

Centre for Investment Research Discussion Paper Series

Discussion Paper # 06-01*

Hedge Funds: An Irish Perspective

Mark Hutchinson
University College Cork, Ireland

Centre for Investment Research
O'Rahilly Building, Room 3.02
University College Cork
College Road
Cork
Ireland

T +353 (0)21 490 2597/2765

F +353 (0)21 490 3346/3920

E cir@ucc.ie

W www.ucc.ie/en/cir/

*These Discussion Papers often represent preliminary or incomplete work, circulated to encourage discussion and comments. Citation and use of such a paper should take account of its provisional character. A revised version may be available directly from the author(s).

HEDGE FUNDS: AN IRISH PERSPECTIVE

Mark Hutchinson¹

INTRODUCTION

The International Financial Services Centre (IFSC) in Ireland is gradually becoming a major centre for hedge-fund operations. Industry reports suggest that there are up to sixty-six hedge funds domiciled in Ireland. Funds are attracted primarily by the low corporation tax rate, but also by the progressive attitude of the Irish regulatory authorities. In addition, a sample of hedge funds examined in this paper suggests that the Irish Stock Exchange is the most popular exchange listing for hedge funds and fund of funds. Despite Ireland's emergence as a hedge-fund centre, as yet there has been no research dealing with Ireland in the literature. The purpose of this article is to introduce hedge funds, review the development of the industry in Ireland and discuss the alternative strategies followed by funds and their relative performance, and how this performance compares to traditional asset classes such as equities and bonds.

Subsequent to this introductory section, the paper is set out as follows: the next section gives a definition of hedge funds and a brief history, followed by a review of the hedge-fund industry in Ireland. The trading styles used by hedge funds are then described and the returns to the different strategies analysed. The final section of the paper provides a summary and conclusion.

DEFINITION AND HISTORY OF HEDGE FUNDS

Hedge funds are private investment vehicles where the manager has a significant personal stake in the fund and enjoys a high level of flexibility to employ a broad spectrum of dynamic trading strategies involving use of derivatives, short selling² and leverage in order to enhance returns and better manage risk. It is this dynamic use of derivatives and short selling that differentiates hedge funds from traditional investment vehicles such as mutual funds and index trackers.

Fund of funds can be defined as investment vehicles offering investors exposure to a group of portfolio-manager-selected hedge funds employing a range of trading strategies. To avoid exposure to specific manager- or investment-strategy risk, a typical fund of funds would invest in 8 to 10 different hedge-fund strategies and 30 to 50 managers.

Despite the perceived innovation, hedge funds are not an investment product of the 1990s. The person widely accepted as having started the first hedge fund is Alfred Winslow Jones (see Fung and Hsieh, 1999; Argawal and Naik, 2000; Ineichen, 2000 etc.). Jones started his private partnership fund on 1 January 1949 and employed a long short strategy in order to increase returns and hedge a degree of market exposure. In 1966, an article appeared in *Fortune* magazine describing Jones' investment style and strong returns. This article attracted significant attention, capital and new funds to the hedge-fund industry. However, during and after the downturn of 1969, many funds experienced difficulty due to their net long bias and there was a net outflow of money out of hedge funds. In the mid- to late 1980s, with the emergence of managers such as George Soros and Julian Robertson, generating returns of at least 40 per cent per annum, the industry began to return to prominence. More recently, hedge funds have generally remained out of the spotlight, with the exception of the high-profile failure of Long Term Capital Management (LTCM)³ in 1998.

THE HEDGE-FUND INDUSTRY IN IRELAND

The Irish hedge-fund industry has grown quickly over the last couple of years. During this period, the Irish Stock Exchange has become the exchange listing of choice for hedge funds and fund of funds. **Table 1** is reproduced from data supplied by EurekaHedge Pte Ltd. Out of a sample of 346 hedge funds, 71 have a stock exchange listing. Of these 71, 65 are listed on the Irish Stock Exchange. From a sample of 555 funds of funds, 26 per cent have a listing and 66 per cent of those listed have an Irish Stock Exchange listing. It would appear that, in total, about one-quarter of hedge funds and fund-of-funds have a stock exchange listing and three-quarters of those listed are listed on the Irish Stock Exchange.

