CHAPTER 1

Introduction

The first known hedge fund was created by Alfred Winslow Jones in 1949. His fund should look familiar to today's hedge fund participants. The fund was organized as a limited partnership and used private placement rules to avoid registration. It invested primarily in common stocks and used moderate leverage to carry long and short positions modestly larger than the fund capital.

The number of hedge funds has grown significantly, and there are many different types of hedge funds. But this first hedge fund bears a close resemblance to the most common hedge fund strategy today, called long/short equity.

DEFINITION OF HEDGE FUND

Definitions of hedge funds run into problems because it is exceedingly difficult to describe what a hedge fund is without running into trouble with funds that don't fit into the rules. There are investment pools that closely resemble hedge funds but are generally regarded as a different type of investment. Still other types of investments may contain characteristics that are generally associated with hedge funds.

As a starting point, begin with a rather typical definition of a hedge fund:

> *A hedge fund is a loosely regulated investment company that charges incentive fees and usually seeks to generate returns that are not highly correlated to returns on stocks and bonds.*

Many traits of hedge funds aren't useful in defining what is and what is not a hedge fund.

Regulation and Hedge Funds

Chapter 8 describes the laws and regulations that control hedge funds. While hedge funds are not unregulated, as is sometimes asserted, they are more loosely regulated than mutual funds and common trusts run by bank trust departments. Other types of investments are also loosely regulated, though, including private equity partnerships, venture capital funds, and many real estate partnerships.

Investors may feel they will "know it (a hedge fund) when they see it," but there are no firm lines separating hedge funds from these other types of investments. Hedge funds may invest part of their assets in private equity, venture capital, or real estate.

To further blur the distinction between hedge funds and regulated investment companies, there is increasing pressure from the Securities and Exchange Commission (SEC), bank regulators, auditors, and exchanges for hedge funds to disclose more information and to control permitted activities. Hedge funds may soon be required to disclose much of the information that mutual fund companies must report. The SEC has proposed to require all hedge fund management companies to register as investment advisers.

Limited Liability

Sometimes, the definition of hedge funds mentions that hedge funds are a vehicle where investors have no liability for losses beyond their initial investment. It certainly is true that most hedge funds in the United States are organized as limited partnerships or limited liability corporations (see Chapter 5) that protect the investor from liability. However, offshore funds are usually organized as corporations and, despite this difference, also create a limited liability investment.

Most other investments are also limited liability investments. Investors can lose no more than 100 percent of the value of long positions in stocks and bonds. Mutual funds also protect the investor from losses in excess of the amount of money invested. While accurate for hedge funds, the characteristic of limited liability does little to define hedge funds.

Flow-Through Tax Treatment

Hedge funds are not taxed like corporations. Instead, all the income, expenses, gains, and losses are passed through to investors. This feature does not define hedge funds because many other investment types are flow-through tax entities. Real estate investment trusts (REITs), mutual funds, venture capital funds, and other private equity funds are regularly constructed to receive flow-through tax treatment.

Hedge funds organized outside the United States are frequently organized in locations that have little or no business tax. In these locations, hedge funds are not organized to get flow-through tax treatment. Instead, these funds are organized as corporations that do not require investors to include the annual hedge fund income and expenses on investor tax returns.

Hedge Funds and Their Use of Leverage

Many hedge funds use leverage to carry long and short positions in excess of their capital. Not all hedge funds use leverage, and many hedge funds use leverage of two times or less (see Chapter 6).

Other types of investments also use leverage to carry assets in excess of capital. Some mutual funds use leverage. Leverage is common in real estate investments. Private equity funds may borrow money to limit the equity needed to carry investments.

Hedge Funds Charge Incentive Fees

Hedge funds charge a variety of fees, including a substantial management fee and an incentive fee. The management fees are similar to management fees at mutual funds, private equity funds, and real estate funds. Incentive fees are also typical in private equity funds, real estate funds, and (to a limited extent) mutual funds.

Hedge Funds and Lockup Commitments

Many hedge funds require investors to leave funds invested for a year or more. This lockup provision is not typical of mutual funds, but the load fees strongly encourage investors in mutual funds to hold their investments for several years. Private equity funds frequently have lockup provisions. Venture capital funds in particular may grant the investor no opportunity to exit before assets are liquidated. Real estate funds may have similar restrictions.

