PART
one

The Hedge Fund Industry

CHAPTER 1

Introducing Absolute Returns

During the French Revolution such speculators were known as agitateurs, and they were beheaded.

—Michel Sapin*

HISTORY OF THE ABSOLUTE RETURN APPROACH

Prologue to the Twentieth Century

Most market observers put down 1949 as the starting date for so-called absolute return managers, that is, the hedge fund industry. However, if we loosen the definition of hedge funds and define hedge funds as individuals or partners pursuing absolute return strategies by utilizing traditional as well as nontraditional instruments and methods, leverage, and optionality, then the starting date for absolute return strategies dates further back than 1949.

One early reference to a trade involving nontraditional instruments and optionality appears in the Bible. Apparently, Joseph wished to marry Rachel, the youngest daughter of Leban. According to Frauenfelder (1987), Leban, the father, sold a (European style call) option with a maturity of seven years on his daughter (considered the underlying asset). Joseph paid the price of the option through his own labor. Unfortunately, at expiration Leban gave Joseph the older daughter, Leah, as wife, after which Joseph bought another option on Rachel (same maturity). Calling Joseph the first absolute manager would be a stretch. (Today absolute return managers care about settlement risk.) However, the trade involved nontraditional instruments and optionality, and risk and reward were evaluated in absolute return space.

Gastineau (1988) quotes Aristotle's writings as the starting point for

*Michel Sapin, former French Finance Minister, on speculative attacks on the franc. From Bekier (1996).

options. One could argue that Aristotle told the story of the first directional macro trade: Thales, a poor philosopher of Miletus, developed a "financial device, which involves a principle of universal application."* People reproved Thales, saying that his lack of wealth was proof that philosophy was a useless occupation and of no practical value. But Thales knew what he was doing and made plans to prove to others his wisdom and intellect. Thales had great skill in forecasting and predicted that the olive harvest would be exceptionally good the next autumn. Confident in his prediction, he made agreements with area olive-press owners to deposit what little money he had with them to guarantee him exclusive use of their olive presses when the harvest was ready. Thales successfully negotiated low prices because the harvest was in the future and no one knew whether the harvest would be plentiful or pathetic and because the olive-press owners were willing to hedge against the possibility of a poor yield. Aristotle's story about Thales ends as one might guess: When the harvesttime came and many presses were wanted all at once, Thales sold high and made a fortune.

Thus he showed the world that philosophers can easily be rich if they like, but that their ambition is of another sort. So Thales exercised the first known options trade some 2,500 years ago. He was not obliged to exercise the options. If the olive harvest had not been good, Thales could have let the option contracts expire unused and limited his loss to the original price paid for the options. But as it turned out, a bumper crop came in, so Thales exercised the options and sold his claims on the olive presses at a high profit. The story is an indication that a contrarian approach (trading against the crowd) might have some merit.

Lemmings and Pioneers

One could argue that in any market there are trend followers (lemmings) and pioneers or very early adopters. The latter category is by definition a minority. In the early 1990s, some people were running around with mobile phones the size of a shoe. Having a private conversation in a public place did not seem to be more than a short-term phenomenon. At the time, the author of this book thought they were in need of professional help, and therefore did not buy Nokia shares in the early 1990s so—unfortunately—cannot claim being a pioneer or having superior foresight. It turned out that those egomaniacs were really the pioneers, and it is us—the lemmings—who have adopted their approaches and processes.

In asset management there is a similar phenomenon. The pension and

*Note that George Soros, according to his own assessment, failed as philosopher but succeeded as an investor. From Soros (1987).

endowment funds loading up exposure to hedge funds during the bull market of the 1990s were the exception. They belong to a small minority of investors. The majority of institutional as well as private investors took for granted what was written in the press and steered away from hedge funds. However, economic logic would suggest that it is this minority, the pioneers, that have captured an economic rent for the risk they took by moving away from the comfort of the consensus. As the hedge fund industry matures, becomes institutionalized and mainstream, and eventually converges with the traditional asset management industry, this rent will be gone. The lemmings will not share (or will share to a much smaller extent) the economic rent the pioneers captured.

As Humphrey Neill (2001), author of *The Art of Contrary Thinking*, puts it:

> *A common fallacy is the idea that the majority sets the pattern and the trends of social, economic, and religious life. History reveals quite the opposite: the majority copies, or imitates, the minority and this establishes the long-run developments and socioeconomic evolutions.*

Note that trend following is not irrational. In a market where there is uncertainty and where information is not disseminated efficiently, the cheapest strategy is to follow a leader, a market participant who seems to have an information edge. This, however, increases liquidity risk in the marketplace. Persaud (2001) discusses herd behavior in connection with risk in the financial system and regulation. He makes the point that turnover is not synonymous with liquidity. Liquidity means that there is a market when you want to buy as well as when you want to sell. For this two-way market, diversity is key and not high turnover. Shiller (1990) and others explain herding as taking comfort in high numbers, somewhat related to the IBM effect: "No one ever got sacked for buying IBM." In the banking industry, for example, lemming-like herding is a risk to the system. If one bank makes a mistake, it goes under. If all banks make the same mistake, the regulators will bail them out in order to preserve the financial system.[1] Lemming-like herding, therefore, is a rational choice.

In Warren Buffett's opinion, the term "institutional investor" is becoming an oxymoron: Referring to money managers as investors is, he says, like calling a person who engages in one-night stands romantic.[2] Buffett is not at par with modern portfolio theory. He does not run mean-variance efficient portfolios. Critics argue that, because of the standard practices of diversification, money managers behave more conservatively than Buffett. According to Hagstrom (1994) Buffett does not subscribe to this point of view. He does admit that money managers invest their money in a more conventional manner. However, he argues that conventionality is not

synonymous with conservatism; rather, conservative actions derive from facts and reasoning.

Some argue that history has a tendency to repeat itself. The question therefore is whether we already have witnessed a phenomenon such as the current paradigm shift (as outlined in the Preface) in the financial industry. A point can be made that we have: In the 1940s anyone investing in equities was a pioneer. Back then there was no consensus that a conservative portfolio included equities at all. Pension fund managers loading up equity exposure were the mavericks of the time.

The pioneers who were buying into hedge funds during the 1990s were primarily uncomfortable with where equity valuations were heading. A price-earnings (P/E) ratio of 38 for the Standard & Poor's 500 index (S&P 500) (as was the case when this was written) is not really the same as a P/E of 8 (as for example in 1982). Whether the long-term expected mean return of U.S. equities is the same is open to debate and depends on some definitions and assumptions. However, there should be no debate that the opportunity set of a market trading at 38 times prospective (i.e., uncertain) earnings is the same as the opportunity set of a market trading at eight times prospective earnings.

Some pension funds (pioneers perhaps) have moved into inflation-indexed bond portfolios and are thereby matching assets with liabilities, that is, locking in any fund surplus rescued from the 2000–2002 bear market. What if this is a trend? What if there is a lemming-like effect whereby the majority of investors take risk off the table at the same time? If the incremental equity buyer dies or stops buying there is only one way equity valuations will head and equity prices will go.

The First Hedge Funds

The official (most often quoted) starting point for hedge funds was 1949 when Alfred Winslow Jones opened an equity fund that was organized as a general partnership to provide maximum latitude and flexibility in constructing a portfolio. The fund was converted to a limited partnership in 1952. Jones took both long and short positions in securities to increase returns while reducing net market exposure and used leverage to further enhance the performance. Today the term "hedge fund" takes on a much broader context, as different funds are exposed to different kinds of risks.

Other incentive-based partnerships were set up in the mid-1950s, including Warren Buffett's Omaha-based Buffett Partners and Walter Schloss's WJS Partners, but their funds were styled with a long bias after Benjamin Graham's partnership (Graham-Newman). Under today's broadened definition, these funds would also be considered hedge funds, but regularly shorting shares to hedge market risk was not central to their investment strategies.[3]

Alfred W. Jones was a sociologist. He received his Ph.D. in sociology

from Columbia University in 1938. During the 1940s Jones worked for *Fortune* and *Time* and wrote articles on nonfinancial subjects such as Atlantic convoys, farm cooperatives, and boys' prep schools. In March 1949 he wrote a freelance article for *Fortune* called "Fashions in Forecasting," which reported on various technical approaches to the stock market. His research for this story convinced him that he could make a living in the stock market, and early in 1949 he and four friends formed A. W. Jones & Co. as a general partnership. Their initial capital was $100,000, of which Jones himself put up $40,000. In its first year the partnership's gain on its capital came to a satisfactory 17.3 percent.

Jones generated very strong returns while managing to avoid significant attention from the general financial community until 1966, when an article in *Fortune* led to increased interest in hedge funds (impact of the 1966 article is discussed in the next section). The second hedge fund after A. W. Jones was City Associates founded by Carl Jones (not related to A. W. Jones) in 1964 after working for A. W. Jones.[4] A further notable entrant to the industry was Barton Biggs. Mr. Biggs formed the third hedge fund, Fairfield Partners, with Dick Radcliffe in 1965.[5] Unlike in the 2000–2002 downturn, many funds perished during the market downturns of 1969–1970 and 1973–1974, having been unable to resist the temptation to be net long and leveraged during the prior bull run. Hedge funds lost their prior popularity, and did not recover it again until the mid-1980s. Fairfield Partners was among the victims as it suffered from an early market call of the top, selling short the Nifty Fifty leading stocks because their valuation multiples had climbed to what should have been an unsustainable level. The call was right, but too early. "We got killed," Mr. Biggs said. "The experience scared the hell out of me."[6] Morgan Stanley hired him away from Fairfield Partners in 1973. Note that around three decades later some hedge funds also folded for calling the market too early; that is, they were selling growth stocks and buying value stocks too early.

Jones merged two investment tools—short sales and leverage. Short selling was employed to take advantage of opportunities of stocks trading too expensively relative to fair value. Jones used leverage to obtain profits, but employed short selling through baskets of stocks to control risk. Jones' model was devised from the premise that performance depends more on stock selection than market direction. He believed that during a rising market, good stock selection will identify stocks that rise more than the market, while good short stock selection will identify stocks that rise less than the market. However, in a declining market, good long selections will fall less than the market, and good short stock selection will fall more than the market, yielding a net profit in all markets. To those investors who regarded short selling with suspicion, Jones would simply say that he was using "speculative techniques for conservative ends."[7]

Jones kept all of his own money in the fund, realizing early that he could

not expect his investors to take risks with their money that he would not be willing to assume with his own capital. Curiously, Jones became uncomfortable with his own ability to pick stocks and, as a result, employed stock pickers to supplement his own stock-picking ability. Soon he had as many as eight stock pickers autonomously managing portions of the fund. In 1954, he had converted his partnership into the first multimanager hedge fund by bringing in Dick Radcliffe to run a portion of the portfolio.[8] By 1984, at the age of 82, he had created a fund of funds by amending his partnership agreement to reflect a formal fund of funds structure.

Caldwell (1995) points out that the motivational dynamics of Alfred Jones' original hedge fund model run straight to the core of capitalistic instinct in managers and investors. The critical motives for a manager are high incentives for superior performance, coupled with significant personal risk of loss. The balance between risk seeking and risk hedging is elementary in the hedge fund industry today. A manager who has nothing to lose has a strong incentive to "risk the bank."

The 1950s and 1960s

In April 1966, Carol Loomis wrote the aforementioned article, called "The Jones Nobody Keeps Up With." Published in *Fortune*, Loomis' article shocked the investment community by describing something called a "hedge fund" run by an unknown sociologist named Alfred Jones.[9] Jones' fund was outperforming the best mutual funds even after a 20 percent incentive fee. Over the prior five years, the best mutual fund was the Fidelity Trend Fund; yet Jones outperformed it by 44 percent, after all fees and expenses. Over 10 years, the best mutual fund was the Dreyfus Fund; yet Jones outperformed it by 87 percent. The news of Jones' performance created excitement, and by 1968 approximately 200 hedge funds were in existence.

During the 1960s bull market, many of the new hedge fund managers found that selling short impaired absolute performance, while leveraging the long positions created exceptional returns. The so-called hedgers were, in fact, long, leveraged and totally exposed as they went into the bear market of the early 1970s. And during this time many of the new hedge fund managers were put out of business. Few managers have the ability to short the market, since most equity managers have a long-only mentality.

Caldwell (1995) argues that the combination of incentive fee and leverage in a bull market seduced most of the new hedge fund managers into using high margin with little hedging, if any at all. These unhedged managers were "swimming naked."[10] Between 1968 and 1974 there were two downturns, 1969–1970 and 1973–1974. The first was more damaging to the young hedge fund industry, because most of the new managers were swimming naked (i.e., were unhedged). For the 28 largest hedge funds in the Securities and Ex-

change Commission (SEC) survey at year-end 1968, assets under management declined 70 percent (from losses as well as withdrawals) by year-end 1970, and five of them were shut down. From the spring of 1966 through the end of 1974, the hedge fund industry ballooned and burst, but a number of well-managed funds survived and quietly carried on. Among the managers who endured were Alfred Jones, George Soros, and Michael Steinhardt.[11]

Hedge Funds—The Warren Buffett Way

An interesting aspect about the hedge funds industry is the involvement of Warren Buffett, which is not very well documented as Buffett is primarily associated with bottom-up company evaluation and great stock selection. He is often referred to as the best investor ever and an antithesis to the efficient market hypothesis (EMH). According to Hagstrom (1994), Warren Buffett started a partnership in 1956 with seven limited partners. The limited partners contributed $105,000 to the partnership. Buffett, then 25 years old, was the general partner and, apparently, started with $100. The fee structure was such that Buffett earned 25 percent of the profits above a 6 percent hurdle rate whereas the limited partners received 6 percent annually plus 75 percent of the profits above the hurdle rate. Between 1956 and 1969 Buffett compounded money at an annual rate of 29.5 percent despite the market falling in five out of 13 years. The fee arrangement and focus on absolute returns even when the stock market falls look very much like what absolute return managers set as their objective today. There are more similarities:

- Buffett mentioned early on that his approach was the contrarian/value-investor approach and that the preservation of principal was one of the major goals of the partnership.[12] Today, capital preservation is one of the main investment goals of all hedge fund managers who have a large portion of their own net wealth tied to that of their investors. Warren Buffett's partnership had a long bias after Benjamin Graham's partnership. Selling short was not central to the investment strategy.
- Buffett's stellar performance attracted new money. More partnerships were founded. In 1962 Buffett consolidated all partnerships into a single partnership (and moved the partnership office to Kiewit Plaza in Omaha). The fact that stellar performance attracts capital is not new. Superior performance attracts capital in retail mutual funds as well as hedge funds. However, with some absolute return strategies there is limited capacity. In addition, there are manager-specific capacity constraints next to strategy-specific capacity constraints. Skilled managers are flooded with capital and eventually close their funds to new money.
- As the Nifty Fifty stocks like Avon, IBM, Polaroid, and Xerox were trading at 50 to 100 times earnings Buffett had difficulties finding value. He

ended his partnership in 1969. Buffett mailed a letter to his partners confessing that he was out of step with the current market environment:

> *On one point, however, I am clear. I will not abandon a previous approach whose logic I understand, although I find it difficult to apply, even though it may mean foregoing large and apparently easy profits to embrace an approach which I don't fully understand, have not practiced successfully and which possibly could lead to substantial permanent loss of capital.*[13]

These notions sound like an absolute return investment philosophy. There are two nice anecdotes with this notion: First, in recent years some market observers were claiming that Warren Buffett finally "lost it" as he refused to invest in the technology stocks of the 1990s as he had refused to invest in the Nifty Fifty stocks three decades earlier. The lesson to be learned is that absolute return managers do not pay 100 times prospective earnings, whereas relative return managers do.* Warren Buffett's quotation looks very similar to quotes by Julian Robertson. Julian Robertson wrote to investors in March 2000 to announce the closure of the Tiger funds (after losses and withdrawals). Robertson was returning money to investors, as did Warren Buffett in 1969. Robertson said that since August 1999 investors had withdrawn $7.7 billion in funds. He blamed the irrational market for Tiger's poor performance, declaring that "earnings and price considerations take a back seat to mouse clicks and momentum."[14] Robertson described the strength of technology stocks as "a Ponzi pyramid destined for collapse." Robertson's spokesman said that he did not feel capable of figuring out investment in technology stocks and no longer wanted the burden of investing other people's money.

There are also some similarities between Buffett and Soros: Both Warren Buffett and George Soros are contrarians.† There is a possibility that successful investors are contrarians by definition.‡ Hagstrom (1994) quotes Buffett: "We simply attempt to be fearful when others are greedy and to be greedy

*Assuming the stock is in the benchmark portfolio and the contribution to active risk is not negligible.

