
Hedge Funds: A Critical Examination

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Introduction

According to the September 2001 edition of *Smart Money*, the \$527 million endowment fund at Denison University dropped by \$105 million over a six-month period.¹ Although the endowment had historically invested in a conservative blend of stocks and bonds, during the 1990s it shifted a significant amount of assets to venture capital, tech stocks and hedge funds. Following the precipitous decline in tech, Denison concentrated approximately one third of its remaining endowment in hedge funds.

Both anecdotal and survey evidence suggest that Denison's asset management strategies are surprisingly common in the academic endowment community. As other funding sources dry up, university endowment directors may attempt to compensate for recent losses by pursuing higher returns from hedge funds.

This article is intended to review recent academic research into the merits and liabilities of hedge fund investing. It summarizes the research in order to evaluate hedge funds primarily from the viewpoint of a fiduciary who must make investment decisions in conformance with applicable legal standards, such as ERISA, the Common Law of Trusts (Prudent Investor Standard) or the Uniform Management of Institutional Funds Act (UMIFA). It draws upon several information sources including a recent speech by the Director of the Division of Investment Management of the U.S. Securities and Exchange Commission as well as articles published in several academic journals.

History and Conceptual Background of Hedge Fund Investing

In the 1950s, Jack Treynor, A.W. Jones, and others investigated whether it would be possible to profit from a technique known as statistical arbitrage. Capital market theory holds that asset price changes are determined by a security's sensitivity to one or more factors; and security mispricings occur if the market does not correctly price each of these factors. The concept underlying statistical arbitrage is that a savvy investor should be able to construct a portfolio, such that the portfolio's factor exposures are balanced against each other (hedged). The hedged portfolio's returns benefit

from the market's correction of the mispricings identified by the portfolio manager. Although hedge funds adopt numerous strategies for identifying market mispricings and for eliminating (or enhancing) exposure to systematic factors, application of statistical arbitrage is only one of two unifying themes linking all hedge funds. The other theme is the tendency to structure funds in a manner that avoids regulatory oversight. Hedge fund managers may view certain regulatory mandates and compliance issues as constraints on their unfettered ability to use their investment acumen.

Market Exposure and Security Specific Factors

If an investor buys a security, such as a share in General Motors, the investor's return will depend on factors unique to GM and to the auto industry, and also on factors influencing the market as a whole (inflation, tax policy, unemployment, etc.). Some investors seek to reduce market related risk, so that their returns will depend primarily on the accuracy of their projections of GM's prospects. Specifically, hedge fund theory suggests that investors can decompose risk and return into market and security specific factors. Market risk is measured by a statistic known as beta. A portfolio with a beta of 1.0 has the same risk as the market; a portfolio with a beta of 0.5 has just half the risk of the market. Security specific factors are measured by a statistic known as alpha. Alpha describes return from the security after all market risk factors have been eliminated.

Long Shorts

Capital market theory holds that a portfolio with no market exposure (*i.e.*, a beta equal to 0.0) will earn the risk free U.S. Treasury rate, unless superior stock selection generates profits (*i.e.*, the average stock in the portfolio has a positive alpha). Hedge fund managers conduct a quantitative evaluation of securities to identify stocks that are relatively over or under valued. Undervalued stocks are candidates for purchase (long positions); overvalued stocks are "sold short." This means that the manager submits a sell order and receives cash (which, to the extent permitted by margin regulations, is reinvested back into the undervalued

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¹ Suskind, R., "On Dangerous Ground," *Smart Money*

(September, 2001), pp. 116 – 124.

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part of the portfolio) despite the fact that he or she does not own the stock! The manager seeks excess returns from two primary sources:

1. Greater than market appreciation from the portfolio's long positions, and
2. The return differential between the portfolio's long and short positions.

By managing the ratio of the portfolio's long and short positions, the manager controls exposure to the market. If long and short positions are balanced, the portfolio is "market neutral," and beta is approximately zero. Depending on the hedge fund's approach and the manager's view of the market's prospects, a hedge fund portfolio may be primarily long, primarily short, or market neutral (sometimes referred to as "long/short").