CONTRASTING MUTUAL FUNDS WITH HEDGE FUNDS

One definition of a hedge fund is that it is a mutual fund that doesn't have to follow any rules. This overly simple distinction may help the uninitiated get a rough idea of what a hedge fund can do. Of course, there are lots of rules that a hedge fund must observe, and hedge funds are organized differently from mutual funds. The distinction loses meaning as mutual funds have been given broader investment rules over time. Recently, U.S. regulators have been pressing to tighten the regulation of hedge funds. Nevertheless, there are some consistent differences between mutual funds and hedge funds.

Fees

Most mutual funds charge a management fee but not incentive fees. Mutual funds may charge management fees from less than 0.25 percent up to several percent of assets under management. Hedge funds also charge management fees, usually between 1 percent and 2 percent of assets. Mutual funds usually charge no incentive fee, but hedge funds charge incentive fees of 20 percent of profit or more. While mutual funds may be sold with no sales charge (called no-load mutual funds), many are sold with commissions of 5 percent of assets or more. Mutual funds may also assess other sales charges called 12b-1 fees. In contrast, hedge funds generally don't charge sales commissions.

Leverage

A small number of mutual funds borrow to carry long positions in excess of capital or to carry short positions. One mutual fund, Northeast Investors Trust, bought corporate bonds as long as 30 years ago using borrowed funds to increase the return on the fund. Most mutual funds use debt only to provide short-term liquidity to accommodate withdrawals. Mutual funds also use derivative instruments in lieu of investing in cash securities, not to create leverage.

In contrast, a survey conducted by Van Hedge Fund Advisors International, LLC in 1997 reported that 70 percent of hedge funds used leverage.[1] During the time of the study, some fixed income hedge funds ran positions 70 times their capital or higher.

Transparency

Mutual funds publish quarterly income statements and balance sheets at least quarterly. The balance sheets aggregate assets so that investors cannot see details of individual positions. Nevertheless, mutual funds publish detailed portfolios annually, albeit with substantial delays.

Hedge funds have typically refused to disclose positions or trade details to the public. Some funds would disclose this information to a small number of important investors. More recently, funds of funds investors have often demanded to know position details. A survey by Deutsche Bank found that one-third of investors demanded transparency and information about risk.[2] Only 3 percent of investors would invest in funds that refused to provide any position information to investors.

Liquidity

Mutual fund investors generally may redeem shares at any time, not subject to restrictions on exit under normal market conditions. In some cases, fees encourage investors to remain invested for several years, but investors may otherwise exit without restrictions. Mutual funds generally accept or redeem investments on the same day or next day. In contrast, hedge funds allow entry or exit only at certain times of the year, monthly, quarterly, or annually. In addition, hedge funds may restrict redemptions for a year or more.

CONTRASTING PRIVATE EQUITY FUNDS WITH HEDGE FUNDS

Private equity funds include leveraged buyout funds, venture capital funds, mezzanine financing funds, and other portfolios of direct investment in private corporations.

Legal Structures

Private equity funds entities are organized as limited partnerships or limited liability corporations if located in the United States or as corporations in tax-favored offshore locations. Private equity funds use the same exemptions that hedge funds use to escape many of the regulations that affect regulated investment companies.

Fee Structures

Private equity funds generally charge both an incentive and a management fee much like the fees charged by hedge funds. Unlike hedge funds, though, many private equity funds charge no incentive fees until individual investments are liquidated because there is no verifiable way to mark the assets to market prior to sale. Upon sale, the investment and gain are returned to investors less an incentive fee on profits. Occasionally, hedge funds will carve out portions of their assets and treat them similarly to private equity investments. These assets are called side-pocket allocations.

Leverage and Private Equity Investments

Like hedge funds, private equity funds can borrow money to buy assets in excess of their capital. Leveraged buyout funds and venture capital funds may carry the debt on the balance sheet of the companies they own. Leverage in private equity is lower than the leverage in the most leveraged hedge funds.

Private Equity and Absolute Returns

Many hedge funds seek returns that are relatively uncorrelated to stock and bond returns. They don't try to keep up with the stock market when returns are very high on stocks. Likewise, they seek to avoid losing money in periods when stock returns are negative. These hedge funds are seeking absolute returns, to contrast the traditional portfolio manager that benchmarks return relative to a market index.

Most private equity strategies are not absolute return strategies. Venture capital returns, for example, are highly correlated with Nasdaq returns because the venture capital funds and the Nasdaq share a concentration of investment in technology companies.