†Most investors believe they are contrarians—which, by definition, is not possible. Contrarian principles are nothing new. Jean-Jacques Rousseau was quoted saying: "Follow the course opposite to custom and you will almost always do well."

‡Lakonishok et al. (1994) found that because the market overreacts to past growth, it is surprised when earnings growth mean reverts. As a result, poor past performers have high future returns, and strong past performers have low future returns. Contrarians buy low (poor past performance) and sell high (strong past performance).

only when others are fearful."* This sounds (in terms of content, not phraseology) very much like what George Soros has to say:† "I had very low regard for the sagacity of professional investors and the more influential their position the less I considered them capable of making the right decisions. My partner and I took a malicious pleasure in making money by selling short stocks that were institutional favorites."[15] Buffett compares investing with a game: "As far as I am concerned the stock market doesn't exist. It is there only as a reference to see if anybody is offering to do anything foolish. It's like poker. If you have been in the game for a while and don't know who the patsy is, you're the patsy." There are some similarities with how George Soros sees investing: "I did not play the financial markets according to a particular set of rules; I was always more interested in understanding the changes that occur in the rules of the game."[16]

Shareholders of Berkshire Hathaway were also exposed to various forms of arbitrage, namely risk arbitrage and fixed income arbitrage. Over the past decades, Warren Buffett created the image of being a grandfatherly, down-to-earth, long-term, long-only investor, repeatedly saying he invested only in opportunities he understood and implying a lack of sophistication for more complex trading strategies and financial instruments. However, there is no lack of sophistication at all. According to Hagstrom (1994) Buffett was involved in risk arbitrage (aka merger arbitrage) in the early 1980s and left the scene in 1989 when the game became crowded and the arbitrage landscape was changing. In 1987 Berkshire Hathaway invested in $700 million of newly issued convertible preferred stocks of Salomon, Inc. Salomon was the most sophisticated and most profitable fixed income trading house of the time and the world's largest fixed income arbitrage operation. Note that Long Term Capital Management (LTCM) was founded and built on the remains of Salomon staff after the 1991 bond scandal.‡ Warren Buffett became interim

*One could argue that a relative return manager can execute a contrarian approach as well. However, there is a strong incentive not to, since many investors evaluate managers on a yearly (or maximum three-year) basis. This means that not participating in a bubble, which can take many years to unfold and then burst, is too risky. The relative return manager will be pushed out of business before he or she is proven right. This is one of the odd incentives that absolute return managers want to avoid.

†Warren Buffett and George Soros agree on many other fronts—for example, that stock prices are driven by sentiment (fear and greed) much more than by fundamentals (in the short term, that is). This was formalized by Shiller (1981, 1989) and is probably a consensus view today.

‡In August 1991, Salomon controlled 95 percent of the two-year Treasury notes market despite rules only permitting 35 percent of the total offering. Salomon had exceeded this limit by a wide margin and admitted to violating Treasury action rules. From Hagstrom (1994), p. 171.

chairman of Salomon after chairman John Gutfreund resigned. Hagstrom (1994) argues that "Buffett's presence and leadership during the investigation prevented Salomon from collapsing." Had the board, led by Warren Buffett, not persuaded U.S. attorneys that it was prepared to take draconian steps to make things right, it seems highly likely that the firm would have been indicted and followed Drexel Burnham to investment banking's burial ground.[17]

Warren Buffett's Berkshire Hathaway was invested in Bermuda-based West End Capital during the turbulence caused by the Russian default crisis in 1998. Berkshire contributed 90 percent of the capital raised in July 1998 to West End Capital, which attempts to profit through bond convergence investing and uses less leverage (around 10 to 15 times) than comparable boutiques. However, the investment is not sizable when compared to long-only positions. In August 1998 John Meriwether approached Buffett about investing in LTCM. Buffett declined.[18] Later Buffett offered to bail out LTCM, an offer that was ultimately declined by LTCM.*

Throughout his extremely successful career, Warren Buffett has had some kind of involvement in what today is called the hedge fund industry, that is, money managers seeking absolute returns for their partners and themselves while controlling unwanted risk. Figure 1.1 shows what great money managers have in common: a focus on absolute returns.

One of the great ironies in the annals of finance is that George Soros is probably the most misunderstood and controversial figure in the money management scene. However, based on realized performance, he is probably the greatest investor the world has ever seen. This is ironic because George Soros' sterling conversion trade in 1992 is considered as symptomatic of pure speculation. Soros compounded at an annual rate of 31.6 percent (after fees) in the 33 years from 1969 to 2001. This compares with around 26.0 percent in the case of Warren Buffett in the 44 years ending 2001 and with around 22.4 percent for Julian Robertson in the 22 years ending 2001. Note that compounding $1 at 31.6 percent, 26.0 percent, 22.4 percent and 7.9 percent (S&P 500) over a 25-year period results in terminal values of $958, $323, $157, and $6.7 respectively. This, albeit anecdotal, can be considered a big difference.

Who is the greatest money manager of all time? Most people would probably agree that it is either George Soros or Warren Buffett. Figure 1.1 would suggest the former, Figure 1.2 the latter. Figure 1.2 shows annualized returns in relation to the standard deviations of these annual returns, that is, so-called risk-adjusted returns (implying that the standard deviation of returns is a sound proxy for risk). The sizes of the bubbles (and the numbers next to the

*Warren Buffett is the ultimate value investor. Acquiring LTCM's positions at a discount would have been a great trade, since most positions turned profitable after the "100-year flood" had settled.

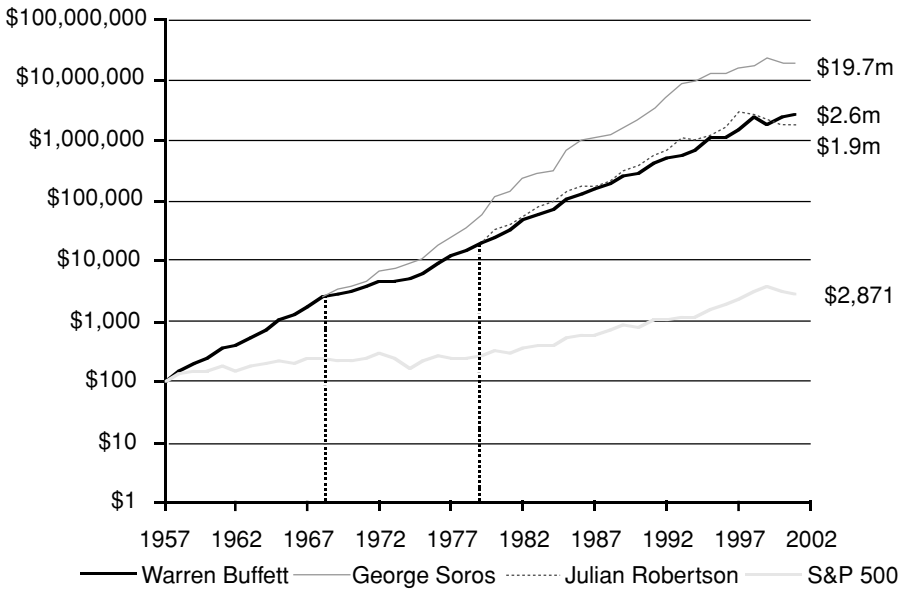

FIGURE 1.1 Performance of Greatest Long-Term Money Managers
Source: Hagstrom (1994), Peltz (2001), Datastream, TASS, Managed Account Reports.

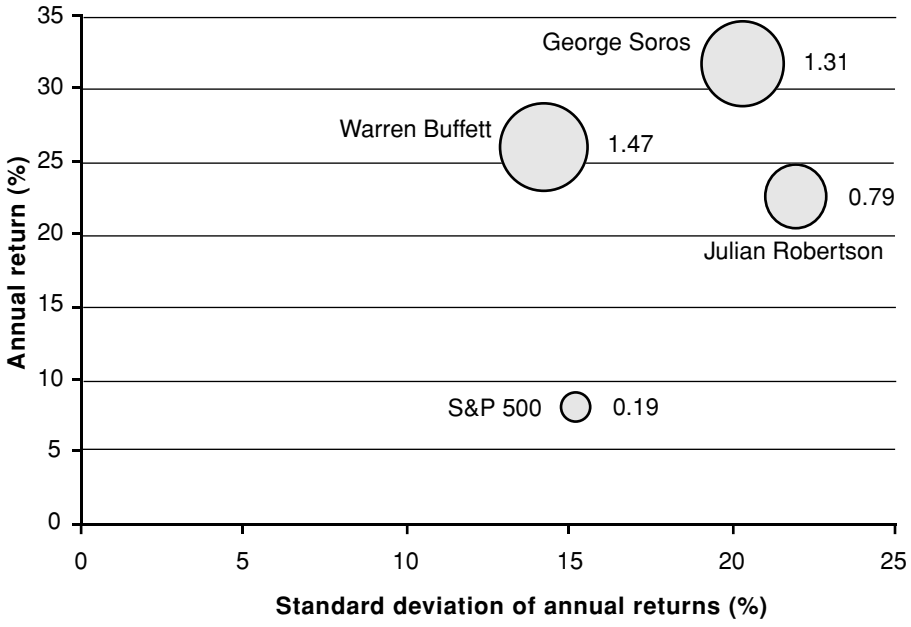

FIGURE 1.2 Risk-Adjusted Returns of World's Greatest Money Managers
Source: Hagstrom (1994), Peltz (2001), Datastream, TASS, Managed Account Reports.

bubbles) measure the Sharpe ratios assuming a constant risk-free rate of 5 percent. Note that the risk-adjusted returns were calculated over different time periods.

Figure 1.1 and Figure 1.2 also reveal another interesting aspect of business life. According to Hagstrom (1994) Warren Buffett started with $100 in 1957. Figure 1.1 implies that his initial investment of $100 would have grown to only $2.6 million by the end of 2001. However, Warren Buffett is a multibillionaire and one of the wealthiest individuals on the planet.* The difference between $2.6 million and his X-billion wealth is attributed to entrepreneurism and not investment skill (albeit there is strong correlation between the two). This should serve as a reminder to day traders and other financial comedians: Unambiguous greatness and sustainable value creation are achieved through successfully setting up and running businesses and not through having a go at the stock market.

The 1970s

Richard Elden (2001), founder and chairman of Chicago-based fund of (hedge) funds operator Grosvenor Partners, estimates that by 1971 there were no more than 30 hedge funds in existence, the largest having $50 million under management. The aggregate capital of all hedge funds combined was probably less than $300 million. The first fund of hedge funds, Leveraged Capital Holdings, was created by Georges Karlweis in 1969 in Geneva.[19] This was followed by the first fund of funds in the United States, Grosvenor Partners in 1971.

In the years following the 1974 market bottom, hedge funds returned to operating in relative obscurity, as they had prior to 1966. The investment community largely forgot about them. Hedge funds of the 1970s were different from the institutions of today. They were small and lean. Typically, each fund consisted of two or three general partners, a secretary, and no analysts or back-office staff.[20] The main characteristic was that every hedge fund specialized in one strategy. (This, too, is different from today.) Most managers focused on the Alfred Jones model, long/short equity. Because hedge funds represented such a small part of the asset management industry they went un-

*According to hereisthefinancialnews.com, based on *Forbes*' "World's Richest People" list, Warren Buffett is the second wealthiest man in the world after Bill Gates: "To give you some idea of what this means, consider the following anecdote: 'A man gave his wife $1 million to spend at a rate of $1,000 a day. In three years she returned for more. So he gave her $1 billion and she didn't come back for 3,000 years.' Warren Buffett's wife could go on a spending spree for 90,000 years." From hereisthefinancialnews.com, March 6, 2002.

noticed. This resulted in relatively little competition for investment opportunities and exploitable market inefficiencies. In the early 1970s there were probably more than 100 hedge funds. However, conditions eliminated most.

The 1980s

Only a modest number of hedge funds were established during the 1980s. Most of these funds had raised assets to manage on a word-of-mouth basis from wealthy individuals. Julian Robertson's Jaguar fund, George Soros' Quantum Fund, Jack Nash from Odyssey, and Michael Steinhardt Partners were compounding at 40 percent levels. Not only were they outperforming in bull markets, but they outperformed in bear markets as well. In 1990, for example, Quantum was up 30 percent and Jaguar was up 20 percent, while the S&P 500 was down 3 percent and the Morgan Stanley Capital International (MSCI) World index was down 16 percent. The press began to write articles and profiles drawing attention to these remarkable funds and their extraordinary managers.

Figure 1.3 shows an estimate of number of hedge funds in existence through the 1980s. Duplicate share classes, funds of funds, managed futures, and currency speculators were not included in the graph.

During the 1980s, most of the hedge fund managers in the United States were not registered with the SEC. Because of this, they were prohibited from

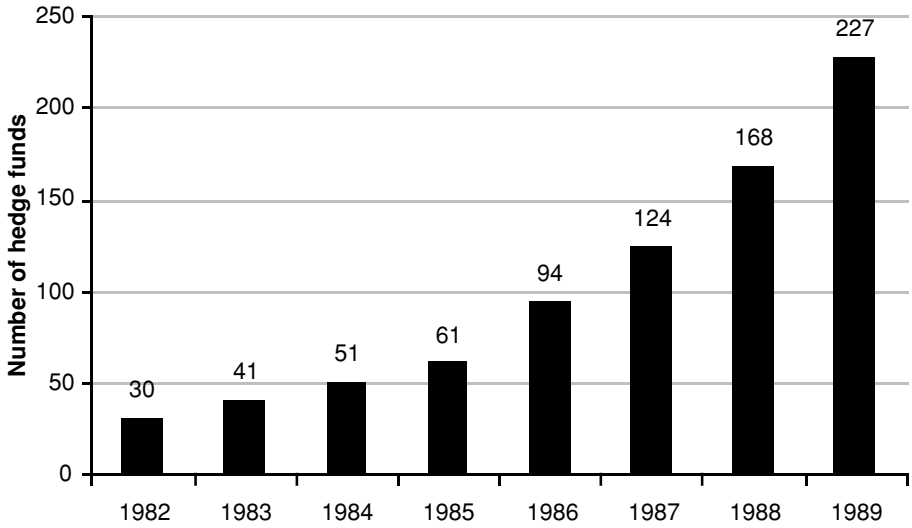

FIGURE 1.3 Number of Hedge Funds in the 1980s
Source: Quellos Group.

advertising, and instead relied on word-of-mouth references to grow their assets. (See Table 1.1.) The majority of funds were organized as limited partnerships, allowing only 99 investors. The hedge fund managers, therefore, required high minimum investments. European investors were quick to see the advantages of this new breed of managers, which fueled the development of the more tax-efficient offshore funds.

Caldwell (1995) puts the date where hedge funds reentered the investment community at May 1986, when *Institutional Investor* ran a story about Julian Robertson.[21] The article, by Julie Rohrer, reported that Robertson's Tiger Fund had been compounding at 43 percent during its first six years, net of expenses and incentive fees. This compared to 18.7 percent for the S&P 500 during the same period. The article established Robertson as an investor, not a trader, and said that he always hedged his portfolio with short sales. One of the successful trades the article mentioned was a bet on a falling U.S. dollar against other major currencies in 1985. Robertson had bought an option, limiting downside risk by putting only a fraction of the fund's capital at risk. Rohrer showed the difference between a well-managed hedge fund and traditional equity management.

Another fund worth mentioning was Princeton/Newport Trading Partners. Princeton/Newport was a little-known but very successful (convertible) arbitrage fund with offices in Princeton, New Jersey, and Newport Beach, California. Some practitioners credit the firm with having the first proper option pricing model and making money by arbitraging securities; this included optionality that other market participants were not able to price properly. For

Table 1.1 Hedge Fund Assets under Management in the 1980s ($ millions)

Category	1980	1985	1990
Global	$193	$517	$1,288
Macro	0	0	4,700
Market-neutral	0	78	638
Event-driven	0	29	379
Sector	0	0	2
Short selling	0	0	187
Long-only	0	0	0
Fund of funds	0	190	1,339
Total (excluding fund of funds)	$193	$624	$7,194
Total (including fund of funds)	193	814	8,533

Source: Eichengreen and Mathieson (1998), Table 2.2, p. 8, based on MAR/Hedge data.

two decades up to 1988, Princeton/Newport had achieved a remarkable track record with returns in the high teens and extremely few negative months. Unfortunately, Princeton/Newport was hit by overzealous government action that led to an abrupt cessation of operations in 1988.*

The 1990s

During the 1990s, the flight of money managers from large institutions accelerated, with a resulting surge in the number of hedge funds. Their operations were funded primarily by the new wealth that had been created by the unprecedented bull run in the equity markets. The managers' objectives were not purely financial. Many established their own businesses for lifestyle and control reasons. Almost all hedge fund managers invested a substantial portion of their own net worth in the fund alongside their investors.