Short Shorts

As you can imagine, delivering stocks that you do not own can be problematic. In a short sale, you must borrow the stocks (from a large institution, bank, or brokerage house) so that you can deliver them to the buyer. Borrowing stocks will cost you something (no one lets you use their assets for free); but, since you sold overvalued securities, you anticipate a price decline so that you can pay back your stock loan by buying them cheaply at a future date. The strategy is, in essence, borrow a stock to sell high and repay in the future by buying low. Market risk is neutralized by further quantitative techniques that attempt to match the beta of the short portfolio with the beta of the owned or long portfolio. If the betas match and if you are on both sides of the market (*i.e.*, long and short), you are immunized against market risk. Theoretically, the investor has hedged against market risk. However, risk still exists, since favorable returns will not materialize if the fund manager cannot identify under or over valued securities or if the manager cannot accurately predict future stock betas.

Hedges Can Get Trimmed

The traditional hedge fund positions itself as "risk neutral" or "market neutral," and touts its usefulness as a portfolio diversification tool because its zero market risk gives it a low correlation with other assets. Note, however, that long positions have maximum theoretical loss potential of 100%. If you own a stock that declines in price, you cannot sustain investment losses greater than your current equity in the stock. If, however, you sell borrowed stock, your loss exposure is infinite! At some future date you will have to buy the stock to repay the lender. Although you hope to buy it back for less than your short sale price, the stock price may rise, not fall. Although a stock's price cannot fall below \$0, there is no limit on how high its price can rise. Given a sufficiently long investment period, no

matter how improbable it may seem in any single period, the chance of a catastrophic and unexpected loss from a short-sale strategy approaches certainty.

Different Types of Hedges

Although, originally, hedge funds were used to hedge the systematic risk of equity markets (market-neutral funds), they now encompass a wide variety of investment styles and objectives including investments in private equity, leveraged buyouts, distressed securities, third-world debt and event-driven arbitrage (merger and acquisition funds). In fact, many of today's hedge funds are pure long equity positions in alternative assets. Some hedge funds exhibit behaviors similar to sector funds because they construct portfolios with especially strong sensitivity to pre-selected economic factors. Thus hedge funds may add value to an existing portfolio by filling in asset allocation gaps. For example, a venture capital hedge fund can bridge a theoretical gap between private equity and publicly traded securities.

Hedge Indices

Many institutional investors have been slow to incorporate hedge funds into their portfolios because they lack objective standards for evaluating manager performance. Of course, any broadly perceived sales impediment in the financial services marketplace will be addressed by an entity with an interest in making the sale. The CSFB/Tremont Hedge Fund Index (published by Credit Suisse First Boston Tremont Index LLC, a joint venture between subsidiaries of Credit Suisse First Boston and Oppenheimer Acquisitions Corp) purports to be an asset-weighted index for evaluating the performance of hedge fund managers, and for use in comparing the performance of hedge funds with other widely followed global indices. The Index draws from the TASS Management Limited database of hedge funds, which maintains data on over 2600 funds. Funds in the index must have a minimum of \$10 million in assets, audited results, and must report performance at least monthly.

One of the interesting characteristics of CSFB/Tremont Hedge Fund Index is that, unlike traditional stock indices, the index is comprised of composite returns from a cross-section of hedge fund managers. Furthermore, CSFB/Tremont regularly changes the composition of the index, adding and removing managers. As of October 1, 2001, the index included 372 of the 2600 hedge funds in the TASS database. For the fourth quarter, the index added eight new managers, and removed eleven managers from the composite.

The CSFB/Tremont Hedge Fund Index further decomposes hedge funds into nine sub-indices (broad manager strategies). Performance of the index and the nine sub-indices is reported at www.hedgeindex.com.

Index reporting is also available at www.hedge-world.com, the web site of HedgeWorld, a hedge fund information company based in Bermuda. Returns reported for the index and the nine sub-indices are pre-

sented in the table, below. A brief review of recent returns illustrates why hedge funds are becoming increasingly popular, given the losses incurred in most traditional equity markets.

