HAMMOND ASSOCIATES

Research Note

Hedge Funds Revisited

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EXECUTIVE SUMMARY

Hedge funds continue to attract interest from institutional investors seeking absolute returns. The decision to invest in hedge funds is a difficult one for many institutions, as hedge funds represent a complex subject matter. The structure, terms, and characteristics of hedge funds differ greatly from those of traditional investment management. Investment vehicles are typically limited partnerships or offshore investment companies, and managers are generally subject to less regulatory oversight than their traditional counterparts. Fees are typically 1% of assets plus 20% of profits, and investors are often locked-up for the initial year of investment, with limited exits thereafter.

Hedge funds expose an investor to new and additional risks. Some of these risks are systematic, such as equity, credit, and interest rate sensitivity. Others, such as blow-up risk, are generally unique to hedge funds.[1] A fund of hedge funds can be used to diversify these risks and conduct the resource-intensive tasks of manager sourcing, due diligence, and risk monitoring. Naturally, these services carry an additional layer of fees.

Some hedge fund strategies provide attractive returns and/or worthwhile diversification benefits, which are independent of the equity markets and the manager's stock-picking skills. These are event driven and most relative value strategies. While these strategies appear to offer a degree of systematic return for risk, the risks in these strategies are different than traditional market beta. As such, exposing a portfolio to these different risks can provide diversification benefits.

For example, merger arbitrage exposes an investor to deal risk, or the risk of deal failure. The returns of many relative value strategies are derived, in part, from providing liquidity to the capital markets.[2] This liquidity premium represents systematic return potential, which again differs from that resulting from market risk. Of course, skillful active management is a requisite for the successful extraction of any such systematic return without undue risk. In addition, the securities used to implement many event driven and relative value strategies are often extremely complex. Complexity represents an area well-suited for active management success, although complex securities often carry the baggage of esoteric hazards.

Long/short strategies, particularly market neutral long/short strategies, also have some appeal relative to traditional active management. It stands to reason that the economic rewards of successfully managing a hedge fund attract the most talented stock pickers.[3] A skillful long/short manager has the potential to add value by buying the most attractive stocks and shorting the least attractive stocks. Perhaps more importantly, because these managers are not exposed to the career risk associated with straying outside the style box imposed by consultants and investors in the traditional, long-only, world, they are free to exploit security mispricings wherever they may be identified (large, small, growth, or value).

Additionally, long/short managers offer certain advantages over other hedge fund managers. It is a relatively easy strategy to understand, and leverage is generally limited. And, unlike arbitrage strategies, most long/short managers will not be liquidity constrained—there are plenty of stocks to buy or sell.

However, the public markets are renowned for their efficiency, and adding value by selecting stocks is a particular daunting proposition. In the long/short arena, we are inclined toward specialty managers who may have

[1] In light of Enron, WorldCom, and numerous internet mutual funds, hedge funds are clearly not the only investment that "blows up."

[2] In theory, event driven strategies also provide liquidity to the market. Merger arbitrageurs purchase take-over targets from sellers that do not want exposure to deal risk, while distressed managers are often providing an exit to market participants that are selling for non-economic reasons.

[3] While we have no doubt that many of the most talented investment managers have been, and will likely continue to be, drawn to the economic rewards of successfully managing a hedge fund, we do not lose sight of the fact that the desire for significant personal wealth is not limited to only those that possess superior investment acumen.

a definable information edge. This advantage could be, for example, technology funds with a qualified technical staff or healthcare funds with entrepreneurially-inclined medical professionals.

In this Research Note, we attempt to de-mystify the asset class. We provide background information on hedge funds and discuss common terms of investment. We examine some of the more prevalent strategies and comment on their future prospects. In addition, we will explore other hedge fund issues, such as leverage, transparency, benchmarking, and fraud.

Hedge funds offer the potential for diversification benefits and enhanced portfolio returns, as their performance is driven by manager skill rather than the direction of the capital markets. However, because the degree of skill varies among managers, the bottom line experience will differ greatly for each hedge fund investor. Unlike traditional asset classes, an investor cannot "buy" hedge funds and enjoy the systematic rewards of the asset class. Rather, a successful hedge fund experience is contingent upon investing with extraordinary hedge fund managers.

BACKGROUND

The term "hedge funds" refers to a broad group of investment strategies. The general thesis for investing in these strategies is that their returns are dependent upon exploiting pricing inefficiencies in public markets. As such, the returns should rely upon manager skill, rather than the performance of financial markets at large. Therefore, managers might be able to provide strong absolute returns, regardless of how the market behaves. For this reason, hedge funds are commonly referred to as "absolute return strategies." The prospect of absolute returns has become increasingly attractive as a result of the recent bear market. Many investors are looking to diversify away from traditional equity holdings, without sacrificing return. Hedge funds offer that hope.

Defining "hedge funds" is a difficult task, not the least of the problems being that no agreed-upon definition exists. Generally speaking, hedge funds are private investment partnerships, where the manager is empowered with significant investment flexibility to implement a strategy with the potential of generating absolute returns, utilizing publicly-traded securities. Increased investment flexibility (e.g., selling short), allows a manager to hedge systematic risk exposures (e.g., equity market risk), and isolate a source of return consistent with their skill set (e.g., security selection). However, many hedge funds are not hedged, some hedge funds invest outside the publicly-traded securities universe, and not all hedge fund managers possess a skill set worthy of the lofty fees that they charge.

Given this complex backdrop, it is little wonder that hedge funds are often viewed as mysterious and excessively risky. The popular press does little to dispel these perceptions. References to hedge funds are often followed by a parenthetical—such as; "Hedge funds are little-regulated private investment partnerships for large investors. They wager huge sums in global currency, bond, and stock markets in search of quick profits."[4]

Another challenge in understanding hedge funds is that the term is a catch-all classification for a number of unique trading strategies. These strategies are heterogeneous, but are generally bound by a common set of characteristics that differ from traditional active management. Some of these characteristics include: (1) returns are more dependent on the skill of the manager than the direction of financial markets; (2) managers may invest in securities or engage in strategies that are usually "off-limits" to traditional money managers (e.g., distressed debt, derivatives, selling short, using leverage); (3) investment vehicles are typically limited partnerships; (4) managers often have a substantial personal investment in the fund; (5) multiple strategies may be employed simultaneously; and (6) perhaps most significant, they charge high fees, including a percentage of returns.

While largely considered a new, or young, "asset class," hedge funds and, more accurately, the underlying investment strategies, have been around for some time. Alfred W. Jones is credited with forming the first hedge fund, a long/short equity fund, in January 1949. Jones organized a private investment partnership and incorporated short selling and leverage to hedge market risk and focus on security selection. The fund included performance-based fee compensation, and Jones pioneered another oft-touted hedge fund characteristic—secrecy, as he operated (quite successfully) under the radar for seventeen years. Gus Levy is credited with inventing merger arbitrage in the 1940s, while investing in distressed securities has been around for as long as there have been overleveraged, sick companies. In his 1931 book, *Arbitrage in Securities*, Meyer H. Weinstein noted "with the advent of rights, warrants, and convertible securities that began during the 1860s railroad consolidation, arbitrage in equivalent securities was born."

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4 Ken Brown, Aaron Lucchetti, and Carrick Mollenkamo, "How Canary's Song Charmed Firms," The Wall Street Journal, September 4, 2003, C9.

STRUCTURE AND TERMS

Hedge funds are typically structured as private limited partnerships, with the manager acting as general partner and the investors as limited partners.[5] The partnership format is attractive for hedge fund managers because they have wider investing latitude, as they are subject to less oversight from government securities regulators than other investment formats (e.g., open-end mutual funds). The partnership format also allows for performance-based compensation, as the Investment Advisers Act of 1940 generally precludes such arrangements for mutual funds.[6] Managers of limited partnerships are also able to place restrictions on withdrawals, reducing the concern for redemptions that traditional money managers face. This allows managers the luxury of investing in less liquid securities.

Fees

The fee structures vary widely for hedge fund strategies. A typical fee structure is a 1% management fee, per annum, with an incentive fee, which is typically a 20% share of profits. The management fee is charged as a fixed percentage of assets. The incentive fee is typically collected annually, provided the manager earns a positive return for the year. Because of the incentive fee, many tout the alignment of investor and manager interests with the hedge fund structure—the manager is rewarded when investors profit. However, the alignment of interests is asymmetric. That is, the manager shares in profits, but not in losses. In other words, the manager receives upside participation and downside protection, which is a payout similar to that of a call option. However, unlike a call option, the manager pays no premium for the right to profits.