Insert Table 1 about here

The main attraction of a stock exchange listing is that it increases a fund's potential investor base. Some institutions in continental Europe are restricted from investing in funds which do not have a European stock exchange listing. The other advantage is that a listing allows investors to mark their investment to market. The Irish Stock Exchange's main advantages over other exchanges are reputation, ease of listing and low cost.

In addition to the funds listed on the Irish Stock Exchange, there are also many funds operating from Ireland. In 2001, A&L Goodbody (2001) estimated that there were 25 hedge funds domiciled in Ireland. As of 30 June 2002, William Fry (2002) put that number closer to 66 six. The attraction of an Irish domicile is, in order of importance, the attractive tax rates,

the existence of a responsible and progressive system of regulation and of course Ireland's position both within the Eurozone and in close proximity to London.

The profits of investment managers, custodians and other service providers operating in the International Financial Services Centre (IFSC) benefit from a 10 per cent corporation tax rate that is currently being phased out, to be replaced by the standard corporation tax rate of 12.5 per cent. This compares favourably with rates of between 25 per cent and 36 per cent in the G7 group of countries. In addition, collective investment undertakings established in the IFSC enjoy a complete exemption from all forms of taxation on income and gains. There are no withholding taxes on distributions to investors. Issues, transfers and repurchases of units are similarly free of tax. No net asset value or similar taxes are levied. Unlike the special IFSC corporation tax rate, these additional exemptions are not being phased out.

Up to 1 May 2003, the Central Bank of Ireland (CBI) regulated the financial services industry in Ireland. These powers have now been transferred to the newly formed Irish Financial Services Regulatory Authority (IFSRA). Central Bank of Ireland (2002) contained a series of notifications describing the restrictions on an investment vehicles' leverage and investment objectives to allow different types of investors access. They divide funds into two types depending on their investor type; the Professional Investor Fund (PIF), the Qualifying Investor Fund (QIF) and allow for a third umbrella fund, the Fund of Funds.

The minimum investment in a PIF is €125,000 and most of the CBI's general fund restrictions regarding leverage and investment objectives may be disapplied. According to William Fry (2002), most hedge-fund strategies can be accommodated within a PIF structure, subject to certain restrictions on the nature of leveraged futures and options that can be used.

For a QIF, all of the CBI's conditions and restrictions on leverage and investment objectives are disapplied in full. A QIF has a minimum investment of €250,000, with the additional stipulation that an investor in a QIF must meet certain criteria regarding minimum net worth. For private investors, this minimum is set at €1.25 million (excluding household residence and household goods), with a requirement for institutions to have capital or investments worth €25 million (or the beneficial owners of the institution must be qualifying investors in their own right).

As of December 2002, the CBI has also imposed conditions in relation to retail investment in hedge funds. The investment vehicle which the CBI has deemed suitable for retail investors is the fund of funds. The main conditions the CBI has set for fund of funds to qualify for sale to retail investors cover diversification, minimum subscription and auditing, and controls of the underlying hedge-fund schemes.

The scheme may not invest more than 5% of the net assets in the units of any one scheme or more than 10% in the units of schemes managed by the same management

company. These limits may be raised to 10% and 20% respectively if the management company is authorised to provide investment management services in an OECD jurisdiction. [Source: Central Bank of Ireland (2002)]

It should be noted that related companies/institutions are regarded as a single management company. With regard to minimum subscription, “[t]he scheme must have a minimum subscription requirement of €12,500 or its equivalent in other currencies. This requirement may be disapplied where acceptable arrangements are in place to provide full capital protection to the capital subscribed by investors.” [Source: Central Bank of Ireland (2002)]

The final condition covers auditing and control of the underlying schemes. “The underlying schemes must be subject to independent audit in accordance with generally accepted international accounting standards (and) must have arrangements in place such that all assets are held by a party/parties independent of the manager of the scheme.” [Source: Central Bank of Ireland (2002)]

The CBI’s treatment of hedge-fund products is among the more liberal in the OECD and differs considerably from the United Kingdom. FSA (2002) presents the current hedge fund regulatory environment in the United Kingdom. Although there are hedge-fund managers in the United Kingdom, almost all funds are domiciled offshore due to tax considerations. There is no specific regulatory regime for marketing hedge-fund products. Generally, hedge funds can only be marketed to intermediates, market-counter parties or to persons for whom the investment is considered suitable by an FSA authorised firm. Retail investors can invest in fund of funds that are set up as limited companies and listed on the London Stock Exchange, but this has been due to market innovation rather than policy design.

