

A Few Initial Remarks

1.1 WHAT IS A HEDGE FUND?

In the United States, the country where they first appeared and enjoyed the greatest development, there is no exact legal definition of the term “hedge fund” that outlines its operational footprint and gives a direct understanding of its meaning.

Yet, to rely on the literal meaning of hedge fund, i.e. “investment funds that employ hedging techniques”, could be misleading, because it relates merely to just one of the many traits of hedge funds and makes reference to only one of the many investment techniques they deploy.

A more fitting definition in our opinion is the following: “A hedge fund is an investment instrument that provides different risk/return profiles compared to traditional stock and bond investments”.

To appreciate the meaning fully, however, it is necessary to remark that hedge funds make use of investment strategies, or management styles, that are by definition alternative, and that they do not have to fulfill special regulatory limitations to pursue their mission: capital protection and generation of a positive return with low volatility and low market correlation.

Hedge funds are set up by managers who have decided to take the plunge into self-employment, and whose backgrounds can be traced to the world of mutual funds or proprietary trading for investment banks.

The differences between hedge funds and mutual funds are manifold.

The performance of mutual funds is measured against a benchmark, and as such it is a relative performance. A mutual fund manager considers any tracking error, i.e. any deviation from the benchmark, as a risk, and therefore risk is measured in correlation with the benchmark and not in absolute terms. In contrast, hedge funds seek to guarantee an absolute return under any circumstance, even when market indices are plummeting. This means that hedge funds have no benchmark, but rather different investment strategies.

Mutual funds cannot protect portfolios from descending markets, unless they sell or remain liquid. Hedge funds, however, in the case of declining markets, can find protection by implementing different hedging strategies and can generate positive returns. Short selling gives hedge fund managers a whole new universe of investment opportunities. It is not the general market performance that counts, but rather the relative performance of stocks.

The future return of mutual funds depends upon the direction of the markets in which they are invested, whereas the future return of hedge funds tends to have a very low correlation with the direction of financial markets.

Another major difference between hedge funds and mutual funds is that the latter are regulated and supervised by Regulatory Authorities, and are bound by limitations restricting their portfolio makeup and permitted instruments. Moreover, investors are further protected by obligations burdening the management company in terms of capital adequacy, proven robust organization and business processes. On the contrary, the absence of a stringent

regulatory framework for hedge funds leaves the manager with greater latitude to set up a fund characterized by unique traits in terms of the financial instruments to be employed, the management style, the organizational structure and the legal form.

Therefore, the hedge fund industry is marked by a great heterogeneity, in that it is characterized by different investment strategies and by funds of a wide variety of sizes.

Although hedge funds immediately bring to mind the image of innovative investment strategies within the financial landscape, the first hedge fund came into existence more than half a century ago.

1.2 HISTORY OF HEDGE FUNDS

This section details some of the important events in the history of hedge funds.

Back in 1949, Alfred Winslow Jones, a former reporter for *Fortune*, started the first hedge fund with an initial capital of only US\$100 000. Jones' core intuition was that by correctly combining two speculative techniques, i.e. using both short sales and leverage, it would be possible to reduce total portfolio risk and construct a conservative portfolio, featuring a low exposure to the general market performance. Jones also had two other major ideas: to cater to investors, he had invested all his savings in the fund he managed, and his profit came from a 20 % stake in the generated performance rather than from the payment of a fixed percentage of assets under management. This approach made it possible to bring the interests of manager and investor together.

Today, the archetype described above characterizes only a small number of hedge funds: the term is now used to refer to a vast realm of different management models.

At present, a hedge fund has five main characteristics:

- The manager is free to use a wide range of financial instruments.
- The manager can short sell.
- The manager can use leverage.
- The manager's profit comes from a management fee, which is fixed and accounts for 1.5–2.5 %, and from a 20–25 % fee on profits. Generally, the performance or incentive fee is applied only if the value of the hedge fund unit grows above the historical peak in absolute terms or over a one-year period.
- The manager invests a sizable part of his personal assets in the fund he manages, so as to bring his own interests in line with those of his clients.

In 1952, Jones opened up his partnership to other managers and started to hand over to them the management of portions of the portfolio, and within a short period of time he assigned them the task of picking stocks. Jones would allocate the capital among his managers, monitor and supervise all investment activities and manage the company's operations. The first hedge fund in history turned into the first multi-manager fund in history.