One of the characteristics of the 1990s was that the hedge fund industry became extremely heterogeneous. In 1990, two-thirds of hedge fund managers were macro managers, that is, absolute return managers with a rather loose mandate. Throughout the decade, more strategies became available for investors to invest in. Some of the strategies were new; most of them were not. By the end of 2001, more than 50 percent of the assets under management were somehow related to a variant of the Jones model, long/short equity. However, even the subgroup of long/short equity became heterogeneous. Figure 1.4 compares some alternative investment strategies with the traditional long-only strategy with respect to the variation in net market exposure. The horizontal lines show rough approximations of the ranges in which the different managers are expected to operate. It will become clear in later chapters that the superiority of the long/short approach is derived from widening the set of opportunities (and the magnitude of opportunities) from which the manager can extract value. The graph highlights a further aspect of hedge fund investing: Not all equity absolute return managers have the same investment approach. This diversity results in low correlation among different managers, despite the managers trading the same asset class. Low correlation among portfolio constituents then allows construction of low-risk portfolios.

*In 2002, a similar vendetta was unfolding. New York State Attorney General Eliot Spitzer was moving in on established Wall Street firms. Glassman (2002) makes the obvious point that every bear market requires a scapegoat, and this time the chosen victims are stock analysts. According to the *Wall Street Journal* (2002), Mr. Spitzer was bidding to be the next Ferdinand Pecora, the Congressional aide whose flaying of Wall Street gave birth to the Depression-era regulatory establishment that still hangs around today and which did nothing to prevent Enron or false market calls. As Warren Buffett puts it: "It's only when the tide goes out that you see who has been swimming with their trunks off."

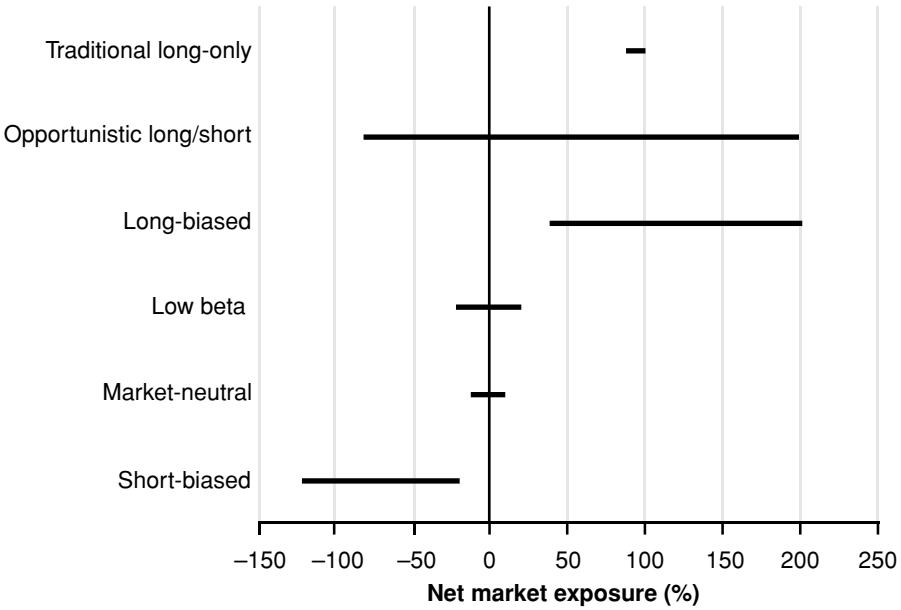

FIGURE 1.4 Different Strategies in Equities
Source: Quellos Group.

The 1990s saw another interesting phenomenon. A number of the established money managers stopped accepting new money to manage. Some even returned money to their investors. Limiting assets in many investment styles is one of the most basic tenets of hedge fund investing if the performance expectations are going to continue to be met. This reflects the fact that managers make much more money from performance fees and investment income than they do from management fees. Due to increasing investor demand in the 1990s, many funds established higher minimum investment levels ($50 million in some cases) and set long lock-up periods (three to five years).

Both Julian Robertson's Tiger Management and George Soros' Soros Fund Management reached $22 billion in assets in 1998, setting a record for funds under management.[22] Both organizations subsequently shrunk in size, and Tiger ultimately was liquidated. Today, there are dozens of organizations managing more than $1 billion. Based on data from Hedge Fund Research, Inc. (HFRI) the hedge fund industry grew in terms of unleveraged assets under management of $38.9 billion in 1990 to $456.4 billion in 1999 and $536.9 billion at the end of 2001.

Conclusion

Some investors in the hedge fund industry argue that the pursuit of absolute returns is much older than the pursuit of relative returns (i.e., beating a benchmark). This view can be justified if we allow for a loose interpretation of historical deals. One could conclude that the way hedge funds manage assets is going back to the roots of investing. What Charles Ellis (1998) calls trying to win the loser's game, therefore, could be viewed as only a short blip in the evolution of investment management. Put differently, both the first and third paradigm of investment management were about absolute returns.

Irrespective of the history of hedge funds or whether hedge funds are leading or lagging the establishment, the pursuit of absolute returns is probably as old as civilization and trade itself. However, so is lemming-like trend following.

INVESTMENT PHILOSOPHY OF ABSOLUTE RETURN MANAGERS

Introduction

An absolute return manager is essentially an asset manager without a benchmark or with a benchmark that is the return on the risk-free asset. Benchmarking can be viewed as a method of restricting investment managers so as to limit the potential for surprises, either positive or negative. By defining a market benchmark and a tracking error band, the plan sponsor gives the manager a risk budget in which the manager is expected to operate. Recent legal action in the United Kingdom by a pension plan sponsor probably will mean that the relative return industry will be even more "benchmark-aware" than it already was.*

Separating skill from luck is one of the major goals of analyzing the performance of a particular manager, regardless of whether he is running long-only or absolute return money. In any sample of managers, a small percentage is bound to have exceptional performance (both positive and negative). Managers with exceptional positive performance will attribute the excess return to skill. Those who perform exceptionally poorly are unlikely to blame lack of skill but rather bad luck as the cause of their performance. Grinold and Kahn (2000a) categorize managers according to luck and skill. The

*A pension fund sued a large asset management firm for negligence resulting in 10 percent underperformance against the benchmark. The case was settled out of court. It was estimated that the asset manager paid around £70 million ($107 million) compensation.

lucky and skilled are "blessed." The lucky and unskilled are "insufferable." The unlucky but skilled are "forlorn," whereas the unlucky and unskilled are "doomed."

Grinold and Kahn argue that "nearly half of all roulette players achieve positive returns on each spin of the wheel." This means that the wheel most often stops on red or black (as opposed to 0 or 00). Even the existence of very large returns (such as when the ball stops on a single number bet like 7) does not prove skill. However, the expected return of the roulette gambler is negative. Over the long term, they all lose. The casino, however, has positive expected returns and wins (as long as it has enough cash or credit lines to live through a bad evening).*

The practical issue arising from performance analysis is that it requires a certain amount of data points before any conclusions can be drawn with a reasonable degree of confidence. For example, to analyze yearly returns, 16 years of observations are needed to judge whether a manager is top quartile (has an information ratio of 0.5) with 95 percent confidence. As the normal life span of an asset manager is less than 16 years, a 16-year monitoring period seems rather impractical. Assessing qualitative aspects (investment philosophy, trading savvy, risk management experience, infrastructure, incentive structure, etc.)—that is, bottom-up fundamental research and due diligence—is the only way around this issue.

A Car without Brakes

The most comparable strategy to long-only equity is long/short equity. The HFRI Equity Hedge Index (equity long/short managers) outperformed most equity market indexes on an absolute as well as risk-adjusted basis by a wide margin. However, most long/short managers should underperform long-only managers in momentum-driven bull markets where all stocks increase rapidly.† The long/short manager should underperform because the short positions are a drag on performance (for example, in liquidity-driven momentum markets as in the late 1990s). However, when markets have only slightly positive or negative returns, long/short managers have outperformed the

*Running a casino, an insurance company, or the national lottery is a business called statistical arbitrage. The operators win as long as they can survive statistical outliers, that is, large but few occasional outflows or losses. Statistical arbitrage is one strategy executed by absolute return managers. The irony is that the public perceives absolute return managers to be like gamblers, whereas they are actually more like someone running a casino. Their expected return is positive.

†Note that this is a generalization and that generalizations are actually inappropriate in an industry as heterogeneous as the hedge fund industry or long/short equity subindustry. However, occasionally a generalization helps to put across a point.

long-only managers, at least in the past. In other words, long/short hedge funds underperform in strong bull markets and outperform in bear markets. This means that if the returns of the benchmark index are fairly normally distributed, the return profile of absolute return managers is nonlinear, that is, asymmetrical to the market. Figure 1.5 shows the symmetrical returns of an equity index and compares it with the asymmetrical return profile of a hedge fund index. The figure shows the average quarterly returns of the HFRI Equity Hedge Index when the MSCI World was positive and negative respectively. The average of the 34 positive quarterly returns between 1990 and 2001 was 5.8 percent. The corresponding return for the HFRI Equity Hedge Index was 6.6 percent. The averages of the 14 negative quarters were –7.3 percent and 0.9 percent respectively.

The main reason why traditional funds do more poorly in downside markets is that they usually need to have a certain weight in equities according to their mandate, and therefore are often compared to a car without brakes. The freedom of operation is limited with traditional asset managers and more flexible with absolute return managers. Another reason why hedge fund managers may do better in down markets is that they often have a large portion of their personal wealth at risk in their funds. Arguably, their interests are more aligned with those of their investors. This alignment, together with the lack of

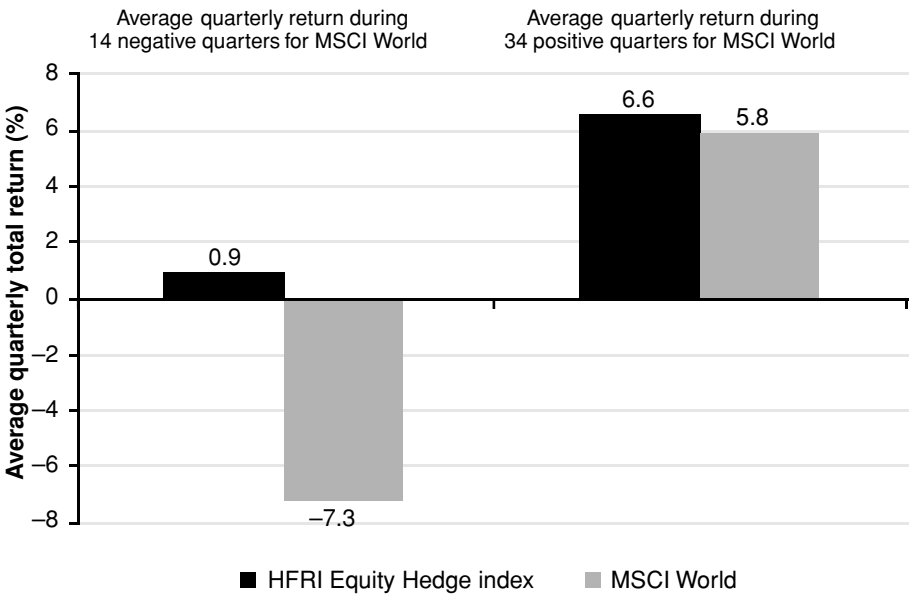

FIGURE 1.5 Asymmetrical versus Symmetrical Return Profile, 1990–2001
Source: Hedge Fund Research, Datastream, UBS Warburg (2000).

a relative measure for risk, increases the incentive to preserve wealth and avoid losses.

Avoiding Negative Compounding

Downside protection is closely related to avoiding negative compounding. A simple example may help illustrate the importance of wealth preservation: If one loses 50 percent, as various markets and stocks did during 2000–2001, one needs a 100 percent return just to get back to breakeven. That is, the positive return must be double the negative return. We argue that downside protection from the investors' point of view and avoidance of negative returns from the managers' point of view are different sides of the same coin.

Table 1.2 is an attempt to explain the investment philosophy of absolute return managers. Both absolute and relative return managers would argue that they were not hired by investors to lose money. The fundamental difference between the two investment philosophies lies in the aversion to absolute financial losses and the definition of risk. Absolute return managers define risk as *total risk* whereas relative return managers define risk as *active risk*.

Orthodox financial theory suggests that investors should focus on the long term. It also suggests that investors will generate satisfactory returns if they have a long enough time horizon when they buy equities. This may or may not be true. The problem faced by absolute return managers is that they might not live long enough to experience the long term. Absolute return managers do not care if the probability of equities underperforming bonds over a 25-year period is low. Moreover, absolute return managers are interested in

Table 1.2 Different Approaches to Creating Value

	Long-Only Buy-and-Hold				Alternative Strategies			
	MSCI World	S&P 500	Nasdaq Composite	Nikkei 225	Equity Market-Neutral	Equity Hedge	Macro	Fund of Funds
Dec. 1998	$100	$100	$100	$100	$100	$100	$100	$100
Dec. 1999	125	121	186	137	107	144	118	126
Dec. 2000	109	110	113	100	123	157	120	132
Dec. 2001	91	97	89	76	131	158	129	135
Return 1999	25%	21%	86%	37%	7%	44%	18%	26%
Return 2000–2001	–27	–20	–52	–44	22	9	10	7
Dec. 2001 vs. peak	–28	–23	–58	–73	0	–4	0	0
Breakeven return[a]	39	30	141	269	0	4	0	0

[a]Return required to break even from previous peak.

Source: Hedge Fund Research, Datastream.

how they get there; that is, they are interested in *end-of-period* wealth as well as *during-the-period* variance.

Table 1.2 summarizes what we mean by "avoiding negative compounding." It shows four long-only buy-and-hold portfolios as well as four alternative absolute return strategies. The absolute return manager could argue that the first four columns have nothing to do with asset management or risk management. Absolute return managers want to make profits not only when the wind is at their backs but also when it changes and becomes a headwind. Absolute return managers will therefore use risk management and hedging techniques—this is where the asymmetrical return profile discussed earlier comes from. From the point of view of absolute return managers, relative return managers do not use risk management,* and do not manage assets as they follow benchmarks. They are trend followers by definition.

In other words, the relative return manager is long; hence the term long-only. The relative return manager, again from the point of view of the absolute return manager, has no incentive, no provisions to avoid losses.† This does not make sense to many absolute return managers and is the reason why some absolute return managers believe relative return managers face obsolescence.

Table 1.2 shows that an investment in the four equity indexes in December 1998 would have ended in losses by December 2001, despite the phenomenal performance of equities in 1999.‡ The second row from the bottom measures the percentage from the peak in local currencies. The high losses in the Nikkei 225 make it clear why some Japanese investors are not as averse to hedge fund exposure as are, for example, U.K. pension fund trustees. (Demand for hedge fund products is larger from Japanese institutional investors than it is from U.K. institutional investors.) It also illustrates one of the incentives of absolute return managers. Absolute return managers would try to keep this figure at zero, because first they have their own money in the fund and do not want to lose it, and second, most hedge fund managers have a high-water mark. This

*Note that, for example, Lo (2001) expresses a diametrically opposing view, arguing that "risk management is not central to the success of hedge funds" whereas "risk management and transparency are essential" for the traditional manager.

†This is not entirely correct: A relative return manager has an incentive to grow funds under management (i.e., avoid funds under management falling) because fee income is determined based on the absolute level of funds under management.

‡It is interesting to note that some fund of hedge funds managers regard themselves as being boring. They do not offer the excitement of the swings as shown in Table 1.2. They simply want to offer financial wealth-increasing vehicles with low volatility. The ultimate irony, as mentioned several times in this book, is that hedge fund exposure is still regarded as more risky than long-only equity exposure by a majority of financial professionals and regulators and an even larger majority of the general public.

means that they can charge an incentive fee only from new profits; that is, the fund has to make up for any losses before it can charge its performance fee. For example, a fund falling to 80 from 100 and then rising back to 100 will not charge a performance fee on the 25 percent profit from 80 to 100.