In the US, hedge funds are restricted to “accredited” investors but fund of funds products can currently be sold with a minimum investment of \$25,000. However, as discussed in Tannebaum and Cruz (2003), this is currently an area being reviewed by the SEC, with a view to greater regulation of retail hedge-fund products. Switzerland, under the Swiss Investment Funds Act, amended in 1994, allows funds domiciled in the European Economic Area, United States, Guernsey and Jersey to be sold to Swiss investors. There is no minimum investment but, to May 2002, it has never been below Sfr10,000 (€5558).⁴ In Singapore, hedge funds can be sold to the public subject to a minimum investment of S\$100,000 (€49,928) per investor, adequate risk disclosure in the prospectus and suitable manager expertise.

HEDGE-FUND TRADING STYLES

Hedge funds use a variety of different styles to generate high absolute returns irrespective of market conditions. Although these strategies do not aim to outperform equity or bond benchmarks, some of the strategies are more closely correlated with financial markets. This paper follows Ineichen (2000) by classifying funds into three main trading styles, according to their historic correlation with equity markets. **Figure 1** sets out the three main hedge-fund style classifications – arbitrage, event driven and directional – and further subdivides them into nine distinct trading strategies. On the left side of **Figure 1** are the strategies with the lowest historic correlation with financial markets, while those strategies on the right have the highest historic correlation with financial markets.

Insert Figure 1 about here

The textbook definition of *arbitrage* is, “the purchase and immediate sale of equivalent assets in order to earn a sure profit from difference in their prices” (Bodie and Merton, 1998) However, in well-functioning capital markets, the opportunity for a risk-free profit does not normally arise. According to Taleb (1996), a trader definition of arbitrage is “a form of trading that takes a bet on the differential between instruments, generally with the belief that the returns will be attractive relative to the risk incurred”. Within the broad arbitrage trading style, there are three main hedge-fund trading strategies: equity market neutral, fixed-income arbitrage and convertible-bond arbitrage.

Equity-market neutral funds take matched long and short positions of equal monetary value within a sector/country. Funds are heavily diversified with lots of long/short positions in many different stocks. The advantage of this strategy is that unlike a long-only portfolio, a market-neutral portfolio is not heavily exposed to market movements and, unlike a less diversified portfolio, the fund is not overly exposed to stock specific news. Trading decisions are taken based upon in-depth statistical analysis of historical data, identifying and exploiting equity relationships and inefficiencies. To illustrate with a simple example: if a fund observed that, historically, on 90 per cent of the trading days following a rise in AIB’s share price, Bank of Ireland rose 1 per cent and AIB was unchanged; then, following a rise in AIB’s share price, the fund would go long Bank of Ireland short AIB for one day hoping to capture the expected relationship/inefficiency.

The fixed-income arbitrageur takes positions in government bonds, investment grade corporate bonds, government agency securities, swap contracts and futures and options on fixed income securities, in order to exploit the relative values of the different instruments. The fund is constructed so that it is hedged against large interest rate risk. As the margins on fixed-income arbitrage are relatively small, a larger degree of leverage is usually employed. (Fixed income markets tend to be less volatile than equity markets, so more leverage does not

necessarily mean more risk. Nonetheless, the largest hedge fund failure to date was Long Term Capital Management, a fixed-income arbitrage fund.)

Convertible bond arbitrage funds attempt to exploit under pricing of convertible securities by purchasing the under valued security and hedging market and credit risk using the underlying share and credit default swaps.