Index	October, 2001	2001 through October	Trailing 12 Months	Average Annual Return since 1/94	Standard Deviation of Return
CSFB/Tremont Hedge Fund Index	0.44%	2.63%	3.73%	11.64%	9.41%
Convertible Arbitrage	1.11%	13.41%	13.37%	11.12%	4.85%
Dedicated Short Bias	-4.97%	5.15%	20.64%	-0.10%	18.70%
Emerging Markets	2.19%	-2.87%	-4.23%	3.59%	19.52%
Equity Market Neutral	0.72%	8.51%	10.20%	11.67%	3.30%
Event Driven	1.35%	9.39%	9.01%	11.83%	6.32%
Fixed Income Arbitrage	1.55%	8.09%	9.20%	6.94%	4.14%
Global Macro	1.18%	15.95%	26.22%	14.04%	13.51%
Long/Short Equity	-0.80%	-5.87%	-6.35%	13.33%	12.12%
Managed Futures	3.40%	9.17%	25.49%	5.93%	11.24%

Leveraged Hedges

Many of today's hedge funds use leverage to enhance returns. For sector specific hedge funds with long only portfolios, leverage doesn't neutralize market risk, it magnifies it. Leveraged investment positions add a new and complex dimension to hedge funds. Like mutual funds, large hedge funds may face liquidity risk due to the amount of assets under their control. For example, if Fidelity Magellan Fund wanted to sell its entire position in Microsoft, merely offering for sale the vast number of Microsoft shares that Magellan owns would drive down Microsoft's stock price. Consequently, Magellan's proceeds from the sale of Microsoft stock would be significantly less than the pre-sale net asset value at which they carry Microsoft on their books. Ordinarily, investment leverage does not represent a significant risk for portfolios of highly liquid, low risk investments. However, if hedge funds own relatively illiquid, non-traditional assets, leveraging may prove disastrous.

Highly leveraged hedge funds can experience a phenomenon known as a "market liquidity crisis." This is a downward price spiral caused when market liquidity evaporates (a stock cannot be sold because there is no buyer willing to take the other side of the trade). Richard Bookstaber conducts a comprehensive examination of the nature and scope of a liquidity crisis sparked by highly leveraged hedge fund positions in a recent study entitled "Understanding and Monitoring the Liquidity Crisis Cycle."² Bookstaber describes a three stage cycle:

- 1) A triggering event
- 2) A liquidation event to satisfy creditors' margin requirements; and,
- 3) A market-impact event that serves as a follow on triggering event.

Liquidity Driven Death Spirals

The triggering event may seem rather benign. For example, if a portfolio's market price declines by just 1%, margin requirements for a fund with 10:1 leverage will require that the fund liquidate 10% of its capital. If, however, asset sales cause the market price to decline by an additional 1%, the secondary decline triggers a sale of an additional 10% of the fund's remaining capital. Assuming linearity, the new sale may cause asset prices to drop an additional 0.90%. Depending on the virulence of the asset price drops, fund liquidations will cause the fund to either:

- 1) Converge to a new, but lower, equilibrium price; or,
- 2) Generate "an ever-widening downward spiral [that] cannot satisfy creditors' or investors' demands no matter how aggressively [the fund] sells."³

In a market liquidity crisis, traditional sources of funds for the buy side (i.e. market makers, specialists and exchange traders) will not only disappear, but will cease being liquidity suppliers to become liquidity demanders. Market participants with available cash will not want to be the first in line to buy assets caught in an uncontrollable downward price spiral. Often, a price decline attributable to new negative information

² Bookstaber, R., "Understanding and Monitoring the Liquidity Crisis Cycle," *Financial Analysts Journal* (September/October,

2000), pp. 17 – 22.

³ *Ibid*, p. 18.

attracts bargain-hunting buyers; however, in a liquidity crisis, price declines scare away buyers, and may force the leveraged asset owners to sell, even at reduced prices.

Bookstaber points out that the \$3.6 billion bailout of Long-Term Capital Management is a good example of the virulence of a market liquidity crisis. The hedge fund intended to capture pricing differentials in bond spreads that typically ranged between 0.1% and 0.2% over long planning horizons. Nevertheless, the fund advertised a realized historical return in excess of 20% per year. Simple arithmetic suggests that the only way to generate a 20% return by exploiting a 0.2% mispricing is to leverage the fund 100:1. Given this degree of leverage, and the substantial assets controlled by the fund, adverse price movements triggered a series of liquidation events that threatened the international banking system.