Private Equity and Liquidity

Private equity funds generally offer little or no liquidity to investors. As mentioned earlier, venture capital funds generally don't charge incentive fees until assets are liquidated because it is difficult to defend mark-to-market valuations of their assets. For the same reason, venture capital funds generally don't redeem their investments until assets are liquidated to avoid having to defend a mark-to-market net asset value. As a practical matter, the venture capital fund may not have cash available to redeem investments and no means to readily generate cash because it carries assets with limited marketability.

CONTRASTING COMMODITY POOLS WITH HEDGE FUNDS

It is particularly vexing to distinguish commodity pools from hedge funds. In fact, any hedge fund that trades futures or commodities only minimally must also register as a commodity pool (see Chapter 8). Nevertheless, as long as a fund invests significantly in cash instruments (that is, not commodities or futures), it is generally described as a hedge fund, not a commodity pool. A fund is called a commodity pool if substantially all its holdings are in commodities, futures, and options on futures.

Unfortunately, hedge funds and commodity pools are similar in other ways. These similarities make it difficult to draw a distinction between hedge funds and commodity pools.

Legal Structures

Commodity pools are structured using the same types of businesses used to create hedge funds. Pools organized in the United States are structured as limited partnerships or limited liability corporations. Pools organized offshore are generally located in tax-favored locations and are structured as corporations.

Commodity pools use the same exemptions from registration that are used by hedge funds to avoid registration. Commodity pools can be sold to individuals who pass certain income and wealth tests (see Chapter 8). The tests are similar to income and wealth tests used by hedge funds to qualify for exemptions from regulation.

Liquidity and Commodity Pools

Typically, a commodity pool restricts entry to and exit from the pool to month-end or quarter-end. Commodity pools have somewhat simpler tax reporting than hedge funds but don't allow daily entry or exit in order to simplify tax computations.

Some commodity pools may impose a lockup on funds invested. The commodity pool has less need to lock up investment funds because the pool's assets are generally liquid and reasonably easy to liquidate. However, a commodity pool will impose a lockup if investors will tolerate a lockup to try to hold on to investment funds longer.

SIZE AND GROWTH OF HEDGE FUNDS

Because hedge funds avoid most of the registration requirements of traditional money managers, no business or governmental agency has precise knowledge of the number of hedge funds in existence. Businesses that collect performance data on large numbers of hedge funds maintain estimates of the number of hedge funds. Fortunately, the estimates are fairly close.

For example, in Figure 1.1, Van Hedge Fund Advisors International has estimated the number of hedge funds worldwide at 8,100. Other estimates are generally within about 10 percent of this estimate.

The number of hedge funds has risen by about 12.6 percent annually since 1988.[3] This total represents the new funds created and the funds that shut down. Hedge fund professionals believe that the average hedge fund has been in existence for about eight years. The lack of hard data on hedge fund assets means that this average life is uncertain; but if it is true, each year many more hedge funds are created and a large number of funds exit.

The same sources that estimate the number of hedge funds also estimate the assets under management (AUM). Figure 1.2 shows the hedge fund assets estimated by Van Hedge Fund Advisors International each year-end from 1988 through 2003. The hedge assets are also subject to uncertainty. However, Tass Research separately estimated the global hedge fund assets at $750 billion on December 31, 2003.

The assets invested in hedge funds have risen by 21.9 percent annually since 1988.[4] Figure 1.2 shows that although the growth has been irregular, the industry has grown every year.

