Hedge Fund Structured Products

by

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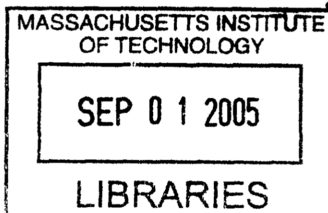
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Abstract

In the aftermath of the bear market and one of the most volatile periods in recent financial history, individual and institutional investors worldwide are reevaluating their asset allocation strategies. Interest in hedge funds and alternative investment styles is growing as investors realize these investments offer better return potential with relatively low correlation to traditional asset classes. However, returns of hedge funds have been somewhat lackluster recently, on average, and several factors indicate investors should expect similarly muted performance in the future. Hedge funds also expose investors to non-traditional risks, such as lack of transparency, lack of regulatory oversight, and limited liquidity.

Structured products mitigate these risks and allow for flexibility in portfolio construction. They can help reduce the risk of an investment in exchange for a reduction in the potential upside. Additionally, they can provide a greater chance of a good return through the use of leverage. Because structured products can be designed to meet a variety of investment objectives they have become an increasingly popular way to gain exposure to and benefit from a variety of hedge fund strategies.

The discussion of hedge funds and the ways in which structured products can be utilized to enhance return and mitigate risk is a broad and expansive topic. This paper is a primer on what hedge fund structured products are and how they can be used to enhance the risk/return profile of a portfolio. The focus is on the US market.

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HEDGE FUND STRUCTURED PRODUCTS

INTRODUCTION

In the aftermath of the bear market and one of the most volatile periods in recent financial history, individual and institutional investors worldwide are reevaluating their asset allocation strategies. Interest in hedge funds and alternative investment styles is growing as investors realize these investments offer better return potential with relatively low correlation to traditional asset classes. However, returns of hedge funds have been lackluster recently, on average, and several factors indicate investors should expect similarly muted performance, on average, in the future. Hedge funds also expose investors to non-traditional risks, such as lack of transparency, lack of regulatory oversight, and limited liquidity.

Structured products mitigate these risks and allow for flexibility in portfolio construction. They can help reduce the risk of an investment in a hedge fund, in exchange for a reduction in the potential upside. Additionally, they can potentially enhance returns through the use of leverage. Because structured products can be designed to meet a variety of investment objectives they have become an increasingly popular way to gain exposure to a variety of hedge fund strategies.

The discussion of hedge funds and the ways in which structured products can be utilized to enhance return and mitigate risk is a broad and expansive topic. This paper is a primer on what hedge fund structured products are and how they can be used to enhance the risk/return profile of a portfolio for a US investor.

The focus is on the following issues:

- Do hedge funds still offer attractive risk-adjusted returns?
- How can investors avoid the high minimums, lack of transparency and limited liquidity of hedge funds?
- How can an investor customize the risk/return profile of a hedge fund investment?
- Are leveraged structured products the answer to diminishing hedge fund returns?
- Do structured products provide attractive returns on an after-fee basis?
- What types of investors can benefit from these products?
- How can banks compete in this business?
- What are the primary risks facing the hedge funds and hedge fund structured product categories?

Section One provides an overview of the background and characteristics of hedge funds, and a discussion of how the investment category has evolved. Recent performance trends and key investor considerations are outlined, and common misperceptions are clarified.

Hedge funds provide excellent diversification to traditional asset classes but, on average, their returns have declined in recent years. In part, they are a victim of their own success. Many hedge funds seek to benefit from mis-pricings in the marketplace; more assets chasing the same situation increases the efficiency of the market and reduces the potential to benefit from these temporary anomalies. While hedge funds offer excellent diversification to traditional asset classes, there are significant drawbacks such as high

minimums and limited liquidity that call into question the attractiveness of these products for some investors.

Section Two discusses structured products. It explains what structured products are and how they can be used to access hedge funds. Structured products alter the risk/return characteristics of an investment and can be tailored to meet a wide range of investor preferences. These products can address a wide variety of investor needs, from minimizing risk by protecting their initial investment to increasing their risk profile by leveraging their investment in hedge funds.

There are two main types of structured products: principal protection and leverage. A structured product often includes a derivative with exposure to an equity investment and a bond. Structured products generally use funds of hedge funds or hedge fund indices rather than single funds as the underlying investment vehicle because these vehicles offer greater diversification and transparency, as well as professional selection and oversight of hedge fund managers.

Structured products have become a popular way for investors to gain exposure to hedge funds because they address concerns about protection, leverage, or liquidity. They also help mitigate the risks of lack of transparency, lack of oversight and poor liquidity.

Family offices, HNW investors and funds of funds are the primary market for structured products today, with investor interest focused on leveraged products. With a few

exceptions, endowments and foundations and insurance companies have not been very active in the hedge fund structured product area. Their initial interest will likely be in principal protected products given their preference for predictable, steady returns. The development of separate accounts, which allow hedge fund investments to be monitored and measured utilizing the same kinds of risk management measures institutional investors have become accustomed to with traditional asset classes, will facilitate their involvement in these products.

Section Three outlines important considerations for investors in structured products. The primary issue is ensuring attractive after-fee returns. The triple layer of fees from the hedge fund, fund of funds and structured product reduce the return and the cost/benefit of the product. The products can still enhance a portfolio, but investors need to carefully consider their role in the portfolio to maximize their effectiveness.

Section Four presents the business issues and potential risks for banks, distributors and investors. Increasing competition for structured products and a broader investor base are important considerations. Firms need to decide how they are going to compete in this increasingly crowded market. Some firms focus solely on providing the structured component of the product, while others combine the structure with proprietary distribution and underlying hedge funds. Each approach can be successful if the firm differentiates themselves within the category they have chosen to compete and creates a sustainable competitive advantage.

In addition, distribution, margin pressure, regulatory issues, suitability risk and market risks are additional concerns that can have a significant impact on the performance of hedge funds and structured products.

Investors need to understand both the benefits and the risks presented by hedge fund structured products to determine the best way to incorporate these products in their portfolio.

SECTION ONE: THE EVOLUTION OF HEDGE FUND INVESTING

The hedge fund universe has evolved from a few funds managed by a highly select group of investment managers for a limited number of wealthy, sophisticated individuals to a much larger and diverse asset category with a broad range of investors. The low barriers to entry and opportunity for almost unlimited compensation have resulted in a plethora of new funds and managers, causing both opportunity and confusion for new investors.

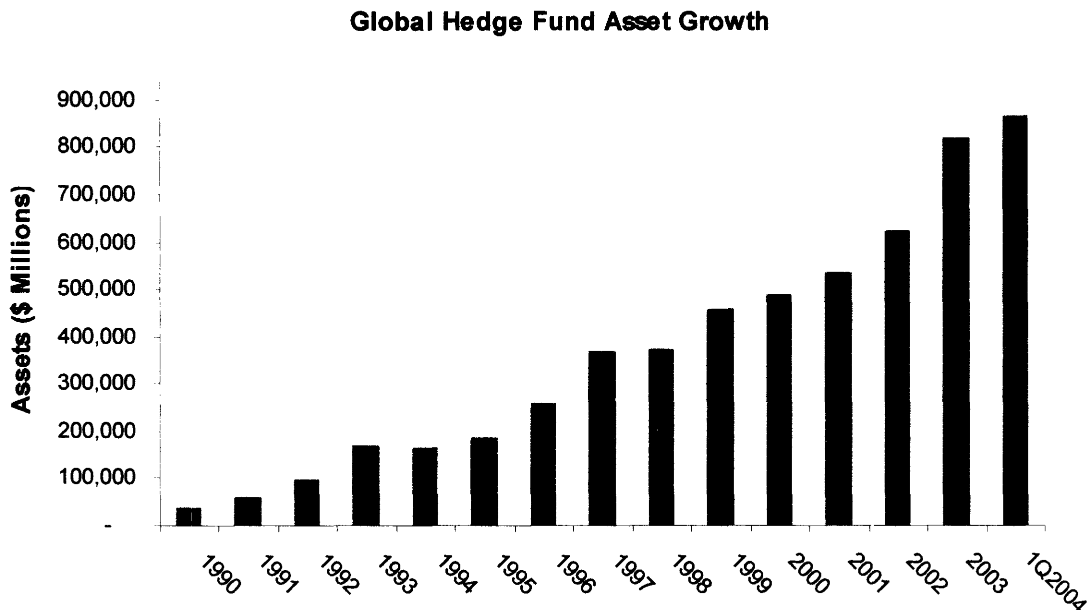
Hedge funds have acquired a mystique as being highly complicated and risky investments, which enhances their appeal to some investors and acts as a deterrent to others. There are several reasons hedge funds have developed this reputation. First, hedge funds employ a wide variety of tools and strategies that mutual fund managers are generally not able to use, including leverage and short selling. Secondly, hedge fund managers are not required to disclose much about their activities. Finally, the media has focused on the implosion of a few major funds, even though these funds are not truly representative of the hedge fund universe.