Organizational Structure

From a legal and regulatory perspective, hedge funds are investment pools usually organized as limited partnerships (or overseas corporations) with the investment sponsor acting as general partner and the investors as limited partners. The U.S. partnerships or the offshore corporations are, for the most part, unregulated by the Securities and Exchange Commission (SEC); and, therefore, operate outside the range of federal supervision. Although there are several data vendors that compile historical information including track records of hedge funds, providing information to such vendors is strictly voluntary. Likewise, there is no guarantee that returns are calculated under comparable methodologies from fund to fund: "For the most part, you're relying on the fund itself to tell you what it's worth...there are almost no standards for reporting performance, and most managers won't even disclose details of their investing strategy."⁴

Review of Hedge Fund Characteristics

Based on the discussion so far, we can characterize hedge funds as generally exhibiting the following characteristics. A hedge fund:

- 1) Is a largely unregulated limited partnership or offshore corporation;
- 2) May or may not employ substantial investment leverage in order to enhance returns; and
- 3) Adopts various investment strategies that attempt to hedge against many traditional portfolio risks, ranging from true market-hedging (market neutral) long/short funds, to pure sector funds with long

positions in alternative assets that exhibit low or negative correlations with more traditional investments.

Additionally, hedge funds are characterized by a unique fee structure. Typically, fund expenses include a 1% asset management fee and a profits incentive fee that pays the manager 20% of fund profits in excess of some target threshold.

Who's Using Hedge Funds?

Zask Survey

An excellent general survey of hedge funds is found in the Winter 2000 edition of *The Journal of Alternative Investments*.⁵ The author, Ezra Zask, points out that hedge funds are one of the most rapidly growing parts of the investment industry, with approximately 6,100 funds operating as of the end of 2000. About 2000 of these funds were launched in 1999. Interestingly, several large pension funds, including the California Public Employees Retirement System Fund (CalPERS) have or plan to invest substantial sums in hedge funds. According to Zask, in order to assure a prudent standard of asset management, the pension or endowment must have sufficient resources and expertise to overcome three obstacles:

- 1) The periodic dramatic losses and outright fraud that stem from the lack of transparency and regulation of the hedge fund industry;
- 2) The extreme fragmentation of alternative investments firms, which makes gathering information difficult and costly; and,
- 3) The lack of widely accepted performance and style benchmarks to help impose consistency.

These obstacles may be particularly difficult for retirement plan sponsors and other investment fiduciaries, given their responsibilities to participants and beneficiaries. To overcome these obstacles, several brokerage houses (e.g., Morgan Stanley and Goldman Sachs) now offer hedge fund risk profiles and investment position analysis to institutional clients. Institutional clients may also use risk evaluation systems marketed by Bear Stearns and by Standard & Poors (in alliance with Ernst & Young). These systems test hedge fund performance over various future economic scenarios. These resources, however, are available only to very large institutional clients.

CalPERS Perspective

Mark Anson, senior investment officer at CalPERS, details the CalPERS perspective on hedge fund investing in an article published in the Summer 2001 edition of *The Journal of Investing*.⁶ Anson lists

⁴ Suskind, *supra*. p. 122.

⁵ Zask, Ezra, "Hedge Funds: An Industry Overview," *The Journal of Alternative Investments* (Winter, 2000), pp. 33-42.

⁶ Anson, Mark, "An Institutional View of the Hedge Fund World," *The Journal of Investing* (Summer, 2001), pp. 83-89.

several reasons why hedge funds are attractive:

- 1) During the period 1989 through 1997, hedge funds generated superior risk-adjusted returns;
- 2) The low correlation between hedge funds and traditional investments make them good portfolio diversifiers;
- 3) Inclusion of hedge funds in optimized portfolios reduces overall volatility;
- 4) The non-traditional assets of hedge funds expand the investment opportunity set for portfolio managers.

Against these positives, Anson considers several negatives:

- 1) Few comprehensive performance result studies encompass the period past 1998 and, therefore, the hedge fund industry's track record may simply be an artifact of the limited sample period under evaluation;
- 2) The stability of the hedge fund industry is questionable given the closure or demise of several large funds following the Asian financial crisis and given the increase in fund "death rates" since 1998;
- 3) Performance studies that only consider the funds that survive (and remain in the data base) are highly suspect; and,
- 4) There is no conclusive evidence suggesting that hedge fund managers can consistently provide superior performance results.

The fourth item is especially interesting in light of the ability of hedge funds to attract top managers. Indeed, bank trust companies and mutual funds may start hedge funds to prevent competing firms from stealing their top managers. Star managers like hedge funds because the funds' unique fee structure offers enticing financial incentives that can dramatically increase their personal compensation.