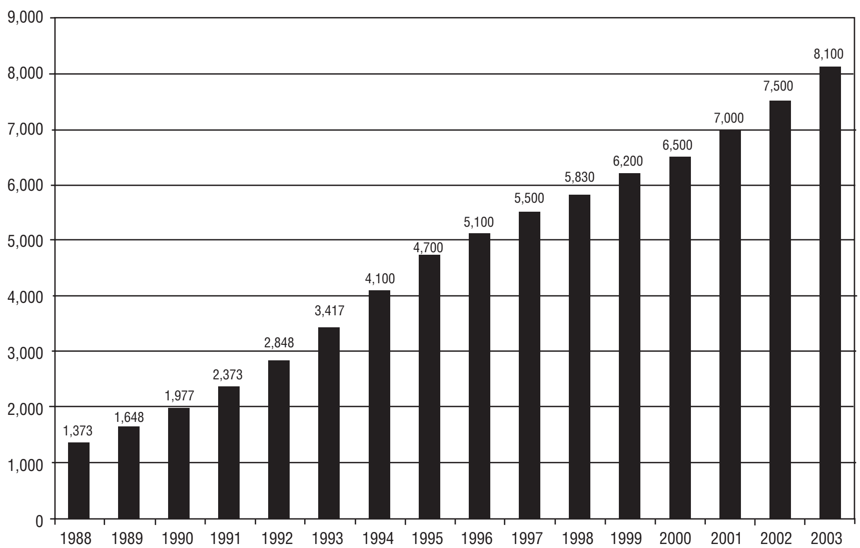

FIGURE 1.1 Estimated Number of Hedge Funds
Source: ©2004 by Van Hedge Fund Advisors International, LLC, and/or its licensors, Nashville, TN, USA.

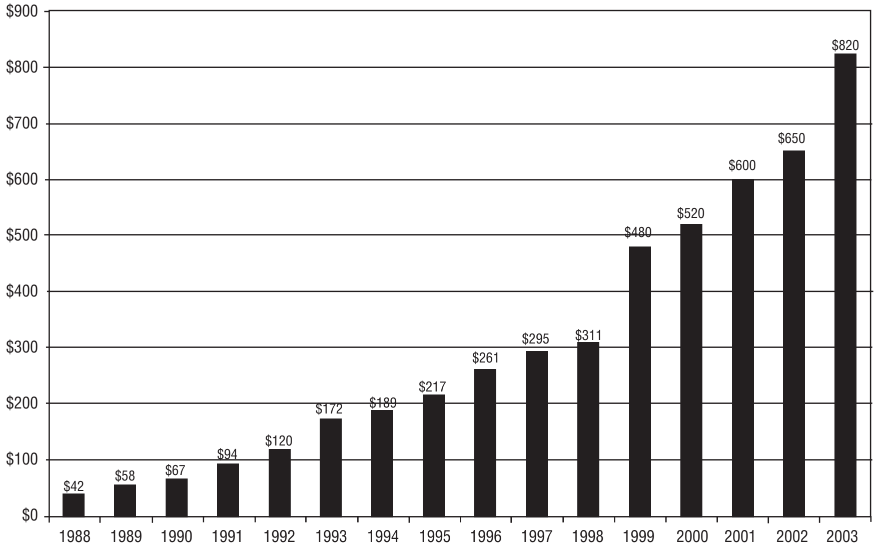

FIGURE 1.2 Estimated Hedge Fund Assets under Management ($Billions)
Source: ©2004 by Van Hedge Fund Advisors International, LLC, and/or its licensors, Nashville, TN, USA.

Because the assets under management have been growing faster than the number of hedge funds, it is clear that the size of the average hedge fund is rising. Figure 1.3 shows the average size calculated from the data in Figure 1.1 and Figure 1.2.

The size of the average hedge fund grew irregularly over the past 15 years. Although the assets grew by an average rate of 8.3 percent annually,[5] the average size remained about the same or declined in about a third of the years.

Funds of hedge funds have been growing somewhat faster than single-manager hedge funds. Figure 1.4 shows the assets under management including both direct investments and investments through a fund of funds intermediary. Single-manager funds (funds that implement hedge fund strategies other than fund of funds strategies) have grown at 21.5 percent annually.[6] Fund of funds investments in hedge funds have grown at 26.0 percent annually.[7] For this time period, the combined hedge fund assets have grown at 22.6 percent annually.[8]

