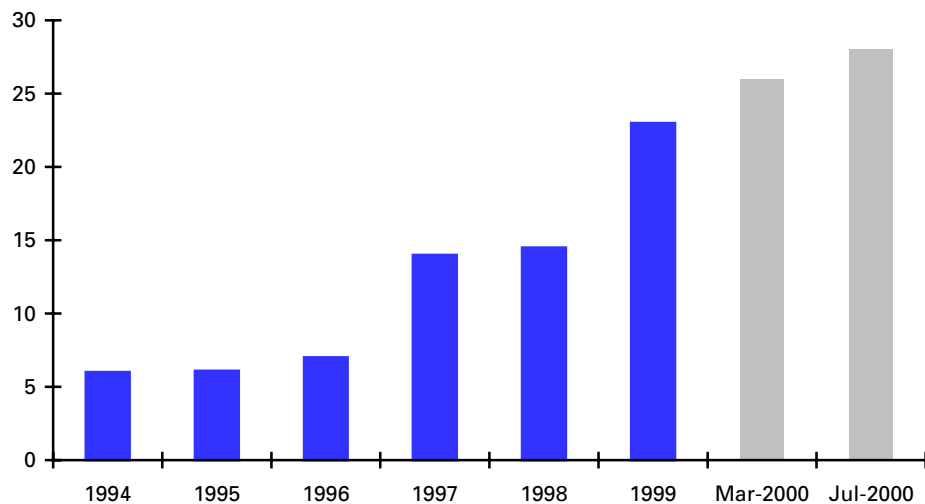
We expect demand for hedge funds to increase among European institutions

The breaking down of corporate barriers across Europe has encouraged the growth of hedge funds

Since the financial crises of the late 1990s, there has been significant expansion of the hedge fund industry, particularly in Europe and Asia. In fact, research⁵ shows that the European hedge funds are now at the leading edge of the industry's growth. Growth began earlier in the European fund of funds sector (the first fund of funds came from Europe in 1969), although 1999 saw substantial amounts of capital invested in European single-manager start-ups and existing funds, in addition to an increased number of US hedge funds setting up European offices. In our view, the European hedge fund industry now has such momentum that growth is unlikely to be daunted by anything, other than a prolonged bear phase in equity markets. We expect demand for hedge funds to increase among European institutions and that funds of hedge funds are most likely to benefit from inflows from new hedge fund investors. We have already seen anecdotal evidence of traditional funds investing in managed funds of hedge funds, to diversify portfolios and reduce risk.

Unsurprisingly, in our view, the introduction of the Euro and the breaking down of corporate barriers across Europe, has encouraged the growth of merger-arbitrage strategies. Europe has also witnessed an increasing number of banks and traditional asset management houses launching their own hedge fund products. As these new funds reach maturity thresholds (two-to-three-year track records), we expect there to be higher demand from private investors. The necessary hedge fund infrastructure has also developed in Europe (consultants, legal advisors, software suppliers), and administrative and listing services are already well established in London and Dublin, due to the existing offshore (traditional) fund industry.

Figure 4: Growth of European Hedge Fund Market (\$ billion)



Source: TASS

1. In "The Coming Evolution of the Hedge Fund Industry: A Case for Growth and Restructuring", Dr. Ramo Rao argued that the Hedge Fund Industry was at a strategic inflection point. Mathematically, the inflection point occurs when the rate of change of the slope of any curve changes. After a few decades of modest growth, the hedge fund industry, since 1990, has experienced a dramatic acceleration in its growth of both assets and number of funds.
2. Hedge Fund Research.
3. Ludgate Communications survey of 100 of the leading European institutions that collectively control 60% of assets under management in Europe Euro 5,300 billion.
4. Ramos and Szilagyi
5. William Dombrowski, Arthur Anderson (1999)