Hurdle Rate

Some partnerships have a "hurdle rate," which must be earned before the manager is eligible for the incentive fees. For example, a manager with a hurdle rate of 5% would only collect their incentive fee on that portion of the annual return that exceeds 5%. An appropriate hurdle rate has substantial appeal, ensuring that managers are rewarded for value added; however, their use is not widespread.

High-Water Mark

Most partnerships have a provision, known as a "high-water mark," which requires the general partner restore any cumulative losses before incentive fees may be collected. The high-water mark has obvious intuitive appeal—why should a manager be rewarded for recouping past losses? However, the implications of a high-water mark can be damaging.

Funds that are significantly below high-water often go out of business because managers have little incentive to keep them open. For instance, a manager that needs to earn 30% just to reach new high-water may find it financially rewarding to close the fund and start a new one, so that incentive fees are available on profits immediately. Even funds that remain open in an effort to reach new high-water are often faced with the loss of key personnel. These investment professionals are motivated to take their skills to other hedge funds, where they are more likely to receive the hefty bonuses to which they have become accustomed. Nevertheless, an "under-water" fund that chooses to close is a less frightening alternative than a fund that increases risk to imprudent levels in an effort to regain the previous high-water level.

Expenses

In addition to management and incentive fees, hedge funds, like mutual funds, charge expenses to the fund, to be borne pro-rata by its investors. Expenses generally include trading and back-office costs, such as accounting, auditing, legal, and administration. Organizational expenses are also typically expensed to the fund, amortized over the initial three years of the partnership.

Fee Impact

The high fees charged by hedge funds create a rather high performance hurdle. Table 1, below, shows the gross return necessary to obtain a net goal return based on a 1% management fee and a 20% incentive fee. For instance, a 10% net goal return requires 13.5% gross return. Said differently, a manager that posts a 13.5% gross return would receive fees totaling 3.5%.

Table 1: Required Gross Return Required to Reach Net Return Goal

Net Goal Return	*Required Gross Return*
5%	7.25%
10%	13.50%
15%	19.75%
20%	26.00%

Despite the significant cost of investing in hedge funds, skillful hedge fund managers earn their fees. Earning a

[5] As limited partners, investors are liable only for the investment amount. General partners, on the other hand, have unlimited liability.

[6] See Rule 205-3 of the Investment Advisers Act for exemptions to performance-based compensation prohibition.

20% share of profits requires the extraordinary—alpha, or excess return that is not attributable to market risk. To illustrate, consider two hypothetical managers—a traditional US large-cap manager and a market neutral hedge fund manager. Assume that both managers earn a net return of 10% over the course of a year during which the S&P 500 gained 9%. Assume further that the traditional active manager charged a fee of 1%, while the hedge fund manager collected a total fee of 3.5%, as calculated above. The traditional manager delivered 1% of alpha, assuming the risk of the portfolio equaled that of the market. The hedge fund manager, on the other hand, hypothetically contributed 7% of alpha.[7] In terms of alpha per fees, the hedge fund manager "outperformed" the traditional manager by a factor of two (7% alpha / 3.5% fees versus 1% alpha / 1% fees).

While the performance was "equal" over the course of the year, let's assume during the following year the S&P 500 falls 20%. Using our same set of assumptions, the long-only manager loses 19% and is applauded for strong relative performance. The hedge fund manager again posts a 10% gain, net of fees, and delivers on the promise of absolute returns.

The prospect of sharing profits, even at a significant clip, is palatable, as long as the manager is able to generate a reasonable amount of alpha. Paying incentive fees for market-driven returns (equity, credit, or interest rates) is inappropriate.

The roaring bull market of the late-nineties kept many institutional investors out of hedge funds. However, the painful equity bear market and the prospect of an impending bond bear market, has investors rushing into alternative asset classes. The irony is not lost on us that investors are seeking to increase portfolio profits by agreeing to share those profits with investment managers. An institution's profits are precious, particularly in today's capital markets environment, and an institution should fully understand the pros and cons of hedge fund investing before approving an allocation.

Lock-Up Periods and Redemptions

Many managers impose "lock-up" periods on hedge fund investors. This means that investors must commit to a minimum holding period. Depending on the trading strategy, one-year lock-up periods are not uncommon. Once the lock-up period has expired, investors may liquidate all or part of the investment at pre-specified intervals. Withdrawal intervals may be monthly, quarterly, or annually, based on either the investment anniversary date or the calendar year. Redemptions require a notice period. For instance, a manager might require 90-days prior written notice, in order to process a redemption request as of the next withdrawal date.

It is human nature for an investor to favor managers that offer greater liquidity. For instance, an investor may favor one distressed manager over another of presumed equal ability, because the first manager offers monthly liquidity, while the second only allows withdrawals annually. Such an approach may lead investors down a dangerous path. Should both managers encounter difficulties, other investors may redeem from the monthly liquidity fund, forcing the liquidation of holdings at unfavorable prices, further exacerbating losses. Greater liquidity is not always an appropriate distinguishing feature between managers of the same strategy.

Of greater concern is the appropriateness of the withdrawal frequency relative to the underlying portfolio. As an extreme example, a distressed securities manager that offers daily liquidity to investors has an asset/liability mismatch, as the assets (distressed bonds) have a significantly greater duration than the liabilities (partnership interests). Even if a manager only allowed withdrawals at calendar year-end, an asset/liability mismatch might still exist. Assuming the manager only requires 30-days written notice, the market impact of selling illiquid assets over 30 days may impair the fund's returns. Anniversary date liquidity may address such a concern, assuming the investor anniversary dates are equally distributed throughout the year. In such a scenario, not all investors are able to exit the fund at once.

Some hedge funds have a "gate" that limits the amount of withdrawals to a certain percentage of assets. For example, if investors representing 20% of a fund's capital request redemption, and the fund had a 10% gate, only 10% of the withdrawals would be honored on a pro-rata basis. Beyond the stated withdrawal frequency and gates, most hedge fund managers retain the right to suspend redemption privileges at their discretion.

Obviously, most hedge fund investments are far less liquid than the daily liquidity available in traditional investments. However, depending upon the strategy, lock-up periods and limited withdrawals are often appropriate. Even gates and the ability to suspend redemptions, in the hands of

[7] With market neutral managers, any return over the risk-free rate of cash is alpha, by definition. For the purposes of this example, we assume a risk-free rate of 3% per annum and zero beta. Our alpha assumption is admittedly aggressive.

skillful managers of high integrity, can be appropriate. A disappointing outcome for a long-term investor that attempts to ride out a difficult period is to have their returns damaged by the impatience of co-investors heading for the exit.

REGULATION

Through a number of exclusions, exemptions, and exceptions to federal securities laws, hedge funds often avoid regulation. For instance, two exclusions from the Investment Company Act of 1940 allow hedge funds to avoid registration with the SEC. Section 3(c)(1) of the Investment Company Act effectively limits investors to 100 "accredited" persons. Accredited institutional investors are generally those with at least $5 million in assets. Section 3(c)(7) effectively imposes a limit of 500 investors and requires investors be "qualified purchasers." Qualification, in this case, requires an institutional investor have at least $25 million in assets. It is presumed that wealthy investors do not need the full protection of federal securities laws. Furthermore, to avoid the regulatory oversight associated with a public offering, hedge funds are not allowed to advertise.[8]

While less regulatory oversight is clearly an accurate generalization for the asset class, not all hedge funds are regulated (or unregulated, as the case may be) equally. A number of hedge fund and fund of hedge funds managers are voluntarily Registered Investment Advisers. Other hedge funds, through either broker-dealer affiliations or futures trading activity, fall under the purview of the NASD (National Association of Securities Dealers) or the CFTC (Commodities Futures Trading Commission). All hedge fund managers, whether registered with the SEC or not, are subject to the antifraud provisions of the Investment Advisers Act.

The SEC has conducted an extensive fact finding mission into hedge funds, and held a well-publicized Hedge Fund Roundtable in May 2003. The Commission is currently preparing a report that will summarize their findings and recommend any potential regulatory actions. It is widely presumed that the net worth requirements for hedge fund investing will be increased. Another possible action is the required registration with the SEC for all hedge fund managers.