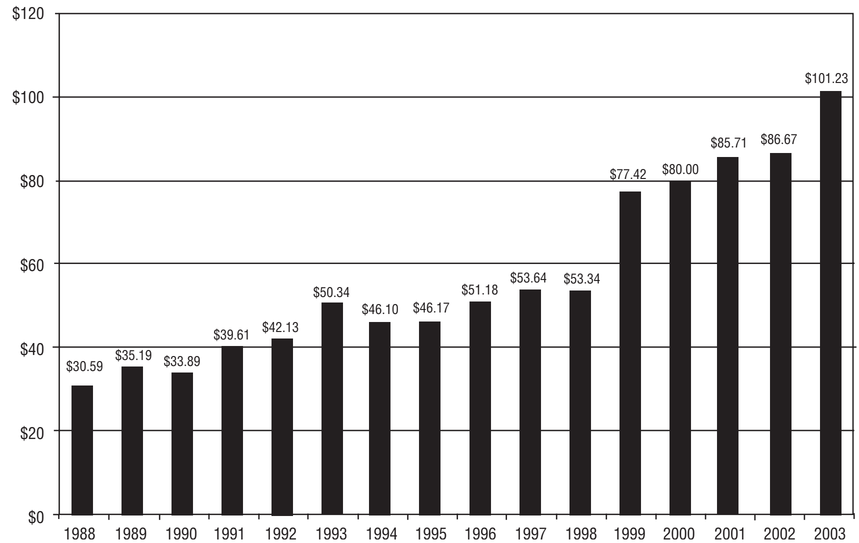

FIGURE 1.3 Estimated Hedge Fund Average Size (AUM $Millions)
Source: ©2004 by Van Hedge Fund Advisors International, LLC, and/or its licensors, Nashville, TN, USA.

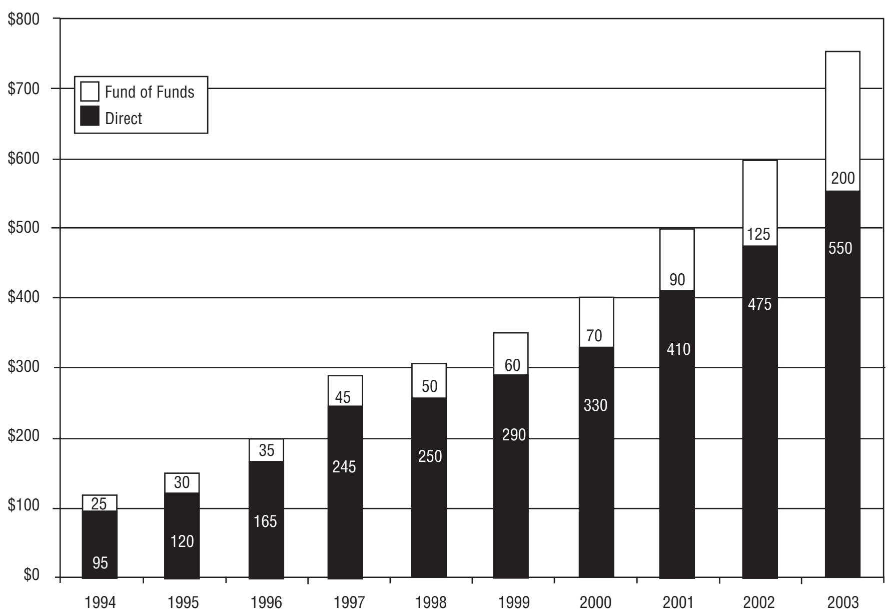

FIGURE 1.4 Estimated Hedge Fund Assets under Management ($Billions)
Source: Tass Research.

WHY INVEST IN HEDGE FUNDS?

Marketing literature describes a number of reasons why investors should put part of their portfolios into hedge funds. Generally, those reasons fall into one of three somewhat overlapping motivations: (1) to increase return, (2) to reduce risk, and (3) to increase diversification.

Investing in Hedge Funds to Increase Return

With thousands of hedge funds in existence, it is difficult to generalize much about the expected return. Funds can experience higher returns or lower returns than traditional assets, including stocks and bonds. Nevertheless, some hedge fund managers seek to make very high returns and are willing to accept substantially more risk in their portfolios to achieve that return.

Adding high returns to a portfolio increases the return in a predictable way. The return on a portfolio is equal to the weighted average of the individual returns; see equation (1.1):

$$r_{\text{Portfolio}} = \sum_{i=1}^{N} w_i \times r_i \tag{1.1}$$

where r_i represents the return of individual assets in the portfolio and w_i represents the weight of each asset in the portfolio.

In the late 1980s and early 1990s, a number of global macro hedge funds (see Chapter 2 for a description of this and other hedge fund styles) caught the public's attention. This group of funds made levered investments in U.S. and international stocks, bonds and foreign currencies. Despite the name, they were generally not hedged, although the variety of their positions may have provided some risk control in the form of diversification.

Chapter 11 demonstrates that the typical hedge fund is not as risky as a buy-and-hold investment in the Standard & Poor's 500 stock index. For some investors, hedge funds serve a valuable role in increasing the expected return on a portfolio. These investors may not be happy about accepting additional risk but are nevertheless willing to take on more investment risk to achieve a higher portfolio return.