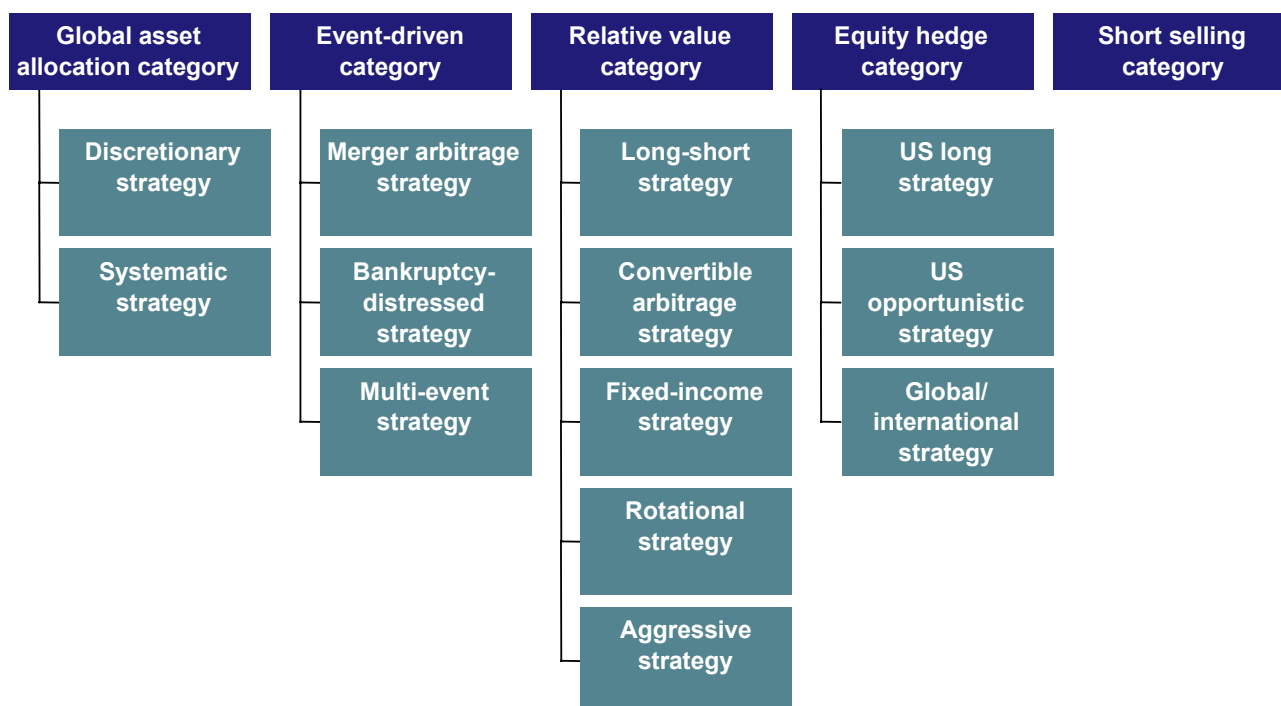
Hedge Fund Strategies

Overview

A number of basic hedge fund strategies are commonly employed

A number of different investment strategies are employed by hedge funds. Although we define the broad categories here, it should be noted that there are no industry standard definitions and hedge fund managers will often use their own interpretations, subdividing further the categories we present. This should be taken into consideration when comparing portfolio descriptions from different managers.

Figure 5: The Spectrum of Hedge Fund Strategies



Source: Deutsche Bank

- Equity Hedge** – this strategy employs bottom-up research to take advantage of undervalued and overvalued securities by taking both long and short positions. Managers can shift from net long to net short, value to growth, small to large cap, and strategies can be focused on specific sectors and geographical regions. More opportunistic managers may adopt a less structured approach. Leverage, and the uses of derivatives, are also common features of this strategy.
- Relative Value (Market Neutral)** – this strategy attempts to exploit temporary anomalies between related equities, fixed interest securities and derivatives, usually of the same company, by being long and short at the same time. This strategy tends to have a low correlation with movements in equity and fixed interest markets.
- Global Macro (Asset Allocators)** – this strategy employs top-down macro research to take advantage of expected market movements by taking both long and short positions at the same time. Such funds can invest in equities, bonds, currencies and derivatives and tend to be highly opportunistic and highly geared.

- **Event Driven** – this strategy focuses on companies that are involved in special situations, including corporate restructuring, acquisition, merger and bankruptcy. A manager will typically take a long position in the company being acquired and a short position in the acquirer. The principle risk factor is deal risk rather than market risk. These types of funds do not therefore rely on market direction, but do tend to perform best when equity and fixed interest markets are strong.
- **Short Selling (Short Biased)** – short strategies involve managers taking short only positions in overvalued securities, by either selling borrowed stock or using derivatives to create synthetic shorts. Although these strategies are usually short only, Short Biased strategies involve long positions being taken for limited periods of time.
- **Funds of Funds (Multi-manager funds)** – the majority of funds of hedge funds invest in portfolios diversified by manager and strategy. The objective is to create consistent returns with low risk. Funds of funds provide hedge fund investors with access to experienced management, enhanced liquidity and less risk of default. Funds of hedge funds are the main focus of this document.