Event driven is the second broad style of hedge fund. Generally, event-driven funds focus on generating returns from identifying securities that can benefit from the occurrence of extraordinary transactions. Examples of extraordinary transactions would be mergers, acquisitions and carveouts. More specifically event-driven funds tend to specialise in one of three areas: merger arbitrage, distressed securities and special situations.

Merger arbitrage involves taking long and short positions in companies that are engaged in corporate mergers or acquisitions. These corporate deals can be divided into two main types, cash and share. With all share mergers, funds generally buy shares of the company being acquired and sell short the shares of the acquiring company in a proportion that reflects the proposed merger agreement. Whereas with cash mergers, the fund will buy the shares of the company being acquired below the agreed merger price and profit from the narrowing of the spread between the two when the deal is completed.

Distressed securities funds generally accumulate securities of financially troubled companies. These securities often trade at substantial discounts to par value. Hedge funds accumulate them with the belief that they can be sold at a profit in the secondary market or with the expectation that the company may be recapitalised, restructured or liquidated.

Special situations funds seek returns from a variety of corporate events. Examples of special situations strategies are capital structure arbitrage and the arbitrage of equity index constituent changes. With capital structure arbitrage, funds exploit the mispricing of different parts of the capital structure of a company. Arbitraging of equity index constituent changes takes place when an equity index that is heavily tracked (for example the FTSE 100) ejects a company and replaces it with another. By anticipating that the ejected company will have to be sold by index trackers and the replacing company has to be purchased, the funds can generate returns. The third broad style is the *directional style*. This category of hedge funds tends to have a higher expected return, standard deviation of returns and correlation with financial markets than the two other styles. This category can be further subdivided into three strategies: long short equity, short sellers and macro funds.

Alfred Jones' fund, the "original" hedge fund, was a long short equity fund, and it remains the most popular strategy, with 30 per cent of total hedge-fund assets. The *long short equity* manager uses short positions for two reasons: to attempt to profit from a drop in prices or to hedge the portfolio from market risk. Returns are generated by the stock selection skill of the manager. These funds tend to specialise by region or sector and had excellent performance

throughout the 1990s. However, their aggregate performance has been poor over the last two to three years, as, intuitively, those managers with a long bias would have had superior prior performance and have attracted more funds.

Short sellers specialise in seeking profit from a decline in stocks, while earning interest on the proceeds from the short sale of stock. Obviously, the performance of these funds was poor during the 1990s due to the strong negative correlation with equity markets. These funds were the best performers in 2001 and 2002.

The strategies described so far in this section are clearly definable. In contrast, *macro funds* enjoy remarkable flexibility regarding investment and trading strategy. They take long and short positions in currencies, bonds, equities and commodities. Through their size (an estimated 15 per cent of hedge fund assets under management) and the degree of leverage used, they are believed to have a considerable influence on world markets. Trading decisions are based upon the fund managers' macro economic views. The triggering of the 1992 break-up of the exchange-rate mechanism in Europe was partly attributed to the activities of macro funds, which viewed the partially fixed exchange rates in Europe as being unsustainable considering the economics of the different countries.

STRATEGY RETURNS

Before analysing the statistical properties of hedge-fund strategy returns, it should be noted that the returns being analysed are for hedge-fund strategy indices. When looking at the returns to an index of hedge funds, there are two main issues that need to be addressed before proceeding, survivor bias and diversification.

Survivor bias exists where managers with poor track records exit an index, while managers with good records remain. If survivor bias is large, then the historical returns of an index that studies only survivors will overestimate historical returns. Brown, Goetzmann and Ibbotson (1999) and Fung and Hsieh (1997a) have estimated this bias to be in the range of 1.5 per cent to 3 per cent per annum. Counteracting this bias, when comparing hedge fund returns to equity and bond indices, the HedgeIndex data is net of fees; whereas to invest in an equity or bond index tracker would reduce those indices' returns by between 0.75 per cent and 1 per cent per annum.

Regarding *diversification*, it would be expected that skewness and kurtosis for an index's returns would not be so pronounced as for individual fund returns. Kat and Lu (2002) document portfolios of funds for the period 1994 to 2001 exhibiting lower kurtosis but more pronounced skewness than individual funds. However, as hedge-fund investors would

generally hold portfolios of funds or invest in fund of funds with similar properties to indices, the relative statistical attributes of individual funds is not overly important.