Anson enumerates three potential ways that institutional investors could use hedge funds:

- 1) Use hedge funds to build "completion portfolios." A completion portfolio includes investment positions that complement or complete an existing portfolio. Hedge funds are ideal for this task, given their emphasis on non-traditional assets.
- 2) Use groups of hedge funds oriented towards specific factors or sectors to create a diversified intra-asset class position (thus reducing the risk of investing with a single manager). Although some managers may underperform, the overall group of top managers is expected to generate above average returns.
- 3) Enter into joint ventures with top managers, and share some of the fee revenue from the fund. For example, a pension sponsor might agree to capitalize

and promote a hedge fund for either a share of profits or for access to manager expertise on a reduced fee basis.

The most difficult hurdle for investment fiduciaries, however, is the opaque and proprietary nature of hedge fund investment strategies. Fund managers often provide only limited and vague statements regarding investment strategy and holdings. Even if the managers are more explicit, they can and do change strategies without disclosure. This makes it particularly difficult to recommend hedge funds to investment committees who are charged with the duty to determine the prudence of including investments within the retirement plan portfolio, and who must monitor investments to evaluate their continued suitability. As Anson points out, in the world of fiduciary investing, "the articulation and documentation of the process is just as important as the investment results generated by the process....Maximizing manager skill may become secondary to risk control and stability of returns." Multibillion-dollar plans may have sufficient leverage within the investment community to force hedge fund managers to provide transparency and investment consistency. Alternatively, the prospect of joint ventures may provide special insights that will enable fiduciary committees to document the integrity of their decision making process.

Pitfalls for Smaller Portfolios

Where, however, does this leave fiduciaries who administer smaller portfolios? Hedge funds are widely pitched to this target market by banks, insurance companies, brokerage houses and mutual funds. Fiduciaries must overcome formidable obstacles to demonstrate an adequate level of care, skill and caution with respect to their stewardship. Furthermore, the complex marketing relationships between hedge fund managers, investment product vendors, and sales organizations are rife with potential conflicts of interest. Banks and insurance companies, in particular, face fierce competition (from independent trust companies, mutual funds, and other competitors) to hold market share for managed assets. A recent presentation by David Lamere, President of Mellon Bank's Private Asset Management division, noted that the banking industry's market share has been eroding over the last decade.⁷ Part of this erosion is undoubtedly due to aggressive marketing on the part of competing organizations. However, the generally mediocre record of the banking industry's commingled account and proprietary mutual fund asset management activities force

⁷ Lamere, David, F., "The Future of Private Client Management," *Investment Counseling for Private Clients III*, Association

for Investment Management and Research (Virginia, 2001), pp. 94-104.

banks to compete by selling the prestige of old-line, blue chip money management as well as the sizzle of high-tech investment programs available only to accredited investors through special partnerships or offshore corporations—*i.e.*, hedge funds. As a preface to a discussion regarding the importance of building an aggressive sales force, Lamere states: “A firm should continue to offer new products, such as private equity and hedge fund investing, to its clients. The firm does not need to manufacture these capabilities but must have access to them. Without such access, competing firms will gladly provide them, gaining a competitive advantage.” Mellon Bank is just one of several large private money management institutions that have moved towards indexed investment strategies for the core portfolio (abandoning claims that their managers can consistently beat the market) and, to take up the revenue slack, directs attention to satellite asset positions that are implemented through high-fee products like hedge funds.

Rush to Create Additional Hedge Funds Traditional Asset Managers

As some asset managers concede their inability to add value in the traditional stock and bond markets, they have become more active in the alternative investment strategy markets. Zask points out that the “boomer/sooner” rush on the retail level began with the 1997 National Securities Market Improvement Act. Seeking to decrease the amount of intrusive government regulation, the Act:

- 1) Raised the number of investors that could be placed in each hedge fund program from 99 to 499, and
- 2) Significantly lowered the amount of individual net worth required to qualify as an “accredited investor.”

Not surprisingly, retail vendors attempted to capture the pool of potential new customers (not to mention high fees) by creating hundreds of new hedge fund programs. Advertised track records, however, may be suspect. Bing Lang, assistant professor of finance at Case Western Reserve University, estimates that the yearly track record of hedge funds over the period 1990 through mid 1999 has a 2.43% survivorship bias.⁸ This means that if the track record of hedge funds that went out of business during this period were added to the track record of those that survived, the industry’s average performance record would be adjusted downwards (14.2% - 2.43% = adjusted track record of 11.77%). Indeed, hedge funds exhibit a high death

rate. Over the period 1994 to 1999, the average annual attrition rate equaled 8.5%. Following the Long Term Capital Management crisis, 13% of hedge funds ceased to operate in 1998.

