The role of hedge funds in pension fund portfolios: Buying protection in bear markets

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Greg N. Gregoriou
is the Institut de Finance Mathématique de Montréal Scholar in the PhD programme (Finance) at the University of Quebec at Montreal (UQAM). He regularly publishes articles on hedge funds at academic and non-academic levels. He received the award for best doctoral paper in finance with Fabrice Rouah at the ASAC conference in London, Ontario in May 2001. He also specialises in the construction of hedge funds with Fabrice Rouah.

Fabrice Rouah
obtained his BSc in Applied Mathematics from Concordia University and his MSc in Applied Statistics from McGill University. Since 1989, he has worked as a biostatistician and is presently Faculty Lecturer in the Department of Mathematics and Statistics, McGill University.

Abstract This paper will outline the benefits of including hedge funds, and funds of hedge funds, in pension fund portfolios. Due in part to their non-correlation to traditional stock markets, hedge funds are powerful tools for portfolio diversification, and help to enhance returns, reduce volatility and increase risk-adjusted returns, especially during bear markets. An allocation of 10–20 per cent of portfolio assets into alternative investments such as hedge funds and funds of hedge funds is considered sufficient. Hedge funds typically charge a management fee of 1–2 per cent and a performance fee of 20 per cent, but also include high water marks and hurdle rates. Hedge funds are loosely regulated and their non-transparency makes it difficult to evaluate their positions. Selecting hedge funds and funds of hedge funds can be challenging, and a number of different factors, including the size of the fund, the number of managers, and the nature of its trading strategies, must be examined for this to be done appropriately.

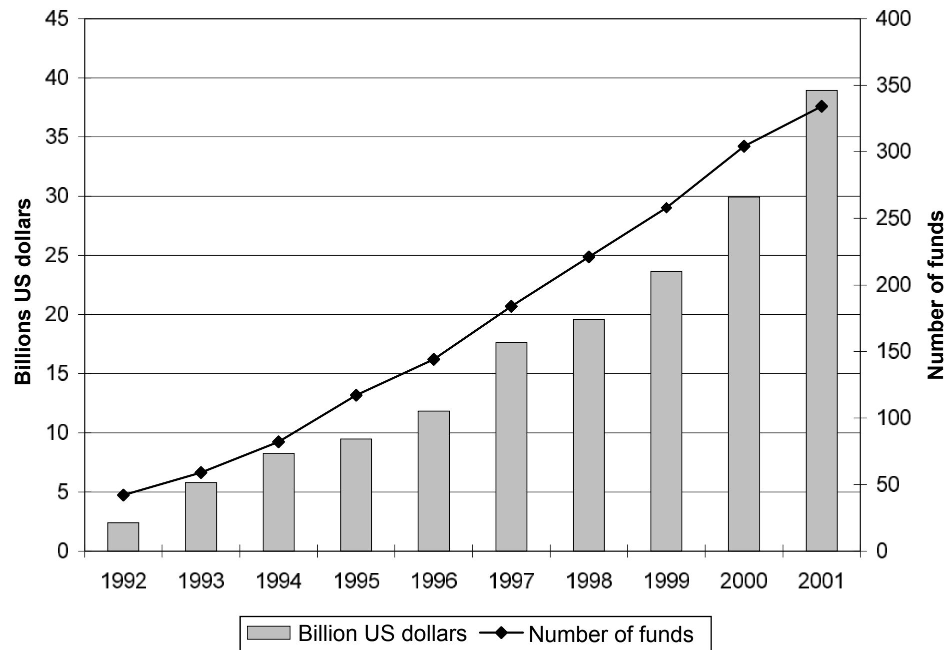
Keywords: *hedge funds; diversification; risk-adjusted returns; pension funds; funds of hedge funds; risk-return tradeoff*

Greg N. Gregoriou
PhD candidate (Finance),
University of Quebec,
Montreal, PO Box 8888,
Station 'Centre-Ville',
Montreal, Quebec H3C 3P8,
Canada.

Tel: +1 514 843 7575;
Fax: +1 514 843 7575;
E-mail: ggregoriou@sympatico.ca.