In 1967, Michael Steinhardt started Steinhardt, Fine, Berkowitz & Company with eight employees and an initial capitalization of \$7.7 million. Steinhardt began his career as a stock picker and then, as his hedge fund grew, shifted to a multi-strategy fund. In the 1980s Steinhardt became head of a hedge fund group with roughly US\$5 billion of assets under management and with over 100 employees. Steinhardt ended his hedge fund career in 1995 after suffering big losses in 1994.

By 1969, the US Securities and Exchange Commission (SEC) had started to keep a watchful eye over the blossoming industry of hedge funds as a result of the rapid growth

in the number of new hedge funds and of assets under management. At that time, the commission estimated that approximately 200 hedge funds were in existence, with \$1.5 billion of assets under management. 1969 was also the year that George Soros created the “Double Eagle” hedge fund, the predecessor of the more renowned Quantum Fund.

The first fund of hedge funds¹ was Leveraged Capital Holdings, created in Geneva in 1969 by Georges Karlweis of Banque Privée Edmond de Rothschild, which had the purpose of investing in the best single-managers of the time. Leveraged Capital Holdings also represents the first European hedge product.

In 1971, the first US fund of funds was started by Grosvenor Partners, and in 1973, the Permal Group launched the European multi-manager and multi-strategy fund of funds, called Haussmann Holdings N.V. The people who were given the task of creating the investment team for Permal were Jean Perret and Steve Mallory (hence the name Permal).

Then, in 1980, Julian Robertson and Thorpe McKenzie created Tiger Management Corporation and launched the hedge fund Tiger with an initial capital of \$8.8 million. In 1983, Gilbert de Botton started Global Asset Management (GAM), a company specializing in the management of funds of hedge funds, which in 1999 was acquired by UBS AG and by the end of 2004 had some €38 billion of Assets under Management (AuM).

At the beginning of the 1990s, Soros, Robertson and Steinhardt managed macro funds worth several billion dollars and invested in stocks, bonds, currencies and commodities all over the world, trying to anticipate macro-economic trends.

In 1992, alternative investment instruments started to draw the attention of the press and of the financial community, when George Soros’s Quantum Fund made huge profits anticipating the depreciation of the British pound and of the Italian lira.

The early 1990s were the heyday of macro funds. The exit of the British pound and the Italian lira from the European Monetary System in September 1992 allowed Soros to cash in an incredible profit of \$2 billion.

On 4th February 1994, the Fed unexpectedly introduced the first rate hike of one quarter of a percentage point, which caused US treasuries to topple and led to a temporary drain of liquidity on the markets. The twin effect of panic on the markets and leverage proved disastrous for Steinhardt Partners, which in 1994 suffered a loss of 31 %. Steinhardt decided to retire at the end of 1995, despite the fact that during that year he had been able partly to recover the 1994 losses, ending 1995 up 26 %.

Later on, hedge funds bounced back into the headlines when in the first nine months of 1998 Long Term Capital Management, managed by John Meriwether and a think tank including two Nobel laureates in Economics (Myron Scholes and Robert Merton), generated a staggering \$4 billion loss, starting a domino effect that left many banks, financial institutions and big brokers in many countries teetering on the brink of default. Only the prompt intervention of a bail-out team led by the Federal Reserve of Alan Greenspan avoided the onset of a systemic crisis.

In October 1998, when the Japanese yen appreciated against the dollar, Robertson suffered a loss of about \$2 billion. In 1999, his long/short equity strategy, based on the analysis of fundamentals of listed companies, did not work at all in the market driven by the tail wind of the New Economy. After withdrawals from investors, assets under management had plunged from \$25 billion in August 1998 to less than \$8 billion at the end of March 2000.

¹ Ineichen, A.M. (2003) *Absolute Returns: The Risk and Opportunities of Hedge Fund Investing*, John Wiley & Sons, Inc.

At the end of March 2000, when the “dot-com” speculative bubble was at its peak, Robertson announced the liquidation of the Tiger Fund.

In April 2000, George Soros changed his chief investment strategist and soon after the CEO of Soros Fund Management LLC as well. Soros announced to his investors that he would stop making large leveraged macro investments. To reduce the risk he would downsize his return objectives.

1.3 PROPRIETARY TRADING

The world of hedge funds borders with that of proprietary trading in investment banks.

Proprietary trading desks are made up of groups of managers, who manage the proprietary book of banks following the same techniques and financial instruments employed by hedge funds. This affinity is further evidenced by the fact that many hedge fund managers have a past experience in proprietary trading desks for the most prestigious investment banks. The main difference lies in the fact that in a hedge fund the manager is also the owner, whereas proprietary trading managers are employees of the banks and only part of their variable wage is linked to the performance of the portfolio they manage.