Example Strategies

This section provides a deeper insight into the broad strategy types discussed on the previous page. The simple examples below are typical of the strategies in question, but do not necessarily represent the methodology of all trades within that strategy.

Equity Hedge

- **Description:** The exceptional growth of internet-related commerce was followed by 'dot.com' euphoria on the part of many investors. After the correction in technology stocks during March-June 2000, however, many of them began to rethink their view of Internet stocks. It has now become crucial to differentiate stocks of companies that provide real value, from those that do not have a working business model generating revenues.
- **Goal:** To capture price imbalances, resulting from valuation inconsistencies between stocks in the Internet sector, on the back of differences in perceptions regarding the merits of the respective business models.
- **Strategy:** The hedge fund manager will, for example, sell short the stock that he believes is overvalued and buy the stock which is undervalued and has good fundamental potential. If the strategy proves to be correct the manager will make money, irrespective of the overall movements in the Internet sector.

Relative Value

- **Description:** Investment opportunities often arise from the fact that the value of a convertible bond is a function of the prices of several components (that is, bond and equity options), whose theoretical values may diverge from the market value of the convertible bond as a whole.
- **Goal:** To achieve a low-risk profit, based on price differences and/or inefficiencies (arbitrage).
- **Strategy:** The hedge fund manager determines that discrepancies between the price of the convertible bond, its constituent components and the

ordinary shares of the same company exist. If the convertible bond is too cheap with respect to the sum of the theoretical values of those components, the hedge fund manager will buy the undervalued convertible security and sell short a number of shares of the same company, based on valuation principles, to offset the stock-specific risk. If the pricing imbalance disappears and the intermediary net cashflows are positive, the hedge fund manager will unwind the initial trades at a profit.

Global Macro

- **Description:** Approaching the launch of the Euro, the view was that interest rates in all economies bound together by the Euro would have to be at, or very near, the same level. Countries with historically high interest rates, such as Italy, would have to reduce them significantly over a short period of time.
- **Goal:** To exploit the opportunities presented by the forced convergence of interest rates, up to the launch of the Euro on 1 January 1999.
- **Strategy:** The hedge fund manager, for example, buys Italian government bonds and sells short German government bonds to hedge the overall Euro-zone bond market risk. It was expected that Italian interest rates would drop substantially to the Euro-zone average, prior to 1 January 1999 and, as a result, the price of Italian government bonds would increase. German government bonds, with a yield approximating the Euro-zone average, were expected to remain unchanged. If prices of the Italian bonds develop as expected, the hedge fund manager would be able to lock in the profit.

Event-driven

- **Description:** Company A announces a take-over of Company B, and agrees to pay a purchase price, which is 20% higher than the current stock price of Company B.
- **Goal:** To capitalise on the difference between the market prices of the stocks before and after the take-over event has taken place.

The hedge fund manager anticipates two things. First, that the stock price of company B will rise to the level that Company A has agreed to pay, and second, that the stock price of company A will decline, perhaps due to investors' concerns that the acquiring company is paying too much for the stock of Company B, or has to borrow too much money to finance the transaction.

- **Strategy:** The hedge fund manager buys the stock of Company B, and at the same time sells short the stock of Company A. If the assumptions above prove correct, this strategy will lead to a profit from the rising stock price of Company B, and the declining stock price of Company A; this profit will have been realised, however, without taking a specific market view.

Short Selling

- **Description:** Recently, many lawsuits have been filed against tobacco companies for selling products believed to be demonstrably a danger to smokers and the public at large. Should some, or all, of these lawsuits be upheld, the companies involved could face exceedingly large damage judgements against them, which could seriously endanger the viability of these companies.

- **Goal:** To profit from the sale of tobacco companies' shares on the basis of the belief that the whole industry sector could suffer as a result of the potential judgements against the companies.
- **Strategy:** The hedge fund manager sells short the chosen tobacco stocks, in anticipation of a decline in their value, based on the assumption that the companies will be negatively impacted by the lawsuits. At a later date, he will try to repurchase the same shares at a lower level to lock in the profit.