Introduction

Investors today seem mesmerised by the stellar returns of hedge funds, and continue to focus solely on expected future returns when selecting alternative investments for inclusion into their portfolios. Hedge funds provide unique risk and return opportunities, both as stand-alone investments and as diversifiers, in traditional stock and bond portfolios.[1] Over this past decade, pension funds have been allocating an increasing amount of their assets to alternative investments, such as hedge funds and funds of hedge funds (a basket of hedge funds) to diversify their portfolios (see Figure 1). Unfortunately, institutional investors having no expertise in selecting hedge funds often choose the most established and well-known managers, rather than using a formal selection process based on research and a



Source: Zurich Capital Markets database

Figure 1: Fund of hedge funds, 1992–2000

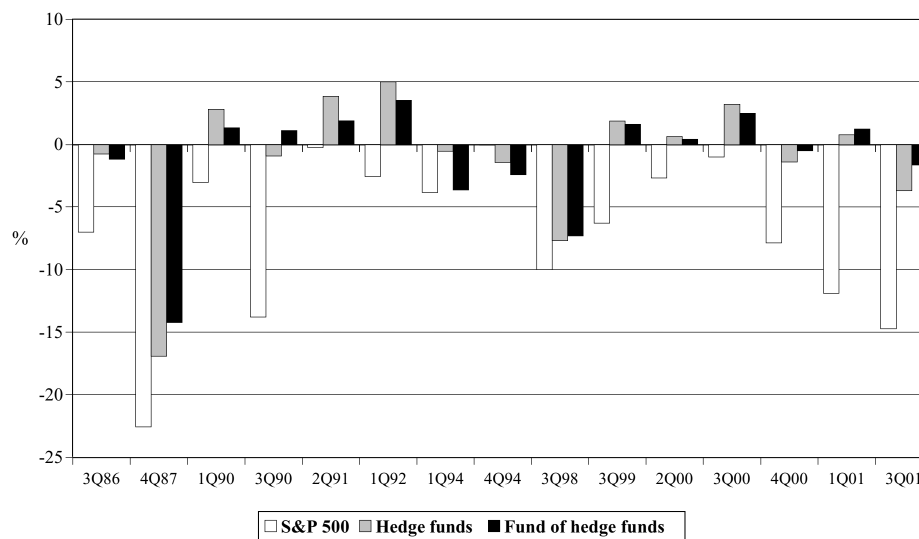
review of the literature. It is projected that, by 2006, approximately US$1.7tn worldwide will be invested in hedge fund assets.[2] Hedge funds provide flexibility to move in and out of markets, making them a suitable alternative asset class for many investors. Unlike their mutual fund counterparts, hedge fund managers focus on absolute returns and their ultimate goal is to profit in all types of market environments.

Low correlation

Hedge funds provide superior risk-adjusted returns (Sharpe ratio) and low volatility, and show evidence of low correlation to traditional stock, bond, and currency markets.[3] Pension fund managers often have pre-conceived notions of hedge funds being too risky. In fact, as can be seen from Figure 2, hedge funds (and funds of hedge funds) have exhibited low volatility and superior performance during negative S&P 500 quarters. Managers of these funds have been rewarded in recent times, during the first quarter of 2001 for example, when the S&P 500 Index experienced its worst quarter since 1987. During this period, hedge funds (and funds of hedge funds) fared better, in part because of their low correlation to market indices. Many plan sponsors today employ traditional money managers, but unfortunately most of them are closet indexers and provide neither protection nor added value in extreme market movements.

Ideal allocation in pension fund portfolios

Some pension funds are now beginning to accept levels of 5–15 per cent of portfolio holdings allocated in hedge funds and funds of hedge funds.[4]



Source: www.laportesoft.com

Figure 2: Performance of hedge funds and funds of hedge funds in negative S&P 500 quarters, 1985–2001

Endowment funds and institutional investors have embraced alternative investments with more enthusiasm than pension funds, probably due to the longer time horizon and complimentary match with the liability stream of pension funds. Hedge funds can be usually be redeemed on a monthly or a quarterly basis, and are thus classified as investments with limited liquidity. Moreover, many hedge funds have lock-up periods, usually lasting one to two years, to allow the manager enough time to execute the different strategies driving his or her investment style.

Many endowment funds in the USA and Canada, such as those managed by Harvard University, Yale University, and the University of Toronto, have reaped the benefits offered by hedge funds (and funds of hedge funds), both as diversifiers in traditional portfolios and as tools for downside equity risk management. Over the next five years, pension funds plan to increase their allocations to alternative investments from 5–10 per cent to 10–20 per cent, as foundations have been doing for many years.[5] It is therefore surprising that some pension funds fail to understand the tremendous benefits of alternative investments such as hedge funds. Investment into hedge funds need not be enormous or overbearing. Indeed, an allocation of 10–20 per cent of alternative investments in pension fund portfolios is considered by many to be an ideal and well-balanced mix.[6]