The perception of hedge funds as a renegade asset class has kept many investors from participating in this asset category. Conversely, this perception has caused others to have unrealistic performance expectations, resulting in disappointment or ineffective use of hedge funds in portfolio construction. Used correctly, hedge funds can provide attractive returns that are uncorrelated to traditional asset classes. As access to these products expands, there is a need for more education about the benefits, and limitations, of these products.

Robust Supply and Demand

The hedge fund industry has experienced enormous growth and hedge funds are now one of the fastest growing investment categories. There are over 8,000 hedge funds, roughly equal to the number of mutual funds. Hedge funds have over $1 trillion in capital before leverage invested, which is a ten-fold increase over the past decade.[1]

The chart below by Hedge Fund Research illustrates this growth.



And the growth is not slowing. According to a recent study by Deutsche Bank, 62% of respondents said they planned to increase their allocation to hedge funds.

In their book, Hedge Funds, Phillips and Surz explain the attraction of hedge funds: They point out that at least 80% of the return from traditional equity investing comes

[1] "Roundtable: The $1 Trillion Growth Market." *Euromoney,* June, 2004.

from the overall market. Hedge funds, however, can generate returns that are uncorrelated to major moves in the market because of the strategies hedge fund managers employ. In particular, Phillips and Surz explain that it is the manager's skill, often known as "alpha," that determines fund performance as opposed to the performance of the underlying market, or the market's "beta."

Placing a portion of a portfolio in uncorrelated assets, such as hedge funds can enhance overall returns and reduce volatility in a portfolio. Hedge funds do not try to beat a particular index – their objective is to deliver consistent, positive returns whether the financial markets are up or down.

Hedge funds were not initially embraced by a broad range of investors and, in part due to regulatory constraints, have been almost exclusively used by the very rich. As of mid-2004, ultra high net worth (HNW) investors and family offices accounted for approximately 75% of hedge fund assets.[2]

Over the next five years, however, pension funds and other institutions are expected to invest as much as $250 billion in hedge funds, according to a recent study by the Bank of New York and the consulting firm Casey, Quirk & Associates. That amount would ultimately account for half of all money flowing into hedge funds.

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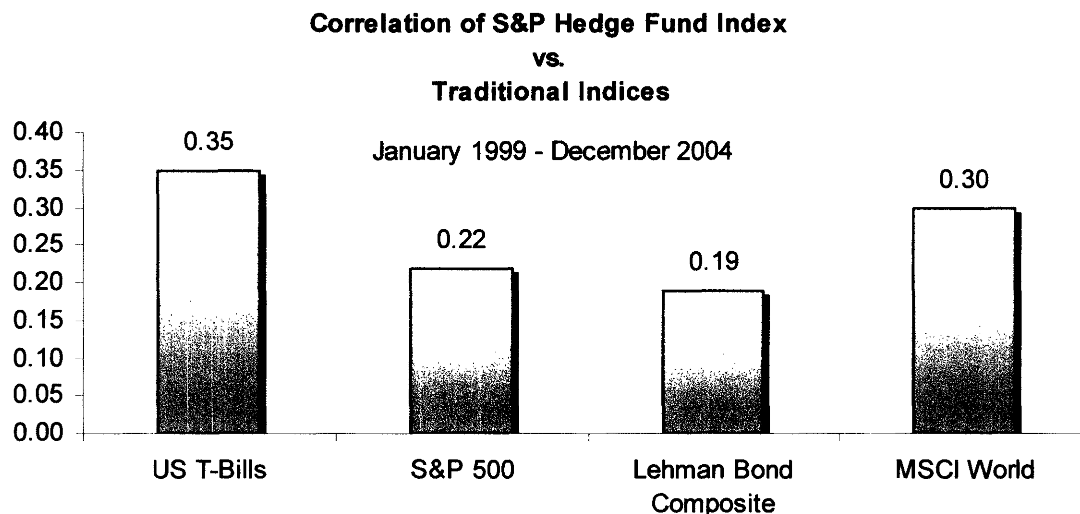
[2] Avery, Helen. "Is There Room at the Hedge Fund Table?" *Euromoney,* July 2004.

A broader base of HNW individuals is also gaining access to this product group through product innovations such as fund of hedge funds and hedge fund indices. These investment vehicles provide more transparency, lower minimum investment requirements and are well diversified, which reduces the risk for less sophisticated investors.

Important Portfolio Benefits

Used appropriately, hedge funds can improve the risk/return characteristics of a portfolio.

Portfolio Diversification. Because hedge funds have low correlation to traditional asset classes, they can provide very effective portfolio diversification, as shown in the following chart.



Source: PlusFunds Group, Inc.

Lower Volatility. The average annualized return for hedge funds over the 10-year period that ended last December was just 12.57% vs. 12.07% for the S&P, according to an index maintained by Hedge Fund Research (HFR). Hedge funds, however, earned their returns

with half the volatility of the index. Adding hedge funds to a portfolio can smooth the performance of the overall portfolio.

Positive Returns in a Down Market. Hedge funds focus on delivering consistent, positive returns whether the financial markets are up or down. During the market downturn in 2000 and 2001, hedge funds delivered on that objective: according to HFR, the average hedge fund rose nearly 5%, which compares favorably with declines of 9% in the S&P 500 in 2000 and nearly 12% in 2001.[3]

Perception vs. Reality

Despite the prominence of hedge funds in the financial media and investing literature, investors generally do not have a good understanding of what hedge funds are and what type of performance pattern they should expect. A history that includes stellar returns for a few hedge fund managers and spectacular crashes by others has influenced the perception of hedge funds and obscured the true nature of these investments.

Return Expectations. The outsized returns of a few managers, such as an annual return of almost 40% for more than a decade by the hedge fund Renaissance have been highly publicized.[4] This causes other investors to expect similar rewards.

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[3] Anderson, Jenny and Atlas, Riva D. "If Only I had a Hedge Fund; Is this the New Emerald City, or a Road to the Next Crash?" *New York Times*, March, 27, 2005.

[4] "The New Money Men." *The Economist,* February 19, 2005.

On average, however, investors should not expect such spectacular returns. As shown in the performance history below of the Van US Hedge Fund Index, most hedge funds do not produce such out-performance, but over the past five years hedge funds have performed as should be expected; they have outperformed traditional strategies in down years and participated in approximately 60 – 65% of the upside in positive years.

Returns and Standard Deviation

	2000	2001	2002	2003	2004	2000 - 2004 Net CAR*	2000 - 2004 Std. Dev.
Van US Hedge Fund Index	11.4%	5.8%	-0.4%	19.7%	8.4%	8.8%	8.0%
S&P 500	*-9.1%*	*-11.9%*	*-22.1%*	*28.7%*	*10.9%*	*-2.3%*	*18.5%*
Lehman Brothers Aggregate Bond Index	*11.6%*	*8.4%*	*10.3%*	*4.1%*	*4.3%*	*7.7%*	*3.7%*

*Compound Annual Return

Some investment professionals question the ability of hedge funds to continue to generate strong returns; solid rather than spectacular returns are likely to continue as hedge funds have become a victim of their own success. First, many hedge funds try to identify mis-priced opportunities, but mis-pricings are harder to find with more capital available to reduce market inefficiencies. Fewer mis-pricings reduce market volatility, which eliminates another type of opportunity hedge funds use to generate returns. Second, the number of new hedge funds being created raises the question of whether supply has outstripped the talent required to effectively manage the fund. Third, the amount of assets that are available for hedge funds to invest has also reduced the duration of each investment cycle, thus reducing the amount of time a hedge fund can capitalize on a

particular anomaly. In the 1990s, the typical length of a cycle was somewhere between three to five years; today it can be as little as twelve to eighteen months.[5] Furthermore, for many hedge fund strategies there are limits to the amount of money that can be traded cheaply and quickly, and a sizeable portion of the returns seem to have come from small to medium size stocks which cannot absorb the large amounts of capital available to be invested.

Performance pressure may tempt some hedge fund managers to stray into strategies that are a poor match with their skill set, potentially increasing risk and decreasing returns. The compensation structure encourages this behavior, as managers need to hit certain performance levels to receive their performance bonuses. If they under-perform in one period, they have to make up that amount and still generate additional returns to qualify for their bonus. This is such a difficult task that some managers just close their funds.

Given these factors, knowledgeable investors are focusing on manager selection, recognizing the importance of manager skill in realizing the benefits this asset category has to offer. Investors are also increasingly looking to hedge funds as a source of portfolio diversification, rather than relying on them for outsized returns. It will be important for brokers to educate their clients about the appropriate risk and return expectations for hedge funds and the role hedge funds should play in a portfolio.