The returns, standard deviation, skewness and kurtosis of returns to the different strategies are set out in [Table 2](#). The hedge-fund data that was used to calculate these statistics is from 31 December 1993 to 30 June 2003, net of all fees, and was sourced from HedgeIndex, a joint venture between Credit Suisse First Boston and Tremont Advisors, providing asset-weighted indices of hedge fund performance. Equity and bond index data for the same period was downloaded from DataStream. The ISEQ, FTSE 100 and S&P 500 are broad based equity indices in Ireland, the United Kingdom and the United States respectively. Ireland and Euro Bond Indices are MSCI aggregate value weighted indices of corporate and government bonds in Ireland and the Eurozone respectively. The VIX is a volatility index calculated by the Chicago Board Option Exchange. It is calculated by taking a weighted average of the implied volatilities of eight 30-day call and put options to provide an estimate of equity market volatility.

Returns (x_i) for all time series are calculated using the formula in equation 1.

$$x_i = Ln\left(\frac{P_t}{P_{t-1}}\right) \quad (1)$$

Annualised mean monthly returns (*AMMR*) are calculated as described in equation 2.

$$AMMR = 12 \times \frac{\sum_{i=1}^n x_i}{n} \quad (2)$$

Annualised monthly standard deviations (σ_i) are calculated as described in equation 3.

$$\sigma_i = \sqrt{\frac{\sum_{i=1}^n (x_i - \bar{x})^2}{n-1}} \times \sqrt{12} \quad (3)$$

Skewness characterises the degree of asymmetry of a distribution around its mean. Positive skewness indicates a distribution with an asymmetric tail extending towards more positive values. Negative skewness indicates a distribution with an asymmetric tail extending towards more negative values. Obviously, from an investors' perspective, positive skewed returns are superior to no skewness or negative skewness. Skewness values are calculated as described in equation 4.

$$skewness = \frac{m_3}{m_2 \sqrt{m_2}} \quad (4)$$

where

$$m_j = \frac{1}{n} \sum_{i=1}^n (x_i - \bar{x})^j \quad (5)$$

Kurtosis characterises the relative peakedness or flatness of a distribution compared with the normal distribution. Positive kurtosis indicates a relatively peaked distribution with more occurrences in the middle and at the extreme tails of the distribution. Negative kurtosis indicates a relatively flat distribution, with fewer occurrences in the middle and at the extreme tails of the distribution. Intuitively, investors should view an investment with returns showing high positive kurtosis as unfavourable, indicating more frequent extreme observations.

$$Kurtosis = \frac{m_4}{m_2^2} - 3 \quad (6)$$

Insert Table 2 about here

The highest returning strategy over the time period was global macro with an annualised mean monthly return of 13.5 per cent. However, this strategy has the second highest standard deviation. Another strategy with a high standard deviation is short sellers, which have performed consistently badly other than in 2001 and 2002, when they returned an average 6.3 per cent per annum. Equity market neutral exhibits the lowest standard deviation combined with an annualised mean return of 10.3 per cent per annum.

None of the hedge-fund strategies exhibit negative kurtosis. Special situations, distressed securities and fixed income arbitrage have the highest kurtosis indicating more observations at the extreme tails of the distribution. These three strategies also exhibit the largest negative skewness, indicating that the majority of extreme observations occurred on loss-making days. A closer look at the data shows that fixed income arbitrage, distressed securities and special situations worst monthly returns were -7.2 per cent, -13.3 per cent and -12.7 per cent. All three of these observations occurred in a period of extreme market stress around the collapse of Long Term Capital Management from August to October 1998. Equity market neutral, short sellers and macro all have the smallest absolute levels of skewness and kurtosis.

Looking at equity indices, the ISEQ, FTSE 100 and S&P 500, while generally having more desirable skewness and kurtosis characteristics, generated lower returns for a higher standard deviation than the majority of hedge-fund strategies, with the exception of short sellers. Bond indices demonstrate low standard deviation, reasonably high returns with minimal skew and kurtosis.