The efficient frontier

The introduction of Modern Portfolio Theory (MPT) in 1952 by Nobel laureate Harry Markowitz was the first attempt to explain the relationship between risk and return in investment portfolios. It was developed to help managers select the most efficient portfolio from a given pool of assets. Of course, the theory assumes that investors seek the least amount of risk for a given level of return. The contributions of MPT to investment theory and practice resulted in the development of a formal risk/return framework, in which

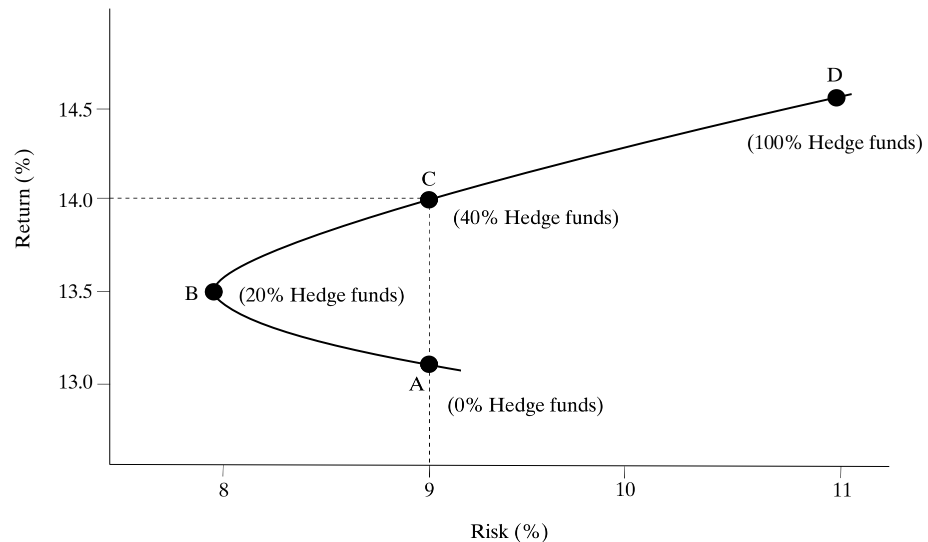


Figure 3: Efficient frontier with incremental additions of hedge funds

statistical techniques are used in investment decisions.[7] Simply put, MPT optimises a portfolio of asset classes to obtain an expected rate of return with the lowest amount of risk.

One technique developed by Markowitz is the so-called 'efficient frontier' for a given number of securities. Portfolios that lie along the efficient frontier provide investors with optimal risk/return characteristics, making them mean-variance efficient portfolios. As shown in Figure 3, the efficient frontier measures the trade-off between risk and return of traditional portfolios, through the incremental additions of hedge funds. The optimal portfolio would be B, since that point represents the lowest risk with an optimal amount of hedge funds. As we move along from A to B there is an improvement of return but with the lowest amount of risk. If we continue from B to C, we find that with the same level of risk as A, there is a higher performance with a 40 per cent addition of hedge funds. We then discard the bottom half of the efficient frontier (line below point B) because it is inefficient.

Downside protection

Alternative investments such as hedge funds (and funds of hedge funds) can be profitable in both up and down markets, but their most important feature is their non-sensitivity to the globalisation of stock and bond portfolios. Negative impacts resulting from the high correlation between stock and bond markets often observed during extreme markets, are attenuated in traditional asset portfolios that incorporate hedge funds (or funds of hedge funds). Table 1 presents performance measures of a typical US pension fund index, compared with the same index containing hedge funds added uniformly at different levels of 5 per cent, 10 per cent, 15 per cent and 20 per cent.[8] The table indicates that an optimal amount of 20 per cent in alternative investment improves performance and increases the Sharpe ratio, and lowers the standard deviation (risk). This is consistent with previous research, in which it is estimated that adding a hedge fund to traditional portfolios of stocks and bonds increases the Sharpe ratio of the original portfolio by between 22.7 per cent and 45.4 per cent.[9]

Table 1: Incremental additions of hedge funds in a US pension fund index

	Pension fund index (%)	Pension fund index (+5%)	Pension fund index (+10%)	Pension fund index (+15%)	Pension fund index (+20%)
Average annual return (%)	13.1	13.2	13.3	13.3	13.5
Drawdown (%)	9.41	8.90	8.28	7.99	7.86
Annualised standard deviation (%)	8.96	8.66	8.27	7.98	7.91
Annualised semi-deviation (%)	6.92	6.52	6.12	5.74	5.54
Annualised Sharpe ratio	0.90	0.95	1.00	1.05	1.10