HEDGE FUND STRATEGIES

There are numerous types of hedge fund strategies. In this Research Note, we will focus on those that are most common. Many hedge funds blend one or more of these different strategies in their portfolios, allocating capital opportunistically to those strategies perceived to offer the greatest profit potential. Such a manager falls into yet another strategy designation, that of the multi-strategy manager.

There are many different ways to categorize hedge fund strategies. We find two different viewpoints to be particularly helpful in understanding managers, the risks of a strategy, and the source of returns. First, hedge fund strategies can be categorized by the degree of market exposure inherent in each. Table 2, below, provides such a schematic. "Relative value," "event driven," and "directional" are categories, each consisting of several different strategies. Generally speaking, directional strategies display the highest degree of market sensitivity, while relative value strategies display the lowest. As such, relative value, and to a lesser extent, event driven strategies, often offer the greatest diversification benefits to a traditional portfolio of stocks and bonds.

Table 2: Hedge Fund Strategy Roadmap

(less) ←Market Risk Exposures→ (more)		
Relative Value	**Event Driven**	**Directional**
Equity Market Neutral	Merger Arbitrage	Long/Short Equity
Convertible Arbitrage	Distressed Securities	Short Bias
Fixed Income Arbitrage		Global Macro
	←Multi-Strategy→	

Sourcse: UBS Warburg and Hammond Associates

Another useful way of looking at strategies is to separate them into two broad categories based on their potential sources of alpha—those strategies that generate alpha primarily from security selection (long/short equity, equity market neutral, short bias, and global macro) and those that generate a degree of alpha by providing liquidity to the capital markets (primarily relative value and event driven strategies). Of course, security selection is also an alpha source for relative value and event driven strategies.

It must be noted that while categorizing strategies may be helpful in understanding them, no two hedge fund managers, even those employing the same strategy, are identical. For example, some long/short equity managers

[8] This information is paraphrased. For a more complete summary, please see the testimony of William H. Donaldson, SEC Chairman, before the Senate Committee on Banking, Housing and Urban Affairs, from April 10, 2003. Mr. Donaldson's testimony is available for review on the SEC's website (www.sec.gov, "Testimony Concerning Investor Protection Implications of Hedge Funds").

maintain very low net exposure to the market, while others are decidedly net long. Obviously, "directional" is a more appropriate description of the latter. A convertible bond arbitrageur that does not hedge credit or interest rate exposures has directional exposure to these markets. Finally, a merger arbitrageur that does not hedge equity exposure may have greater directional exposure than many long/short managers.

DIRECTIONAL STRATEGIES

Directional strategies tend to have a relatively high degree of market exposure inherent in the strategy. As such, the direction of the capital markets can have a significant influence on their returns. In fact, some long/short managers and most global macro managers are seeking to add value through timely directional exposure.

Long/Short Equity

Long/short managers are similar to traditional managers in that they take long positions in stocks they find attractive. However, unlike traditional managers, short sales are used to bet that unattractive stocks will fall or underperform the market. The short positions act as a natural hedge to the portfolio. Long/short funds are the most prevalent hedge fund in terms of assets under management and number of funds.

Focusing primarily on publicly traded stocks, long/short managers use short sales and leverage, or margin, in an attempt to produce returns, on an absolute or risk-adjusted basis, that are superior to those of the market. As an example, if a long/short manager has $10,000 in capital, shares may be sold short totaling $6,000. A portion of the short sale proceeds may be used, along with the initial capital, to purchase $12,000 in long positions. Therefore, the gross investment would be $18,000 ($12,000 long plus $6,000 short, or 180% of net capital), but the net long position would be only $6,000 ($12,000 long minus $6,000 short, or 60% of net capital). Since the net long position is only 60% of capital, protection should be provided during a market downturn.

Long/short managers have the ability to add value through two areas: (1) stock selection, and (2) market timing. Stock selection return can be added if the stocks held long perform better than the stocks sold short, regardless of overall market direction. In addition, adjusting the net long position can add value, by increasing or decreasing the net exposure in a rising or falling market, respectively. Most long/short managers tend to maintain a positive net long position since markets generally appreciate over time. Managers may take a net short position if they believe that equity markets will fall.

With regard to stock selection, long/short managers have the ability to make multi-tiered investments. Managers can place bets against style (e.g., buy growth and short value), size (e.g., buy large-caps and short small-caps), and sectors (e.g., buy technology and short consumer durables). Placing these bets results in multiple sources for adding value, as well as greater uncertainty, since capital is being placed at risk on multiple levels across the market.

Since the net long position in long/short hedge funds is generally positive, the incentive fee charged in these strategies is a bit troublesome. Managers without a hurdle rate are rewarded with 20% profits for a return that may have come substantially because of a net long position. For instance, if a manager with a 60% net long position earns 15% during a year when the market earns 20%, 12 percentage points (60% x 20%) of the manager's return is attributable to the market's return.[9] Why pay 20% of profits for returns attributable to the market? While paying incentive fees for skillful returns that are attributable to security selection, rather than market performance, may be justifiable, the challenge is to identify skillful managers. Moreover, while consultants and investors often bemoan "excessive" fees, we must be careful what we wish for—the economic rewards of managing a hedge fund is that which attracts the most skillful managers.

The long/short equity strategy can be decomposed into several unique sub-strategies. Funds can be classified as US, global, or emerging markets, depending on the area of geographic focus. Sector funds are long/short funds that focus on the stocks of a single sector, such as technology, presumably an area where the manager possesses specialized expertise. Long bias funds are long/short funds that maintain a net long position to the market. Long/short managers that actively manage their net exposure (to be net long, net short, or net neutral) can be further categorized as discretionary long/short managers.

Potential advantages to long/short investing include the downside protection of a hedged portfolio, the expanded opportunity set of shorting, and the lack of portfolio "deadweight" (stocks held to reduce benchmark tracking error). The long/short manager does not have a

[9] On the other 40% of the portfolio, the manager should earn at least the T-Bill rate.

benchmark, *per se*. Long-only managers, on the other hand, are saddled (and rightfully so) with a benchmark—an index that they are expected to outperform. Otherwise, investors are better served by simply buying the index. While the motivation for benchmarking is justified, the implications can be undesirable.

The long-only manager has significant career risk associated with underperforming their index. As a result, managers often devote considerable effort to minimizing benchmark risk. Differences to the index, such as sector weights, are carefully scrutinized and managed. In some cases, stocks are held not because of the manager's opinion of the company's future prospects, but simply because of the security's inclusion in the index. Therefore, the long-only portfolio may contain significant deadweight, or stocks held solely for the purpose of minimizing tracking error to the index. The long/short manager, on the other hand, is motivated to make money, not beat a benchmark. As such, securities held long or short are generally based strictly on manager conviction, not benchmark inclusion.

Short Bias

Short bias managers are those that generally hold both long and short positions, but maintain net short exposure to the market. "Short sellers" is the term often used to describe those managers that only hold short positions. Given that markets tend to appreciate over time, some hedge fund investors do not use short managers, arguing that the strategy is at odds with the long run direction of the equity markets. On the other hand, short focused managers can be incorporated into a portfolio of hedge fund managers to offset the equity exposure inherent in other strategies. For instance, using both short and long bias managers that generate alpha results in an efficient hedge fund portfolio. Hypothetically, the directional exposure in each manager (market beta) cancels out, leaving only alpha. Short managers can be used to minimize the equity exposure in other hedge fund strategies, such as event driven, or that of the traditional portfolio.

Global Macro

Global macro generally involves taking leveraged, directional bets. As such, it is little wonder that global macro managers are often characterized as the high rollers of the hedge fund industry.[10] Investing legends, such as George Soros and Julian Robertson, made these types of hedge funds famous in the 80's and 90's. Macro managers usually utilize a top-down approach to investment management, focusing on inflation, interest rates, and currency movements. In addition to investments in traditional securities, these managers will often make sizable bets on macroeconomic factors, such as the direction of currencies and interest rates, by using leverage through derivatives.

George Soros, manager of the Quantum Fund, made a $10 billion bet in 1992 that the United Kingdom would be forced to devalue the pound. In this case, Soros was correct. When the U.K. devalued the pound, Soros reaped profits exceeding $2 *billion* almost overnight. Naturally, disastrous results can occur also. In 1994, many macro funds were decimated. One fund in particular lost 29% in a single month because of an ill-timed investment in Japanese bonds.

An argument against global macro is the rapid pace of globalization—as borders around the globe break down, fewer cross-border opportunities might exist. On the other hand, global macro managers are often dealing with very complex securities and trades. Again, complexity represents an area ripe for skillful hedge fund managers.