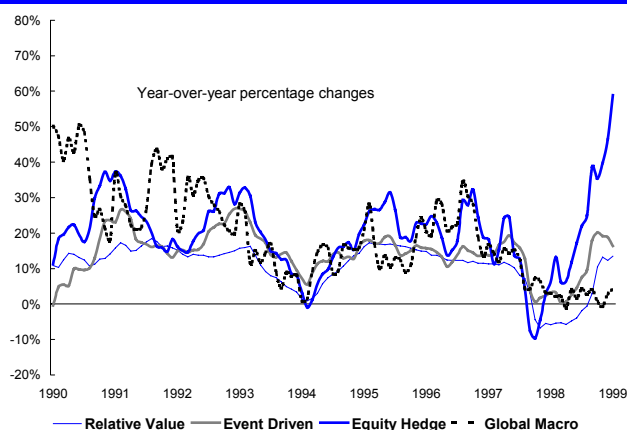
Diversification of Hedge Fund Investment

“During the past five years, investors in George Soros’ Quantum Fund have earned net returns of 41% per year. Not bad! In contrast, many investors in David Askin’s Granite Fund lost most of the money in 1994 when his fund imploded. Not good!” – George P. Van, 1995

Diversified portfolios of hedge funds can provide double-digit returns with bond-level risk

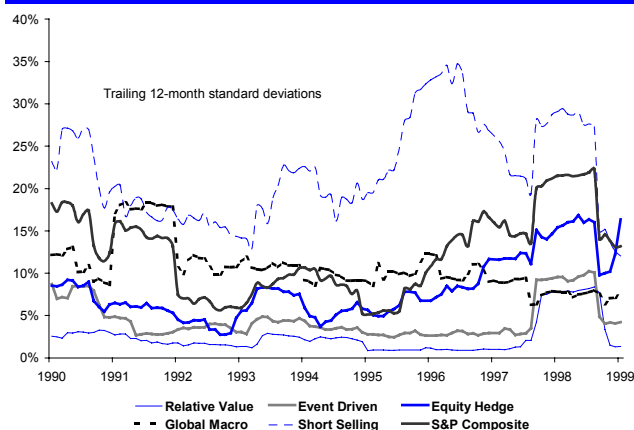
In reality, hedge funds are not as volatile as these two extreme cases would suggest, but different strategies do offer different risk/return profiles. Figures 5 and 6 show the risk and return profiles of competing strategies over the past decade. A closer examination of 1999 shows the divergence of returns, as equity hedge managers rebounded strongly following the troubles of 1998 on the back of a strong equity market. Performance by relative value and event-driven hedge funds also improved, while global asset allocators continued to lag. Owning a relatively few hedge funds can, therefore, be a high-risk strategy and would be in contradiction of Modern Portfolio theory, that advocates portfolio diversification. It concludes that the risk/return profile of a group of risky assets is much less volatile than the risk/return profiles offered by the individual assets themselves. By holding a pool of assets, unsystematic risk can be diversified away. Unfortunately, although this is a widely recognised concept, there are still numerous examples of investors taking excessive risk by investing in only one or two hedge funds, rather than in a diversified portfolio.

Figure 6: Hedge Fund Returns by Strategy



Source: Deutsche Asset Mgt, Datastream, Evaluation Associates

Figure 7: Hedge Fund Risk by Strategy



Source: Deutsche Asset Mgt, Datastream, Evaluation Associates

At least 15 to 20 funds are required to achieve the necessary diversification

Extensive research¹ has been carried out on the merits of holding a portfolio of hedge funds. One study² argued that a minimum of six funds provided sufficient diversification, but others³, having studied further empirical evidence, argued that at least a dozen funds is necessary. In fact, when ‘survivor bias’ and the potential for funds to default are considered, it can be argued that at least 15 to 20 funds are required to achieve the necessary diversification. (1, 2, 3: see page 15.)

Research⁴ has also shown that investment in a diversified portfolio of hedge funds can provide double-digit returns with bond-level risk. In fact, it has been argued that this is one of the principle reasons fuelling the dramatic growth of the hedge fund industry throughout the 1990s. (4: see page 15.)

Table 2 shows the annualised returns for a variety of hedge fund strategies, including the EACM 100 index and the S&P Composite index. The EACM index is an arbitrary constructed index, compiled by Evaluation Associates

Inc, comprising 30% relative value, 15% event-driven, 30% equity hedge, 20% global macro and 5% short selling strategies. As the returns show, throughout the 1990s, the EACM 100 index returned an average of 14.8% per annum. Although this is almost 3% less than the 17.7% annualised return generated by the S&P Composite index, it was generated with only one-third the level of risk, 4.3% versus 13.4% and this is the same level of risk as that exhibited by bonds. Thus, it offered double-digit returns with bond-level risk.