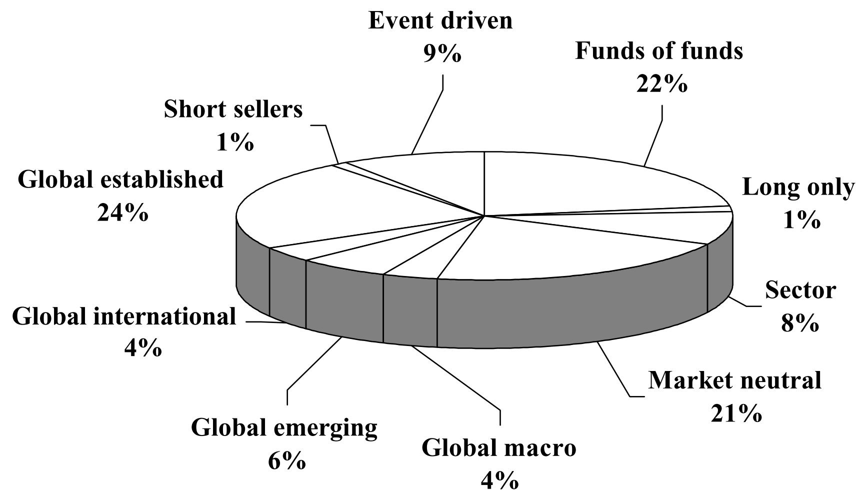
Source: TASS Research

Funds of hedge funds

Multi-manager funds (or funds of hedge funds as they are more commonly known) are rapidly becoming permanent fixtures in pension fund portfolio, for downside equity risk management. These funds employ various trading and investing strategies and are not exposed to usual market movements, thereby providing investors with a 'hedge' against market fluctuations. However, each fund of hedge funds has its own recipe for fund and manager selection, which can yield excellent or disastrous results. The failure of Long-Term Capital Management (LTCM) in 1998 reminded investors of the importance of diversifying among different hedge fund managers. A strong force in the hedge fund industry, funds of hedge funds represent a 22 per cent portion (in terms of assets) in the hedge fund universe, according to Zurich Capital Markets and the LaPorte Asset Allocation System (see Figure 4).[10] The drawback associated with these funds of funds is the extra layer of management and performance fees the manager charges, as compensation for his knowledge and skill in selecting an ideal mix of hedge fund managers and strategies. Pension funds must examine their options carefully when selecting hedge funds for their portfolios. They must also examine the net return of all fees of funds of hedge funds, to ascertain whether or not the additional management fee associated with these funds is justified.

The cost of investing in an established fund of hedge funds can be relatively small when compared to the costs of building and maintaining a proprietary portfolio. This is especially true when one ponders the ramifications of mistakes done by novice managers. Funds of hedge funds are particularly attractive diversifiers, as they allow investors to benefit from a pool of managers who spread investment risk across a diverse range of strategies. Individually, the strategies and managers may experience significant variability in their returns, but collectively those returns tend to be stable.

There are two inherent risks in multi-manager hedge funds: style risk and manager skill risk. Style risk refers to the possibility of the hedge fund strategy not working in certain environments and conditions. For example, so-called 'market-neutral' strategies are typically neutral to the direction, but not to the volatility, of markets. Manager skill risk, on the other hand, refers to the added value that the manager brings to the fund (typically measured against a benchmark market index). Non-directional strategies



Source: LaPorte/Zurich

Figure 4: Hedge fund styles at December 2000 (percentage amounts reflect the number of funds)

(such as market neutral) have low volatility whereas directional strategies (such as global macro) have greater volatility.[11]

Large or small

Due to their lack of internal expertise in alternative investments, many institutional investors such as pension funds are opting to purchase funds of hedge funds, instead of buying hedge funds directly. This is a wise choice, since selecting hedge fund managers directly (to avoid the extra layer of fees charged by funds of hedge funds) is difficult and risky, especially if the pension fund does not have the necessary skill and knowledge needed to manage these types of investments. Choosing 'star' hedge fund managers with great track records is too simplistic, since past performance is not necessarily an indicator of future performance.[12] However, there is little evidence to suggest that the size of a hedge fund impacts its performance.[13]

Pension funds managers must also decide on the optimal number of managers in a fund of hedge funds. As there are almost 1,000 funds of funds in hedge fund databases, the selection process can be long, arduous and complex. Indeed, database vendors such as Hedge Fund Research (HFR), TASS and Zurich Capital Market database provide monthly returns net of all fees, but the overlap of hedge fund managers between the Zurich and HFR databases is approximately 30 per cent. On the surface, a multi-manager fund with 25–80 underlying hedge fund managers would appear to provide sufficient diversification. However, statistical theory dictates that as more managers are added to a fund, the variance of its returns is reduced by a negligible amount, while both its ability to diversify and its downside risk are actually reduced as more and more managers are added.[14–16] Prior research into this issue has found that 15–25 hedge fund managers are the optimal number in funds of hedge funds.[17] Other studies have suggested that anywhere from five to ten managers is sufficient for diversification.[18] Including a large number of managers in a fund of hedge funds is often wrongly

perceived as enhancing diversification (intuitively at least), since the opposite is actually true. In so doing, the fund runs the risk of managers having similar strategies, and therefore being correlated with one another, which in turn diminishes the original intent of diversification.