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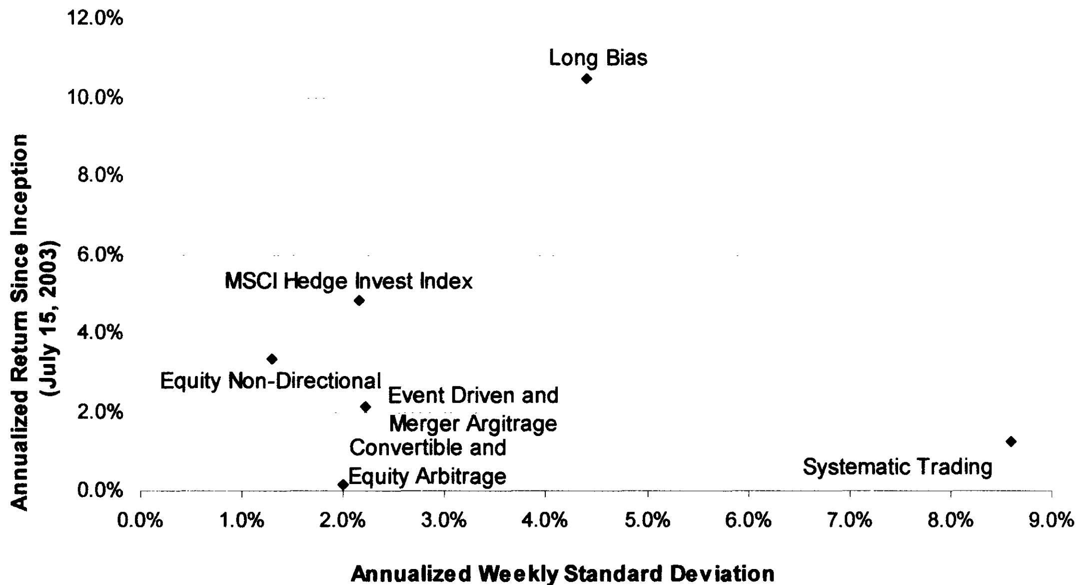
[5] "Roundtable: The $1 Trillion Growth Market." *Euromoney,* June, 2004.

Varying Degrees of Leverage. Many investors assume all hedge funds are highly leveraged, in part because of extensive coverage in the media of leveraged hedge funds that have imploded. This is not necessarily true. According to Van Hedge Advisors, as of December, 2004, 28% of hedge funds do not use any leverage, 43% use less than two times, and 29% use more than two times leverage. In addition, the use of leverage varies widely by strategy, with the distressed securities strategy using the least leverage (only 7% use more then two times leverage) and the macro and market neutral arbitrage strategies using the most (about 60% of the funds leverage their assets more than two times).

Investors need to understand the level of leverage in the fund they are targeting to effectively integrate a hedge fund into their portfolio, especially if they plan to further leverage the investment.

Heterogeneous Strategies. Hedge funds can invest in virtually any instrument and employ a variety of trading and investment techniques. Beyond that similarity, however, hedge funds use extremely diverse strategies, making the general label of "hedge fund" almost meaningless to an investor trying to determine the appropriate performance expectations for a fund. The risk/return characteristics vary significantly by strategy, as shown in the following chart by MSCI.



Source: MSCI, December 2004

The correlation of each hedge fund strategy with the various benchmarks also varies widely.[6] As an example, the correlation of the S&P 500 ranges from -0.8 for the short selling strategy to 0.8 for the Value strategy. This is true for the Lehman Brothers index as well; its correlation with the Market Neutral Arbitrage and Opportunistic strategies is zero, while its correlation with the Income strategy is 0.4.

Between hedge fund strategies, correlations vary significantly as well. For example, the Short Selling strategy has a 0.9 correlation with Aggressive Growth and 0.7 with the Multi-Strategy. But it has a -0.9 correlation with an Opportunistic strategy and -0.6 with Market Timing.

[6]Van Hedge Fund Advisors

Investors need to understand the performance characteristics of each hedge fund and the impact on the overall portfolio.

Performance Dispersion. Hedge fund performance also varies widely by manager. Even within the same strategy, managers use different tactics and display varying levels of skill. While hedge fund returns overall have declined and some investors are questioning the benefits of these products, there is a large dispersion between managers and many hedge fund managers still offer strong returns. In 2003, returns for funds using the Short-Seller strategy ranged from almost -30.0% to 10%. Market Neutral returns ranged from approximately -4.0% up to 50%.[7] This highlights the importance of due diligence when choosing a hedge fund. One consultant stresses the significance of the role of the manager saying, "You're not buying an asset class, you're buying a skill-set."[8]

Hedge Fund Drawbacks

Hedge funds offer attractive, uncorrelated returns, but they also present numerous challenges that investors need to consider.

Limited Track Records. Given the dispersion in performance, it is clear that manager ability is critical. Unfortunately, it can be difficult for investors to access proven managers because many of the more successful, established funds are closed.

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[7] CISDM Hedge Fund Universe Database

[8] "Fool's Gold." *The Economist,* August 20, 2001.

According to Philip Duff, Chief Executive of FrontPoint, a $4.3 billion hedge fund, the average life of a hedge fund is only 2.5 years, which means investors often have to place their assets with unproven managers.

Longer Lock-Ups. Hedge fund managers do not want to have to sell their holdings in a down market, so they require investors to commit their money to the fund for a certain period of time. Strong demand for these funds enables the managers to establish very stringent liquidity guidelines. Lock-ups of one year are fairly common and some funds are requiring lock-ups as long as three years. The investors will not be able to withdraw their money once they have committed to the lock-up, even if they become uncomfortable with the fund manager's strategy or performance.

Difficult to Access. Many funds are already closed to additional investors. Those funds that are still open often have minimum investment amounts of $250,000 - $1,000,000 due to regulatory restrictions.

Minimums Limit Diversification. For many investors, the large minimum amount precludes investing in more than one hedge fund, which means they are not able to diversify their exposure to fund managers or strategies.

No Customization. Despite the numerous strategies and styles available, and the size of the investment that is required, once a hedge fund is selected it is a "one-size-fits-all" investment. The hedge fund manager will not tailor their investment approach or

portfolio characteristics to the needs of an individual investor.

Lack of Transparency. Hedge funds provide little information about their market exposure, amount of leverage used, or the instruments traded. Some funds make private investments, which can pose valuation problems, and net asset values are typically published only on a monthly basis. This makes it difficult for an investor to make an informed choice when selecting a fund and could mitigate some of the diversification benefits if the hedge fund holdings replicate other positions in the investor's portfolio.

Diverging Fee Structure. The best-performing hedge funds are raising their fees and are screening investors more carefully to make sure the investor will not panic in a downturn and want their money back. But fees on "second tier" funds will likely decline as hedge funds on average become more commoditized and as people become more receptive to the idea that returns on many funds may not be quite as spectacular as they once were.

SECTION TWO: HEDGE FUND STRUCTURED PRODUCTS

Structured products have become a popular way for investors to gain exposure to hedge funds. A structured product is a financial instrument designed to meet specific investor needs by modifying the risk-return balance of an investment. The two primary types of structured products are *principal protection*, which lowers the risk while giving up some of the expected returns, and *leverage*, which increases expected returns while adding some risk. As cited in survey by Deutsche Bank, leverage is the most commonly used structured product, with 41% of investors using structured products for this purpose, and 23% seeking principal protection. Because structured products are linked to many different types of alternative investment vehicles, such as funds of funds or hedge fund indices, they also help mitigate the risks of lack of transparency, lack of oversight and poor liquidity.

While a structured product can be used with many types of investments, they are particularly well-suited to hedge funds because the absolute return characteristics of hedge funds help cover the cost of the structure.

Structured products can be customized to vary the amount of protection vs. participation in the return or by specifying the amount of leverage. The ability to customize structured products also extends to the way they are packaged and distributed. Investors can participate to varying degrees in constructing the product depending on their desire, knowledge, level of investment, and willingness to pay for the customized service; while

providers can realize economies of scale through targeted products intended for broad-based distribution.

Structured products are generally packaged to fit into one of three categories: dedicated structures which are designed for a particular investor, syndicated structures created for a specific group of investors, and distribution structures which are designed and branded for the needs of a specific network, such as private banks, retail banks, insurance companies, and asset management groups. Some firms specialize in serving just one of these areas, while others pursue multiple avenues, depending on their client base and distribution infrastructure.

Investor Profile

Investors are becoming aware of the attractiveness of these products. According to the 2004 Deutsche Bank Alternative Investment Survey, 32% of hedge fund investors reported using structured products in their hedge fund portfolio. The same study found that of investors not currently using structured products, 30% plan to do so in the future.

US investors have shown limited interest in principal protection, which is broadly accepted in Europe. A combination of comfort with equity investing, a positive view of the market environment, a fairly robust level of risk tolerance, and the low interest rate environment have made US investors reluctant to pay for the insurance offered by principal protected products.

Family offices, HNW investors and funds of funds are the primary market for structured products today, with investor interest focused on leveraged products.

With a few exceptions, endowments and foundations and insurance companies have not been very active in the hedge fund structured product area. Their initial interest will likely be in principal protected products given their preference for predictable, steady returns. The development of separate accounts, which allow hedge fund investments to be monitored and measured utilizing the same kinds of risk management measures institutional investors have become accustomed to in the traditional asset market, will facilitate their involvement in these products.

Structured Product Overview

Structured products transform the risk profile of an existing investment to suit a specific investor while maintaining the same basic source of returns. Most structured products include a derivative or option to provide exposure of varying degrees to the underlying hedge fund investment, and a bond, usually a zero coupon bond, to provide a specified level of principal protection. Products can be tailored to meet the needs of each investor without requiring managers to alter their investment styles.