Over the past decade, the stock market has enjoyed high returns and violent losses. Bonds have also enjoyed good performance over the past two decades. During the periods of high stock and bond returns, investors have not needed to move into hedge funds to get excellent returns. During the downturn in 2001–2002, most hedge fund performance was higher than stock returns. During this period, although some investors have been motivated by the higher performance, an increasing number of investors looked for a nondirectional return.

Investing in Hedge Funds to Reduce Risk

Hedge fund investors face many risks. These risks include the risks introduced by the securities and currencies held by the fund; the use of leverage, which may concentrate risks present in the positions; the risk of financing positions; and other risks (see Chapter 11). However, many hedge funds are considerably less risky (by several risk measures) than the S&P 500, and many funds are less risky than the more conservative Lehman Brothers Aggregate Bond Index.

Investors who add assets that are less risky than assets held in the portfolio can lower the risk of the portfolio. If the investor can pick less risky assets that are expected to earn as high a return as the other assets in the portfolio, the investor can lower the risk of the portfolio without lowering expected return.

Investing in Hedge Funds to Increase Diversification

Diversification can significantly lower portfolio risk, compared to the risk of individual assets. Many hedge funds do not track stock or bond returns closely so they are more effective in reducing risk through diversification than simply splitting the debt and equity investments over more securities in a portfolio.

One of the most popular measures of risk is the standard deviation of returns. This measure is used by academic writers, traditional investors, and hedge fund investors. The standard deviation of return is shown in equation (1.2) and can be found in almost any introductory statistics textbook:

$$\text{Standard Deviation} = \sigma = \frac{\sum_{t=1}^{N} r_t - \bar{r}}{N-1} \tag{1.2}$$

where r_t represents a series of returns over N time periods. Usually, the standard deviation is annualized by multiplying the results of equation

(1.2) by the square root of the number of observations per year. Equation (1.3) shows the standard deviation for monthly data:

$$\sigma = \frac{\sum_{t=1}^{N} r_t - \bar{r}}{N-1} \times \sqrt{12} \tag{1.3}$$

Assuming the returns of two assets are normally distributed, the sum of risk of owning two assets is determined by the risk of the two assets and the covariance between the two assets. The standard deviation of a two-asset portfolio is shown in equation (1.4):

$$\sigma_{\mathrm{A,B}} = \sqrt{w_{\mathrm{A}}^2\sigma_{\mathrm{A}}^2 + w_{\mathrm{B}}^2\sigma_{\mathrm{B}}^2 + 2w_{\mathrm{A}}w_{\mathrm{A}}\sigma_{\mathrm{A,B}}} \tag{1.4}$$

Suppose an investor can invest in asset A, which has an expected return of 10 percent, or asset B, which has an expected return of 9 percent. However, both assets are equally risky, having a standard deviation of return equal to 15 percent. The correlation between the returns of the two assets is 50 percent. The covariance is calculated from the correlation in equation (1.5):

$$\sigma_{\mathrm{A,B}} = \sigma_{\mathrm{A}}\sigma_{\mathrm{B}}\rho_{\mathrm{A,B}} = 15\% \times 15\% \times 50\% = 1.125\% \tag{1.5}$$

Table 1.1 is created by applying equation (1.4). The risk reduction is clear on a graphical view of Table 1.1, as shown in Figure 1.5.

TABLE 1.1 Portfolio Return and Risk for Various Weights

w_{A}	w_{B}	$r_{\mathrm{A,B}}$	$\sigma_{\mathrm{Portfolio}}$
100%	0%	10.00%	15.00%
90%	10%	9.90%	14.31%
80%	20%	9.80%	13.75%
70%	30%	9.70%	13.33%
60%	40%	9.60%	13.08%
50%	50%	9.50%	12.99%
40%	60%	9.40%	13.08%
30%	70%	9.30%	13.33%
20%	80%	9.20%	13.75%
10%	90%	9.10%	14.31%
0%	100%	9.00%	15.00%