EVENT DRIVEN STRATEGIES

Event driven strategies focus on corporations involved in extraordinary transactions, such as bankruptcies, mergers, reorganizations, and other special situations (the "events" of the corporate life cycle). There are two major sub-classifications of event driven strategies—merger arbitrage and distressed securities. Some event driven managers concentrate on a specific strategy, while others will invest in both merger arbitrage and distressed securities, overweighting the area that appears most attractive at any given time.

Managers that skillfully implement both strategies possess an attractive characteristic, as the opportunity sets for merger arbitrage and distressed securities tend to be countercyclical. When the economy is expanding, stock prices have most likely appreciated. As a result, many corporate executives view their stock as expensive currency and initiate acquisitions. During such periods of economic prosperity, fewer companies tend to be

[10] Such generalizations may be unfair. There are a number of global macro managers that are able to add value, while thoughtfully managing risk.

distressed. At the other extreme, during economic slowdowns there is usually an abundant supply of distressed companies. Such a period, however, is generally associated with a decline in equity prices and a lower level of corporate acquisitions.

Event driven strategies are appealing because there is a systematic reward for risk taken. Furthermore, the risk is different from market risk. As a result, diversification benefits are available. However, these strategies are not likely to hold up well during times of severe market stress. Indeed, during global market crises, distressed securities are often shunned, depressing their prices, while mergers tend to fail or be suspended indefinitely. Consequently, these strategies may not provide the desired diversification when it is needed the most. While a crisis period generally impairs performance, it also often represents a terrific buying opportunity.

Merger Arbitrage

Merger arbitrage involves trading the securities of companies involved in mergers. A merger announcement usually results in a sharp increase in the stock price of the target company. Nonetheless, the opportunity for profit still exists. Following the announcement of a deal, the shares of the target company will almost universally trade at a spread below the eventual acquisition price. This occurs because the market discounts the security on the chance that the deal fails. Consequently, profits can result from holding the shares until the completion of the deal.

The case for investing in acquisition targets centers on the argument that securities of acquisition targets are often discounted more than the risk of failure warrants. The argument is that there is an over-abundance of sellers after a deal announcement, because the downside risk of the deal falling apart appears much greater than the modest upside potential. Merger arbitrageurs are providing liquidity to those sellers.

In a deal financed by a stock exchange, arbitrageurs will usually purchase the stock of the target company and sell short the stock of the acquirer. The idea is to insulate the position from price movements in the acquirer's stock, thereby locking-in profits if the deal is completed. Of course, if the merger is not completed, arbitrageurs will lose money—targets may even fall below their pre-announcement price following a deal break.

A merger arbitrage manager's greatest risk is an economic, political, or market shock that causes deals to collapse, such as a stock market crash. The risk of collapsing deals is one that cannot be hedged by the short sale of the acquirer's stock. In addition, once invested, merger arbitrage managers are exposed to an increase in the spread between the market price and the acquisition price. This can occur if deals are perceived to have a lower probability of completion, or if liquidity dries up. Increasing spreads resulted in substantial losses for merger arbitrage managers in August 1998. Nonetheless, most deals were eventually completed, so managers had the opportunity to recoup the losses in just a few months.[11]

To minimize security-specific risks, merger arbitrageurs will usually invest in many different deals. Arbitrageurs also attempt to add value through their knowledge of possible regulatory pitfalls, enabling them to identify deals that are likely to be completed and those more likely to fail.

At a macro level, the returns available from merger arbitrage investing are a matter of economics, as is the case with most arbitrage strategies. Performance is largely dependent on the balance between merger activity (supply) and the amount of capital investing in those deals (demand). The profitability of merger arbitrage is reliant on the spread available between the market price after the merger announcement and the acquisition price. In the bull market of the late-nineties, merger activity was very high, which helped keep spreads wide as there were an abundance of deals in which arbitrageurs could invest. However, as merger activity dried up over the recent bear market, the spreads available have been considerably lower, as merger arbitrageurs have had far fewer deals in which to invest. If institutions continue to pour money into hedge funds, spreads will likely remain tight due to the law of economics—more money chasing a limited number of merger deals.

Distressed Securities

Distressed securities managers invest in securities (most often debt) of companies that are experiencing distress. Often companies will be in or near bankruptcy. Most managers in this area perform analysis on the various classes of a company's debt and other securities to determine the relative attractiveness and expected payoffs. After comparing this information to the current market prices, managers decide whether to buy, or perhaps, short the security. Managers often have the ability to hold non-public securities, such as bank debt, trade claims, or

[11] The opportunity to recoup losses was contingent on the hedge funds having appropriate liquidity provisions. If investors panicked and were able to quickly redeem, the funds may not have survived.

private notes. Distressed securities managers tend to use little leverage.

The argument behind investing in distressed securities is that prices of assets for troubled firms are below their intrinsic value due to overreaction by the market. Many institutional investors are not willing or legally able to invest in troubled companies. For instance, many institutions cannot hold defaulted debt securities. As a result, the securities are available at a lower price than the uncertainty in the company's future alone should dictate.

The primary risk for this strategy is, of course, the inability of the companies to honor their debt. The major economic risk is a prolonged recession or depression that impairs the ability of companies to repay debt. Usually, however, managers will purchase securities with at least some asset backing to mitigate the losses in case of default. Once the economy approaches bottom in a recession, or begins recovery, opportunities should be available for distressed managers, as there would likely be a greater number of distressed companies in which to invest.

Distressed investing comes in many shapes, sizes, and approaches. Some managers are "long-only," using short sales infrequently, if at all. Others are hedged, seeking to add value through both long and short positions. A relatively new strategy has evolved from hedged distressed investing—capital structure arbitrage. Capital structure arbitrage involves long and short positions in different securities within the same company's capital structure. Distortions in the relative value of securities across a capital structure tend to occur most frequently in distressed companies, as conflicting investor motivation influences prices.

Some managers endeavor to add value by actively participating in the restructuring of a distressed company, such as serving on creditor committees. These types of managers generally possess specialized expertise, such as legal backgrounds or restructuring experience. Because creditor committee work can lead to inside information, such tactics may result in a manager being restricted from trading a security until the information becomes public.

Given the illiquidity of the securities, especially if a manager is restricted, we generally prefer long-only distressed strategies in a "lock-up fund" format, where investors are unable to redeem over the life of the partnership. Such a format falls into the private equity allocation of the portfolio. In this manner, a distressed investor is able to reap the full benefits of the liquidity premium. On the other hand, some managers invest both long and short, avoid restriction, and focus on the more liquid realm of distressed securities. Such funds are appropriate for an institution's hedge fund portfolio.

RELATIVE VALUE STRATEGIES

Relative value strategies generally involve attempting to capture pricing discrepancies between related securities. A long position is taken in the cheap security, while a short position is taken in the relatively expensive one. "Arbitrage" is another term often used to describe these strategies; however, its use is often inaccurate because it implies that risk-free profits are available. In reality, these strategies involve taking risk, but the risks are often independent of market risks. The degree of risk is often directly related to the degree of independence in the prices of the security pairs.

We discuss three relative value strategies: equity market neutral, convertible arbitrage, and fixed income arbitrage. These are just a small sampling of potential relative value strategies. Essentially, wherever "related" securities trade "independently" of one another, relative value trading strategies exist. It is the arbitrageurs (hedge funds), in fact, that keep the prices of these securities in line with one another. Other relative value strategies include: volatility, or options, arbitrage (trading options against the underlying assets); index arbitrage (trading a basket of stocks that comprise an index versus the index); share class arbitrage (trading share classes of securities against one another); ADR arbitrage (trading ADR's versus local shares), and closed-end fund arbitrage (trading closed-end mutual funds against the underlying assets). Because the pricing disparity is usually small, some of these strategies involve significant leverage.