A typical structure involves three parties: the fund manager, who provides the underlying investment or collateral; the investor, who provides the capital; and the bank who provides the capital guarantee or leverage. The structured product needs to address the exit strategy, liquidity and hedging approach.

Principal Protection Products

Principal protected structured products can be an appealing complement to a hedge fund investment. This product protects the investor's capital while also providing some participation in the upside potential of the hedge fund.

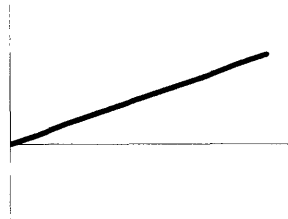
Principal protected products combine multiple asset classes, specifically a bond component and an option on a hedge fund, into one investment with the benefits of both components: the principal protection of bonds and the enhanced returns of hedge funds. Participation levels in the underlying hedge funds can vary. Usually, the lower the participation in the equity markets, the cheaper the price of the product, because of the lower level of risk. Other factors can also influence pricing, such as interest rates and volatility.

Two main types of principal protected products are option-based structures and constant proportion portfolio insurance.

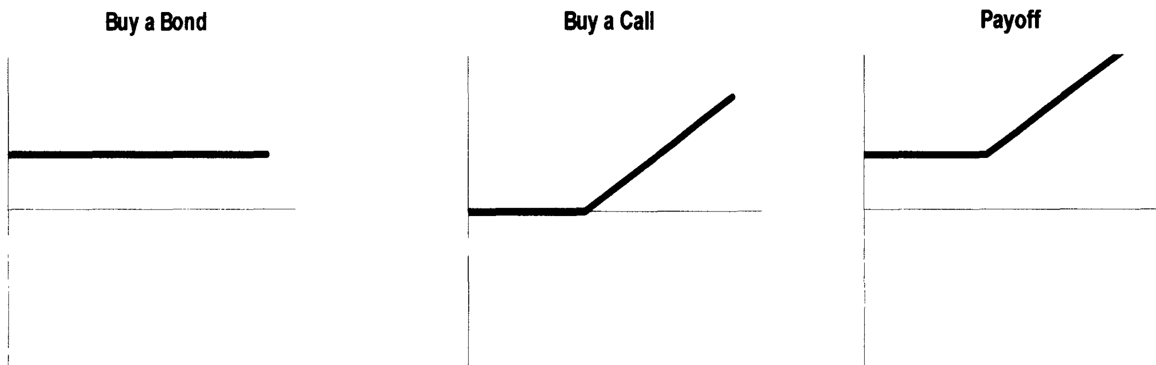
Option-Based Structure. In their most basic form, principal protection products consist of a zero-coupon bond purchased at a discount, plus an option. At maturity, the zero-coupon bond redeems at par, thereby providing capital protection to the investor. The option, offering participation in the hedge fund, pays out at maturity the performance of the underlying fund. The investor receives 100% exposure to the fund, independent of intra-term performance. If the hedge fund returns less than the call, at the end of the term

the investor will receive their principal but no additional upside. The graphs below illustrate the payout scenario.

Direct Investment



Principal Protection



A direct investment in an underlying hedge fund or fund of funds gives an investor full exposure to the upside as well as the downside. The principal protected product offers benefits over a direct investment in a hedge fund because the investor is assured a minimum return on the capital, no matter how poorly the hedge fund performs. The tradeoff is that if the hedge fund performs well, the investor may participate in only a

portion of the upside returns. There is also a cost for the option even if the investor does not receive any additional return.

Following is an example. To clearly differentiate the options, a relatively high return of 18.5% annualized for the hedge fund has been used. The components of this product structure are a zero coupon bond and an option. The term is five years and the investor has $100 to invest. The investor buys a zero coupon bond for $65 and uses the remaining amount to purchase a call option on a hedge fund (or fund of funds). Assume the call option has a value of 40% and the investor can purchase it for $35. This gives the investor 87% participation (35/40) in the upside of the underlying portfolio.

At the end of the five-year term, the investor will receive $100 from the zero coupon bond. They will also receive 87% of the five year cumulative hedge fund return of 133%, or approximately a 16.5% annualized return on their investment of $35. This is $75 on a five year cumulative basis. The combined $175 is an annualized return of approximately 12%, ignoring the cost of the option. The investor gave up the 18.5% from the direct investment in exchange for the principal protection, but they did better than the zero coupon bond of approximately 9%.

The risk to the investor is that if the call expires out of the money, there will be no value to the call at the end of its term. The investor will still have the return of principal from the zero coupon bond or $100. The loss to the investor would be the opportunity cost from the investment of the $35 in the option as well as the cost of the option.

The benefits of this structure are three-fold: 1) capital protection; 2) a participation rate that is predefined and remains constant; and 3) a return that is not path-dependent but is based only on final performance. This means that even if the value of the equity portion declines significantly during the term of the investment, the investor can still participate in any positive returns if the underlying portfolio rebounds before the end of the term. Also, the amount of exposure to the hedge fund component can be tailored to the risk tolerance of each investor. Investors need to realize, however, that capital is protected only if the product is held until maturity. If they redeem the bond early, they may receive much less than the $100.

Constant Proportion Portfolio Insurance (CPPI). One type of portfolio insurance incorporates a stop-loss arrangement whereby the investment reverts to a fixed income security if the value of the underlying investment falls through a predefined threshold at any point in time. The investor would be locked into the fixed income investment for the remainder of the term, even if the performance of the hedge fund recovered. The investor would receive their principal at maturity but would not participate in any upside performance of the hedge fund. If the threshold point was crossed early in the term of the investment, there could be a significant opportunity cost of the underlying investment recovered.

A type of principal protection product that tries to address this limitation is called Constant Proportional Portfolio Insurance (CPPI). CPPI is a portfolio balancing technique that aims to maintain a constant level of risk in the portfolio throughout the life

of the investment. Like the basic portfolio insurance product, the portfolio invests in two assets, a fund of hedge funds and a zero coupon bond (these two components are combined into what is called a reference portfolio), and is designed to give investors downside protection while also allowing for participation in the upside. However, in contrast to a traditional structure which always has a portion of net asset value invested in securities that underpin the guarantee, an initial allocation of a CPPI structure is usually 100% to the fund and 0% to the bond, which provides more exposure to the upside. The allocation between assets is handled by dynamic hedging. Dynamic hedging is the active management of a hedge position through continuous trading and risk management activities based on pre-agreed and fully specified criteria. It shifts the asset allocation between a risky asset, which is the underlying hedge fund or fund of hedge funds, and a non-risky asset, such as a zero-coupon bond.

The value of the portfolio is calculated on a daily basis and is compared with the zero-coupon level. The difference between the two values is multiplied by the leverage factor (normally between three and four times, depending on the risk appetite of the investor) to determine the amount of risky assets allowed in the portfolio. As the fund value increases, the allocation to the fund increases and the allocation to the bond falls. As the fund value falls, the fund allocation falls and the bond allocation increases. The portfolio is always invested in the risky asset up to the maximum proportion allowed.

CPPI provides the potential for leveraged returns with no risk to the initial capital. It offers full principal protection, 100% initial participation and potential for leverage.

Importantly, it provides the opportunity to outperform a direct fund investment. The terms for a CPPI investment can be configured many different ways, with the amount of participation and threshold limits tailored to the risk preferences of the investor and investment underwriter.

For the example below, the CPPI product provides dynamic hedging and retention of profits up to the threshold event, but no additional participation in the returns of the hedge fund once the investment has been converted to a zero coupon bond. The investor starts with $100. Instead of dedicating a portion of the $100 up front to a zero coupon to assure principal protection, the entire amount is invested in an underlying portfolio. Assume, similar to the prior example, the underlying portfolio returns 133% in five years (18.5% annualized), in a positive progression through the term (each year has a positive return). The investor will participate at a 100% level, which means the CPPI investor receives $233, which is a return of the initial $100 and $133 from the hedge fund.

However, if the underlying portfolio falls below a certain threshold amount, the investment would be shifted to a zero coupon bond and the investor would not participate in future gains on the underlying portfolio.

The benefits of this structure are capital protection, high potential exposure to the hedge fund performance (100% or more), and dynamic asset allocation. The exposure to the hedge fund increases with good performance and or a rise in interest rates. The risks are that this product offers a path dependent return. Participation is not necessarily

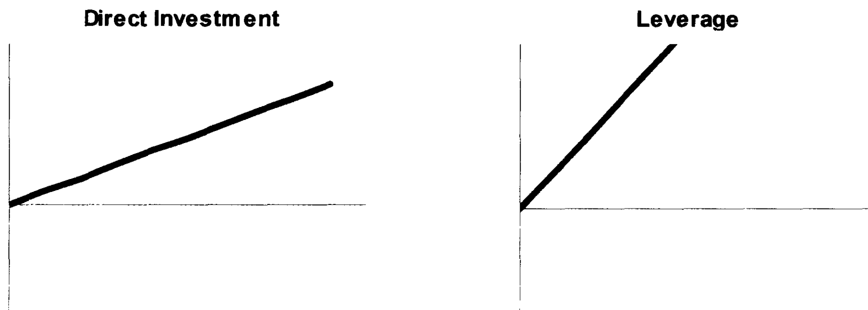
predefined and if the product does not recover from an early drawdown event, the investor would not participate in any upside from the underlying hedge fund once the "trigger" point is reached. Some CPPI products are constructed so that the investor does not receive any participation in the upside at all even if positive returns had been generated before the trigger point was reached. Also, like the previous version, the product needs to be held until maturity to receive full capital protection.