Figure 1.6 shows two hypothetical saving schemes of a Japanese employee, assuming deposits are made at the end of each calendar year over a 20-year period and that deposits grew 2 percent per annum due to salary increases. The two series contrast a local stock market savings scheme (as measured by the Nikkei 225) and a fixed-rate scheme of 5 percent. Figure 1.6 should serve as a reminder that it is true that equity markets go up in the long term but: (1) Differences between markets are huge. Taking the S&P 500 as a proxy for equity investing over the past 10, 20, 50, or even 100 years is inappropriate because the U.S. stock market is the mother of all stock markets, that is, the winner of a large group of survivors. (2) An investor might not live long enough to experience the long term.

Nearly all analysis in the asset management industry is based on *time-weighted* rates of return. However, the most relevant metric from an investor's perspective is *dollar-weighted* rates of return or their internal rate of return (IRR). For example, Manager A earns 20 percent, 20 percent and –10 percent in years one to three, while Manager B earns –10 percent, 20 percent, and 20 percent. In both cases, the time-weighted return is the same (9 percent average

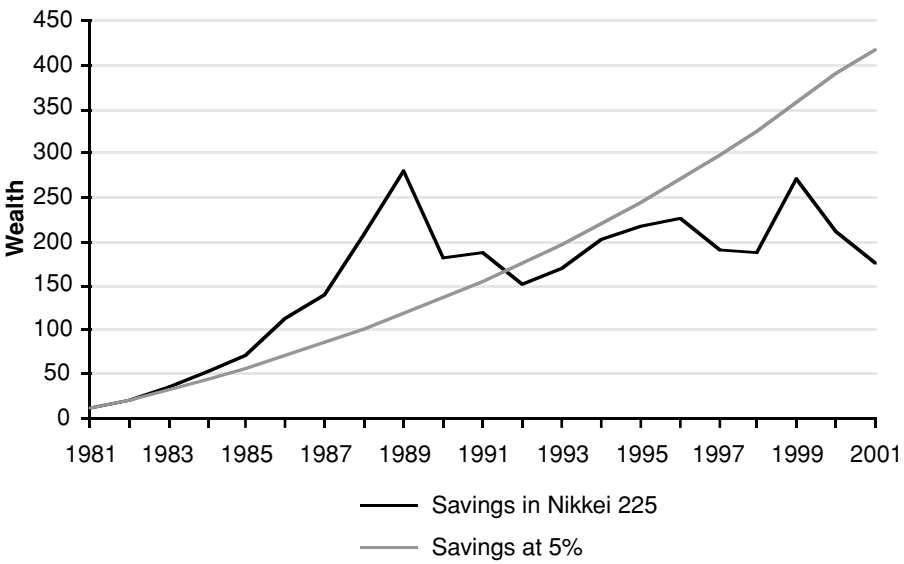

FIGURE 1.6 Low Volatility Savings Plan Compared with Equity Investment
Source: Datastream.

annual compound growth). However, the dollar-weighted rate of return between the two managers will likely be vastly different for nearly all investors. The only exception is investors that neither invest nor withdraw assets. These investors would have earned the same IRR by investing with either manager. An investor who was a saver, contributing $100 per year, would earn $120, $264, and $328 with Manager A by the end of years one to three, respectively, but $90, $228, and $394 with Manager B. The increase in wealth produced by each fund ($328 versus $394) is dramatically different even though the time-weighted return is the same. This effect is more pronounced the greater the degree of variation in returns. Earning 9 percent per year results in $357 at the end of period three, that is, is in between the two other outcomes. Accumulation of wealth is much more reliable (less risky) the lower the total risk.

Assume that the dark line in Figure 1.6 is the retirement plan of a 45-year-old employee who started working 20 years ago and has been investing money in the stock market every year, starting with $10 in year one. The employee's wealth would have been $241 at the end of 2001. Invested at 5 percent, this would have ended in wealth of $416 (assuming contribution increases at a rate of 2 percent in both cases). In other words, the stock market has not been that great for a Japanese saver over the past 20 years, despite the fact that the 1980s was one of the greatest bull markets ever in the country's financial history (as were the 1990s in the United States and Europe).* If the hypothetical Japanese equity saver continues to get a salary increase of 2 percent per year and invests it in the Nikkei 225, the annual growth rate of the Nikkei 225 over the next 20 years has to be around 9.6 percent to equal the fixed-rate investment over the full 40-year period. If this growth rate materializes, the Japanese investor would be as well positioned at retirement age 65 as if he or she had invested at 5 percent. The Japanese equity market might perform at a rate of 9.6 percent per year over the next 20 years; however, and this is the whole point, it might not.†

The Nikkei 225 is an extreme example that was chosen on purpose. The choice is based on the fact that the high volatility in equity markets can have a large impact on end-of-period wealth as well as variance during the investment period. An investment strategy that does not manage both end-of-period

*For this not to happen to savers in the United States and Europe there is an urgent need of incremental buyers, that is, buyers who consider valuations in the high thirties or low forties—based on aggregate market earnings per share (EPS)—as cheap. Continental European pension funds have been announcing throughout the late 1990s that they will increase their allocations to equities. Most investors and financial professionals hope that they do not change their minds. For a market to go up, there is a need for (incremental) buyers. No buyers—no asset price inflation.

†At a rate of 9.6 percent per year, the Nikkei 225 would break through its all-time high of around 40,000 during the year 2016 and close at 66,161 on December 31, 2021.

wealth as well as during-the-period variance is not an active but rather a passive investment strategy.

Return Illusion

To the casual observer, the return of 86 percent on the Nasdaq index in Table 1.2 may look high even if it is followed by a retreat of *only* 52 percent. However, if $100 had been passively invested in the Nasdaq Composite index at the beginning of 1999 and transaction costs were zero, the portfolio would have declined to $89 by the end of December 2001 (an $86 gain in 1999 followed by a $97 loss in 2000–2001). This compares with $131 for a portfolio of equity market-neutral absolute return managers, $135 for the average fund of hedge funds, or $129 for a diversified exposure to global macro managers.* High returns as observed on the Nasdaq are good for headlines and selling financial magazines. However, these returns are an illusion in a long-term context. A volatile market-based strategy with returns such as 89 percent per year is an indication that the return figure might reverse in a linear fashion.

The figures in Table 1.2 are only moderately conclusive because the analysis has starting- and end-point bias. However, a point worth making is that investing in absolute return funds or adding alternative asset classes and strategies to traditional asset classes and strategies is a conservative undertaking. Diversifying into assets with low correlation to one's existing assets or combining assets with low correlation reduces total risk. Diversification and hedging unwanted risks are laudable concepts—despite the popular belief that, apparently, (still) suggests otherwise: In the United States, 401(k) plans allow a 100 percent allocation to one stock. In the United Kingdom, some pension funds recently had a larger allocation to one domestic stock than to the whole U.S. stock market due to benchmark considerations. It is unlikely that these examples of suboptimal allocation of risk will persist forever.

Perception of Risk

Misunderstanding about absolute return managers is derived from the observation that relative and absolute return managers do not speak the same

*The irony here is that macro hedge funds are considered as the most speculative investment vehicles, since the managers are the most extravagant and their investment process is the least transparent. However, what is often overlooked is that the different personalities and loose investment mandate result in huge diversity among macro managers. This diversity means that the returns from different macro managers have a low correlation with one another because their performance is attributed to different factors, opportunities, and investment approaches. The low correlation among macro hedge funds allows an investor to substantially reduce portfolio volatility by combining different macro managers.

language. Terminologies and perceptions can be as different as the strategies. One perception has to do with risk. When a relative return manager speaks of risk he or she normally means *active risk*. When an absolute return manager speaks of risk he or she usually means *total risk*, that is, the probability of losing everything and being forced to work for a large organization again.

Traditional long-only managers whose benchmark is, for example, the S&P 500 see a "riskless" position as holding all 500 stocks in exact proportion as the index. Shifting 10 percent out of high-beta stocks into cash is perceived as an increase in risk. Absolute return managers would view such a shift as decreasing risk. In other words, absolute return managers have a different perspective.

This does not mean that a relative return manager perceives true financial risk as active risk. Losing money is obviously worse than making money. However, it is active risk that is linked to their remuneration and future career prospects. Their incentive and mandate is to manage active risk, not total risk. The investment consulting boom beginning in the late 1960s and the paper on asset allocation by Gary Brinson et al. (1986) were probably the key moments in the bifurcation of the second paradigm of asset allocation, that is, the migration from an absolute return to a relative return perspective. Institutional investors, academics, and consultants were the drivers pushing money managers to assimilate the relative perspective toward risk and return—whether long-only managers liked it or not. The third paradigm in asset management mentioned in the Preface is steering away from the odd incentives derived from a relative return approach.

Risk Illusion from Time Diversification

An often-debated phenomenon in equity markets is the benefit of time diversification. Some argue that equities are safe in the long term.* The argument goes as follows: Equities have a 60 percent probability of outperforming government

*Swank et al. (2002), for example, recommend pension plans to be 100 percent invested in equities (i.e., they recommend portfolio concentration as opposed to portfolio diversification): "While an appropriate investment strategy depends on a number of factors, many of them plan-specific, in many cases we believe it is in the best interest of both the pension plan's sponsor and its participants to invest the plan's assets entirely in equities. Certainly plans must maintain the liquidity necessary to make annual contributions and benefit payments, but many plans have the financial stability and liquidity to handle a downturn in the market even if invested 100 percent in equities. For these plans, any amount not invested in equities simply reduces the long-term growth of assets with no offsetting benefit." It is unlikely that the authors would have drawn the same conclusions had the analysis been done with Nikkei 225 or MSCI Europe index returns instead of S&P 500 returns.

bonds over a one-year period and a 95 percent outperformance probability over 25 years. In addition, long-term volatility is normally lower than short-term volatility. The apparent conclusion, therefore, is that investing in equities is foolproof as long as one has a long time horizon. The debate surrounding whether time reduces risk is often referred to as the time diversification controversy. Another school of thought argues that time diversification is an illusion and a longer time horizon does not reduce risk.

The illusion (or misconception) of time reducing risk arises from a misunderstanding of risk. It is true that the annual average rate of return has a smaller standard deviation for a longer time horizon. However, it is also true that the uncertainty compounds over a greater number of years. Unfortunately, this latter effect dominates in the sense that the total return becomes more uncertain the longer the investment horizon. Had a long-term investor with a 100-year investment horizon decided to put money into the U.S. stock market in 1900, the investment would have compounded at a reasonable rate. However, other choices were other large markets such as Argentina, Imperial Russia, or Japan. The 100-year return of these markets was materially different than the U.S. experience.

An eye-opener is the difference between the probability of suffering a loss at the *end of* the investment period and the probability of suffering a loss *during* the investment period. The former is very small and the latter large by comparison. The practical significance is that large absolute losses are very uncomfortable for most investors, private as well as institutional. The difference between 15 percent and 18 percent rates of return seems relatively small. The impact on ending wealth is considerably larger ($3,292 versus $6,267 compounded over 25 years for a $100 initial investment). Thus the variation or risk in end-of-period wealth does not decrease with time. Further, this analysis specifies no utility function for the investor. If an investor had uncertainty as to when he or she would withdraw money, the variability in ending wealth would further diminish the value of the risky investment over the safer investment. *End of the period* and *during the period* lose significance if the end of the investment period is not known with 100 percent certainty.

The financial industry has not yet paid a lot of attention to risk-adjusted returns. Pure returns or, in some cases, active returns are the main focus point when performance is presented to investors and/or prospects. With Table 1.3 we try to make the point that two portfolios with the same return are not necessarily the same.

Table 1.3 shows the difference of achieving an 8.1 percent annual return over a 10-year period with volatile returns and with stable returns. The volatile returns are annual total returns in U.S. dollars for an investment in the MSCI World index for the 10-year period ending in 2001 (in reverse order). The stable returns were calculated for volatility to equal 1.58 percent, that is, one-tenth of MSCI World return volatility. Note that

Table 1.3 Volatile versus Stable Returns

Year	Volatile Returns	Year-End Wealth	Stable Returns	Year-End Wealth
		$100		$100
1	–17%	83	9.6%	110
2	–13	72	6.6	117
3	25	90	9.6	128
4	24	112	6.6	137
5	16	130	9.6	150
6	13	147	6.6	159
7	21	178	9.6	175
8	5	186	6.6	186
9	23	229	9.6	204
10	–5	218	6.6	218
Average return per year		9.2%		8.1%
Compound return per year		8.1		8.1
Volatility		15.8		1.58
Sharpe ratio (5%)		0.20		1.96

the 10-year period covered a large part of the 1990s, which is generally considered to be one of the greatest decades for equity investors in the history of financial markets.

The view of an absolute return manager is that many investors underestimate the impact of negative years on overall wealth creation. The first strategy in Table 1.3 looks superior because the average of the simple returns is 9.2 percent whereas it is only 8.1 percent for the second strategy. However, once the compound annual return of 8.1 percent is put into context with the variance of the returns, the investment with the stable returns does not appear to be inferior. As a matter of fact, if end-of-period wealth as well as during-the-period variance matter, the investment with the more stable returns is superior.*

Many absolute return managers probably subscribe to Benjamin Graham's rule of investing:

*For the stable-return investment to result in a volatility of 15.8 percent the investor could use leverage of around 7:1. The compound annual return would increase to 24.5 percent. This is a further indication that a low-volatility investment is superior to a high-volatility investment when the expected return is the same.

The first rule of investment is don't lose. And the second rule of investment is don't forget the first rule. And that's all the rules there are.

Today this is considered Wall Street wit and regularly used for entertainment purposes. However, the notion has probably more than just entertainment value. It is the reason why absolute return managers are more than just relative return managers with cash as their benchmark. It is also the reason why many investors regard investing to be at least as much alchemy (Soros, 1987) or art (Yale Endowment, 2001) as it is pure science. Figure 1.7 shows that portfolio volatility matters.

Figure 1.7 shows two 10-year investments that double over a 10-year period. The dark line is a $100 investment growing at 7.2 percent over the 10-year period. The lighter line experiences a loss of 30 percent in the first year. The growth rate to match the 7.2 percent growth rate in the remaining nine years is 12.4 percent. If the second investment grew from 70 after the first year at a rate of 7.2 percent, the end-of-period wealth would accumulate to only $131. The annualized return would result in a compounded annual growth rate of only 2.7 percent. To an absolute return manager, an investment vehicle where there is no provision to manage volatility is, to use the politically correct term, suboptimal. Note that in many continental European

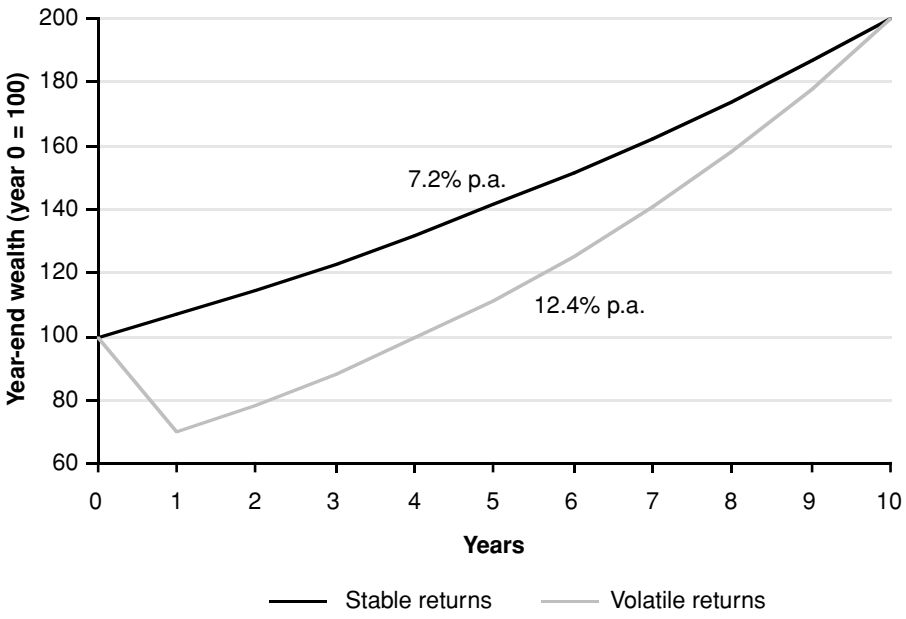

FIGURE 1.7 Different Ways of Doubling an Initial Investment of $100

countries the equity culture began in the late 1990s. It is not unreasonable to assume that for some investors the 2000–2002 bear market was the first experience with equities as an asset class.