Equity Market Neutral

An equity market neutral manager uses techniques similar to a long/short manager with regard to stock selection. However, in order to minimize market risk, managers maintain a net long position of 0%. In other words, long positions match short positions. In this way, any returns earned above the T-Bill rate are a result of stock selection skill, which is active management in its purest form.[12] Naturally, even the definition of neutrality is open to interpretation. For instance, "dollar-neutral" indicates that

[12] When selling short, the security is borrowed and sold, with the expectation that the short position will be covered (bought) at a lower price. The security is then returned to the lender. The proceeds of the short sale are held as collateral against the borrowed stock. As a result, the sale proceeds earn interest (T-Bill return) until the short position is covered.

the long market value equals the short market value, while "beta-neutral" means the aggregate market beta of the long and short portfolios match. Equity market neutral managers can select securities through either a fundamental or quantitative process.[13]

A subset of equity market neutral, or more accurately, yet another unique hedge fund strategy, is statistical arbitrage. Statistical arbitrage involves a market neutral portfolio, but the securities are not selected based on fundamentals, *per se*. Rather security selection is based on historical pricing patterns. Statistical arbitrageurs rely on sophisticated computer algorithms to identify pairs of stocks that are likely to revert to their mean pricing patterns. For example, the historical price charts of Ford and GM display similar patterns, as common risk factors apply to both companies. Periodically, these patterns diverge from one another, perhaps as a result of trading anomaly—a heavy seller or buyer. A statistical arbitrageur endeavors to identify these opportunities and initiate offsetting long and short positions to profit from the expected reversion to the mean in the relative stock prices. Stat arb is the quintessential "black box," or computer-driven, strategy.

As with traditional long/short strategies, the crux of equity market neutral strategies is a simultaneous double bet on long and short positions. If the countervailing positions have characteristics similar to one another in terms of size, style, and sector, the strategy will not be overly risky and any excess returns should be a function of security selection. Additional risk will arise when the manager intentionally or unintentionally makes sizable bets in these collateral areas. When this occurs, the possibility for the manager to be doubly wrong is increased.

For instance, in 1999 some market neutral managers were buying value stocks and shorting growth stocks. While the short positions offset long positions on a dollar basis, there was an inherent style bias, which resulted in atrocious returns in the growth-driven rally of 1999. Of course, managers that bet the other way enjoyed strong gains.

From a risk-control standpoint, the ideal long/short strategy would be one that matches long and short positions within industries and, at a portfolio level, matches the market's price-to-earnings, sector weights, average capitalization, and other risk factors. Removing these other dimensions will likely result in lower potential for excess returns, because limitations are placed on a manager's ability to make "bets." However, small but predictable alpha has unique advantages.

A specific advantage of market neutral long/short strategies is that the alpha is transportable to other asset classes through the use of futures. For instance, a market neutral manager could be hired and overlayed with S&P 500 futures. This would result in the returns of an S&P 500 index fund plus any added alpha from the market neutral manager. Similarly, other indexes with futures contracts could be used. A market neutral manager could even enhance a fixed income allocation.

Equity market neutral should be attractive to those who believe active managers can add value through security selection, but do not want the market risk and market timing element with traditional long/short funds. Given a hurdle rate equal to T-Bills, an incentive fee structure is reasonable, since incentive fees would only be paid when a manager adds value through security selection. Because the T-Bill return is inherent to the strategy, a T-Bill hurdle rate should be, in our opinion, included in the terms of any market neutral hedge fund. In practice, equity market neutral is the strategy most likely to offer a hurdle rate.

Convertible Arbitrage

Convertible arbitrage typically combines the purchase of convertible securities with the simultaneous short sale of the underlying equity. Arbitrageurs seek to exploit pricing discrepancies between these securities. Convertibles will always trade at a premium to the conversion value, which is the value if converted to the underlying stock, because investors are willing to pay for the downside protection the bond provides relative to the common stock, while participating in the equity's upside potential. The conversion value is simply the value of the investment if converted to stock.

An arbitrageur would attempt to find securities that he believes are trading at a conversion premium that is too low, with a hope that the conversion premium will increase.[14] The arbitrageur would then purchase the convertible security and short the underlying stock. The

[13] In both cases, the managers are selecting securities based on their underlying fundamentals and/or price momentum, but the quantitative manager utilizes a modeled-approach to pick the stocks.

[14] The conversion premium on a convertible security behaves much like a call option on the underlying stock. All else equal, call options are more attractive during times of high volatility, because there is a greater chance of high, positive returns. Likewise, the conversion premium on convertible securities is more valuable during times of high market volatility. Arbitrageurs are often attempting to buy "cheap volatility."

shorting of the underlying stock insulates the portfolio from downside volatility in the equity markets.

The amount of stock required to hedge away the equity risk depends upon the sensitivity of a convertible security to the underlying stock. If a convertible security is deep "in the money," meaning that the conversion value to the underlying stock dwarfs the present value of the future interest payments on the bond, the bond will behave more like the underlying stock rather than a bond. This means that the short equity position would have to be relatively large to hedge away the equity risk. On the other hand, if the convertible bond is far "out of the money," meaning that the present value of the future interest payments exceeds the conversion value to the underlying stocks, the convertible security will behave more like a bond, which means that equity risk could be hedged away with a relatively small short position.

One risk of convertible arbitrage investing is rising long-term interest rates because, like other bonds, rising interest rates will cause the market value of convertibles to fall. The short sale of the underlying stock cannot completely hedge this risk—although stocks tend to perform poorly during times of rising interest rates, this is not always the case. Another risk is credit risk, as convertible securities have historically been issued below investment grade. Therefore, deteriorating credit quality will likely lead to losses. While swaps can be used to hedge credit exposure, hedging credit risk is not always an easy task. Because the recent bear market has curtailed the issuance of secondary equity offerings, a large number of companies, including a larger proportion of investment grade issuers, have secured financing through the issuance of convertible securities.

The new issuance calendar for convertible securities represents the supply side of the economic equation in the strategy. As long as new issuance is strong, the strategy should continue to generate attractive returns, particularly on a risk-adjusted basis, with significant diversification benefits. However, during periods where new issuance dries up, hedge funds will have to rely to a greater degree on their ability to pick each other's pockets.

The convertible securities landscape has changed dramatically over the years. In the strategy's infancy, arbitrageurs were primarily competing with long-only investors, such as insurance companies or balanced mutual funds, and presumably arbitrageurs held a competitive advantage over these institutions. However, given the proliferation of convertible arbitrage hedge funds, it is now widely accepted that arbitrageurs hold the majority of convertible securities.[15]

Historically, the strategy has experienced liquidity crises like clockwork every four years (1990, 1994, and 1998). Proponents of the strategy (including convertible arbitrageurs) contend that because hedge fund managers are better managers of risk, the liquidity cycle is history. Granted, we are still waiting for the 2002 crisis. Convertible arbitrageurs have effectively become providers of liquidity in convertible securities, which should garner a liquidity premium. However, during periods when arbitrageurs *need* liquidity, to whom can they turn? It may be that the liquidity cycle has simply been elongated, but with more extreme bottoms.

Fixed Income Arbitrage

Fixed income arbitrageurs seek to capture pricing differences between similar fixed income securities, while keeping neutral interest rate exposure. There are numerous ways to implement fixed income arbitrage strategies. For instance, managers may try to exploit pricing discrepancies between futures contracts and the underlying bonds, bet on the direction of credit spreads in Germany, exploit mispriced pre-payment options in mortgage-backed bonds, or profit from changes in the shapes of yield curves. Managers often use sophisticated computer models to identify pricing discrepancies. The pricing inefficiencies that fixed income arbitrageurs are trying to exploit are extremely small. As a result, these managers usually employ very high leverage.

One risk to which fixed income arbitrageurs are exposed is the risk that the pricing differences between two securities get worse rather than better. Some arbitrage strategies exist because of liquidity—liquid issues generally trade at a higher price than non-liquid issues. Some arbitrageurs will, therefore, sell liquid securities and buy illiquid securities, in an attempt to capture the liquidity premium. However, during times of crisis, the premium for liquidity is higher, which works against some arbitrage strategies. Long Term Capital Management (LTCM), which was on the brink of going under prior to a Federal Reserve-led bailout, employed some highly-leveraged fixed income arbitrage strategies, betting that liquidity premiums would decline.

Another risk is model risk. Fixed income securities have become increasingly complicated in recent years as asset-

[15] Arbitrageurs have likely held the majority of convertible securities for at least five years.

backed and other exotic bonds have gained prominence. Due to prepayment risk and other factors, it is more difficult to derive a true value on these securities relative to traditional bonds. Furthermore, it is harder to predict how they will react to changes in interest rates. If a model is not properly specified, it could lead to erroneous portfolio allocations, which can be disastrous when coupled with leverage. Mispecified models contributed to the downfall of Granite Capital's $600 million fund in 1994, as the portfolio did not act as expected to the Fed's sudden and significant increase in interest rates.