This product category continues to evolve. Principal protection arrangements are being applied to composite or multi-strategy portfolios that borrow capital to provide greater leverage and exposure to more cash-intensive hedge fund strategies. Profit lock-ins have been introduced to create rising guarantees. Also, more sophisticated financing arrangements are being developed to optimize cash usage, create even greater flexibility, and add to the diversity of portfolio types and risk/reward outcomes.

Leverage Products

The second main type of structured products for hedge funds is leveraged product. Leveraged structured products use borrowed capital to increase an investor's exposure to the underlying investment. These products can be structured to have limited recourse, which means the investor is only liable for a specific amount rather than the total leverage amount. Low interest rates increase the attractiveness of using leverage. One and a half to two times leverage are the most common amounts, but some products offer up to four times leverage. Leverage magnifies returns, as shown in the diagrams below,

but investors need to be aware it can also magnify losses.



The following example shows how an investor can gain greater exposure to an underlying portfolio using leverage. Assume four-to-one leverage on an initial investment of $100. The investor would have a total of $400 exposure to the underlying asset. Assuming a 10% cost of capital over the five year period and an 18.5% annualized return in the underlying portfolio, the investor would realize a 779% cumulative five-year return or about 44% annualized and the $400 investment would grow to $718. This would clearly be much better than the earlier example of 133% generated by a direct investment over the period of five years.

The return is not without risk, however, since leverage magnifies losses as well as returns. Depending on how the leverage is structured, the investor could lose their entire investment because they do not have any principal protection. They would also have to pay the cost of the structure. If the value of the loan falls below the value of the collateral (generally a percentage of the underlying hedge fund investment), the bank will call the loan. This means the investor may have to sell the hedge fund investment at an inopportune time and potentially realize significant losses. If the value of the fund drops

so quickly that it can not be liquidated in time to cover the loan amount with the proceeds, the investor may be liable for the entire amount of the loan, or leverage. The bank runs the risk that the investor will not be able to pay the money back and the hedge fund value may not cover the amount of the loan.

Two of the most frequently used leveraged product structures are call warrants and leveraged certificates.

Call Warrants. Call warrants are the most popular hedge fund structured product offering. Warrants are very similar to long-dated options, which are options with terms equal to or longer than one year. The primary difference is that the settlement of standard listed options is guaranteed by an exchange or clearinghouse, and warrants are backed by the creditworthiness of a corporate or governmental issuer.

Warrants provide increased exposure to the underlying investment through leverage. They also provide tax benefits. A direct investment in a hedge fund generates primarily short-term capital gains each year, as well as some long-term capital gains. Warrants, however, generate long-term capital gains upon expiration or sale if they are held for longer than one year.

As described above, there are also risks to the investment. Warrants magnify movements of the underlying security on which they are based and can be very volatile. Also, a warrant can expire worthless, so investors should not buy a warrant unless they are

prepared to lose all the money invested plus any commission charges incurred.

Leveraged Certificate. A leveraged certificate is another common leverage structured product. It is different from a call warrant because a call warrant provides a constant amount of leverage and a certificate may de-lever if volatility causes losses. This means the amount of leverage, or exposure to the fund, is reduced if the value of the fund falls from the initial level. Since the exposure to the fund is reduced, participation in any future upside movements in the fund is also reduced.

Risk and Return Variations

The following Monte Carlo simulations provide additional examples of how various structured products can change the risk/return characteristics of a hedge fund investment.

A Monte Carlo simulation demonstrates the risk/return alternatives offered by various structured products. Based on a random generation of 10,000 mock returns for each year for five years, average returns for five different investment scenarios were generated and are summarized in the table and graphs below. The standard deviation for each scenario is also included in the table, as is the Sharpe ratio. The Sharpe ratio is calculated by subtracting the risk free rate from the rate of the return and dividing the result by the standard deviation of the portfolio returns. The ratio indicates the amount of return, or value added, provided by the manager. The scenarios are:

The **Risk Free** scenario was invested in risk-free treasuries with an assumed 2% yield.

The **Hedge Fund Direct Investment** scenario had 100% of the investment exposed to the hedge fund. With a cumulative return of 132%, its cumulative standard deviation was 110%.

The **Principal Protected** strategy had about 70% of the initial investment in a zero coupon bond that matured in the fifth year and returned the initial investment. The portion not invested in the zero was invested in the hedge fund. Under this scenario, the return of 46% was 65% less than the 100% direct investment in the hedge case, but the standard deviation of 32% was also much lower (71% lower) than the 110% standard deviation of the direct investment.

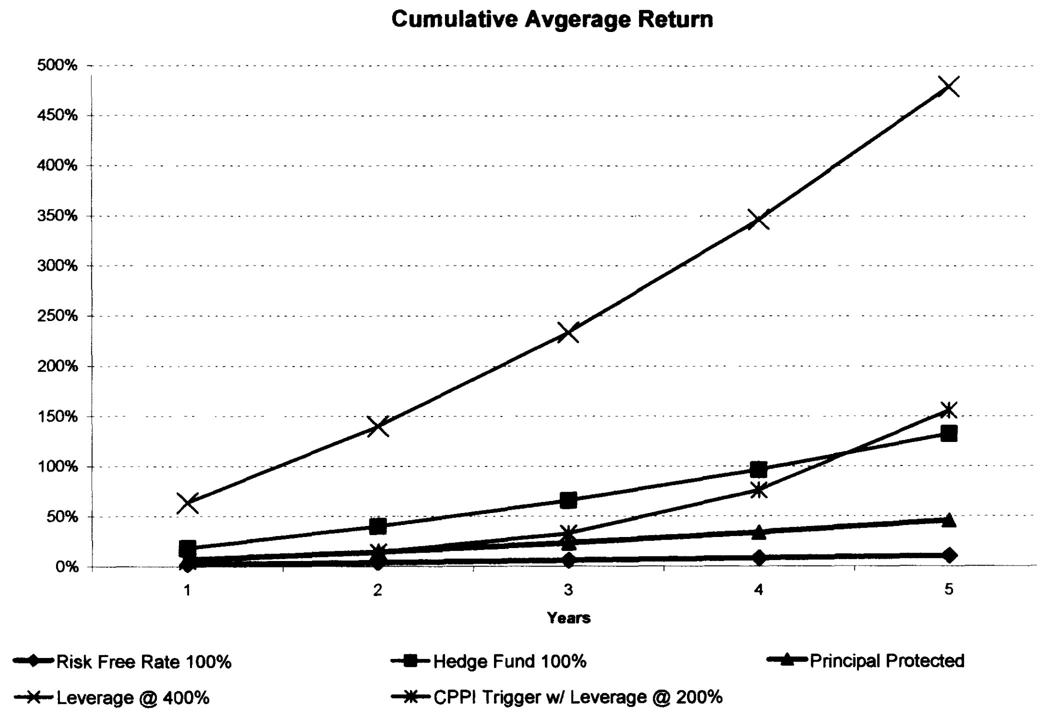
The **Leverage** strategy uses 400% leverage with a 10% cost of capital, providing cumulative average returns of 480% but a very high standard deviation. Here too, the return was very compelling relative to the 100% hedge fund investment: 264% better. However, the standard deviation was 298% higher.

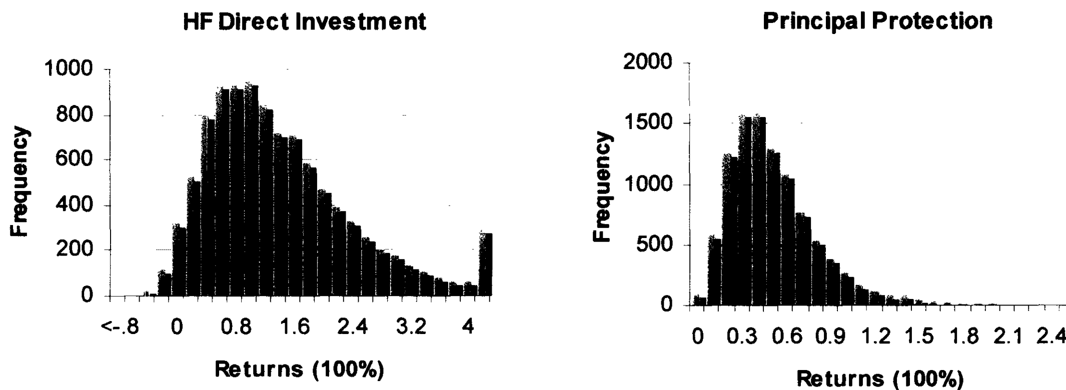
The **CPPI** strategy incorporated 200% leverage with 80% participation in the hedge fund's performance and 20% invested in the zero coupon bond. Its return was almost 18% better than the 100% hedge fund investment, but the standard deviation was 95% greater.