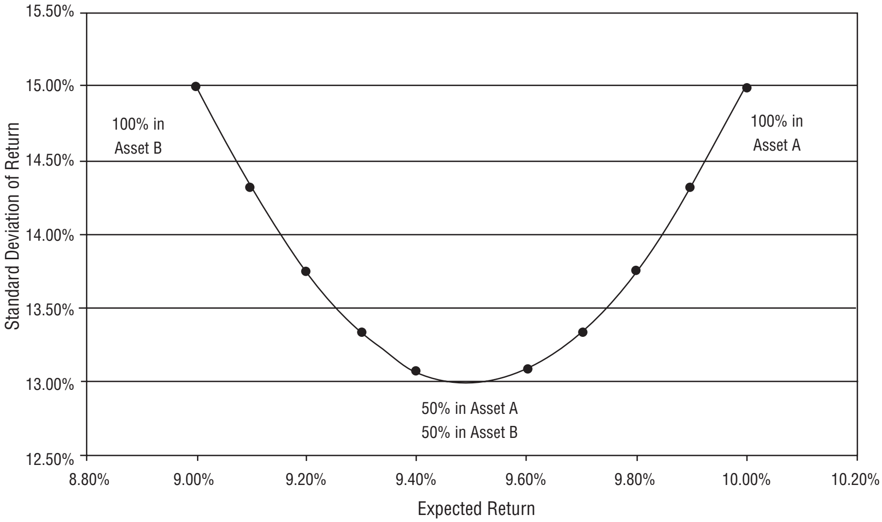

FIGURE 1.5 Risk and Reward

HEDGE FUND BASICS

Many investors are unfamiliar with the way a hedge fund investment behaves. In addition to having more investment latitude than traditional investment managers, a hedge fund manager may charge a variety of fees and place restrictions on exit from a hedge fund.

Fees

Hedge funds charge a variety of fees. Other types of investment pools, including mutual funds, private equity funds, and real estate investment trusts, charge the same types of fees, but the structures of the fees may differ slightly in the hedge fund industry.

A management fee is charged as a flat percentage of assets under management. Hedge funds generally charge an annual management fee between 1 and 2 percent. For example, if a fund charges 1.5 percent, it might assess a monthly fee equal to .125 percent (1.5%/12) based on the value of the fund's capital at month-end. This fee is charged regardless of whether the fund has been profitable. Some funds calculate the management fee quarterly or less frequently.

An incentive fee is based on the profits made by the hedge fund.

Hedge funds generally charge 15 percent to 25 percent of profit as an incentive fee. Suppose a fund makes 2 percent or $2 million on assets of $100 million in a particular month before incentive fees but after the management fee has been deducted. If the fund collects a 20 percent incentive fee, the fund will pay $400,000 ($2 million × 20%) to the management company.

Funds usually charge no incentive fee on profits that offset prior losses. This is called a high-water mark provision. For example, suppose a hedge fund started with a net asset value (NAV) of $1,000. Over several months, the NAV rose to $1,500 and the management company charged incentive fees based on this return. If the NAV declined to $1,400, the manager would refund no incentive fees, but the fund would pay no incentive fees on any returns until the value to investors rose above the previous high-water mark of $1,500.

Sometimes a fund pays incentive fees on returns above a certain minimum return. Suppose a $100 million hedge fund pays a 20 percent incentive fee on returns above the London Interbank Offered Rate (LIBOR). If LIBOR was 3 percent (annualized to 3%/12 or .25% for a month) and the fund return was 3.5 percent in one month, the fund would collect an incentive fee on 3.25 percent; thus, $100 million × (3.5% – .25%) × 20% = $650,000.

A fund may subject previously paid incentive fees to a look-back provision. In this case, a manager may be required to refund incentive fees back to the fund if the fund experiences a loss shortly after an incentive fee is paid. Look-back provisions are not common, and the specific provisions can vary from fund to fund. For example, one fund limits the look-back to three months. Another fund limits the incentive fee look-back to a calendar quarter.

Hedge fund managers may charge other fees, such as commissions, financing charges, and ticket charges. The management company may keep some or all of these fees or may pay out part of these fees as sales incentives to individuals who market the hedge fund to investors. The existence and the magnitude of these fees vary from fund to fund. The fund should disclose these fees to investors, but investors may nevertheless have trouble determining how much these fees affect the return of the fund.

Other Hedge Fund Provisions

Funds may impose a lockup, meaning that investors may not withdraw their investments for a period of time, usually between one and three years. Often, the fund will let an investor withdraw gains but require the investor to keep the initial capital in place during the lockup period.

Funds allow entry into or exit out of the hedge fund at a limited number of times per year. Restricting flows to month-end, quarter-end, or year-end greatly simplifies the tax-reporting burden on the hedge fund administrator. Funds sometimes require investors to advise the manager in advance of withdrawing funds. Some managers require 10 to 90 days' notice to redeem hedge fund interests. These provisions, along with lockup provisions, seek to make hedge fund investments more sticky (investors remain in a hedge fund for a longer period of time).