Table 2: Hedge Fund Returns and Risks – 1990-99

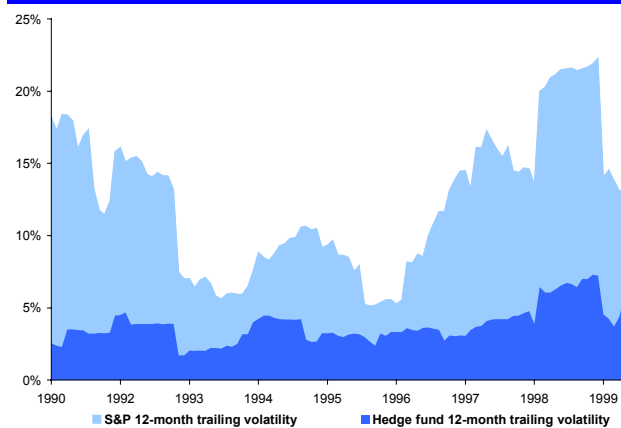
	EACM 100	Relative Value	Event Driven	Equity Hedge	Global Macro	Short Sellers	S&P Composite	Bonds
Returns (%)	14.8	10.2	12.9	20.4	18.4	-0.6	17.7	7.5
Volatility (Std. Dev) (%)	4.3	3.4	5.4	9.9	11.2	22.4	13.4	4.3
Sharpe Ratio	2.3	1.5	1.5	1.6	1.2	-0.3	0.9	0.6

Source: Deutsche Bank calculations based on data from EAI and Datastream

The volatility of hedge funds has been consistently lower than that of the S&P Composite

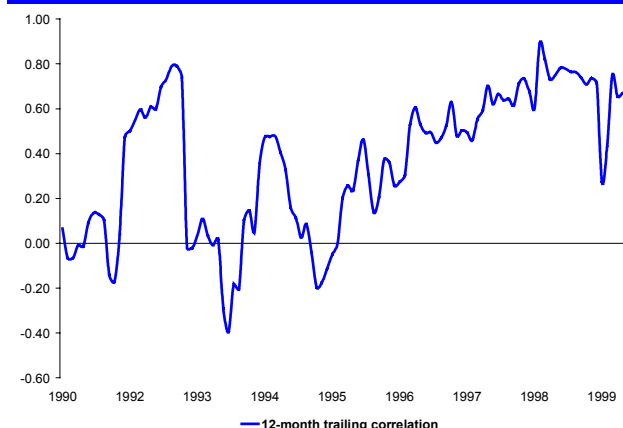
Figure 8 confirms these results, illustrating that the volatility of hedge funds (as denoted by the EACM index) has been consistently lower than that of the S&P Composite index over the past decade. Figure 9, however, shows that over recent years the correlation between the two asset classes has increased. In reality, however, managed portfolios are unlikely to be so highly correlated as the ‘unmanaged’ EACM index, as managers will actively strive to reduce correlation. A well-diversified portfolio will balance the high risk of, for example, equity hedge strategies, with the low risks of event driven and relative value. Figure 7 also shows that the risk profiles of strategies change over time, thereby highlighting the need for active management. The low correlation of hedge fund portfolios to other asset classes has been another key factor sparking interest in portfolios of hedge funds as, returning to Modern Portfolio theory, they can reduce total portfolio volatility, when combined with traditional equity and bond portfolios.

Figure 8: Hedge Fund Volatility versus S&P 500



Source: Deutsche Asset Management, Datastream, Evaluation Associates

Figure 9: Hedge Fund Correlation with S&P 500



Source: Deutsche Asset Management, Datastream Evaluation Associates

In our view, even the most conservative investor should have some hedge fund exposure

The extent to which hedge funds should be combined with traditional equities in a portfolio depends upon the investor’s risk appetite. However, we believe that even the most conservative investor should have some hedge fund exposure, because hedge fund portfolios offer superior risk-adjusted performance versus bonds.

- (1) Henker (1998), Lamm (1998, 1999) and Lamm and Ghaleb-Harter (2000)
- (2) Henker (1998)
- (3) Lamm and Ghaleb-Harter (2000)
- (4) Lamm (1998, 1999, 2000)

Funds of Hedge Funds

Structural Advantages

Investment in a fund of hedge funds is the clear route for small to medium sized investors

We have now argued that investment in hedge funds is best implemented through a diversified portfolio. There are three ways to put this into practice: 1) self-managed, 2) discretionary account, or 3) a fund of funds. With the first option unrealistic for most investors (primarily on the basis of due diligence requirement), and the second too expensive (requiring a significant allocation), investment in a fund of hedge funds is the clear route for new investors, or small to medium sized, investors. In addition to the risk diversification advantages, the other main benefits of investing in funds of hedge funds, or multi-manager funds as they are often referred to, can be addressed under a few main headings.