SEC Concerns

On July 17, 2001, Paul Roye, Director of the Division of Investment Management for the U.S. Securities & Exchange Commission, gave the keynote address to the Public Funds Symposium on the subject of “Risks and Opportunities for Public Pension Plans.”⁹ Roye characterizes hedge funds as “the new craze in the pension plan world.” Roye opines that the hedge fund universe shares several common denominators:

- 1) The managers are paid high performance fees;
- 2) The managers can sell borrowed stock in expectation that the price will fall; and,
- 3) The funds are relatively unregulated, which allows the managers to use derivatives or debt to gear up returns and to be more secretive.

The culture of secrecy has led to a miniboom in hedge fund fraud. As an example, Roye discusses a case brought under the antifraud provisions of federal securities law against the manager of several funds that were not subject to registration or reporting requirements. Among the charges against the defendant, the SEC alleges that the manager engaged in illegal “portfolio pumping.” Portfolio pumping is a systematic strategy of selling short securities of thinly traded companies while, simultaneously launching a PR campaign of false, misleading or unproven information suggesting the stock of the company is overvalued.

Roye remarks that the SEC is alarmed, not only because of the fraudulent activities of individual managers, but also because of imbedded conflicts within the structure of the financial products and services industry that creates and distributes hedge funds. First, Roye points to conflicts within the consulting industry: “consultants hired to identify hedge fund investments are sometimes involved on some level in servicing the hedge funds they promote.” Next, Roye turns his attention to brokerage houses: “some firms offer and sell interests in hedge funds that are substantial brokerage customers of their firms.” Finally, Roye suggests that the SEC is particularly concerned with conflicts of interest within the mutual fund and fund advisor industries:

We also have observed that more and more mutual fund managers and investment advisors are sponsoring and

⁸ Liang, Bing, “Hedge Fund Performance: 1990-1999,” *Financial Analysts Journal* (January/February, 2001), pp. 11–18.

⁹ www.sec.gov/news/speech/spch507.htm.

advising hedge funds and other alternative investments. Firms are doing this for a variety of reasons including the higher fees charged by hedge funds, to meet the demands of wealthy and institutional investors, and to retain star portfolio managers.... The conflicts in these arrangements result from the differing fee structures of hedge funds and mutual funds and traditional private accounts...greater profits can be earned by the adviser from the performance based compensation of a hedge fund.... Conflicts can also arise when hedge funds effect short sales of securities, if such securities are held long by mutual funds or private accounts managed by the same advisory firm. Such trades could adversely affect long positions held by the other accounts. Or mutual fund or private account trades could be used to benefit a hedge fund, when the long positions of these accounts are sold after the hedge fund sells the same security short.

Roye cautions that, in today's regulatory environment, "it is harder for hedge fund investors to know how their funds are being managed, much less exert control over the manager."

Registered Hedge Funds

Perhaps in response to criticisms of the secretive nature of many current hedge fund strategies, several investment firms have been marketing registered hedge funds. These funds are hybrids between mutual funds and traditional unregistered hedge funds. Like a mutual fund, these hedge funds register with the SEC in conformance with the terms of the Investment Company Act of 1940, and hence are subject to a degree of regulatory oversight. The funds can be sold to an unlimited number of investors, and typically have relatively low investment minimums, starting at around \$25,000. However, these funds also share certain characteristics with their unregistered brethren. For example, the funds do not post daily net asset values (NAVs), are not listed on exchanges, are generally only available to investors who meet a net worth minimum (typically \$1.5 million) and typically permit redemption of partnership shares just twice each year.

UBS Paine Webber and CIBC Oppenheimer are the leading distributors of registered hedge funds, although Van Wagoner Capital Management, Global Asset Management, J.P Morgan Chase & Co., Lazard

Asset Management and U.S. Trust also offer registered hedge fund products. UBS Paine Webber currently offers more than a dozen registered hedge funds, and is reportedly receiving investments of more than \$150 million each month into the funds. Even Charles Schwab & Co. is reported to be working with a hedge fund industry consulting firm to determine how best to offer registered hedge funds, and expects to be offering "three or four" registered hedge fund products through its advisory channel within a year. At a recent conference, Jana Thompson, Schwab's vice president in charge of specialized products stated: "This will be part of our whole alternative-investment offering. The idea is to be able to provide more choice and access."