HEDGE FUND MYTHS

As mentioned earlier, the public perceives hedge funds as risky investments appropriate for thrill-seeking investors. This myth and others persist despite evidence to the contrary.

Hedge funds are sometimes called absolute return strategies. The idea of absolute return is in contrast to traditional money management, where returns are compared to a benchmark of returns on similar assets. The return on a portfolio of stocks is compared to the S&P 500 or other index, and a manager is judged not on whether the portfolio was profitable but rather on how the portfolio return compared to the market return. In contrast, absolute return strategies can be expected to be profitable regardless of what happens to any identifiable index. In theory, the absolute return manager would be judged only on the size and consistency of returns.

However, most hedge funds retain at least some correlation to stock and bond returns. Academic studies have shown that the returns on hedge funds can at least in part be explained by market returns and other economic factors (credit spreads, volatility, and others). Further, for hedge funds that follow a popular strategy, it is possible to benchmark an individual fund's return against peer fund returns. Finally, hedge fund indexes now exist that provide reasonable benchmarks for many hedge funds.

Another hedge fund myth involves assumptions about the life cycle of hedge funds. Many investors refuse to invest in hedge funds that have less than, for example, two years of performance in the belief that young funds are more likely to fail. Other investors seek to invest in young funds because they believe that smaller, newer hedge funds provide higher returns than large funds that have been in existence for many years. In addition, there is a belief that hedge funds don't tend to survive longer than about eight years.

In fact, many factors affect the riskiness of hedge funds, the return to particular funds, and the popularity of an investment style. Certain strategies such as convertible bond arbitrage remain attractive, despite existing for decades. The early demise of many new hedge funds can be explained by weaknesses in investment strategy, failure to establish systems and operating procedures, or simply bad timing for a fund of a particular style or strategy.

QUESTIONS AND PROBLEMS

1.1 List three reasons to invest in hedge funds.
1.2 Why are press reports describing disasters with hedge fund investments not a valid reason to avoid investing in the products?
1.3 What is the difference between absolute return strategies and relative return strategies?
1.4 Is it generally true that low correlation is better than high correlation?
1.5 The growth in hedge fund assets under management has been much more rapid than the growth in the number of hedge funds. How is this possible?
1.6 Are any of these fees and/or design structures incompatible and never be used together in the same fund: management fee, incentive fee, hurdle rate, surrender fee, high-water mark, look-back, commission, and ticket charge?
1.7 It is typical in a private equity fund to levy no incentive fee until an investment is liquidated. Explain why this practice differs from the pattern in hedge funds, where an incentive fee is levied on mark-to-market gains in the fund.
1.8 Distinguish a commodity pool or futures fund from a hedge fund.
1.9 You run a hedge fund with \$100 million under management. You charge a management fee of 2.25 percent. What is the management fee assessed on the entire fund for the month of February 2004?
1.10 Assume the hedge fund in question 1.9 earned 4.5 percent (gross return before fees). What incentive fee would the management company earn if the fund paid an incentive fee of 15 percent?
1.11 What is the incentive fee, assuming the same facts from question 1.9 but incorporating a hurdle rate of 5 percent?
1.12 Assume the same facts from question 1.9 but a high-water mark provision. In addition, the hedge fund lost 7 percent in January 2004. What is the incentive fee for February 2004?

NOTES

1. Quoted by Steven Lonsdorf in a message to Congress. Data as of December 31, 1997.
2. Allison Bisbey Colter, "Hedge Fund Investors Seek Detailed Data, Survey Finds," *Wall Street Journal*, April 1, 2003.
3. The estimated number of hedge funds in 1988 (1,373) grows to 8,100 at 12.6 percent annually in 15 years.
4. The estimated hedge fund assets under management in 1988 ($42 billion) grows to $820 billion at 21.9 percent annually in 15 years.
5. The size of the average hedge fund based on the data in Figure 1.1 and Figure 1.2 in 1988 ($30.59 million) grows to $101.23 million at 8.3 percent annually in 15 years.
6. The estimated hedge fund assets under direct investment in 1994 ($95 billion) grows to $550 billion at 21.5 percent annually in nine years.
7. The estimated hedge fund assets under fund of funds investment in 1994 ($25 billion) grows to $200 billion at 26.0 percent annually in nine years.
8. The estimated hedge fund assets under either direct investment or through funds of hedge funds in 1994 ($120 billion) grows to $750 billion at 22.6 percent annually in nine years.