The table and histograms below summarize the risk and return characteristics of each of these investments and demonstrate the trade-offs of assuming more protection or more risk.

Returns, Standard Deviation & Sharpe Ratios

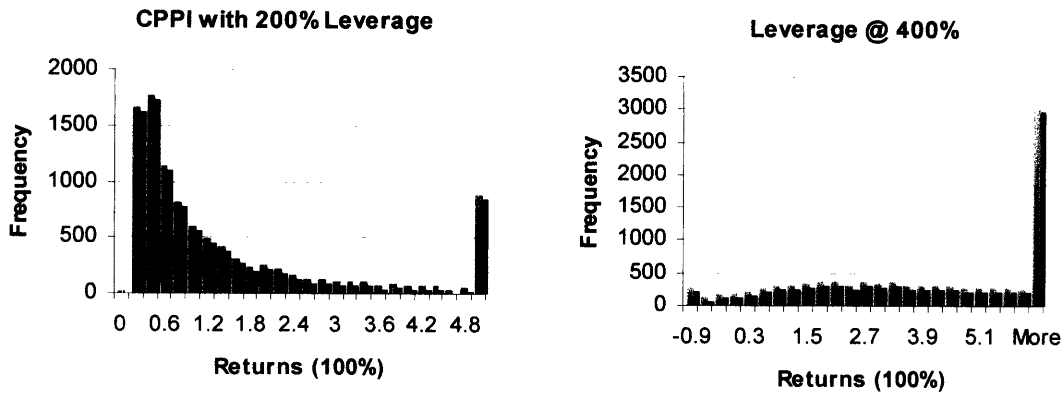
	Year 1	Year 2	Year 3	Year 4	Year 5	Sharpe Ratio
Risk Free Treasuries	2%	4%	6%	8%	11%	0
Standard Deviation	*0%*	*0%*	*0%*	*0%*	*0%*	
Hedge Fund Direct Investment	18%	40%	66%	87%	132%	1.10
Standard Deviation	*24%*	*41%*	*60%*	*83%*	*110%*	
Principal-Protected, 30% Exposure to Hedge Fund	7%	15%	24%	34%	46%	1.09
Standard Deviation	*7%*	*12%*	*17%*	*24%*	*32%*	
Leverage @ 400%	64%	140%	234%	346%	480%	1.07
Standard Deviation	*96%*	*162%*	*239%*	*331%*	*438%*	
CPPI Trigger w/ Leverage @ 200%	5%	15%	33%	76%	156%	0.68
Standard Deviation	*5%*	*13%*	*38%*	*115%*	*214%*	





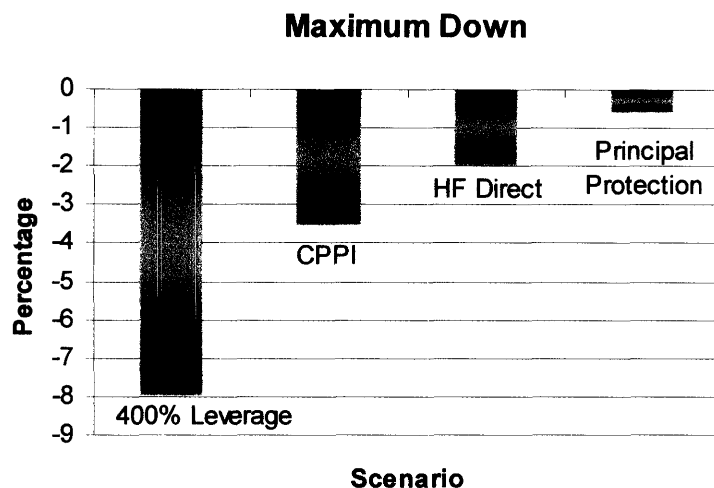
These graphics provide a statistical profile that shows the performance of each of the scenarios. With a direct investment in a hedge fund, the investor assumes some downside risk but the histogram is slightly skewed to the right, which indicates the ability to capture the upside returns. The negative returns shown on the graph reinforce the reality that, unfortunately, an investor may also capture the downside. The upside of the

principal protected product is muted, but it also has a very limited downside. This option has low volatility and offers very predictable returns.



The CPPI strategy with some leverage is a mix of the straight principal protection product and the highly leveraged approach. It offers a fairly good chance to participate in some of the upside of the underlying investment, but is protected on the downside. The downside protection and moderate amount of leverage temper the amount of participation in the positive returns. The returns for the highly leveraged example are very random and unpredictable. An investor could enjoy very high returns, but is just as likely to suffer negative returns since there is no protection on the downside.

The following chart is another indication of the amount of volatility that could be expected from each investment. The maximum down represents the largest drop in return for each scenario over the five years. Clearly, the "ride" for the investor would be most volatile with the highly leveraged scenario.



Product Summary

	Direct Investment	Principal Protection	CPPI	Leverage
Investor Interest:				
Retail	Low	Low	Medium	Low
HNW/Family Office	High	Low	Low	Very High
Institutional	High	Low	Low	Medium
Characteristics:				
Leverage	Varies	Low	Medium	Very High
Risk	Medium	Low	Medium	Very High
Return	High	Low	Medium	Very High
Risks:				
Liquidity	Medium	Low	High	High
Market	High	High	High	High
Interest Rate	Low	Medium	Medium	High
Execution	Low	Low	High	Medium
Counterparty	High	High	High	Very High
Investment	High	Low	Medium	High
Regulatory	High	Very High	Very High	High

Product Trends

The investor base for hedge fund structure products is evolving and the products, distribution, and service methods need to change to keep up with their needs. There is a dichotomy developing in needs of sophisticated vs. newer users. Sophisticated investors want very focused products from structured product providers and fund of fund managers. These investors want to do the asset allocation, rebalancing, and reallocation across strategies themselves. There is a strong trend among these investors away from multi-strategy hedge funds of funds and towards more specialized and strategy-focused products. There is also a trend towards decoupling, where a multi-strategy multi-manager divides the portfolio into its component parts and finds efficient ways of putting them together, giving the end-investor the flexibility to weight and re-weight the components. Less sophisticated investors want more diversification and even principal protection. For these investors, managers of funds of funds are now doing more active tactical allocation. This activity can add a lot of value, since fund of funds managers are generally skilled in analyzing the trends of a particular strategy and overweighting the strategy quickly through targeted indices.

As investors become more comfortable with hedge funds and structured products, they become increasingly comfortable taking risk and want products that offer greater degrees of leverage. The low cost of borrowing also increases the attractiveness of leveraged products. Increasing amounts of leverage, up to four times or more, are becoming more common.

Some firms are providing capital-guaranteed products on individual hedge funds using a managed account structure. Most of these products have used CPPI, but more firms are considering non-path dependent option trades, even though options on singe hedge funds are harder to price and risk manage. The return potential of a single fund could make principal protection more cost effective. On the other end of the risk spectrum, there will also be continued growth in structured products on the new investable hedge fund indices.

SECTION THREE: INVESTOR CONSIDERATIONS

Structured products offer expanded access to hedge funds and the opportunity to tailor the risk/return profile of the hedge fund investment. These products, however, have some drawbacks and complexities that investors need to understand to ensure the products are used effectively.

Underlying Investment Vehicle

The type of underlying vehicle that is chosen will have a significant impact on the risk/return profile of the structured product.

A single product will have the highest return potential because it is more concentrated and it has the lowest cost. The investor will pay fees only to the hedge fund and the bank providing the structure. However, banks are reluctant to structure products on a single hedge fund because of the higher risk from the lack of diversification and the limited information about their holdings and strategies.

Structured products are therefore generally developed for funds of hedge funds because these vehicles offer more transparency, liquidity, and diversification than a single fund. These characteristics are important to the banks that create the structured product, as well as to the end investor. A fund of funds typically puts between five and twenty funds in a basket, providing an investor with access to a well-diversified hedge fund portfolio with just one investment. The fund can either diversify across strategies or across managers within a single strategy.

Funds of funds also offer hedge fund investors additional benefits. The funds of funds provide professional manager selection and monitoring, and lower minimum investments (as low as $25,000 vs. $1 million for a single fund). Funds of funds may also include some well-known, successful hedge funds that would otherwise be closed to individual investors. According to Morgan Stanley, funds of funds have grown at an annual rate of 50% in the past three years, and their share of hedge fund assets has risen from one-fifth to one-third.[9]

However, funds of funds are not a total panacea because their returns are significantly lower than those of a single fund, as shown in the following table.

Hedge Fund Returns

	2003	2004
Hedge Funds	15%	9%
Funds of Funds	11%	6%

Source: Morgan Stanley

The return is reduced further by the management and performance fees of the hedge fund, which are generally 2% and 20% respectively, and for the fund of funds, which average 1.5% and 10%. This is particularly a problem with principal protection products, which have a more conservative performance objective and do not use leverage to enhance returns.