Managing Volatility

Putting it crudely: Absolute return managers have an incentive to manage volatility, whereas long-only managers do not. The portfolios of most long-only managers closely track the benchmark. When the benchmark has a volatility of around 10 percent (as some developed equity markets had around 1995), then the portfolio of the long-only manager will have a volatility of 10 percent. When the volatility of the benchmark increases to 25 percent (as in most developed markets in the period 1997 to 2000), then the portfolio of the long-only manager will have a volatility of around 25 percent. This makes sense because it is in line with the mandate (i.e., mimicking the benchmark market index). Whether this makes sense on a more general level is, for the time being, in the eye of the beholder.

Table 1.4 shows five different ways of managing equity risk. The first is the traditional long-only way where there is no incentive to hedge market risk. The MSCI World index was used as a proxy for a long-only portfolio.

Table 1.4 Long-Only Compared with Market-Neutral and Long/Short Equity

	Long-Only	Alternative Strategies			
Year	MSCI World (Total Return) Index	HFRI Equity Market-Neutral Index	HFRI Statistical Arbitrage Index	HFRI Equity Hedge Index	HFRI Equity Non-Hedge Index
1990	–16.5%	15.5%	11.2%	14.4%	–7.0
1991	19.0	15.6	17.8	40.1	57.1
1992	–4.7	8.7	10.8	21.3	22.8
1993	23.1	11.1	12.6	27.9	27.4
1994	5.6	2.7	4.7	2.6	5.1
1995	21.3	16.3	14.2	31.0	34.8
1996	14.0	14.2	19.6	21.8	25.5
1997	16.2	13.6	19.4	23.4	17.6
1998	24.8	8.3	10.1	16.0	9.8
1999	25.3	10.8	–1.3	46.1	41.8
2000	–12.9	14.6	8.9	9.1	–9.0
2001	–16.5	6.4	1.2	0.4	0.7
Annual return	6.99%	11.09%	10.68%	20.32%	17.33%
Volatility	14.59	3.28	3.87	9.26	14.91
Sharpe ratio (5%)	0.14	1.86	1.47	1.65	0.83
Return for 1.86 Sharpe ratio	32.13	11.09	12.20	22.23	32.72

Source: Hedge Fund Research, Datastream.

The four other equity strategies involve managing downside market risk to different degrees. The HFRI Equity Market-Neutral and HFRI Statistical Arbitrage indexes are both relative value strategies where market risk is fully hedged at all times. The other two strategies are long/short strategies. In equity hedge managers have a small long bias, and in equity nonhedge there is a large long bias. Of these five investments, the market-neutral one has the highest risk-adjusted returns whereas the MSCI World index has the lowest. Assume an investor has a risk budget for equitylike risk, which one of the five investments is superior over the other four?

As shown in Figure 1.8, the five (capital market) lines originate at the risk-free rate, which is most often assumed to have zero risk.* Each line is drawn through the risk/return point in the graph. The steepest line is considered the best. It is not important where the dot is. The reason why the position of the dot is irrelevant is because of the use of leverage. If an investor has a risk budget (risk appetite) of 9.26 percent as the second best investment in Figure 1.8, he could borrow money and invest in the best investment. Assum-

*An investment at the risk-free rate is considered risk free. However, volatility is not zero. The ambiguity derives from the fact that in financial theory volatility (annualized standard deviation of returns) is used as a proxy for risk.

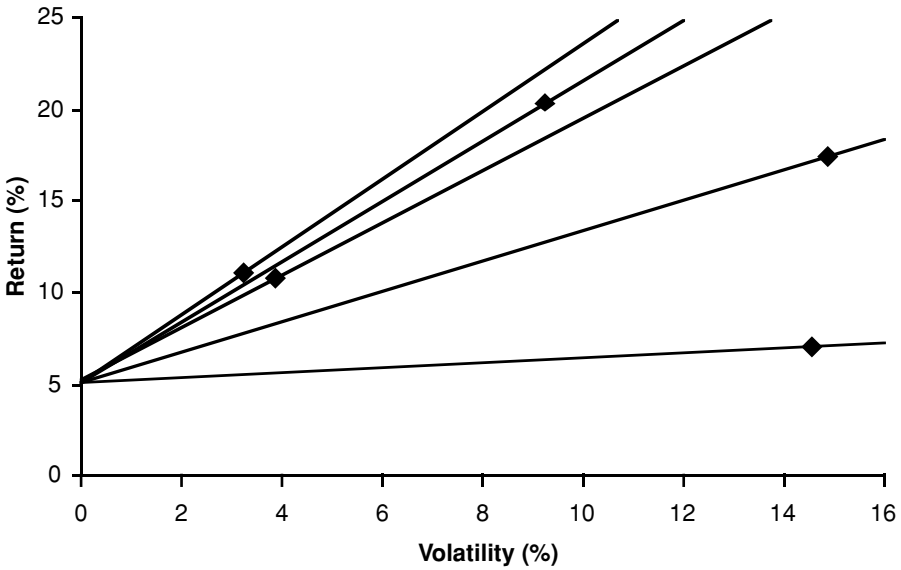

FIGURE 1.8 Risk/Return Trade-off of Five Equity Investment Styles
Source: Hedge Fund Research, Datastream.

ing the investor borrows money at the risk-free rate, invests in the best investment, and accepts a volatility of 9.2 percent, the resultant return would be around 22.2 percent, that is, approximately 190 basis points higher than the second best investment with the same volatility. If the investor is ready to accept the volatility of the most volatile investment (which also happens to be the worst investment of the five), that is, a volatility of 14.59 percent, he or she can lever up and invest in the best investment. The return of using leverage and investment in the best investment would result in an annual return of around 32.1 percent. This seems to represent a big difference from the 7.0 percent in the MSCI World.

Where does this analysis fail? There must be something wrong. First, hedge fund data is inflated for various reasons discussed in later chapters. In addition, volatilities are most likely too low; that is, Sharpe ratios too high. However, these measurement imperfections are unlikely to explain the 2,471 basis points between the best investment in Figure 1.8 and the worst. Second, there is a capacity issue. The worst investment in Figure 1.8 has a market capitalization in excess of $25 trillion whereas the best investment is probably around $50 billion.* What would happen if the investors holding the $25 trillion were to rebalance their portfolio by moving funds from the worst investment to the best investment? The capital market lines would move. Putting it crudely: The suppliers of the $50 billion can deliver Sharpe ratios of 1.86 only if the holders of the $25 trillion do not mind having a Sharpe ratio of 0.14. If the holders of $25 trillion decide tomorrow that a Sharpe ratio of 1.86 is more appealing than a Sharpe ratio of 0.14, then the suppliers of a Sharpe ratio of 1.86 will get flooded with funds. In other words, once all investors start requesting higher Sharpe ratios, the capital market lines in Figure 1.8 will converge. The suppliers of a Sharpe ratio of 1.86 for $50 billion will, by definition, not be able to deliver a Sharpe ratio of 1.86 for $25 trillion. The pioneers of absolute return strategies were enjoying an economic rent that cannot be supported if $25 trillion was managed in this format. Superior risk-adjusted returns—that is, superior performance—attracts capital. Assuming alpha is finite, the alpha will be spread over more investors going forward.† This means that unlocking the alpha in the hedge fund industry is becoming more difficult over time.

*Assuming around 10 percent of the hedge funds universe is market-neutral (or is delivering a Sharpe ratio of 1.86 on a consistent and sustainable basis).

†Unless the regulator intervenes, that is. If regulators only allow certain investors to invest at a Sharpe ratio in excess of 1.5 (which most of them currently do), then the regulator will be determining the winners and losers of the game.

Conclusion

The investment philosophy of absolute return managers differs from that of relative return managers. Absolute return managers care not only about the long-term compounded returns on their investments but also how their wealth changes during the investment period. In other words, an absolute return manager tries to increase wealth by balancing opportunities with risk, and run portfolios that are diversified and/or hedged against strong fluctuations. To the absolute return manager these objectives are considered conservative.

DEFINING THE HEDGE FUND INDUSTRY

Definition

There are nearly as many definitions of hedge funds as there are hedge funds. We define a hedge fund as follows: A hedge fund constitutes an investment program whereby the managers or partners seek absolute returns by exploiting investment opportunities while protecting principal from potential financial loss. With this definition we capture the balancing act of the absolute return manager. On one hand, the absolute return manager tries to make money by exploiting investment opportunities. However, the profit opportunity is always put into context with the potential loss of principal. (Note that this definition does not apply for the relative return manager where the goal is to beat a benchmark.) Crerend (1995) defines hedge funds as follows:

> *Hedge funds are private partnerships wherein the manager or general partner has a significant personal stake in the fund and is free to operate in a variety of markets and to utilize investments and strategies with variable long/short exposures and degrees of leverage.*

Unfortunately, not all hedge fund managers have "a significant personal stake" in the fund. Nonetheless, beyond the basic characteristics embodied in this definition, hedge funds commonly share a variety of other structural traits. They are typically organized as limited partnerships or limited liability companies. They are often domiciled offshore, for tax and regulatory reasons. And, unlike traditional funds, they are not as much burdened by regulation. Less regulation means less protection for the investor and more flexibility for the hedge fund manager. Less protection means higher risk for the investor, for which the investor seeks compensation.

As elaborated on in the appendix to Chapter 2, the reputation of hedge funds is not particularly good. The term "hedge fund" suffers from a similar fate as "derivatives" due to a mixture of myth, misrepresentation, negative

press, and high-profile casualties. Hedge fund strategies are occasionally also referred to as skill-based strategies or absolute return strategies, which, from a marketing perspective, avoids the negative bias attached to the misleading term "hedge fund." Skill-based strategies differ from traditional (market-based) strategies. The former yields a particular return associated with the skill of a manager whereas the latter primarily captures the asset class premium of a market.

Categorization of Hedge Funds

There are three ways to categorize hedge funds: (1) as a separate, alternative asset class; (2) as asset management firms executing alternative investment strategies within a traditional asset class; and (3) as financial services companies. The consensus view is that hedge funds are a separate asset class because return, volatility, and correlation characteristics differ from those of other asset classes such as equities, bonds, commodities and natural resources, real estate, and private equity. In addition, it allows separation between liquid asset classes (e.g., equities and bonds) and less liquid asset classes (e.g., real estate, private equity, and hedge funds). Treating hedge funds as a separate asset class also allows the showing of efficiency improvements gained by including hedge funds in traditional portfolios in mean variance space. One of the practical issues with this classification is that there is limited data availability. Most databases show between 6 and 14 years of data, whereas asset/liability studies are normally based on longer time series.

Viewing hedge funds as an investment style within the asset management industry is an alternative way of categorizing the hedge fund industry. Looking at absolute return managers as part of the asset management industry makes sense because absolute return managers are asset managers who define return and risk objectives differently but manage money by investing in traditional asset classes—equities, bonds, currencies, commodities, or derivatives thereof. They recruit staff from the same pool of talent as do other money managers and offer their products to the same client base. This view finds further support in the fact that more and more traditional asset management firms are offering nontraditional (i.e., alternative) strategies to their investors. The benefits to them are twofold: First, they add a high-margin product to their low-margin long-only product. Second, revenues from alternative products are not necessarily correlated with fee income from traditional products. As the revenues of traditional products are a percentage of funds under management, revenues decline when markets fall. As demand for hedge funds is probably negatively correlated with the direction of the stock market, falling revenues from the traditional product can be, to some extent, balanced with products in the alternative investment segment.

The third way of looking at hedge funds—viewing a hedge fund as a

financial services company—is not very common. However, sooner or later there will be hedge fund organizations going public. The price of the entity will be determined—as with other financial services or asset management companies—based on discounted value of future cash flows or assets under management or whatever valuation tool is in fashion at the time. The main benefit of viewing a hedge fund as a company is to understand all the risk components of a hedge fund as an organization. Any investor selecting hedge fund managers will conduct a bottom-up analysis, similar to the work any equity or credit analyst does on quoted companies. The categorization of financial risk in Figure 1.9 might be helpful to understanding the diversity and complexity of the task of the hedge fund analysis and due diligence.

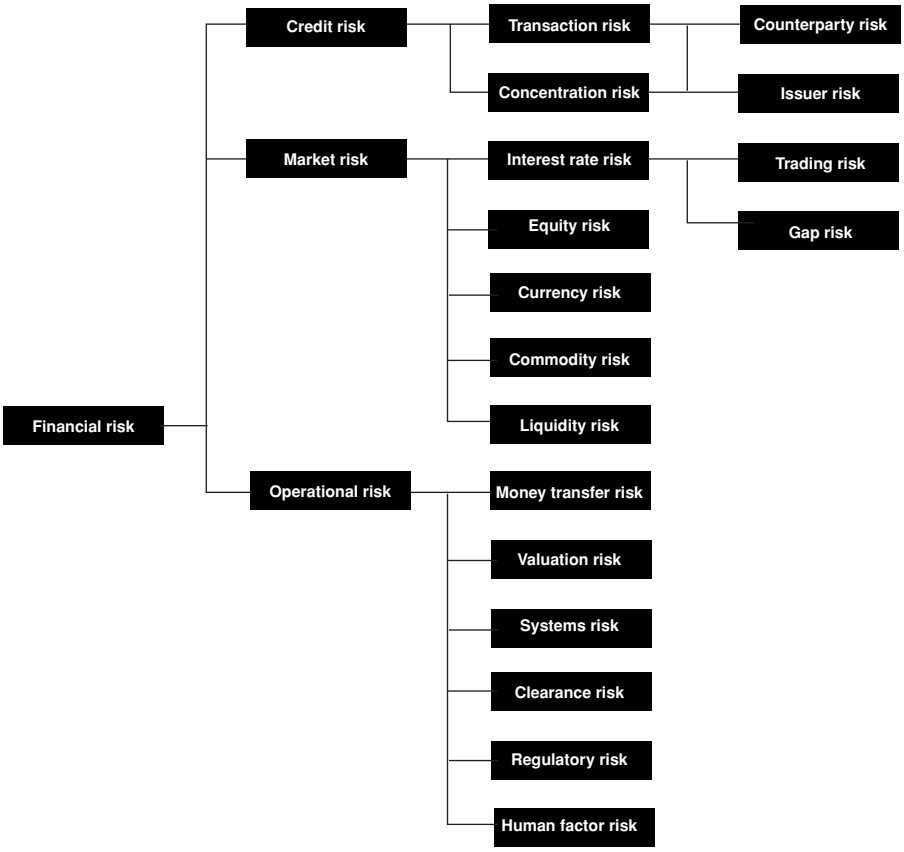

FIGURE 1.9 Categorization of Risk
Source: Estenne (2000).

Normally financial risks are grouped into market risk, credit risk, and operational risk. By viewing hedge funds as a separate asset class or as alternative investment strategies, one might have a tendency to underestimate operational risk. (Note that operational risk is idiosyncratic risk; that is, it can be immunized through diversification.) These operational risks are not reflected through the standard deviation of historical return series but through bottom-up fundamental analysis and due diligence. Figure 1.9 essentially says that the evaluation of companies in general or hedge funds in particular is more complex than can be summarized by one number, for example, the volatility of returns. As with any quoted company there are risks associated to the operation of the business (i.e., process risks, legal risks, human risks, etc.). Note that there are many more operational risks than are shown in Figure 1.9. We shall revisit operational risks with hedge funds in Part III of this book, which will examine the fund of (hedge) funds industry.

Figure 1.10 summarizes the categorization of hedge funds. In any portfolio optimization process there is some merit in viewing hedge funds as a separate asset class, because the performance characteristics differ from those of traditional assets. However—for example, in a core-satellite approach where the core of the portfolio is invested passively in domestic equity and bonds and smaller mandates are outsourced to active specialist managers—there is also some merit in viewing hedge funds as a niche specialist (i.e., one of the satellites). In evaluating hedge funds there are many risk aspects where the only reasonable approach is bottom-up fundamental company research and due diligence.