Another difference is that the hedge fund industry puts an emphasis on monthly results, whereas the time horizon on which the performance of proprietary trading desks is measured is tied to the bank’s quarterly reports.

Before the crisis in August 1998, proprietary trading played quite a role in the income statement of financial institutions. Immediately after the financial crisis of August 1998, which led to sharp losses, many proprietary trading desks were closed or segregated off the balance sheet by creating hedge funds. At present, proprietary trading is making a comeback, even though there is no one single model.

1.4 THE GROWTH OF THE HEDGE FUND INDUSTRY

Hedge Fund Research estimates that the number of hedge funds has gone from 610 in 1990 up to 7436 in 2004 (not including funds of hedge funds). Assets managed by hedge funds went from an estimated \$38.9 billion in 1990 to approximately \$973 billion in 2004.

According to Tremont Capital Management Inc., at the end of 2004 the hedge fund industry reached \$975 billion of assets, in addition to another \$300 billion held in managed accounts, totaling \$1275 billion of AuM. Various sources agree in estimating that the number of active hedge funds is running at about 9000, with approximately 3500 managers.

In the period between 1990 and 2003, as shown in Figure 1.1, assets under management grew at a compound annual growth rate of 26 %, while the number of funds grew at a rate of 20 %.

A trillion dollars accounts for about 1.3 % of the total capitalization of financial markets, excluding the leverage, or 3.5 % including the leverage. Therefore the hedge fund industry can be considered a niche sector.

Why then bother with an industry that accounts for only 3–4 % of the assets of global financial markets? First, because it is estimated that hedge funds make up 10 % of market trade volumes, and second because this is the industry where some participants seem to be able to generate a market-uncorrelated performance.

Figure 1.2 compares the cumulative returns of the hedge fund industry with the cumulative returns of stock and bond markets in the period between 1994 and 2004. Note that as of March 2000, while global stock markets started to slip, hedge funds on average were able to protect their capital and to generate positive returns with a low volatility.

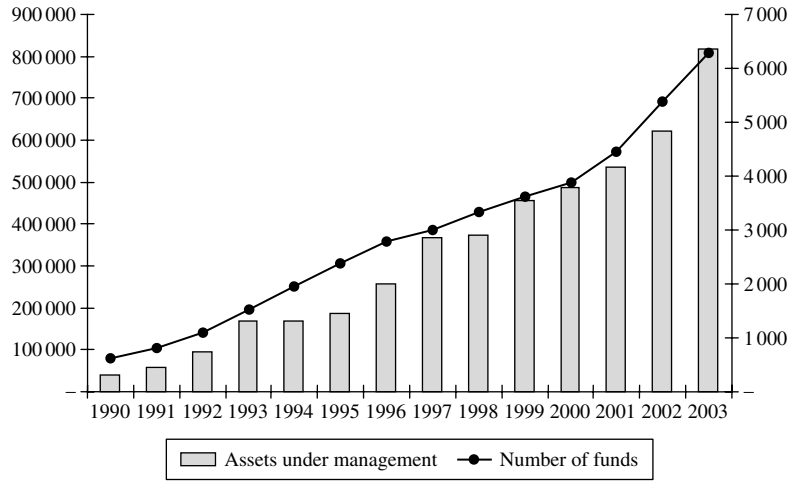
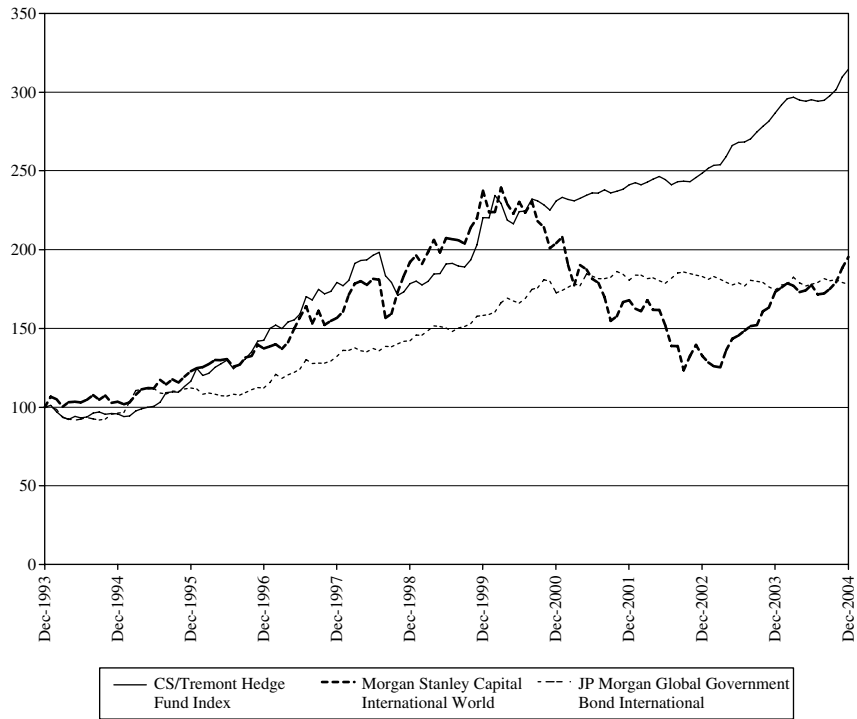