There are several reasons for the difference in performance between single hedge funds and funds of funds. Fund of funds portfolios are very well diversified; the diversification results in lower volatility but also lower returns. Funds of funds also need to have

[9] "Borrowing and Betting." *The Economist,* June 10, 2004.

capacity to accommodate large numbers of investors, so in turn, the hedge funds in the portfolio need to be willing to accommodate sizeable inflows of assets. Top tier hedge funds often will not accept the large inflows of assets that would be generated by a fund of funds, so second tier funds sometimes need to be included in the fund to provide capacity. In addition, the exposure that funds of funds provide to the top performing, "marquee-name" funds is becoming diluted as the size of the fund of funds increases, decreasing the benefit of this exposure.

Also, like performance of most hedge fund managers, fund of funds performance is not persistent, as shown in the following chart. Investors need to continually monitor and assess their fund of funds manager. According to a Standard & Poor's analysis of fund of funds in four public databases from January 1999 to August 2004, of the 97 fund of funds in the top quartile in the year 2000, just 3 remained in the top quartile for the first eight months of 2004. The table also shows how quickly performance changes.

Fund of Funds Quartile Persistency

	2000	2001	2002	2003	1/2004 - 82004
Quartile 1	97 F of Fs	39	26	13	3
Quartile 2	97 F of Fs	27	9	5	1
Quartile 3	97 F of Fs	17	2	2	2
Quartile 4	98 F of Fs	14	2	6	5

Source: Standard & Poors

Hedge fund indices are another type of underlying vehicle. Indices offer even more diversification than funds of funds. Although each index varies somewhat in its composition, indexes contain more hedge funds than are included in a fund of funds, which increases diversification but may also include more hedge funds of lesser quality.

The returns of hedge fund indices are generally lower than the returns of funds of funds, but the fees are also lower.

Another option is the managed account structure. A managed account mirrors the investment strategy and holdings of an individual hedge fund and gives the investor more focused exposure, and thus the potential for higher returns. It offers similar benefits as the fund of fund structure, with professional management and oversight. Because of their higher risk profile, however, banks are sometimes reluctant to use these vehicles to construct principal protected products.

After-Fee Returns

Fees for structured products create an additional drag on returns. This creates a questionable after-fee value proposition for certain structured products, especially for principal protected products. Principal protection products generally use a fund of funds as the underlying investment vehicle. Because funds of funds are well diversified and the average standard deviation of a fund of funds is only 3%, it is questionable how much value is added by a principal protection structure. With a principal protection structure, the return could be further reduced because the bank providing the capital guarantee will place certain restrictions on the hedge fund manager to ensure that the risk of the fund stays within an acceptable range. In addition, the fees of both the fund of funds manager and the cost of the structure need to be subtracted from the overall return. Low interest rates make principal protection products even more costly. With rates as low as they are, the zero coupon bonds may require a substantial amount of available cash over an

extended period of time, leaving less cash available for investment in the hedge fund portfolio. To date, principal protection products have been attractive only to the retail investor who does not have another way to get exposure to a hedge fund or fund of funds. Principal protection may become more appealing if interest rates rise and the length of maturity on the product can be shortened, if volatility increases, or if returns from funds of funds increase.

To improve their chances of getting a cost-effective after-fee outcome, investors need to focus on manager selection. The annual return for a fund of funds in 2003 ranged from approximately 4.5% to almost 30%.[10] Although average returns are moderate, the top funds of funds managers are still generating strong returns. With a top-tier fund of funds, the after-fee return of a structured product can be very attractive. Managers and investors could also use leverage to increase returns, but leverage changes the risk/return profile of the product.

Limited Liquidity

A direct investor in a hedge fund can choose when to exit the fund (subject to fund redemption limitations) but principal-protected products generally do not offer similar redemption options. If the investor's circumstances or the market environment changes, and the investor needs to sell the investment prior to the end of the investment period, it may be difficult to dispose of the underlying notes. In some cases, there may be only a very limited secondary market and selling an investment prior to the expiration of the investment period could result in a return less than the initial capital investment.

[10] CISDM Hedge Fund Universe Database

Leverage Implications

Magnified Returns – and Losses. Leverage, of course, works both ways: if the return on the underlying hedge fund portfolio is below the cost of leverage, the investor faces substantial losses. If a fund loses 10% in a year and the investor has leveraged a $100 investment four times, they would lose $40 instead of the $10 they would have lost on an un-leveraged investment.

Leverage Pile-On. Investors should consider the amount of leverage on the underlying portfolio so they do not create an unintended "leverage pile-on." When an individual borrows to invest in a fund of funds, there could be a tier of debt if the fund of funds is also leveraged to increase its returns and the hedge fund itself could be using leverage. For example, assume an investor in a structured product contributes $33 and the structured product provides three times leverage. The investor then has $100 and he places $10 in each of 10 hedge funds. If the hedge fund is leveraged ten times, the investor controls $1000 based on a $33 investment. Investors need to make sure the underlying investment has not been made riskier than it initially appears due to multiple layers of leverage.

Risk Management. Separating the leverage function from the portfolio manager function creates an additional risk because the portfolio manger is the only one with the overall picture of the underlying risk and the best knowledge about what strategies are being used in the portfolio. The impact of leverage varies by hedge fund strategies. It may be riskier to leverage strategies that exhibit very low volatility because these are the

strategies that are most susceptible to the "fat tails," or occurrence of an unlikely, but disastrous event. Instead of leveraging a very low volatility fund of funds four times, a more prudent approach is two-times leverage on a moderately volatile but well-diversified fund of funds. The potential to increase the return is the same, but the volatility of the two approaches is very different.[11]

[11] "Roundtable: The $1 Trillion Growth Market." *Euromoney,* June, 2004.

SECTION FOUR: BUSINESS ISSUES AND RISKS

Demand for hedge fund structured products is growing and numerous players are entering each aspect of the market. The competitive environment and dynamics of the financial markets, however, have important implications for the attractiveness of these products. These issues need to be given careful consideration before pursing hedge fund structured products as either an investor or provider.

Access to Distribution

Distribution is critical to the viability of a structured products business. Some banks have proprietary distribution; other banks focus only on providing structured products to a variety of third party distributors. There are pros and cons to both approaches, however all banks need to ensure their distribution is extensive and of a high quality.

A proprietary sales force has definite benefits. Clearly, it is a dedicated channel for distributing product. Arguably even more important, though, is the control that having proprietary distribution gives the bank over how their products are sold, which can help minimize suitability risk. Education is one of the biggest challenges that all bankers face as the increasing complexity of the structures makes them more difficult to explain to both distributors and end-users, and thus increases the potential for the products being mis-sold. Although banks are not ultimately responsible for delivering the products to the end-buyers, they still have significant risk to their reputation.

Lack of a proprietary sales force is not an insurmountable disadvantage, however. The benefits of a proprietary sales force is diminishing somewhat as both advisors and their clients demand access to best of class products for both funds of funds and underlying hedge funds. This trend toward open architecture is becoming more prevalent. In addition, the profile of the advisor's client base often is not consistent with the targeted profile of the structured products group. Even when the structuring group and distribution belong to the same firm and target the same market, a significant amount of the structuring business is generated through a bank's trading and prime brokerage relationships. Firms without a direct distribution channel have the benefit of not being burdened by the resource commitment required to manage and support proprietary distribution.

Firms without distribution need to compete and excel on a "best product and service" basis, since they have little leverage over what products are distributed through the third-party channels. They need to have superb structuring capabilities, be able to access top quality hedge funds, and provide strong follow-up support to ensure they attract and retain the interest of third party distributors.

Margin Pressure and Differentiation

Increasing competition is squeezing margins for the banks providing structured products. Product structures become commoditized very quickly so banks need to continually innovate to differentiate themselves and justify a premium for their services. Some banks may try riskier structures to increase returns, but this could backfire and damage

the entire industry if there are widespread losses. Continual innovation, without taking undue risk, is a better approach.

Firms should consider patenting their innovations. A case with State Street Bank in 1998 determined that innovative securities, such as novel derivatives, debt and mutual funds, may be patented. It is likely some product structures would fall into this category, though as Stephen Glazier of Kirkpatrick & Lockhart explains, "Patents can be obtained only for developments that are new, useful and not obvious."[12]

In addition to focusing on innovation, banks can expand the platform of services they provide to distributors and funds of funds, to expand their positioning from "product provider" to more of a "full service provider." The value-added services could include custody and administration of the portfolio, and introductions to hedge fund managers. They could also assist with the education efforts to prevent products being mis-sold. Each of these features, however, can easily be replicated by competitors, leaving the banks with a higher cost structure but without a competitive advantage.

Another approach is segment marketing. Banks that have advanced derivatives and structuring expertise should focus on sophisticated investor segments that value these superior skills. More complicated structures are harder for competitors to copy, which makes the advantage more sustainable.

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[12] Glazier, Stephen. "Patent Pending: Structured Products Patents as a Profit Center for Financial Dealers." *Structured Products Association Newsletter,* March-April 2004.

Perhaps the most difficult strategy, but the one with the highest potential payoff, is developing a strong brand so that users perceive the quality of the product to be better than that of the competition. The best example of this is outside the financial services industry: Intel and its "Intel Inside" campaign have succeeded in creating the perception that Intel chips are superior, even though the quality of their chips is not any better than those of their top competitors. Most buyers are not knowledgeable about computer chips and feel more comfortable having an Intel chip inside their machine. It took Intel a long time and required a very costly marketing campaign to create this perception, but the payoff is a sustainable competitive advantage.