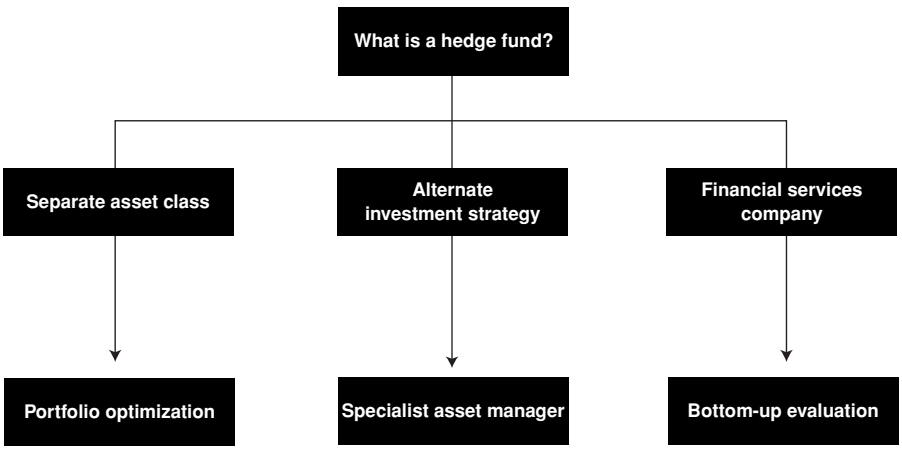

FIGURE 1.10 Categorization of Hedge Funds

Main Characteristics of the Hedge Fund Industry

Industry Size and Growth The hedge fund industry is still in its infancy; it is still a niche industry. Estimates of the size of the hedge fund industry are scarce and fluctuate substantially. The estimates for the number of funds range between 2,500 and 6,000, and assets under management between $500 billion and $600 billion globally. Compared with global pension funds or U.S. financial institutions, the estimated $500 to $600 billion in assets under management remains relatively small. Global pension fund assets grew from $4.6 trillion in 1990 to $15.9 trillion in 1999.[23] (At the same time the equity holdings of pension funds increased from $1.6 trillion to $8.0 trillion—or from 35 percent to 51 percent of total assets.) At the end of the third quarter of 2001, U.S. commercial banks had $4.9 trillion in total assets, mutual funds had assets of approximately $3.7 trillion (compared to $4.9 trillion a year and a half earlier), private pension funds had $4.0 trillion, state and local government employee retirement funds had $2.1 trillion, and life insurance companies had assets of $3.1 trillion.[24]

Figure 1.11 shows one estimate in terms of growth and industry size. Based on data from Hedge Fund Research, Inc., the assets under management

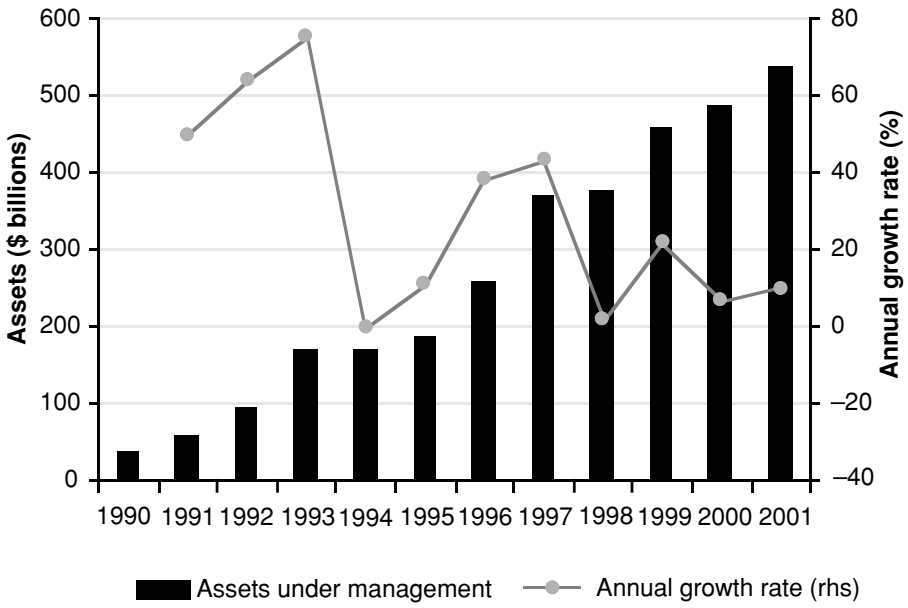

FIGURE 1.11 Estimated Growth of Hedge Fund Assets
Source: Hedge Fund Research, Inc.

grew from $38.9 billion in 1990 to $536.9 billion at the end of 2001.* The average annual growth rate was 29.3 percent, and the compounded annual growth rate was 26.9 percent. The year 1997 saw accelerated growth. These funds went to a large extent into fixed income arbitrage. Annual growth for 2000 and 2001 were 6.8 percent and 10.1 percent, respectively. Main beneficiaries were risk arbitrage (in 2000), convertible arbitrage, and long/short equity. These two growth rates compare with returns for the HFRI Hedge Fund Composite index of 5.0 percent and 4.8 percent, respectively. In other words, asset growth was partially due to performance and partially due to funds inflow. Figure 1.12 shows growth and size in terms of number of funds.

Based on estimates from Hedge Fund Research, Inc., there were around 4,191 hedge funds in operation as of the third quarter of 2001. The average annual growth rate was 19.7 percent. The annual growth rate has been falling throughout the 1990s. To some extent this falling growth rate would be expected as the industry matures. However, intuitively one would not have

*Hennessee Group LLC estimates 2001 net inflow at $144 billion and total assets under management at $563 billion at year-end 2001. From Bloomberg News (2002b).

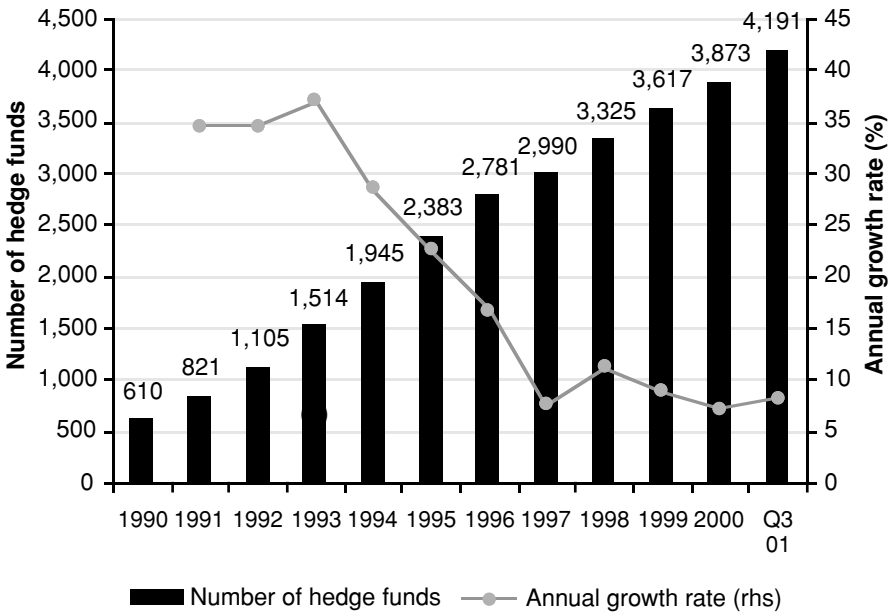

FIGURE 1.12 Estimated Growth of Hedge Funds
Source: Hedge Fund Research, Inc.

thought that the growth rate would decline to 8.2 percent by 2001, since the barriers to entry have vanished, giving an incentive to start a hedge fund. Note that the attrition rate is high and that there could be measurement problems with respect to the number of funds in the industry.

The $150 billion California Public Employees' Retirement System (CalPERS) dropped a bombshell on the hedge fund industry on August 31, 1999, when it released a statement saying it would invest as much as $11 billion into "hybrid investments," including hedge funds.* Coming just one year after the collapse of LTCM, it was seen as a vote of confidence in an asset class that had been largely off-limits to public pension funds. While many other large and sophisticated institutional investors have been investing in the alternative investment strategies (AIS) sectors for years, the announcement by CalPERS (the largest pension system in the world) further legitimized AIS investments for the broad base of institutions seeking viable alternatives to their reliance on rising stock markets.

Historically hedge funds were targeted at private investors. In recent years the participation of institutional investors has risen. University foundations and endowments are among the most aggressive institutional investors. It is commonly known that prestigious schools such as Duke, Chicago, Stanford, and Princeton have large allocations to hedge funds. On the corporate side, large conservative firms such as IBM have been investing in hedge funds for years. Pension funds, under pressure to constantly look for new ways to diversify their holdings, are also starting to allocate capital to hedge funds. In addition, overfunded pension funds seek to preserve wealth by lowering risk. However, according to Hennessee Group, individuals remained the largest source of capital for hedge funds in 2001, contributing 48 percent ($270 billion) of total assets.[25] The share of assets under management is down, though, from 80 percent of total assets in 1994. Further findings from the *Eighth Annual Hennessee Hedge Fund Manager Survey* included:

- Funds of funds were the second largest source of capital, contributing 20 percent of total assets according to Hennessee Group.
- In addition, 37 percent of hedge fund managers indicated that high net worth individuals and family offices were the fastest growing source of capital, while 25 percent specified corporations, 10 percent pension

*CalPERS eventually approved a target for hedge fund allocation of just $1 billion. As of April 2002, it had made five $10 million allocations to five hedge funds with the option to increase four investments to $50 million and the other to $40 million. In other words, the excitement from the $11 billion headline somewhat cooled off in the months and years after the announcement.

funds, 9 percent both endowments/foundations and funds of funds, and 11 percent other sources of capital.

- Due to the increased number of banks and insurance companies offering hedge fund products, 54 percent of hedge fund managers were Registered Investment Advisers in 2001, up from 47 percent in 2000.

Increased institutional participation portends a fundamental shift in the quality of hedge fund programs. In the past, the establishment of hedge funds has been largely supply-driven. Successful investors, often the heads of proprietary trading desks, decided to forgo their lucrative seven- and eight-figure Wall Street remuneration packages to establish boutique organizations as the primary vehicle for managing their own personal assets. Earning a return on their own assets (versus the collection of fees from outside investors) was the primary motivator for early hedge fund entrants. Entry costs were high, as the dealer community set lofty standards for those to which it would lend money/stock and establish credit lines.

Increasing participation from institutions is beginning to shift the expansion from being supply-driven to being demand-driven. This motivates a vast group of aspirants to enter the competition for these new investors. At the same time, the barriers to entry have been torn down. There have been hedge funds launched by 20-year-olds with little or no resources or investment experience.

As a result, the differentiation between quality and substandard managers is becoming more pronounced. Quality hedge fund managers should benefit from a proliferation of ill-managed funds, while investors need to stay alert to this potential degradation in the quality of hedge fund management. This proliferation and the high costs associated with actively selecting hedge funds are among the main reasons for accelerated growth in the funds of funds industry. We will take a closer look at funds of hedge funds in Part III.

The following two sections examine the distribution of dollars invested in hedge funds, by fund size and by fund investment style.

Breakdown by Size Figure 1.13 shows estimates for the distribution of hedge funds by size. As of 1999 as well as 2000, around 83 percent of all funds under management were allocated to funds below $100 million and around 53 percent to funds smaller than $25 million. According to Peltz (1995) the breakdown in 1994 was that 72 percent of managers had $50 million or less, 9 percent between $50 million and $100 million, 14 percent between $100 million and $1 billion, and around 5 percent above $1 billion. The average size of hedge funds is decreasing. Based on the 1,305 hedge funds in the MAR/Hedge database (not shown in graph), the average fund size in October 1999 was $93 million compared with $135 million a year earlier.

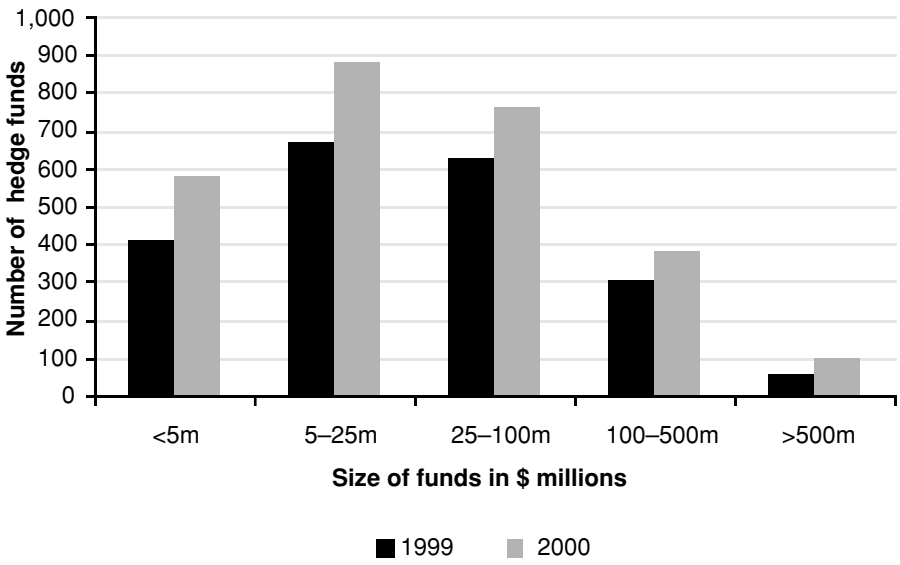

FIGURE 1.13 Size Distribution of Hedge Funds
Source: Van Hedge Fund Advisors.

Breakdown by Style Table 1.5 shows an estimate of assets under management by style as of the third quarter of 2001. We have assumed a total of $500 billion assets under management for the whole industry for this analysis, and applied the percentages from Tremont Advisors (2002).

- Long/short equity is the largest style with a market share of around 45 percent based on assets under management.
- Other estimates for managed futures indicate that around $50 billion is managed by those managers on an unleveraged basis.
- In Table 1.6 note that equity nonhedge and equity hedge are what others define as long/short equity. The market share of long/short equity, therefore, was around 30 percent at the end of 1999 (not shown) and around 43 percent in 2001 according to estimates from Hedge Fund Research, Inc. Since 1990, long/short equity has grown at the expense of macro. All equity-related strategies in Table 1.6 have a share of 56.8 percent of total assets under management in 2001. This compares with 18.0 percent in 1990. The increase in equity-related strategies is primarily a function of the 1990s bull market.

Table 1.5 Estimated Allocation by Investment Style (Third Quarter, 2001)

Category	Assets under Management ($ billions)	Percentage of Total Assets
Equity long/short	$228.3	45.65%
Event-driven	108.4	21.67
Global macro	40.0	7.99
Convertible arbitrage	38.6	7.71
Equity market-neutral	34.9	6.97
Fixed income arbitrage	20.5	4.09
Emerging markets	17.3	3.46
Managed futures	9.9	1.98
Short selling	1.2	0.24
Other	1.2	0.24
Total	$500.0	100.00%

Source: Percentages in righthand column from Tremont Advisors (2002); center column, author's own calculations assuming total assets under management of $500 billion.

Table 1.6 Strategy Composition by Assets, 1990 versus 2001

Category	1990	2001
Equity hedge	5.28%	30.83%
Macro	71.04	13.48
Equity nonhedge	0.60	11.69
Event-driven	3.84	9.30
Fixed income (total)	3.24	8.24
Equity market neutral	1.68	5.59
Sector (total)	0.24	4.50
Relative value	10.08	4.12
Convertible arbitrage	0.48	3.89
Emerging markets	0.36	3.25
Distressed securities	2.40	2.58
Merger arbitrage	0.60	2.44
Short selling	0.12	0.11

Source: Hedge Fund Research.

- Note that there are huge differences between style allocation estimates from Tremont Advisors and Hedge Fund Research. Tremont Advisors has a much higher estimate for convertible arbitrage and a lower estimate for global macro when compared with Hedge Fund Research. This is an indication of quantitative analysis in the hedge fund industry being as much art as science.

Breakdown by Investor Type Table 1.7 shows an estimated breakdown by investor type for U.S. and non-U.S. investors as well as the combined investor base. The investor breakdown estimates (last two columns) are from Hedge Fund Research, Inc. These estimates in combination with an estimate for total assets under management in the industry plus an assumption for the geographic breakdown allow the estimation of investor breakdown in absolute U.S. dollar terms. Our assumption for a geographic breakdown in terms of assets under management between U.S. and non-U.S. was 40 percent by U.S. investors and 60 percent by non-U.S. investors. Note that the figures in Table 1.7 are estimates and not necessarily consistent with all available surveys. U.S. figures are based on 160 responses representing $4.09 billion in hedge fund assets. Non-U.S. figures are based on 169 responses representing $4.55 billion in hedge fund assets.