However, other industry sources believe that registered hedge funds still face significant hurdles, and are unlikely to become as commonplace as unregistered funds. For example, James Hedges, president of LJH Global Investments LLC, a hedge fund consulting firm comments: "There are fewer hedge fund managers willing to work under those constraints, so it limits the number of available styles, and leads to more concentrated portfolios. At the end of the day, the '40 Act is about tying the hands of a money manager, and hedge fund managers are all about being able to trade wherever they want."

Recent Developments: Hedge Funds and Life Insurance

Following the breathtaking declines in the technology and communications sectors, as well as the precipitous drop in global stock markets following the events of September 11th, hedge fund marketing may kick into an even yet higher gear. Recently, the life insurance industry has launched a campaign to sell "private label" variable life policies funded with "star managers" utilizing hedge fund vehicles. Contemporaneously, merger and acquisition activities in financial services have exploded. Today, many traditionally independent mutual funds are owned by insurance companies (Massachusetts Mutual owns Oppenheimer Funds, Northwestern Mutual owns Frank Russell Funds, etc.). Not surprisingly, hedge funds now appear as a funding vehicle for private placement variable life insurance contracts. The insurance company underwrites the policy, while mutual fund managers run the hedge fund programs.

Some insurance carriers now market these programs with minimum purchase requirements (premiums) as low as \$75,000. A typical sales presentation informs the prospective insurance buyer that he or she can purchase a fund of hedge funds in order to build a well-diversified portfolio of stocks, bonds, and alternative assets. Each fund component is managed by a savvy investment pro unconstrained by regulations

governing the mutual fund industry. The implied message is that freeing the hedge fund manager from unwelcome and restrictive rules will enable the manager to generate superior future investment returns. The insurance company/mutual fund, or an “independent due-diligence consultant,” screens hedge funds to determine appropriateness for inclusion in the fund-of-funds and their continued suitability in future years. In essence, the result is a hedge fund “wrap-fee” program that is, in turn, wrapped in an insurance contract.

The sales presentation typically compares recent investment performance of a fund of hedge funds to performance of a single asset class (usually the S&P 500). The apples-to-oranges comparison generally shows that the recommended investment generates high returns, with less volatility than the S&P 500. This implies that the investor has an opportunity to purchase an investment that defies basic capital market theory, because it generates market returns at lower than market risk. [A more realistic comparison would be between the net of fees performance of the fund-of-hedge funds, and a diversified portfolio of asset class index funds, adjusted statistically to equalize the risk of each portfolio. However, as we shall shortly discover, even this adjustment is inadequate to capture the risk element in many hedge funds.]

By the time the dust has settled, the life insurance buyer may be paying a truly extraordinary layer of costs. The insurance company owns the mutual fund company that provides the management talent for the hedge fund program. The mutual fund creates separate hedge fund limited partnerships and markets them to upscale private investors and institutions. These funds carry costs including basic fees of 1% to 2% of assets, and performance fees of 20% to 50% of profits (50% performance

fees often include “high water mark” provisions that stipulate that profits must exceed some threshold, and must be netted against cumulative losses). The mutual fund company then determines which hedge fund managers should be placed in the fund-of-funds pool, for which service they charge a due-diligence fee. The fund-of-funds program also carries its own costs. Additional income can be generated through custodial fees and other soft-dollar compensation arrangements. Once these multi-dimensional cost structures are wrapped within an insurance contract, not even Sherlock Holmes could figure out the true cost. Needless to say, trustees of irrevocable insurance trusts should view sales presentations for this type of product with great skepticism given the fiduciary duty to avoid unreasonable or unwarranted expenses. As the head of Yale University’s International Center for Finance, Professor W. Goetzmann, reminds us, hedge funds are “a giant, unregulated ‘black hole’” where the “potential for things to go awry—in terms of operational mishaps, rogue traders or simply strategies that make no sense and collapse—is growing as the rush to hedge funds picks up.”

Understanding Hedge Fund Investment Risk Capital Decimation Partners

In a recent article, Andrew Lo of MIT addresses the formidable tasks required to assess hedge fund risk.¹⁰ Lo demonstrates the difficulties of performance evaluation by creating a fictitious fund called “Capital Decimation Partners” (CDP). Lo launches his fictitious fund in January 1992 and pursues a specific investment strategy through the end of 1999. During the period under evaluation, CDP’s performance track record compares to that of the S&P 500 stock index as follows:

	CDP Hedge Fund	S&P 500
Total Return	2,721%	367%
Average Monthly Return	3.7%	1.4%
Risk (as measured by monthly standard deviation)	5.8	3.6
Number of months with negative returns	6 out of 96	36 out of 96
Reward to Risk (Sharpe) Ratio	1.94	0.98

By all traditional measures, the hedge fund’s performance dominates the S&P 500’s performance—spectacular returns are achieved at only a modest level of risk. What, Lo asks, is the fund’s secret?