Table 3 illustrates the correlations between the individual hedge fund trading strategy returns and the returns to different market factors. Correlations between hedge-fund returns and market factors are calculated as described in equation 7.

$$\rho_{xy} = \frac{\sigma_{xy}}{\sigma_x \sigma_y} \quad (7)$$

where

$$\sigma_{xy} = \frac{1}{n} \sum_{i=1}^n (x - \bar{x})(y - \bar{y}) \quad (8)$$

Insert Table 3 about here

Consistent with other studies (see Schneeweis, Kazemi and Martin, 2003) equities are a factor in the returns to most hedge-fund strategies. Event-driven and directional strategies tend to be particularly correlated with equities. However, due to their low correlation, the addition of convertible or fixed-income arbitrage to a portfolio of equities would add considerable diversification benefits.

Bonds are obviously important for fixed-income arbitrage and their correlation with macro funds suggests that these funds operate in bond markets. However, bonds have very little correlation with any of the other strategies.

An increase in equity market volatility is negative for event-driven and directional funds, with the exception of short sellers, who obviously benefit from falling markets, something typically associated with rising equity market volatility. Equity market volatility has very little relationship with any of the arbitrage strategies.

SUMMARY AND CONCLUSION

This paper outlines the development of the hedge-fund industry and the regulatory environment in Ireland. The main strategies pursued by these funds, the returns to the different strategies over the last ten years and the market factors which influence these returns are also discussed.

The hedge-fund industry is one of the fastest growing sectors in financial services. Barra RogersCasey (2001) estimates that there are at least 6000 hedge funds in operation globally managing more than €500 billion in assets. The IFSC, due to its attractive tax rates, progressive regulatory environment and close proximity to London, is in a key position to enjoy the benefits of the industries' growth. At the same time, the Irish Stock Exchange is

establishing a reputation as the premier listing for these funds. If, as forecast, the hedge fund industry continues its rapid growth, then Ireland seems well positioned to benefit.

¹The author is grateful to EurekaHedge Pte. Ltd. for the use of their hedge fund database, CSFB/Tremont HedgeIndex for the use of their hedge fund index data and would also like to thank the Irish Stock Exchange for their assistance.

Address for Correspondence: Mark Hutchinson, Lecturer, Department of Accounting and Finance, University College Cork, College Road, Cork, Telephone: 021 4902597, Email: m.hutchinson@ucc.ie

² Short selling is a trade in which the fund borrows a security, sells it, then at a later time repurchases it and returns it to the party who initially loaned the security. The short seller profits if the security has dropped in value and realises a loss if it has risen in value.

³ In October 1998, Long Term Capital Management (LTCM) had trading losses of \$3.6 billion and the fund had to be bailed out by a consortium of banks brought together by the New York Federal Reserve.

Many articles have been devoted to LTCM, but from an investing point of view, the lessons to be drawn from the failure are:

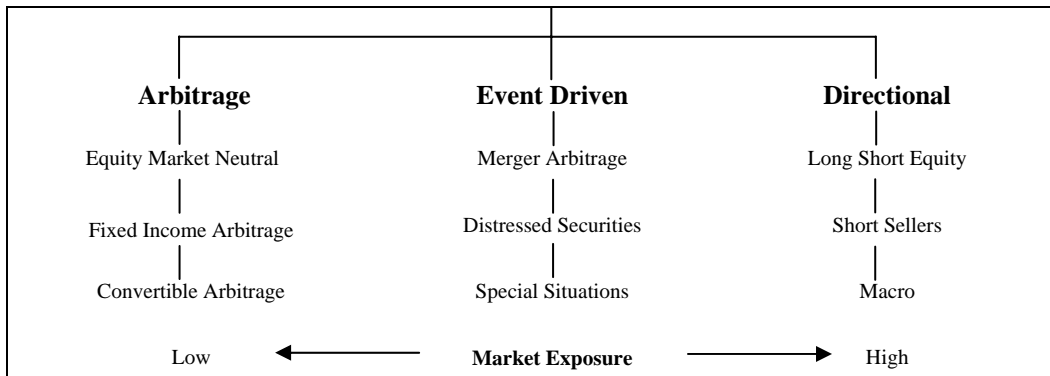
- i Like equities, hedge funds are not a risk-free asset class, just as companies go bankrupt, hedge funds will also go bankrupt. Many funds failed before LTCM and many have failed since.
- ii Like equities, when one fund goes bankrupt it does not mean all funds will go bankrupt.
- iii Therefore, as with equities, hedge-fund investors should hold diversified portfolios of hedge funds.