The main difference between U.S. and non-U.S. investors has to do with the involvement of banks in the industry. U.S. banks hold only around 2.0 percent of hedge fund assets whereas rest of world (RoW) banks hold around 23.3 percent. The fund of funds allocation is also larger outside the United

Table 1.7 Estimated Breakdown by Investor Types ($ billions)

Category	All Investors	U.S. Investors	Non-U.S. Investors	All Investors	U.S. Investors	Non-U.S. Investors
Individuals	$129.5	$80.0	$49.5	25.9%	40.0%	16.5%
Fund of funds	100.3	23.0	77.3	20.1	11.5	25.8
Banks	73.8	4.0	69.8	14.8	2.0	23.3
Pension plans	36.0	21.0	15.0	7.2	10.5	5.0
Family offices	27.2	10.7	16.5	5.4	5.4	5.5
Corporate accounts	24.5	14.0	10.5	4.9	7.0	3.5
Foundations	16.5	6.7	9.8	3.3	3.4	3.3
Endowments	15.0	15.0	NA	3.0	7.5	NA
Insurance	14.0	4.2	9.8	2.8	2.1	3.3
General partners	12.6	2.5	10.1	2.5	1.3	3.4
Trust	4.5	4.5	NA	0.9	2.3	NA
Mutual funds	2.0	2.0	NA	0.4	1.0	NA
Other	44.4	12.4	32.0	8.9	6.2	10.7
Total	$500.0	$200.0	$300.0	100.0%	100.0%	100.0%

Source: Hedge Fund Research, author's own estimates.

States. Assuming hedge fund assets are $500 billion globally, then funds of funds, banks, and pension plans hold $100 billion, $74 billion, and $36 billion respectively. However, the largest investor group is individuals, who hold around $130 billion (26 percent) of unleveraged hedge fund assets.

Table 1.7 is not consistent with a survey Greenwich Associates conducted in 2001. The survey found 1,445 of the 2,500 largest U.S. pension funds and endowments held a total of $35 billion in hedge fund investments (compared to $36 billion in Table 1.7). The survey notes that corporate and public pension funds in the United States together account for just $10 billion of the total (compared to $21 billion in Table 1.7). Our estimates in Table 1.7 are also different from a survey conducted by Barra Strategic Consulting Group (2001). According to this survey, hedge fund assets under management were $450 billion as of July 2001, of which $350 billion (78 percent) were held by U.S. investors, $78 billion (17 percent) by European investors, and $22 billion (5 percent) by Asian investors. This extreme bias toward U.S. buyers probably is, in our opinion, more appropriate for sellers (i.e., hedge fund managers) where the United States is still the dominant marketplace by a wide margin. Around 85 percent of managers are based in the United States.

Use of Leverage Leverage is an important issue to most investors when investing in hedge funds. Institutionally, leverage is defined in accounting or balance sheet terms as the ratio of total assets to equity capital (net worth). Alternatively, leverage can be defined in terms of risk, in which case it is a measure of economic risk relative to capital.

Hedge funds vary greatly in their use of leverage. Nevertheless, compared with other trading institutions, hedge funds' use of leverage, combined with any structured or illiquid positions whose full value cannot be realized in a quick sale, can potentially make them somewhat fragile institutions that are vulnerable to liquidity shocks. While trading desks of investment banks may take positions similar to hedge funds, these organizations and their parent firms often have both liquidity sources and independent streams of income from other activities that can offset the riskiness of their positions.

Table 1.8 shows estimates of how different hedge fund managers are typically leveraged. Based on a report from Van Money Manager Research, around 72 percent of hedge funds used leverage as of December 1999. However, only around 20 percent have balance-sheet leverage ratios of more than 2:1. Fixed income arbitrageurs operate with the smallest margins and therefore gear up heavily to meet their return targets. However, Table 1.8 shows leverage pre-LTCM. Leverage in fixed income arbitrage in the post-LTCM era is closer to 10 to 15 times equity. Hedge funds that operate in emerging markets use little leverage primarily because derivatives markets and securities lending are not developed.

Note that there was massive delevering in hedge funds as brokers tightened credit lines as a direct result of the near collapse of LTCM in 1998. Equity

Table 1.8 Estimated Use of Balance Sheet Leverage

(%)	Balance-Sheet Leverage
Fixed income arbitrage	20-30
Convertible arbitrage	2-10
Risk arbitrage	2-5
Equity market-neutral	1-5
Equity long/short	1-2
Distressed securities	1-2
Emerging markets	1-1.5
Short selling	1-1.5

Source: UBS Warburg (2000).

long/short managers delevered quite substantially during the 2000–2001 market decline. By 2002, cash levels in long/short equity were at an all-time high. As of 2001 there was very little leverage in the system when compared to summer 1998. This is probably the main reason why hedge funds, in general, could preserve wealth so successfully during the difficult market environment that was 2001 (and first half of 2002).

Not all hedge fund managers use leverage. Table 1.9 shows that around 31.6 percent do not use leverage and a further 44.8 percent use less leverage than 2:1. As of 1999, 28.5 percent claimed not to use leverage, 52.1 percent were using leverage less than 2:1, and 19.4 percent more than 2:1. In other words, hedge funds claiming not to use leverage rose from 28.5 percent in 1999 to 31.6 percent in 2000.

High leverage is the exception rather than the rule. Hedge funds lever the capital they invest by buying securities on margin and engaging in collateralized borrowing. Better-known funds can buy structured derivative products without first putting up capital, but must make a succession of premium payments when the market in those securities trades up or down. Pre-LTCM, some hedge funds negotiated secured credit lines with their banks, and some relative value funds even obtained unsecured credit lines.

Characteristics of the "Average" Hedge Fund The hedge fund industry is heterogeneous. This means that a typical hedge fund may not be representative of its brethren. One of the industry's main characteristics is heterogeneity and not homogeneity. However, Table 1.10 lists some average characteristics from the Van Hedge hedge fund universe for 1999 and 2000. Table 1.11 lists some further

Table 1.9 Use of Leverage as of 2000 (%)

	Don't Use Leverage	Use Leverage		
		Low (<2:1)	High (>2:1)	Total
Total sample	31.6	44.8	23.6	68.4
Aggressive growth	29.3	56.3	14.4	70.7
Distressed securities	50.9	45.6	3.5	49.1
Emerging markets	36.5	49.2	14.4	63.6
Fund of funds	35.6	47.9	16.5	64.4
Income	49.2	28.6	22.2	50.8
Macro	10.0	48.0	42.0	90.0
Market neutral — arbitrage	20.7	22.0	57.3	79.3
Market neutral — securities hedging	35.5	25.6	38.8	64.4
Market timing	42.1	22.4	35.5	57.9
Opportunistic	27.3	44.9	27.8	72.7
Several strategies	34.9	36.5	28.6	65.1
Short selling	30.3	45.5	24.2	69.7
Special situations	28.2	55.6	16.1	71.7
Value	31.6	55.5	12.9	68.4

Source: Van Money Manager Research.

characteristics. Note: The *mean* measures the arithmetical average. The *median* measures the point on either side of which lies 50 percent of the distribution. A median is often preferred over the mean as a measure of central tendency because the arithmetic average can be misleading if extreme values are present.

The main change between 1999 and 2000 is in fund age. The median fund age declined from 5.3 years in 1999 to 3.9 years in 2000. The main reason for this continuous decline in longevity is that the barriers to entry have been falling. The lower the barriers to entry, the cheaper is the call-option-like incentive for a new entrant to set up a hedge fund. The falling barriers to entry are causing a dilution of the talent pool within the hedge fund industry. The practical implication is that manager selection is becoming more difficult and more laborious.

The number of funds using a high-water mark has been increasing from 64 percent in 1995 to 87 percent in 2000. Hurdle rates are not very common with single hedge funds but are more common with funds of hedge funds. Some of the characteristics in Table 1.11 will be highlighted when comparing hedge funds with mutual funds in Chapter 3. The following section discusses

Table 1.10 Characteristics of Typical Hedge Fund

	1999		2000	
Characteristic	**Mean**	**Median**	**Mean**	**Median**
Fund size ($ millions)	87	22	90	22
Fund age (years)	5.9	5.3	5.0	3.9
Minimum investment ($)	695,000	250,000	630,729	250,000
Management fee (%)	1.7	1.0	1.3	1.0
Performance-related fee (%)	15.9	20.0	16.7	20.0
Manager's experience (years)				
In securities industry	17	15	17	15
In portfolio management	11	10	12	10

Source: Van Money Manager Research.

Table 1.11 Trends in Descriptive Statistics between 1995 and 2000

Characteristic	**1995**	**1999**	**2000**
Manager is U.S.-registered investment adviser	54%	45%	68%
Fund has hurdle rate	17	17	18
Fund has high-water mark	64	75	87
Fund has audited financial statements or audited performance	97	98	96
Manager has $500,000 of own money in fund	78	75	79
Fund can handle "hot issues"	25	53	54
Fund is diversified	57	57	52
Fund can short sell	76	84	84
Fund can use leverage	72	72	72
Fund uses derivatives for hedging only, or not at all	77	71	71

Source: Van Money Manager Research.

the developments in Europe, which many regard as a growth area for raising capital for absolute return strategies.

Situation in Europe

Based on estimates from the trade publication *EuroHedge*, the size of European hedge fund assets under management is about $64 billion.[26] (See Figure 1.14.) This represents around 11 percent of the total assets under management of $500 billion to $600 billion.* The growth rates as estimated by *Eu-*

*Note that the 11 percent is an estimate of assets *managed* by European hedge funds. The allocation of European investors *investing* in hedge funds is probably around 45 to 50 percent.

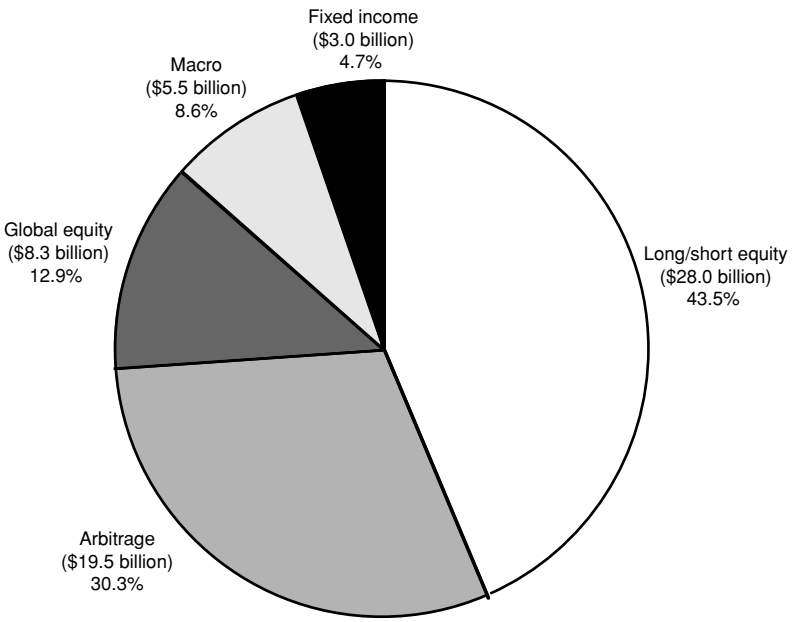

FIGURE 1.14 Assets under Management by European Hedge Funds
Source: Wall Street Journal Online (2002), based on *EuroHedge* estimates.

roHedge for 1999, 2000, and 2001 were 80 percent, 65 percent, and 40 percent respectively. Most of the growth in Europe came from private investors as opposed to institutional investors.

In March 2000, based on the Ludgate Communications (2000) survey, investing in hedge funds was not something widely considered by all German institutional investors. One CIO was quoted in the survey as saying:

> *No, we don't [currently invest in hedge funds]! It is completely obvious that hedge funds don't work. We are not a casino.**

*This quote is not representative for Europe. The amusing part of this quote is that running a casino can be a profitable, low-risk business. The casino running a roulette wheel is, as mentioned earlier, in the business of statistical arbitrage (as are insurance companies and the national lottery). It is the gambler who speculates—not the casino. The ultimate business of statistical arbitrage is what Adam Smith refers to as tax "on all the fools in creation": the national lottery. Ask yourself the following question: Would you sell $1 lottery tickets where every 11th ticket allows the buyer to claim $10 from you? If your answer is no, you might consider not investing in hedge funds. However, if your answer is yes, you are ahead of at least one CIO.

Note that the survey was conducted at the chief investment officer (CIO) level. Another investor was quoted arguing that investing in hedge funds is against the respondent's philosophy and that hedge funds still have a stigma attached to them. It is interesting that there are many investors who are willing and legally permitted to invest in a business model attempting to corner the global market for dog food via the Internet, but are unwilling to invest in some of the most talented investment professionals in the financial industry.

In 2001, Golin/Harris Ludgate (2001) commissioned Fulcrum Research to carry out a survey of European investing institutions regarding their sentiment toward institutional investment in hedge funds. The total sample of respondent institutions accounted for $9.6 trillion (£6.7 trillion) of assets under management, equivalent to approximately 67.6 percent of total European assets under management. The interviews took place in January 2001. Figure 1.15 shows institutional investors invested in hedge funds by 2001 and by 2000. Figure 1.16 shows respondents planning to invest in hedge funds. Note: Ireland was not part of the 2000 survey. The allocation of Italy in 2000 was 0 percent.

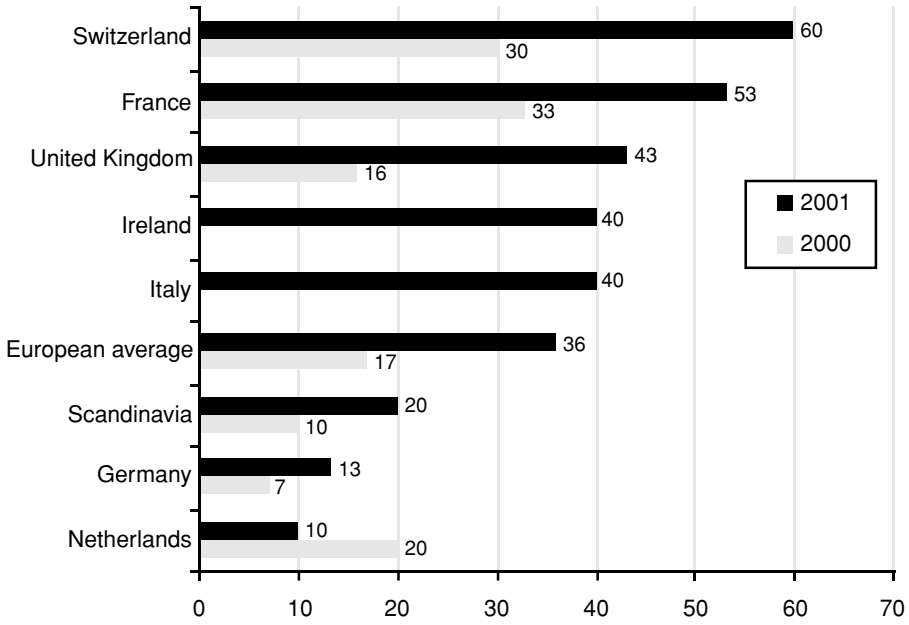

FIGURE 1.15 Currently Invested in Hedge Funds (%)
Source: Golin/Harris Ludgate (2001), Ludgate Communications (2000).

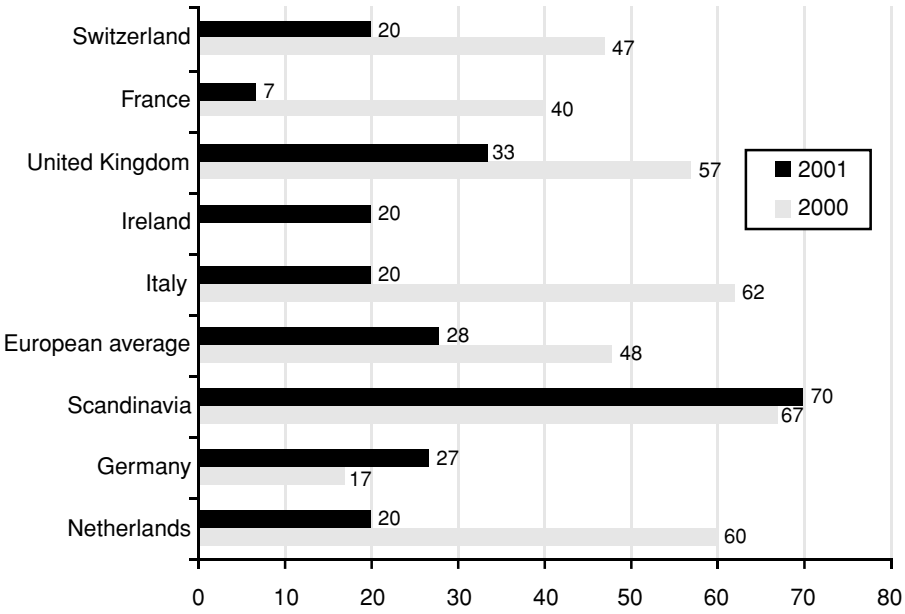

FIGURE 1.16 Planning to Invest in Hedge Funds (%)
Source: Golin/Harris Ludgate (2001), Ludgate Communications (2000).