MULTI-STRATEGY

An area of growing popularity is that of the multi-strategy hedge fund. As its name implies, these managers implement a variety of strategies simultaneously, dynamically allocating capital to those strategies that offer the most compelling reward/risk at a given point in time. The breadth and diversity of strategies traded is unique to each manager, but these managers tend to focus on event driven and relative value strategies.

The attractiveness of a multi-strategy manager is obvious. The ability to move capital across strategies in an effort to profit from pricing inefficiencies as they occur has intuitive appeal. Unlike single strategy managers, multi-strategists are not forced to trade in a strategy when its reward/risk is not attractive. Moreover, the single strategy manager is often compelled to hold cash when opportunities are scarce or increase leverage to maintain returns during a difficult period. Hedge fund strategies often display a degree of cyclicality, and a skilled multi-strategy manager can enhance profits by avoiding cycle bottoms and riding to cycle tops. Further, because many of these strategies have low cross correlations, we would expect superior risk-adjusted returns from a skillful multi-strategy manager.

Several concerns regarding multi-strategy managers are commonly cited. First, multi-strategy managers are the poster-children for style drift. This concern is generally accurate, as many long-standing multi-strategy funds evolved over time from single-strategy origins. In some cases, it is arguable that the fund became multi-strategy in order to deploy capital as assets grew. An investor must determine on a case-by-case basis if a fund is investing outside their skill set or if they have added or developed sufficient expertise to implement multiple strategies.

In some cases, "style drift" can be welcome. As the capital markets evolve and new financial instruments develop, inefficiencies often result, creating new opportunities for profit. Which managers are best equipped to profit from these opportunities? We suggest it is the multi-strategist that has demonstrated creativity and prudence in identifying and capitalizing on new opportunities.

Others consider the movement of capital between strategies to be market timing. Perhaps this characterization is true, but we disagree with any negative connotation. Most multi-strategy managers build the portfolio from the bottom-up, one trade at a time, with a thoughtful view of the resulting strategy mix. Few, if any, multi-strategy managers take a macro view and decide to invest 100% of assets into the most attractive strategy at a given point in time.

The final common criticism is that the use of multi-strategy managers removes the investment policy decision from the hands of plan sponsors and places it in the hands of the managers. This criticism is valid. Historically, hedge fund allocators (plan sponsors, fund of hedge funds managers, and consultants) have designed a hedge fund strategy mix (similar to the asset allocation on the traditional side) and endeavored to fill each strategy with "best in class" managers. The managers implement strategy and the allocators dictate policy. We believe such an approach is sub-optimal in today's hedge fund environment.

In light of the enormous capital flows into hedge funds, we expect the strategy cycles will be of much shorter duration and opportunities priced away at a rapid pace. Given the limited liquidity of hedge funds, by the time an allocator identifies an opportunity, alters the strategy mix, finds a manager to fill that role, and completes due diligence on the manager, the opportunity may be long gone. The ability to move capital quickly across strategies will be of significant importance going forward, and we believe that multi-strategy managers represent the most efficient manner in which to do so. We are not so arrogant to believe that our perception of opportunities is superior to that of those on the front lines. Quite the contrary, we readily admit that the skilled professional placing the bid and fielding the ask has superior information.

Naturally, implementing multiple strategies does not make a manager skilled. The demands of successfully managing the risks inherent in a multi-strategy portfolio are significant. After all, the most famous hedge fund blow-up, LTCM, was a multi-strategy fund (albeit one that had drifted from single strategy roots and arguably deployed capital outside their skill set). The ability to compare opportunities across strategies and construct a thoughtful

portfolio with multiple dimensions of risk demands a unique skill set.

Moreover, the extent and breadth of multi-strategy exposure must be considered. For example, a 100% allocation to multi-strategy hedge funds runs the risk of having excessive exposure to a single strategy. This can be managed to a certain extent, as many multi-strategists have a particular area of expertise where they tend to deploy the most capital. It is possible to construct a hedge fund portfolio with a predominant allocation to multi-strategy, comprised of managers that complement one another, without compromising strategy diversification.

OTHER CONSIDERATIONS

Investing in hedge funds presents investors with some additional considerations not usually faced when investing in traditional asset classes. When evaluating these investments, it becomes necessary to evaluate these additional risks. We comment below on some issues faced by hedge fund investors.

Leverage

Leverage, through borrowing or the use of derivatives, is a major consideration when investing in hedge funds. Most stories of hedge fund blow-ups come down to the use of leverage in one form or another. Many managers, particularly in some arbitrage strategies, use leverage to magnify gains from narrow market inefficiencies. Some market inefficiencies are so narrow that leverage must be used to make the returns attractive. The concern with leverage is that it is a double-edged sword: when more money is at risk than the underlying capital, the possibility of an unexpected severe market dislocation wiping out all capital is higher.

An issue for financial modeling, and hedge funds that use these models, is that the spread of likely returns may be understated by commonly employed statistics, based on so-called normal distributions. Specifically, "standard deviation" as a measure of volatility may understate risk. Kurtosis is a supplemental statistic indicating when the distribution of returns is wider or narrower than indicated by standard deviation data. An implication is that unexpected large losses can quickly lead to the demise of a highly leveraged fund. If a manager has five-to-one leverage ($5 of assets for every $1 of capital), a 20% decline in the assets can eliminate the total capital. The propensity for unexpected large losses to occur was painfully evident in August 1998.

The use of leverage alone, even high amounts of leverage, does not necessarily mean that a fund is overly risky. When evaluating funds it is important to understand how leverage is used and to what extent it creates or magnifies risk for investors. Furthermore, it is important to understand how leverage will affect the strategies during periods where "everything goes wrong."

Ironically, investor discomfort with large amounts of leverage may actually create opportunities. Since the LTCM debacle, some proprietary trading desks have reduced exposure to highly-leveraged strategies, and new investors into hedge funds often eschew these strategies. This lack of interest may create attractive opportunities for skillful managers that implement a thoughtful, risk-controlled, yet relatively highly-leveraged, strategy.

Incentive to Take Risk

A conflict of interest in hedge funds is the incentive for managers to take on risk. Incentive fees reward managers when the fund does well, but managers still receive their management fee when the fund performs poorly. Therefore, the more risk a manager takes, the greater the upside potential, with little immediate downside impact from losses other than a reduction in assets. This conflict of interest may be reduced if the manager has a significant portion of his or her personal wealth in the fund, since it may mitigate the incentive to assume extraordinary risks.

It should be noted that while "skin in the game," or significant personal wealth at risk in the fund is an important consideration when evaluating a manager, it does not preclude a fund from blowing up or a manager from taking excessive risks. In the cases of LTCM and Granite Capital, both managers had significant *leveraged* personal wealth invested in their funds, yet both failed.

It is common (and often required by investors) for a manager to have a majority of their personal wealth invested in the fund. This investor demand is intriguing. Having one's savings at risk alongside one's employment is irrational—if one fails, you hope the other will bail you out. Hedge fund investors expect their managers to be prudent managers of risk, yet they also expect them to manage their personal wealth imprudently. Moreover, the investment objectives for a hedge fund manager will change over time, as do those of every investor. This begs the question—if a fund represents its manager's nest egg, will that fund be managed differently as the manager's investment objectives change?

Transparency

Another consideration investors in hedge funds face is the lack of transparency. Transparency simply refers to the ability (or inability) of an investor to observe the investments a manager is making. Since hedge funds are generally cast in the form of private partnerships, they are not required to reveal their activities or holdings, and some (most) do not volunteer this information. Therefore, it is difficult to ensure the general partners are acting in accordance with the limited partners' wishes. This may allow other risks to arise without the limited partners' knowledge, and the damage may already be done before the limited partners are aware problems exist.

The most obvious tool against this risk is to avoid it altogether by investing only in partnerships that offer a full transparency. However, such a constraint dramatically reduces the opportunity set of potential managers. Furthermore, it is arguable that the most talented managers would be eliminated from consideration, as most long-standing managers may not provide position level transparency.

In some cases, particularly when short selling stocks, a manager has justifiable reasons for not revealing their specific holdings. A manager that achieves an informational advantage through contacts at portfolio companies may lose their access to information if the company finds out the manager has sold their stock short. In addition, given the possibility of a short squeeze, it is often in the best interest of all partners not to reveal short positions.

If a manager is willing to provide an investor with access to positions, an obvious question to ask is, who else has the information, and will it be treated confidentially? Predatory practices in the investment management industry are common. If a manager has an informational advantage, full position level transparency could allow free riders to exploit the opportunity. Moreover, the partnership structure implies less agency friction between the general and limited partners.[16] On the traditional side, agency friction is often manifested in window-dressing, or the practice of a mutual fund manager buying and selling holdings at the end of the quarter to dress-up the portfolio for the quarterly 13F report of assets.