⁴ Currency equivalents here and elsewhere are rounded and use exchange rates on 6 August 2003.

REFERENCES

- Agarwal, V. and Naik N.Y. (2000) “Introduction to Hedge Funds”, Working Paper: London Business School.
- A&L Goodbody (2001) “An Introduction to Hedge Funds”, Research Note.
- Barra RogersCasey (2001) “An Introduction to Hedge Funds”, BRC Hedge Fund Series, 1.
- Bodie, Z. and Merton, R.C. (1998) *Finance*, Prentice Hall.
- Brown, S.J., Goetzmann, W. and Ibbotson, R.G. (1999) “Offshore Hedge Funds: Survival and Performance 1989–95”, *Journal of Business*, Vol. 72, pp. 91–117.
- Central Bank of Ireland (2002) *NU Series of Notices; conditions imposed in relation to Collective Investment Schemes other than UCITS*, December, Dublin: Central Bank of Ireland.
- Financial Service Authority (2002) “Hedge Funds and the FSA”, Discussion Paper 16: FSA Discussion Paper Series.
- Fortune (1966) “Personal Investing: Those fantastic ‘Hedge Funds’”, *Fortune Magazine*, April.
- Fung, W. and Hsieh, D. (1997) “Empirical Characteristics of Dynamic Trading Strategies: The Case of Hedge Funds”, *The Review of Financial Studies*, Vol. 10, No. 2, pp. 275–302.
- Fung, W. and Hsieh, D. (1999) “A Primer on Hedge Funds”, Working Paper, *Journal of Empirical Finance*, Vol. 6, pp. 309–31.
- Hutchinson, M. (2003) “Hedge Funds”, *Accountancy Ireland*, Vol. 35, No. 3, p. 25–7.
- Ineichen, A. (2000) “In Search of Alpha”, London, United Kingdom: UBS Warburg Research Publication.
- Kat, H. and Lu, S. (2002) “An Excursion into the Statistical Properties of Hedge Fund Returns”, CASS Business School: AIRC Working Paper No. 16.
- Schneeweis, T., Kazemi, H. and Martin, G. (2002) “Understanding Hedge Fund Performance: Research Issues Revisited – Part I”, *Journal of Alternative Investments*, winter, pp. 6–22.
- Schneeweis, T., Kazemi, H. and Martin, G. (2003) “Understanding Hedge Fund Performance: Research Issues Revisited – Part II”, *Journal of Alternative Investments*, spring, pp. 8–30.
- Taleb, N. (1996) *Dynamic Hedging: Managing Vanilla and Exotic Options*, Wiley series in financial engineering: Wiley Publications.
- Tannenbaum, M.G. and Cruz, R.J. (2003) “SEC Hedge Fund Roundtable: A Summary of the Main Themes Discussed”, Article for the Hedge Fund Association.
- William Fry Solicitors (2002) “Dublin: Hedge Funds and Fund of Hedge Funds”, October, Dublin: Research Note.

Figure 1: Hedge-Fund Trading Styles and Strategies*



Source: Ineichen (2000)

*This figure sets out the three main hedge-fund style classifications: Arbitrage, Event Driven and Directional, and further subdivides them into nine distinct trading strategies. On the left side of Figure 1 are the strategies with the lowest historic correlation with financial markets, while those strategies on the right have the highest historic correlation with financial markets.