Since structured products and hedge funds are also not well understood, a similar approach could be effective in this product category. With open architecture and the number of product options proliferating, brokers and end-users will gravitate towards the few products and providers they can count on to deliver quality performance and services. Banks could focus on public relations to complement or replace an advertising campaign and try to develop other tangible "proof points" such as white papers on relevant subjects.

Regulatory Issues

There are several regulatory issues that could impact the attractiveness of hedge funds and hedge fund structured products to investors and providers.

The SEC has numerous concerns with hedge funds, including the lack of regulatory oversight, questionable valuation methods of the illiquid securities held by hedge funds,

access to hedge funds by a broader range of investors, and the limited disclosure of holdings and strategies. To address these concerns and to get a better understanding of the hedge fund universe, the SEC is requiring all hedge funds to register with it by February 2006. The exception to the rule is funds that have lock-up periods of at least two years. As the cost of complying with the regulation is estimated to run into the tens of thousands of dollars for small firms and hundreds of thousands for large firms, many hedge funds are implementing two-year lock-ups on new offerings and asking their investors for permission to alter their existing lock-up periods. In response to this effort to evade the registration requirement, the SEC is considering changing the lock-up exemption to three years or longer. If this happens, however, some managers may respond by moving offshore, which would further reduce the SEC's ability to provide oversight of their activities. Alternatively, some managers may require even longer lock-ups.[13]

In another initiative, the SEC may create a new category of issuers, called "Well-Known Seasoned Issuers." This could be a positive development for the industry because it would reduce the time required to issue public products. Structured product issuers would be a beneficiary of this rule. It is not clear, however, whether the rule will benefit firms which do not report under US GAAP, such as the European structured products firms. These companies are required to provide accounting reconciliation statements with each public issue, which makes the process more arduous. If the new rule is enacted, the European firms would be at a disadvantage to their US competitors.[14]

[13] Avery, Helen. "Hedge Funds Register Scorn at SEC Ruling." *Euromoney,* March 2005.
[14] "Structured Notes Issuers to Benefit from SEC Fast Lane." *Derivatives Week,* November 2004.

The principal protected product category faces some legal uncertainties. One issue is the increasing use of side letters. Side letters provide investors in the structured product a waiver of lockup periods or shorter notice periods for redemptions than investors who invest directly in the hedge fund. These arrangements are receiving increasing scrutiny from regulators and may subject the underlying hedge fund to lawsuits because of disparate treatment of investors. Another issue is whether the provision of principal protection constitutes the conduct of an insurance business, which would subject the principal protected product to possible regulation by state insurance regulators. Although issuing letters of credit generally falls under banking regulations, it is still unclear whether the state departments of insurance would consider the use of certain types of derivatives for principal protection purposes to be the conduct of an unregulated insurance business. Principal protection products may also be subject to margin regulations, limiting the amount of credit that can be extended and/or requiring detailed filings. Providers need to monitor these issues to avoid problems and to realize the opportunity these products offer.[15]

Another issue related to principal protection focuses on the CPPI product. The problem arises when managers offer a share class to banks, which can be traded more frequently than those held by individual investors. The banks can manage their risks better by frequently moving in and out of the underlying funds, even though other investors might

[15] Yurke, Alice. "Principal Protection Products: Possibilities and Perils from a Legal Perspective." *Bank Accounting & Finance,* August 2003.

only be able to trade at monthly or quarterly breaks. This gives the appearance of preference and market timing.[16]

There is also increasing potential for mis-selling as these products become more complex and new vehicles provide access to less sophisticated investors. Efforts to avoid this problem, and other problems in the financial system, are well intentioned. In addition however, increased regulatory focus on the nature of the investors who are going into these products could help prevent some of the added regulation of the products themselves.

Market Risks

Investors need to monitor the trends and risks in the financial markets as they determine their exposure to hedge funds and their approach to structured products. Banks providing structured products also continually monitor their level of risk.

Hedge funds are unlikely to trigger a financial crisis, but they would be severely affected by a downturn in the financial markets, especially if liquidity was suddenly squeezed. The danger is that a sharp market move could cause a lot of hedge funds to unwind their positions at the same time. With a significant portion of their $1 trillion in assets leveraged, the impact on the market would be amplified. This would be compounded further by the "leverage pile-on" that was discussed earlier.

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[16] Comlay, Elinor. "Fund Managers Turn Off CPPI in Fear of Market Timing Issues." *Derivatives Week*, December 10, 2004.

The most likely upset would come from a sharp spike in short-term interest rates. Several factors in the marketplace today could trigger this. These include the rise in commodity prices, including oil, along with a weaker dollar and a wider current-account deficit. Since higher rates increase the risk of default, banks would be forced to limit credit and tighten available capital. Banking clients, individual investors, hedge funds, and funds of funds, could find themselves with limited capital.[17]

If rates rise sharply, a liquidity crisis could quickly spread as the leading banks have a significant amount of risk related to hedge funds. Banks have increased their exposure to hedge funds through prime brokerage which often involves providing credit to funds, sales and trading on behalf of hedge funds, increased proprietary trading that often involves hedge funds as counterparties, investment directly in hedge funds, and further investments through their asset management arms. One banker calls prime brokerage the "contagion point" of the financial system because it links the unbridled and largely unregulated activities of hedge funds to the wider banking system. In addition, a bank's loans through its prime brokerage operations may be riskier than intended as most large hedge funds have two or more prime brokers to expand access to securities they want to borrow and increase access to financing. While each broker may apply credit controls and collateral agreements, a broker cannot risk-manage a fund's relationship and trading positions with another firm. Banks and hedge fund also tend to pursue similar trading strategies, so any sudden change in the financial markets could cascade through both the banking and hedge fund industries as both the lender and the borrower try to unwind trades. Banks would be forced to limit credit and tighten available capital – which is

[17] "A Sated Appetite." *The Economist,* March 23, 2005.

necessary to provide valuations and liquidity in the market, and a downward spiral could begin.[18]

These events would clearly have a negative impact on hedge fund structured products. If the health of a bank declines enough, the bank may not be able to fulfill its promise to repay the capital in a principal protected note, though this is extremely unlikely for most banks. If the bank's credit rating declines, however, the cost of a principal-protected product would become prohibitive. Obtaining credit for leveraged structured products would also be very expensive since the risk of the hedge fund or fund of funds would be perceived to be much greater.

On a positive note, a severe downturn would weed out the weaker, lower quality players. This is true in all aspects of the market, including marginal hedge fund managers and funds of funds, and poorly capitalized banks with questionable structuring capabilities. High quality managers and banks would still remain ready to provide a strong infrastructure in the future. A downturn would also increase the investor awareness of the potentially risky nature of hedge funds, and may result in increased interest in principal protected products or more modest amounts of leverage.

[18] Lambe, Geraldine. "Playing with Fire." *The Banker,* December 1, 2004.

CONCLUSION – A BETTER WAY TO INVEST?

Hedge funds offer attractive risk-adjusted returns. The wide range of hedge fund strategies and the variability of performance by manager, however, make an informed approach to hedge fund investing imperative. Investors cannot simply invest in any hedge fund or put their money with any manager; manager selection and understanding the impact that a fund strategy could have on the investor's overall portfolio are critical to realizing the potential of these products.

Despite their benefits, however, hedge funds have significant drawbacks including limited liquidity and transparency, and high minimum investment requirements. Funds of hedge funds mitigate these issues by providing diversification, professional manager selection and other structural features to facilitate investing, but the additional diversification and additional layer of fees reduces the returns of these products. Similar to hedge funds, manager selection of a fund of funds is critical to achieving attractive after-fee returns. Hedge fund indices offer even broader diversification, and thus somewhat lower returns, though the fees on these products are also lower. Managed accounts, investment vehicles structured on a singe hedge fund, provide more focused investment exposure and offer higher returns to investors who do not need the additional diversification of a fund of funds or index.

Structured products can be an advantageous way to participate in the hedge fund product category. Structured products enable investors to tailor the hedge fund investment to

their unique needs and preferences for either enhanced returns or reduced risk, and using a fund of funds or index as the underlying investment vehicle avoids many of the drawbacks of investing in a single hedge fund. This makes structured products appropriate for a wide range of investors. The flexibility of structured products can increase the complexity of the investment, however, and education of both advisors and the end users is important to ensure suitability of the investment. Structured products also add an additional layer of fees and investors will need to carefully consider which features are most meaningful on an after-fee basis.

Competition is growing in this arena and firms are increasingly being pressed to differentiate themselves to maintain their pricing levels and attract attention from advisors and end users. Distribution, competitive advantage, and branding are all becoming important considerations as financial institutions embrace the business opportunity that structured products offer. An important consideration is the impact a sharp market downturn could have on structured product investments and businesses. Prudent risk management is critical to the viability of a hedge fund structured product business.

The nature of structured products and their potential to alter the risk-return profile of hedge funds provides a unique marketing and sales challenge. By meeting this challenge, providers will ensure that investors can fully benefit from this new category.

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