- In January 2001 36 percent of European institutions surveyed confirmed that they were investing institutional money in hedge funds. This has more than doubled from the year before when only 17 percent confirmed that they were doing so. Only institutional investors in the Netherlands, according to the survey, invested less than in the previous year. (This is not consistent with the press coverage of Dutch institutions investing in hedge funds.) The reasons for Dutch investors not investing in hedge funds were quoted as conservatism (hence preference for long-only), uncertainty with respect to sustainable source of return, and view of hedge funds as "too risky."*

*To some extent the Dutch responses in the survey are contradictory. When asked whether their views on institutional investments in hedge funds had changed over the past 12 months, three of the sample of 10 answered that they were more positive whereas seven respondents thought their views were unchanged. All European respondents either became more positive or were unchanged in their views. From Golin/Harris Ludgate (2001), p. 42. Note that the number of respondents was very small relative to the whole market. The 2001 survey was based on only 100 investors, of which 10 were in the Netherlands. The survey therefore is indicative rather than representative.

- Also, 28 percent of the European institutions surveyed were intending to invest in hedge funds before 2005, with the vast majority (39 percent) of these planning this for 2001 or 2002. There were fewer institutions planning to invest in hedge funds in the 2001 findings. This was largely due to the increase of actual investors, illustrating the growing acceptance of the hedge fund industry by institutional investors.
- Swiss institutions had the highest allocation to hedge funds.
- The U.K., French, and Italian market best demonstrated the move from intending to invest last year to actually investing this year.
- The German market best illustrates the shift from previously not considering hedge funds to aiming to invest in them in the next few years.
- Scandinavia—which had a high proportion of institutions with hedge funds on their agendas last year—still had a high proportion in 2001.
- The most often quoted reason to invest in hedge funds was falling stock prices. Efficiency gains through diversification were also mentioned.

Table 1.12 records the responses to the question "Has your view on institutional investments in hedge funds changed over the past 12 months?" Of 98 investors who answered the question, 43 were more positive and 55 had not changed their (positive or negative) views. No one seemed more negative in 2001 when compared with 2000. With regard to another question, 77 out of 86 (89.5 percent) of the responding investors saw growth continuing. In France, all 15 companies surveyed responded to this question, with six predicting a favorable future for hedge funds in the institutional market due to the diversification benefits and good returns that they offer. Two also saw increasing demand from clients as a significant factor in the likely growth of the hedge fund mar-

Table 1.12 Change in Sentiment from 2000 to 2001

Country	Total Respondents	More Positive	More Negative	Unchanged	Main Reason
Germany	15	5	0	10	Weak equity market
France	15	4	0	11	Diversification
United Kingdom	28	25	0	13	Diversification
Switzerland	10	4	0	6	Diversification
Netherlands	10	3	0	7	Weak equity market
Scandinavia	10	7	0	3	Diversification
Ireland	5	2	0	3	Weak equity market
Italy	5	3	0	2	Change in regulation
Total	98	43	0	55	

Source: Golin/Harris Ludgate (2001), pp. 42–45.

ket, while another saw asset allocation to hedge funds increasing. However, five respondents expressed concern regarding the risk posed to institutions if allocations to hedge funds were too heavily weighted in the event of a market crash. Two others thought the risk posed by hedge funds was too excessive, while one company believed that there would be less investment in hedge funds in the future. Two French investors were quoted:

> *What we see is just a fashion favoring hedge funds, but it will not continue very much longer.*
>
> *Hedge funds are not really viable for large institutions, even if they use the low-risk market-neutral strategy. They are too big a risk because hedge funds use leverage usually, which influences the volatility of the asset and the investment house risks losing its entire investment. It's also hard to find a good hedge fund manager, which adds to the unpredictability that large institutions are keen to avoid.*

An Irish investor took the diametrically opposite view by arguing:

> *Yes, institutions will diversify. This is partly due to the idiocy of having index-driven benchmarking. Hedge funds use absolute return benchmarking and are consequently more attractive.*

One U.K. investor increased the entertainment value of the survey by saying:

> *Having been deeply conservative over equities, the continentals* are hardly likely to suddenly leap to the other end of the spectrum.*

The European Pension Fund Puzzle The generally low allocation to hedge funds by non-Swiss pension funds in Europe is puzzling. Relative performance and benchmarks may enable traditional managers to look at their competitive positions relative to their peer groups. But consistent long-term returns—independent of market movements—make a compelling reason for embracing the world of absolute return for all investors, including pension funds. Concepts such as the core-satellite approach and the portable alpha

*Short for continental Europeans. Note that some Brits think of continental Europeans about as highly as a football hooligan appreciates porcelain art from the Ming dynasty (1368–1644).

approach* to investing large amounts of money strongly favor hedge fund investing for the active mandate in these approaches.

An interesting aspect of a survey by Indocam/Watson Wyatt (2000) was the selection criteria for alternative investment managers. Table 1.13 shows the most important alternative investment manager selection criteria analyzed geographically for those pension funds that are currently outsourcing these types of mandates. Interviewees were asked to rate each criterion on a scale from one to four, with one representing the least important and four representing the most important. The table shows respondents from only three countries for presentation purposes.

Generally, the selection criteria do not differ substantially from those exhibited for more conventional asset mandates. There is a considerable amount of uniformity relating to what respondents regarded as the most important of alternative investment manager selection criteria. These criteria generally relate to mandate suitability, investment performance, investment philosophy, staff continuity, caliber of investment professionals, and quality of client servicing.

The least important of the alternative investment manager selection criteria were remarkably similar when analyzed geographically. Respondents generally believed the softer factors to be less important as selection criteria, namely brand comfort, culture of organization, and prior knowledge of organization. Additionally, fees were not deemed to be of particular importance for selection. Generally, the more operational selection criteria, particularly quality of reporting and administration, were regarded as being of moderate importance by respondents.

When asked for their rationales for investing in alternative investment strategies (AIS), the respondents collectively chose average low correlation as

*The core-satellite approach is an alternative to the all-inclusive balanced asset allocation approach. In a core-satellite strategy, a money manager will invest typically 70 to 80 percent of assets in an index tracking fund. Specialist fund managers are hired around this "passive core" as "satellites" to invest in sectors where index-tracking techniques are difficult to apply, for example, alternative investment strategies, smaller companies, or emerging markets. With the portable alpha approach, the alpha of a manager (or group of managers) or a strategy is transported to a target index. For example, a pension fund allocates its fund to a bond manager who generates an alpha of 200 basis points yearly without an increase in credit risk. In addition, it swaps total returns of an equity index with the risk-free rate. The end result is the total index return plus 200 basis points. This approach can be used quite broadly. Alpha can be generated in many different areas and transported into virtually any index. The limiting factor is the availability of derivatives to carry out the alpha transfer. One of the disadvantages is the cost of the transfer. However, if the target index is an index with a liquid futures contract, the costs are usually less than 100 basis points per year.

Table 1.13 Alternative Investment Manager Selection Criteria

	Switzerland	Netherlands	Sweden	Average
Mandate suitability	3.7	3.5	3.8	3.67
Investment performance	3.6	3.6	3.6	3.60
Investment philosophy	3.6	3.6	3.5	3.57
Staff continuity	3.4	3.4	3.5	3.43
Investment professionals	3.0	3.5	3.4	3.30
Quality of client servicing	3.1	3.3	3.1	3.17
Financial strength	3.0	3.4	3.0	3.13
Quality of reporting	2.9	2.9	2.9	2.90
Quality of administration	2.9	3.1	2.6	2.87
Rapport at presentation	2.8	2.8	3.0	2.87
Culture	2.6	2.6	2.9	2.70
Brand comfort	2.8	2.6	2.4	2.60
Prior knowledge	2.5	2.5	2.6	2.53
Fees	2.5	2.2	2.6	2.43

Rating Scale: 1—least important; 4—most important.
Source: Indocam/Watson Wyatt (2000).

the most important aspect followed by outperformance against equity, outperformance against fixed income, and hedge against inflation.

According to Indocam/Watson Wyatt (2000), of the 196 continental European pension funds surveyed, some 30 percent outsource to hedge funds or other alternative investment managers. Another 8 percent believe they will be doing so within three years. Indocam/Watson Wyatt anticipates a rise of the allocation to alternative investments by respondents who already invest in AIS as well as those who are about to invest in these asset classes. The allocation from European pension funds could rise from less than €1 billion to in excess of €12 billion. Since many Swiss respondents did not respond to the survey for three years, this figure is probably understated. The most considerable growth is expected to come from the Dutch, Swedish, and Swiss pension funds. Elsewhere there is expected to be at least some appetite expressed, which is consistent with the findings from the Ludgate Communications survey.

EuroHedge ran a story in 2000 examining why U.K. investors have a small allocation to hedge funds. The headline read:

No hedge funds, please, we're British[27]

It seems U.K. investors are following John Maynard Keynes' maxim that "worldly wisdom teaches us that it is better for reputation to fail conventionally

than to succeed unconventionally." To some extent investing in a third-party fund is abdicating their responsibility to manage the assets. Other deterrents are trustees who do not have the knowledge or resources to understand the benefits of "new" investment vehicles such as derivatives and hedge funds. In addition, the U.K. pension fund market is driven by consultants who have only recently started to look at the subject.

While fees are of limited concern to pension fund managers on the European continent (as surveys suggest), fees are a big stumbling block in the United Kingdom, according to *EuroHedge*. To the trustees of the average U.K. fund, which pays about 30 basis points for asset management, hedge fund charges of 1 percent or 2 percent (management) and 20 percent (performance) appear astronomical. Unless they are convinced that the value added is worth the charges, trustees are even less likely to pay an extra layer of fees for a fund of funds. Another problem is that large U.K. pension funds aim for a target equity market exposure, and will likely either under- or overweight their guidelines if their hedge fund managers' betas are constantly changing—as they will, especially if the managers use leverage. This, in turn, makes it difficult for pension funds to track active risk against their benchmarks.

However, the fact that these problems are being discussed is evidence of changing attitudes. Pension consultants are warming to the concept of hedge funds—though with great caution, so as not to alienate clients.

APPENDIX: Risk Illusion

Question: What is the definition of a stock that fell by 90 percent?
Answer: A stock that fell by 80 percent and then halved.

—Hedge fund investor humor*

Try to count the black dots in Figure 1.17.

There are none. All dots are white. The human brain is tricked.

Which one of the three investments in Figure 1.18 has the highest risk?

Most people would intuitively view investment A as the most risky. Is this a trick? To some extent it is. Figure 1.18 compares the worst 12-month drawdown between January 1990 and December 2001 with a qualitative estimate

*Note that for the traditional hedge fund investor, being long a portfolio of stocks is regarded as of much higher risk than being long a portfolio of hedge funds. Low correlation among hedge fund managers allows construction of portfolios with a portfolio volatility of 5 percent or lower. This is not possible with long-only equities. When equities start falling, correlation normally increases substantially.

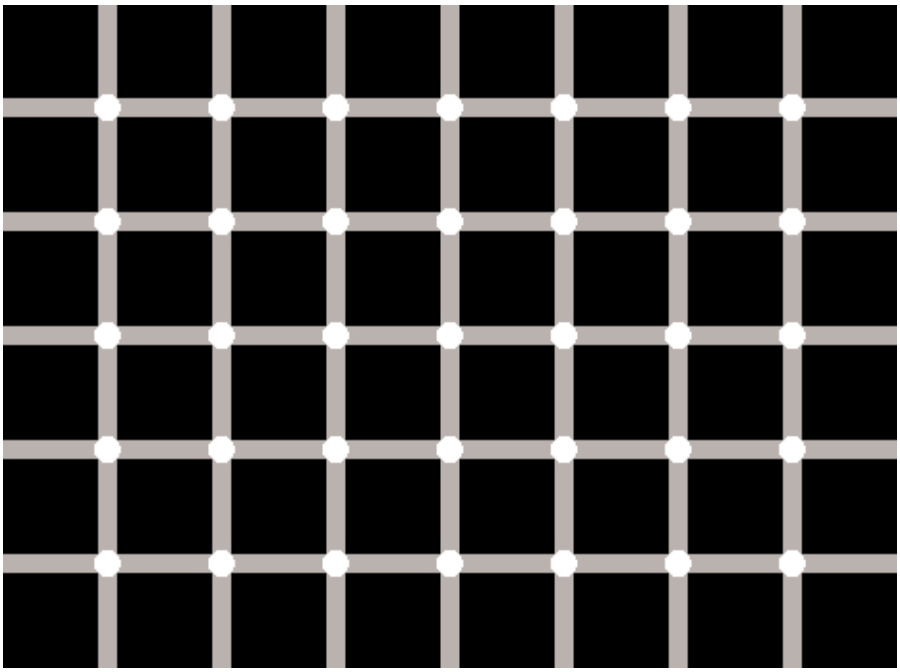

FIGURE 1.17 Optical Illusion
Source: www.eyetricks.com.

for the balance-sheet leverage of three investments where idiosyncratic risk has been diversified.

Investments A and B seem of high risk, as maximum drawdown is high. No one would expect investment C to be the most risky. Only when we reveal the nature of investment C to the press or the local regulator does investment C become the most risky investment. Investment C is a proxy for a portfolio of equity market-neutral strategies as measured by the HFRI Equity Market-Neutral index. Investment A is the S&P 500 Banks index, and investment B is the S&P 500 Composite index. All indexes are total returns and in U.S. dollars. Note that the observation period includes war and the oil price shock (1990–1991), sharp Federal Reserve tightening (1994), the peso crisis (1994–1995), the Asian crisis (1997), the Russian debt crisis (1998), the burst of the Internet bubble (2000), and the World Trade Center attack (2001).

We acknowledge the fact that something unfamiliar or unknown is more risky than something familiar, simply because risk is—at the most general level—a synonym for uncertainty. However, a point can be made that investment C is as much the most risky investment as there are black dots in Figure 1.17.

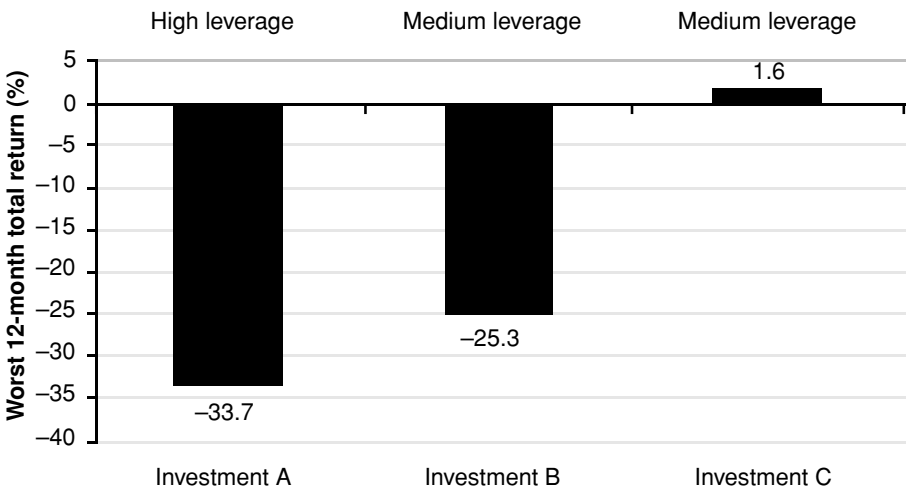

FIGURE 1.18 Worst 12-Month Return Compared with Leverage
Source: Hedge Fund Research, Datastream.

Correlation Is Not Directly Visible—Stocks Are Highly Correlated

One reason why this risk illusion might exist is the lack of visibility of correlation between securities or between asset classes. Correlation is not visible to the human eye. By reading the newspaper or sitting in front of a Bloomberg screen, we observe return and volatility on a daily or weekly basis. Both variables are easily observable. Correlation, however, is not.

Investment C comprises constituents with extremely low correlation with each other whereas investments A and B contain assets with high correlation with each other. If we analyze the constituents of investment C in isolation, we might conclude that they are of high risk (high risk to a single manager blowing up). However, in portfolio construction, the expected correlation between the constituents is a key variable; that is, idiosyncratic risk should be immunized through diversification.