Table 1: Hedge Funds and Global Fund of Funds Listed in Ireland*

	Hedge Funds	Fund of Funds	Combined
Total Sample	346	555	901
Funds with a Listing	71	163	234
% Listed	21	29	26
Funds Listed on ISE	65	108	173
% of Listed Funds on ISE	92	66	74

Source: EurekaHedge Pte. Ltd

*Table 1 is reproduced from data supplied by EurekaHedge Pte. Ltd. Out of a sample of 346 hedge funds, 71 or 21% have a stock exchange listing. Of these 71, 65 are listed on the Irish Stock Exchange. From a sample of 555 fund of funds, 26% have a listing and 66% of those listed have an Irish Stock Exchange listing. In total, about one-quarter of hedge funds and fund of funds have a stock exchange listing and three-quarters of those listed are listed on the Irish Stock Exchange.

Table 2: Hedge Fund, Equity and Bond Returns 1993–2003*

	MEAN %	STD DEV %	SKEW	KURTOSIS
Arbitrage				
Equity Mkt Ntrl	10.3	3.1	0.15	0.11
Fixed Inc Arb	6.7	4.1	-3.41	17.71
Convertible Arbitrage	10.1	4.8	-1.67	4.39
Event Driven				
Merger Arbitrage	8.0	4.6	-1.42	6.50
Distressed	12.3	7.3	-3.00	18.16
Special Situations	9.6	6.6	-2.92	18.59
Directional				
Long/Short Equity	11.1	11.1	-0.00	3.24
Short Sellers	-1.5	17.9	0.66	1.15
Macro	13.5	12.3	-0.24	1.99
Equity Indices				
ISEQ	8.6	18.6	-0.79	1.05
FTSE 100	1.7	15.0	-0.66	0.35
S&P 500	7.8	16.2	-0.70	0.52
Bond Indices				
Ireland Bond Index	7.6	4.5	-0.19	-0.11
Europe Bond Index	7.0	3.6	-0.23	-0.32

Source: CSFB/Tremont HedgeIndex; DataStream

*The returns, standard deviation, skewness and kurtosis of returns of the different strategies over the period 31 December 1993 to 30 June 2003 are set out in Table 2. The data that was used to calculate these statistics is net of all fees and was sourced from HedgeIndex, a joint venture between Credit Suisse First Boston and Tremont Advisors, providing asset-weighted indices of hedge-fund performance. Equity and bond index data for the same period was downloaded from DataStream. The ISEQ, FTSE 100 and S&P 500 are broad-based equity indices in Ireland, the United Kingdom and the United States respectively. Ireland and Euro Bond Indices are MSCI aggregate value weighted indices of corporate and government bonds in Ireland and the Eurozone.

Table 3: Correlations between Hedge Funds and Major Market Factors 1993–2003*

	ISEQ	FTSE100	S&P 500	Ireland Bond Index	Euro Bond Index	VIX
Arbitrage						
Equity Mkt Ntrl	0.28	0.32	0.40	0.08	0.05	-0.16
Fixed Inc Arb	0.14	0.11	0.04	0.23	0.21	0.08
Convertible Arbitrage	0.27	0.16	0.14	0.13	0.14	0.02
Event Driven						
Merger Arbitrage	0.45	0.40	0.45	-0.04	-0.06	-0.32
Distressed	0.58	0.48	0.56	0.07	0.03	-0.41
Special Situations	0.53	0.44	0.49	-0.00	-0.05	-0.31
Directional						
Long/Short Equity	0.52	0.48	0.59	0.09	0.03	-0.37
Short Sellers	-0.64	-0.60	-0.76	-0.03	0.06	0.53
Macro	0.22	0.23	0.23	0.33	0.26	-0.14

Source: CSFB/Tremont HedgeIndex; DataStream

*Table 3 illustrates the correlations between the individual hedge-fund trading strategy returns and the returns to different market factors over the period 31 December 1993 to 30 June 2003. The ISEQ, FTSE 100 and S&P 500 are broad-based equity indices in Ireland, the United Kingdom and the United States respectively. Ireland and Euro Bond Indices are MSCI aggregate value weighted indices of corporate and government bonds in Ireland and the Eurozone. The VIX is an equity volatility index calculated by the Chicago Board Option Exchange. It is calculated by taking a weighted average of the implied volatilities of 8 30-day call and put options to provide an estimate of equity market volatility.