In this case, the fund uses a leveraged investment

strategy. Operating within the Chicago Board of Options Exchange’s margin requirements, it sells (shorts) out-of-the-money S&P 500 put option contracts. This is a purely mechanical strategy that implies no investment manager skill whatsoever.

¹⁰ Lo, Andrew W., “Risk Management for Hedge Funds: Introduction and Overview,” *Financial Analysts Journal* (November/

December, 2001), pp. 16-33.

However, by implementing such a strategy, the fund's capital is exposed to dynamic risk exposures that cannot be captured by traditional performance risk measures (*i.e.*, standard deviation or Sharpe ratios). Where is the risk? The risk lies in what statisticians call "tail events." These events rarely occur—*i.e.*, are found only in the extreme tails of return distributions. If a distribution is a normal or 'bell curve' shape, these events are found only in the far left tail and, therefore, reflect only a small probability of occurrence in any single time period. Shorting out-of-the-money puts, however, is a strategy that sends investment risk off the meter. Returns are great until the rare event occurs; at that point, the downside losses are so virulent that bankruptcy is all but assured. Hedge fund managers wishing to create a bogus appearance of skill may be tempted to play this type of Russian roulette in order to fabricate a compelling track record. Despite the fact that no investor would hire (or pay hedge-fund fees to) a manager to implement this type of mechanistic trading rule, the lack of hedge fund transparency makes such gamesmanship difficult to detect. Parenthetically, prior to the market crash of October 1987, a not uncommon piece of advice given to retirees by their stock brokers was to sell puts against the S&P. This was sold as a low-risk, cash-enhancement strategy. Following the crash, this "low-risk" strategy largely disappeared until it resurfaced in the hedge fund world.

Phase Locking and Other Nonlinearities

Lo argues that hedge fund characteristics make them uniquely "stealthy" with respect to traditional measures of investment risk. Among the dynamic risk exposures of hedge funds, Lo mentions the fact that their return patterns are not bell-curved in shape; but, rather, often exhibit "fat tails." The investor, therefore, fights a temptation to become bedazzled by a track record compiled over a limited number of years, and must dig deeply into the investment strategies of the manager to determine the types and magnitudes of risks which have not yet manifested themselves during the period under evaluation. In addition to "tail risks,"

Lo notes two other important risks:

1. Hedge fund sponsors often claim a low or, perhaps, negative correlation with other major portfolio asset classes. However, the low correlation statistics may merely be artifacts of the sample period during which the comparative return series are analyzed. During periods of market crisis (for example, the 1998 Asian Financial Flu), asset correlations often "phase lock." This means that correlations quickly go from zero to perfect unity. Assets classes with disparate return patterns can suddenly find that their returns are synchronized.
2. Hedge funds are often sold because their portfolio betas suggest that they are "market neutral" (*i.e.*, that they have eliminated systematic or market risk). Lo suggests that investors must consider beta asymmetries that can produce nonlinear (and unexpected) investment results. An example of such an asymmetry is, for example, found in the index of emerging markets hedge funds, which has a beta in up markets of 0.16 (close to market neutral); but a beta in down markets of 1.49 (approximately 50% more volatile than the S&P 500). This is hardly market neutrality! Asymmetries in factor exposures may quickly turn compelling performance track records into investment disasters.

Conclusions

All fiduciaries should be particularly cautious of hedge fund marketing claims not only because of the higher standards of care, skill and caution that their position as trustee or plan sponsor requires, but also in light of the cautions raised by the SEC and various independent, third-party studies. Sometimes, investors use large losses to justify leaping into programs that offer the potential for quick recovery through the use of leverage, short selling, and other "high-tech" strategies. Although hedge funds may be appropriate complements to the portfolios of large institutional investors that command significant resources and leverage within the financial services community (*i.e.*, investors such as the Harvard and Yale endowments or CalPERS), hedge funds may be unsuitable for more modest pensions, trusts and endowments.