A recent trend toward increased transparency has developed, since some investors and consultants, including Hammond Associates, require full disclosure of investment strategy and periodic risk exposure summaries of the portfolio. We believe that periodic analysis of risk at the portfolio level, rather than the security level, is most appropriate, allowing for sufficient risk monitoring, without compromising the manager's positions. The selection of any hedge fund manager should be based, in part, on trust. Simply put, an investor probably should not hire a hedge fund manager for whom they would require full portfolio transparency. The most effective risk monitoring may occur before the manager is even hired. Rigorous due diligence, with particular attention to the general partner's integrity and qualifications, is paramount.

Fraud

A problem experienced by some hedge fund investors is fraud. The SEC has seen an increase in the number of hedge fund fraud enforcement actions over the past several years. The SEC only instituted one such action in 1998, two in 1999, six in 2000, seven in 2001, and 12 in 2002. While this trend is disturbing, it is consistent with the explosive growth of hedge funds in general. With less government oversight, hedge fund managers may have a greater opportunity to mislead investors. Many fraud cases in hedge funds are not outright thefts, rather they are an effort to hide investment losses. Some managers that have experienced losses have attempted to hide them by overstating the market value of the portfolio. Commissioner Donaldson of the SEC notes that charges of misappropriating assets, market manipulation, and reporting false performance are generally not unique to hedge funds and "fraud may not be more prevalent at hedge funds." The potential for fraud argues for broad diversification, which reduces the idiosyncratic risk associated with these investments.

Blow-up Risk

The primary reason cited for not investing in hedge funds is that they are excessively risky. This perception is reinforced by the spectacular hedge fund blow-ups that occur periodically. A number of hedge fund strategies exhibit a negatively-skewed distribution and a condition known as leptokurtosis.[17] In other words, blow-ups are part of the expected return distribution. We believe that

[16] Agency friction refers to a presumed conflict in the relationship between a fund manager (agent) and the investors (principals). Clients often want a "good looking" portfolio, and managers want to keep their jobs. Investment managers may be motivated to hold a portfolio of "in favor" companies to avoid conflict with clients.

[17] Leptokurtosis is a condition of "fat" tails in the distribution, meaning a small number of extreme losses are expected to occur.

choosing to ignore this fact is short-sighted. We further believe that expecting to avoid blow-ups altogether through rigorous due diligence or exceptional risk monitoring may be, ironically, an example of the hubris that lead to many of the blow-ups. In our opinion, a more practical approach is to understand that blow-ups are part of the expected return distribution for hedge funds, and a hedge fund allocation should be diversified appropriately at the manager and strategy level to minimize their impact.

Blow-ups expose Investment Committee members to career risk with regard to their position on the committee, as they are often front-page news. Press coverage of hedge funds often displays negative skewness as well. This may be part and parcel of the hedge fund world. Hedge fund managers are not allowed to advertise, constraining positive self-reporting to the press. In addition, hedge funds are limited only to the wealthy. The cynic in us believes that stories of the rich getting richer are of limited interest to the general public, while stories of wealthy individuals or institutions losing millions are sensational. In part for this reason, some institutions invest in funds of hedge funds, which shield a committee from the political ramifications of a blow-up.

Blow-ups are also a common reason cited for the increased regulation of hedge fund managers. Interestingly, common stock investors lost more money (peak to trough) in either the Enron or WorldCom "blow-ups" (more accurately, frauds) than that lost in perhaps all hedge fund blow-ups and frauds combined. There are no regulatory actions to preclude investors from placing all of their capital at risk in a single stock, so why treat hedge funds differently?

Security Valuation

As mentioned previously, hedge fund managers often have the luxury of investing in less liquid securities, and liquidity, or a lack thereof, is a component of many strategies. Securities that are actively-traded pose little concern with regard to valuation, as these securities are accurately priced at the last trade. But what happens if the last trade occurred days, weeks, or even months ago? In many cases, the hedge fund managers price the security. This is the classic fox guarding the chicken coop scenario. The party relied on to price the security purchased it because of a belief that the market undervalued it. Moreover, the manager stands to personally profit from appreciation in the security price.

Obviously, this concern has greater significance in some strategies than in others. If a manager only invests in actively-traded securities, valuation is generally not an issue. On the other hand, strategies that focus on less liquid securities, such as distressed, are the areas where security pricing policies must be evaluated and understood.

In his article "Do Hedge Funds Hedge?," Asness, et al, demonstrated that many hedge funds actually display a greater degree of market sensitivity and volatility than their returns suggest. This is because the illiquid nature of many hedge fund investments may mask true market exposure. Questions over manager pricing of securities played a major role in the well-publicized demise of Lipper Convertibles Fund.

It is important to understand how managers mark their books. In the case of illiquid securities, prices should be based on a series of third-party dealer quotes, with manager discretion to *conservatively* adjust these prices to reflect the position size and its liquidity in general. The annual audit that is conducted on most hedge funds includes sampling of manager pricing policies. Some hedge fund managers seek third-party verification of prices more frequently.

Asset Capacity

Since some hedge funds look to exploit narrow market inefficiencies, the level of assets managed in the strategy is important. At the manager level, the amount of assets employed in a strategy can affect the realized return, as large trades may move market prices and dampen performance. This is also an issue at a macro level. Excessive amounts of assets allocated to merger arbitrage, for instance, will likely result in a lower spread between the market value and offer price on the deal, making it harder to earn above-normal returns. Some strategies face this risk more than others.

Security selection strategies (long/short, equity market neutral, and global macro) should not encounter macro capacity problems, because the global capital markets are so large. Nonetheless, they may still run into manager-specific capacity problems. Event driven and relative value strategies, on the other hand, have a higher likelihood of running into macro capacity problems, because there are a limited number of opportunities for all funds in a strategy to pursue.

Capacity has become an increasingly important consideration, as capital has flown into hedge funds at record levels. Ironically, the significant asset flows, which have likely been driven by poor equity market performance, may truncate future hedge fund performance. In addition, the number of new hedge fund managers has

kept pace with the increased invested capital. Some of these new hedge fund managers may lack the necessary skill, risk controls, or business acumen to successfully run a hedge fund. As a result, a widening dispersion in hedge fund manager returns may likely result, placing even greater importance on successful manager selection.

Unrelated Business Taxable Income

Many hedge funds use leverage in their funds. This subjects non-taxable investors to unrelated business taxable income ("UBTI"). UBTI is taxable even for non-taxable institutions. The UBTI problem can be avoided by investing in funds domiciled outside the US. Most domestically-managed hedge funds offer offshore counterparts for institutional investors. These vehicles are typically structured as investment companies in tax havens, such as Bermuda or the Cayman Islands. The assets are housed and managed domestically, with administrative functions performed offshore.

Benchmarking

Benchmarking hedge fund returns is often problematic. A number of hedge fund indices exist, but these are plagued by several biases, such as survivor and self-selection, that limit their effectiveness. The impact of these biases can be substantial. Fund and Hsieh (2000) estimate the upward survivorship bias in hedge fund returns to be about 3% per annum.

Style purity also must be considered. In the long-only world, specific indexes are typically available that accurately represent a manager's investable universe of securities (for instance, the Russell 2000 Value index for small-cap value managers). However, because the investable universe for hedge funds is extremely broad and the variety of hedging techniques and magnitude of the hedges is essentially infinite, accurate benchmarking is difficult at best. For example, if a long/short equity manager is 80% net short, while the majority of the index constituents are net long, extreme performance differences between manager and "benchmark" are to be expected.

We believe that industry indexes can be carefully used for essentially what they are—peer group comparisons. While it is natural for an investor to want to employ top quartile managers, such analysis should be conducted over the long-term with an understanding of its shortcomings (which is no different than using peer rankings in the long-only world). For long-term benchmarking purposes, a "T-Bills plus" benchmark, which includes a reasonable alpha expectation for long-term performance (for example, T-Bills plus 5% per annum), may be appropriate. On an interim basis, a custom benchmark that accounts for the degree of market exposure in the portfolio may be reasonable. For example, a blended index of 50% Wilshire 5000 / 50% T-Bills for a long/short fund that is 50% net long, on average, may be used.[18]

At the aggregate hedge fund portfolio level, a custom, blended benchmark designed to approximate aggregate market exposures of the hedge fund portfolio may be appropriate for intermediate-term assessments. A long-term bogey of "T-Bills plus" may also be appropriate. A fund of hedge funds index also has portfolio level appeal. As a matter of fact, because fund of hedge funds indexes have arguably less survivor biases (the hedge fund blow-ups are incorporated in the fund of hedge funds return), we believe that such an index is an appropriate proxy for the average hedge fund investment experience.