Fees and hurdle rates

Hedge funds typically charge a management fee of 1–2 per cent along with a performance fee of 20 per cent on capital appreciation, whereas funds of hedge funds usually charge a management fee of 2 per cent and a performance fee of 10 per cent. Most funds stipulate a 'high water mark' on their performance fees, guaranteeing that, in the event of poor performance, the fee will not be charged until prior losses are recouped. Hurdle rates are meant to convey a message of confidence to investors that their fund will experience high returns — at the very least, higher than the hurdle. One recent study suggests that, among hedge funds in the Zurich Capital Markets database, those with hurdle rates have outperformed those without.[19] The top performing funds tend to set high standards that benefit investors, whereas underperforming funds tend to select their managers poorly and are willing to lower fees in order to attract more clients and increase their asset base. Some multi-manager hedge funds also charge front-load fees as well as management and performance fees. Hedge fund managers often have their own money invested in their funds, ensuring that their interests and those of their clients are aligned. Thus, the unique fee structure and incentive-based compensation of hedge funds are important factors driving their performance.

Drawbacks of hedge funds and funds of hedge funds

Hedge funds are generally not transparent, but recently an increasing number of pension plan sponsors have been getting a peek into the secretive world of privately managed money. Unfortunately, there does not exist an established benchmark for hedge funds, which creates problems for institutional investors and pension fund managers wishing to compare the different strategies of hedge funds. There is concern that hedge funds experiencing poor returns may accept more risk and more leverage in their future activities, to make up their losses and reach their high water marks. High leverage is often a sign of impending doom, as was the case with LTCM in 1998.[20] Even in extreme market movements, the majority of hedge fund styles tend to be correlated, and finding shelter under these circumstances is difficult.[21] To complicate matters further, by using sophisticated hedging techniques, some hedge funds are able to hide from their investors and lenders the amount of leverage employed in their activities.[22]

Over the ten-year period from 1990 to 1999, hedge funds have not, in general, outperformed the S&P 500 Index. According to the Zurich Capital Markets database and LaPorte Asset Allocation System, of the 10 hedge fund categories, only the Global Established style has outperfomed the S&P 500 Index in this decade. Brown, Goetzmann and Ibbotson[23] have observed that there are few good hedge fund managers today, and there is no evidence of performance persistence in raw returns or risk-adjusted returns, even when hedge funds are divided into their returns-based style classification. Many authors have analysed the performance persistence of hedge funds[24–27] but the results of their investigations are mixed

and often contradictory, depending on the database and the time frame used for analysis.

The lack of regulation in the hedge fund industry is often a source of concern for potential investors. Since the Security and Exchange Commission (SEC) does not regulate hedge funds, more pressure is being put on these funds to provide disclosure of their positions. However, some have argued that increasing regulation in the USA will simply result in more hedge funds relocating offshore. The added layer of front-load, management and performance fees of funds of hedge funds is sometimes wrongly perceived as being unfair and opportunistic. Hedge funds are not as efficient in bull markets as they are in bear markets. Indeed, academic studies have concluded that hedge funds tend to underperform the S&P 500 Index during bull markets.[28]

Conclusion

The inclusion of hedge funds (and funds of hedge funds) in portfolios represents a unique and proven opportunity for pension funds to protect their investments during bear markets. Not surprisingly, funds of hedge funds are rapidly gaining the acceptance of pension funds. A well-balanced and constructed portfolio containing hedge funds can provide superior long-term returns with lower volatility than one without hedge funds. However, the selection process must be done carefully, and a number of issues, including the structure of management and incentive fees, the size of the fund, and the number of managers in a fund of hedge funds, must be examined. If properly managed, hedge funds provide effective safeguards during market downturns and periods of increased volatility. Since hedge funds are considered illiquid investments, pension funds wishing to invest in this alternative asset class must have a long-term outlook. With increasing global market volatility since the mid-1990s, pension funds would be well advised to incorporate hedge funds in their portfolios for capital protection during market downturns.

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