- Diversification of Risk.
- Transparency and Regulation.
- Minimum Investment.
- Access to Hedge Funds.
- Liquidity.
- Portfolio Management and Monitoring.

There are also some potential disadvantages in the multi-manager structure that investors should consider when selecting a fund of funds:

- Additional layer of fees
- Level of returns
- Taxation.

Funds of hedge funds can diversify by number of funds and by strategy

Diversification of Risk

We have discussed the importance of diversification of risk. This is achieved on two levels in funds of funds: by number and by strategy. Funds of funds can diversify in terms of the numbers of underlying holdings (managers) producing a degree of diversification, even if the fund only invests in one strategy. However, many funds of funds also diversify by strategy, which, combined with diversification by numbers, produces an overall greater depth of diversification.

Levels of regulation are generally higher for funds of funds listed on stock exchanges

Transparency and Regulation

This is a relevant point for those funds that are listed (for example, in London, Zurich or Luxembourg), where there is increased transparency and where there are controls, in terms of regulatory requirements on reporting and documentation. However, we have found that many of the offshore funds also provide a very good level of reporting, often via websites, including full initial documentation, regular portfolio updates and comments from the managers. Offshore funds are generally not permitted to market directly to retail investors, whereas listed funds can, but only in certain jurisdictions. These issues mark a difference between funds of hedge fund and single hedge funds, and can be of particular significance to the retail or institutional investor.

Minimum Investment

Through funds of funds, investors can gain access to multiple hedge funds with a much smaller investment than the minimum required by individual hedge funds. With minimum initial investment requirements on some hedge funds running into millions of dollars, a significant investment is required in order to build a diversified hedge fund portfolio, beyond the reach of the smaller investor. Typically, minimum investment levels for funds of funds are relatively low. Furthermore, funds that trade on regulated exchanges provide the lowest barriers to entry, where investment is simple and low cost, using familiar trading and settlement mechanisms.

Funds of funds can offer access to funds not available to most investors

Access to Hedge Funds

In addition to potentially high minimum investments, many single-manager hedge funds are closed to new investors, due to capacity constraints. However, funds of funds run by managers with good relationships in the hedge fund industry are often able to invest in these funds, even though they are technically closed. Also, single-manager hedge funds may be prepared to allow a fund of funds to invest on the basis that the fund of funds is likely to be a long-term investor (due to its relatively stable asset base). Finally, a fund of funds may already have investments in single-manager funds that have subsequently closed, therefore being the only way of gaining exposure to those funds.

Dealing tends to be more frequent, with monthly subscriptions and redemptions being commonplace

Liquidity

Hedge funds typically provide monthly or quarterly liquidity through the subscription and redemption of units, in much the same way as a mutual fund. This is also true for most funds of funds, although dealing tends to be more frequent, with monthly subscriptions and redemptions being commonplace. Fund of funds managers typically have more flexibility in satisfying redemptions, particularly when there are a large number of underlying holdings. However, in some cases greater flexibility for the investor can be achieved through listed funds (or those with an OTC secondary market), where dealing is intra-day with market makers, although liquidity can be limited and often on a matched bargain basis (matching buyers and sellers). Closed-end funds of funds, trading in the secondary market, can also trade at discounts or premiums to their underlying NAV.

The manager will take responsibility for strategy allocation and investment in underlying funds

Portfolio Management and Monitoring

A key benefit of investing in a fund of funds is access to the expertise of a professional manager. The manager will take responsibility for strategy allocation and investment in underlying funds, while controlling the risk/return characteristics of the portfolio. The manager must also conduct the necessary due diligence on investee funds and, importantly, continue to monitor the ongoing performance, risk and strategy of investee funds. With an estimated 6,000-plus hedge funds available, many with complex and changing strategies, it is important to select an experienced manager with the necessary relationships in the sector, who is able to make effective investment decisions. It is also important that the manager has sufficient resources to be able to maintain those relationships, many of which may be overseas. Back-up infrastructure with the ability to carry out full due diligence, and continuous performance monitoring, is also an important feature of a fund of funds manager. There are few investors with the ability to carry out all of these functions effectively themselves.