IMPLEMENTATION

If it is decided to invest in hedge funds, the question becomes how. That is, does one invest directly with hedge fund managers (direct program) or through a fund of hedge funds? In the sections that follow, we discuss considerations unique to each.

Direct Programs

The first requirement to building a direct program is a substantial amount of capital earmarked for the hedge fund allocation. Given typical minimum investment amounts of $1 to $5 million, a large amount of capital is required to build a diversified direct program. If an investor decides to build a direct program, strategy mix and manager selection become critical issues. Various hedge fund strategies are cyclical in nature, and each strategy exposes a portfolio to a variety of risk factors. For example, event driven strategies are generally considered to be short volatility, meaning periods of extremely high volatility are difficult for the strategies, while convertible arbitrage is generally long volatility.[19]

As we have discussed, a number of strategies generate returns, in part, by providing liquidity to the capital markets. While these strategies generally provide the most diversification benefits to the traditional portfolio, they are

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[18] In practice, determining such custom benchmarks that are representative of manager risks is difficult and rarely as straightforward as our simplistic example.

[19] Merger arbitrage and distressed securities tend to suffer during global market crises, periods which are associated with high levels of volatility. Short volatility strategies are similar to selling insurance.

all prone to suffer during periods when liquidity dries up, such as August 1998. While long/short equity is an easy strategy to understand and should not be hampered by a liquidity crisis, diversification benefits (assuming a net long bias) can be limited.[20] The strategy mix of a direct program should be constructed to balance risk exposures to equity, credit, volatility, liquidity, etc.

Manager selection is particularly important for hedge fund strategies. Unlike traditional managers where performance is highly dependent upon the asset class in which they are invested, the performance of hedge funds is highly dependent on manager skill. This has several consequences. First, estimating expected returns for the asset class is rife with estimation error. Second, the dispersion among managers of the same strategy can be enormous, further exacerbating the inaccuracy of expected returns. A successful hedge fund investment experience requires successful manager selection, or a lot of luck.

A central issue in constructing a direct program is the number of managers to employ. Clearly, the correct answer is one hedge fund—the one that happens to be the top performer over the upcoming period. Unfortunately, that manager is not known until after the fact. Hedge funds are businesses, and many businesses fail. As such, we do not recommend that an institution invest in a single hedge fund to fill the hedge fund allocation, just like we do not recommend an investor hold a single stock to satisfy the US large-cap mandate.[21]

Investing in several funds minimizes the impact of a single manager blow-up, while prudent diversification by strategy improves the all-weather resilience of the hedge fund allocation. Multi-strategy managers can be incorporated to enhance strategy diversification. The exact number of managers depends on the strategies employed and the investment objectives. Perhaps more important than the number of hedge funds included in the program is the position size of each. Allocations to individual managers should be sized such that no manager has an excessive amount of the portfolio at risk. The more concentrated a direct program is in terms of number of managers and variety of strategies, the greater the expected volatility. The bottom line is that a direct program should be constructed based on investor objectives, constraints, and risk tolerance.

Once managers are hired, oversight becomes critical. It is crucial to ensure that managers continue to operate in the strategy, or strategies, for which they were hired. Furthermore, it is important to ensure that managers are not taking undue risk through leverage or speculative financial instruments. Sufficient risk transparency and effective monitoring are necessary for the success of any direct program.

Funds of Hedge Funds

Investors can delegate the time intensive manager selection and oversight duties to a "fund of hedge funds" manager. As one might assume, a fund of hedge funds is a single investment vehicle (also typically a partnership) that invests its pooled assets into a collection of individual hedge funds. Using a fund of hedge funds reduces the administrative and rebalancing headaches of investing in multiple limited partnerships.

Naturally, employing a fund of hedge funds adds an additional layer of costs to the high fees charged by the underlying managers. A common fund of hedge funds fee structure is an annual 1% management fee plus 10% of profits. Table 13, below, shows the gross return necessary to obtain a *net, net* goal return based on a fund of hedge funds fee structure of 1% management and 10% of profits, and an aggregate underlying fee of 1% management and 20% incentive.

Table 3: Required Gross Return Required to Reach Net, Net Return Goal

Net, Net Goal Return	*Required Gross Return*
5%	9.20%
10%	16.14%
15%	23.09%
20%	30.03%

Clearly, an additional layer of fees in an already expensive asset class creates a daunting hurdle. Despite the high fees, we believe that there are a number of skilled fund of hedge funds managers that earn their fees through thoughtful portfolio construction, identification of extraordinary managers, and successful risk management. While the cost of funds of hedge funds is incredibly expensive solely for diversification purposes, strategy and manager diversification are a tremendous benefit to investing in funds of hedge funds. For smaller institutions, funds of hedge funds represent the only prudent vehicle for hedge fund investing.

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[20] August 1998 was also difficult for long bias equity, not because of liquidity, *per se*, but because stocks fell sharply during the crisis.

[21] Provided a hedge fund represents an appropriately-sized allocation within the portfolio (for example, approximately 1%), investments with single hedge funds can be appropriate, provided the investor understands the strengths and weaknesses of the strategy. Ideally, such an investment would be part of a core-satellite approach paired with a fund of hedge funds.

In addition to smaller institutions, the additional costs of using a fund of hedge funds manager may be worthwhile for those that are new to the asset class. It may be short-sighted to assume that building a direct program will outperform a fund of hedge funds by the amount of the second layer of fees. The difference in cost can be easily swamped by poor manager selection, a lack of diversification, or an inappropriate strategy mix.

Approximately 20 funds of hedge funds currently offer their products through registered investment companies. These products are registered with the SEC. All of these funds currently require that investors meet the accredited eligibility standard, but this is not stipulated by federal law. As such, it may be likely that a fund of hedge funds will come to market, without the accredited investor eligibility requirement, in an effort to tap the retail marketplace. The SEC has stated that one of its primary concerns is the "retailization" of hedge funds. As such, these registered products may be an area of future regulatory action for the SEC (perhaps requiring that investors be accredited). We believe that a fund of hedge funds should be selected based on the strength of product, approach, and most importantly, investment team. While this would not exclude registered investment companies, we don't believe that a fund of hedge funds should be selected based solely on the fact that it is registered.

CONCLUSION

While we believe it prudent for all institutions to consider hedge funds, hedge funds are not a "magic bullet." To reap rewards from hedge fund investing, investors must accept new and additional risks. Most strategies should provide some protection relative to traditional managers during an equity market downturn. However, there are other considerations that makes due diligence and rigorous oversight much more important than with traditional active managers.

The most promising strategies, in our opinion, are event driven and relative value strategies. They provide exposure to systematic risk factors that should be rewarded by the market. These risk factors are different than equity market risk, which means diversification benefits are available to the traditional investor that has significant exposure to the stock market. Of concern are the record asset flows into hedge funds, as additional capital chasing a limited number of opportunities may truncate future returns.

Long/short and equity market neutral also have some appeal. While event driven and relative value strategies are perhaps best suited as "alternative investments," long/short may be an appropriate alternative to long-only active management. For those that believe managers can add value through stock selection, these strategies represent an attractive substitute to traditional active strategies, benefiting from skillful stock selection on long and short positions.

This article may read as though we are speaking from both sides of our mouth. We prefer to consider our comments hedged. The fact of the matter is that making the blanket statement that hedge funds are either good or bad is incomplete. The asset class is driven by manager skill. Investors that identify and invest with the most skillful managers will be rewarded, while those that invest with managers at the other end of the skill spectrum will no doubt be disappointed.

The phenomenal popularity of hedge funds suggests that the single-minded, contrarian investor look elsewhere. Given the capital flows into hedge funds, the proliferation of hedge fund managers, and the high cost of hedge fund investing, we have a generally neutral to negative outlook on the asset class. However, we view a number of individual hedge fund managers and fund of hedge fund managers as highly-skilled, outstanding managers of risk, and consider them to be likely candidates for future success. A thoughtful, well-conceived hedge fund allocation makes sense for most institutional portfolios.

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