It is important to select an experienced manager with the necessary relationships in the sector

Additional Layer of Fees

These portfolio management skills come at a price. Fees are charged by both the fund of funds manager and the underlying hedge funds. While control is

limited on the underlying hedge funds (through the manager's selection criteria), investors should consider the level of both the annual management fee, and any additional performance fees charged by the fund of funds. However, some fund of fund managers are able to mitigate these fees by obtaining fee rebates from the underlying managers, taking advantage of the substantial allocations they can make to the manager. Typical fund of funds fees may be 1-2% management fee per annum, plus another 0.5% for custodians and other professional services. Performance fees can be up to 20% of NAV performance, some subject to a benchmark-related hurdle rate or high watermark, but are usually around 10%.

Performance of a top-performing fund of funds will tend to be lower than a top performing single-manager hedge fund

Level of Returns

The absolute performance of a top-performing fund of funds product will tend to be lower than a top performing single-manager hedge fund. This is due to the level of diversification in a fund of funds, and is compensated for by the reduced volatility. Also, funds of funds often have similar portfolios of underlying managers, which can exacerbate underperformance during market volatility if several investors try to redeem at the same time.

Taxation

Because of their offshore registration, many hedge funds and funds of hedge funds may be tax-inefficient for certain investors in certain countries. This can vary by country and by a fund's structure, registration, jurisdiction or listing. For instance, in Germany, gains on most hedge funds and funds of hedge funds, are taxed as income. Taxation varies for managed accounts, funds and securitised products. Detailed analysis of this is beyond the bounds of this study and we recommend that investors seek independent advice.

Table 3: Glossary of Terms

Alpha	The abnormal rate of return on a security, in excess of what would be predicted by an equilibrium model.
Asset Allocation	Choosing among broad asset classes such as stocks and bonds, or between geographical areas.
Beta	The measure of the systematic risk of a security. The tendency of a security's returns to move with movements in the broad market.
Closed-end Fund	A fund whose shares are traded through brokers at market prices; the fund will not redeem shares at their net asset value. The market price of the fund can differ from the net asset value.
Correlation Coefficient	Used in quantitative analysis, it refers to the degree (covariance) to which fluctuations of one variable are similar to those of another. Correlation can range from +1 to -1.
Covariance	A measure of the degree to which returns on two risky assets move in tandem. A positive covariance means that asset returns move together. A negative covariance means they vary inversely.
Derivative	Instrument derived from securities, currencies, commodities, indices, or indicators representing any of these. The price of a derivative will move in direct relationship to the price of the underlying instrument.
Diversification	Spreading a portfolio over many investments to avoid excessive exposure to any one source of risk.
Draw Down	Period of negative performance, typically measured on a monthly basis, from peak to trough, expressed as a percentage of net asset value (NAV).
Futures	An investment instrument that involves a contract to buy or sell a fixed quantity of a particular financial instrument, for delivery at a fixed date in the future at a fixed price.
High Watermark	A fund's NAV must be in excess of a previous high in order to trigger a certain event, usually the payment of a performance fee.
Hurdle Rate	The rate of performance that must be exceeded for the manager to receive an incentive fee.
Long Position	This is the ownership of a particular security.
Modern Portfolio Theory	Principles underlying analysis and evaluation of rational portfolio selection, based on risk-return trade-off and efficient diversification.
Mutual Fund and Open-End Mutual Fund	A fund that issues or redeems its own shares at their net asset value.
NAV	Net Asset Value (per share), the total value of all holdings at current market prices, as well as all other assets, including cash minus all liabilities, divided by the number of outstanding shares.
Over the Counter (OTC)	An informal market of brokers and traders who negotiate sales of securities.
Option	A contract that gives its owner the right, but not the obligation, to buy or sell some asset at a fixed price on or before a given date.
Performance Fee	Fee paid as an incentive to the manager of a fund, the amount of which depends on performance, often relative to some benchmark index.
Secondary Market	Already-existing securities are bought and sold on the exchanges or in the OTC market.
Sharpe Ratio	Used in quantitative analysis, it is a risk-adjusted measure, calculated using standard deviation and excess return, to determine reward per unit of risk. The higher the Sharpe ratio, the better the fund's risk-adjusted performance.
Short Position	A position resulting from short selling that has not been covered.
Short Selling	The sale of shares not owned by the investor, but borrowed through a broker and later repurchased to replace the loan. Profit is earned if the initial sale is at a higher price than the repurchase price.
Standard Deviation	The square root of the variance (average squared difference between the actual return and the average return). The variance is a measure of the dispersion of a random variable.
Systematic Risk	Also called market risk, systematic risk is an unanticipated event that affects almost all assets to some degree, because the effect is economy-wide.
Non-systematic Risk	Non-market or firm-specific risk factors that cannot be eliminated by diversification. Systematic risk refers to risk factors common to the entire economy.
Volatility	The relative rate at which the price of a security moves up and down; found by calculating the annualised standard deviation of change in price, or NAV.

Source: Deutsche Bank estimates, Bodie Kane & Marcus.

Deutsche Bank AG European Equity Research

Principal Location:

Deutsche Bank AG London

1 Great Winchester Street
London EC2N 2EQ

Tel : (44) 20 7545 8000

Fax : (44) 20 7547 3085

Other Locations:

Deutsche Bank AG

Hohenstaufengasse 4
1010 Vienna
Austria

Tel : (43) 1 5318 1153

Fax : (43) 1 5318 1376

Deutsche-Equities SA

3, Avenue de Friedland
75008 Paris Cedex 8
France

Tel : (33) 1 44 95 64 00

Fax : (33) 1 53 75 07 34

Deutsche Bank AG**Equity Research**

Große Gallusstraße 10-14
60272 Frankfurt am Main
Germany

Tel : (49) 69 910 31926

Fax : (49) 69 910 31989

Deutsche Bank Sim S.p.a.

Via Santa Margherita 4
20123 Milan
Italy

Tel : (39) 0 28 637 9791

Fax : (39) 0 28 637 9786

Deutsche Bank AG

Herengracht 450
1017 CA Amsterdam
Netherlands

Tel : (31) 20 555 4884

Fax : (31) 20 555 4395

DB Corretora - Sociedade**Corretora de Valores
Mobiliários, SA**

Rua Castilho 20-5
1250 Lisbon
Portugal

Tel : (351) 1 352 6337

Fax : (351) 1 352 6409

Deutsche Securities**S.V.B, S.A.**

P^a de la Castellana, 18
28046 Madrid
Spain

Tel : (34) 91 335 5544

Fax : (34) 91 335 5602

Deutsche Bank AG

Stureplan 4 A, Box 5781
S-114 87 Stockholm
Sweden

Tel : (46) 8 463 5500

Fax : (46) 8 463 5555

Deutsche Bank Securities Inc.

31 West 52nd Street
NY 10019-6160 New York
U.S.A.

Tel : (212) 474 7475

Fax : (212) 474 7484

Deutsche Bank Suisse AG

Bahnhofquai 9-11
8023 Zurich
Switzerland

Tel : (41) 1 224 7500

Fax : (41) 1 224 5250

Deutsche Bank AG

Kintore House
74-77 Queen Street
Edinburgh, EH2 4NS

Tel : (44) 131 225 8525

Fax : (44) 131 243 4434

Deutsche Bank 

© 2000. Publisher: Deutsche Bank AG London, 1 Great Winchester Street, London, EC2N 2EQ. Author: as referred to on the front cover. All rights reserved. When quoting, please cite Deutsche Bank AG as the source.

The information contained in this publication is derived from carefully selected public sources we believe are reasonable. We do not guarantee its accuracy or completeness. Any opinions expressed reflect the current judgement of the author and do not necessarily reflect the opinions of Deutsche Bank AG, or any subsidiary or affiliate of the Deutsche Bank Group. The opinions reflected herein may change without notice. Neither the author, Deutsche Bank AG, nor any subsidiary or affiliate of the Deutsche Bank Group accepts any liability, whatsoever, with respect to the use of this document or its contents. On the date of this report, the author, Deutsche Bank AG and/or a subsidiary or affiliate of the Deutsche Bank Group may be buying, selling, or holding significant long or short positions; acting as investment and/or commercial bankers; be represented on the board of the issuer; and/or engaging in "market-making" of securities mentioned herein. Reports relative to such holdings are for informational purposes, only, and should not be construed as an offer or solicitation for buying or selling these securities. Neither this document nor its contents, nor any copy of it, may be altered in any way, transmitted to, or distributed to, any other party. By accepting this document, you agree to be bound by all of the foregoing provisions. Deutsche Bank Securities Inc. has accepted responsibility for the content and distribution of this report in the United States under applicable U.S. requirements. Deutsche Bank AG London being regulated by the Securities and Futures Authority, and being a member of the London Stock Exchange, has, as designated, accepted responsibility for the distribution of this report in the United Kingdom under applicable requirements. All other foreign securities laws governing the preparation, content, and distribution of research material in other jurisdictions apply, and must be observed by provider and recipients, alike, in all instances.

Additional information available upon request