Figure 1.1 The growth of the hedge fund industry. The left scale represents the assets under management in billion US dollars and the right scale is the number of hedge funds from 1990 to 2003. Source: Hedge Fund Research, Inc. © HFR, Inc.2004, www.hedgefundresearch.com. Reproduced by permission of Hedge Fund Research, Inc.



All indices are expressed in US dollars.

Figure 1.2 Cumulative returns of the hedge fund industry compared with cumulative returns of stock and bond markets from 1994 to 2004. Source: Bloomberg L.P.

1.5 MAIN CHARACTERISTICS OF THE CURRENT INDUSTRY

Hedge funds are characterized by the use of alternative management styles or investment strategies, which is in fact what this book intends to analyze.

Figure 1.3 shows the makeup of the hedge fund industry by investment strategy at the end of 2004, measured as a percentage of assets under management. It is clear that the two main investment strategies are long/short equity, with 33 %, and the event driven style, which accounts for 19 % of the market share.

It is also worth examining the hedge fund industry distribution by size. For this type of analysis, we took into consideration only hedge funds that had been operating for at least five years, and we examined asset data as of 31st December 2004 supplied by the LIPPER TASS database. Since the hedge fund assets supplied by this database are denominated in various currencies, we translated all of them into dollars at the exchange rate in force on 31st December 2004.

The resulting industry's actual profile is illustrated in Figure 1.4: each bar of the chart represents the sum of the assets of all hedge funds that belong to that size bracket. Size brackets have been arbitrarily chosen to be seven.

Clearly, the hedge fund industry proves to be heterogeneous in terms of fund size.

In reality, the industry's actual profile should also include the myriads of hedge funds that have little assets under management, that were launched a short time ago, and that are not releasing their performance data to any database yet.

The low barriers to entry characterizing the hedge fund universe lead us to assume a size distribution with a completely different shape: see the curve in Figure 1.4. Let us rotate the bar chart 360° around the dotted axis shown in the chart. Figure 1.5 shows the industry shape subdivided by homogeneous size brackets: we obtain a "vase" shape. According to some journalists we have opened up Pandora's box! Successful hedge funds are those that have reached a bigger size and over time have achieved a consistent performance. The base of

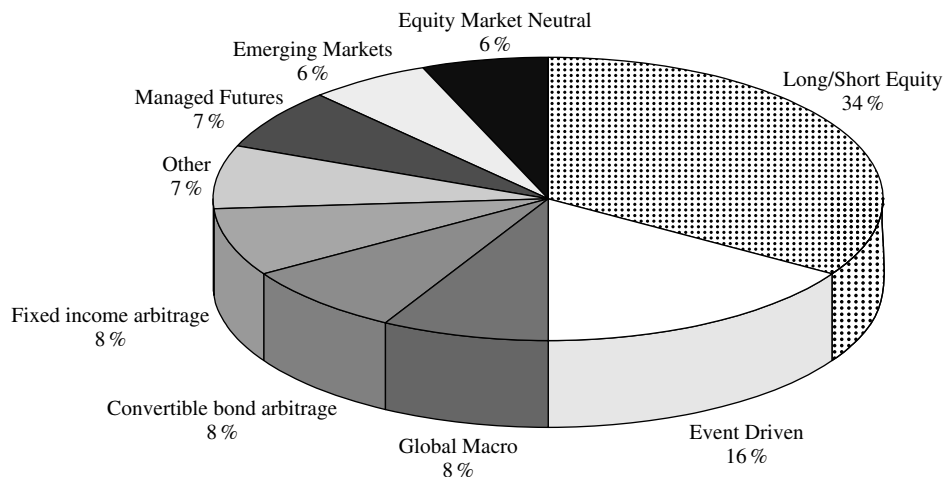


Figure 1.3 Makeup of the hedge fund industry by investment strategy at the end of 2004 (percentages of assets under management). Source: LIPPER TASS, Tremont Capital Management, Inc.

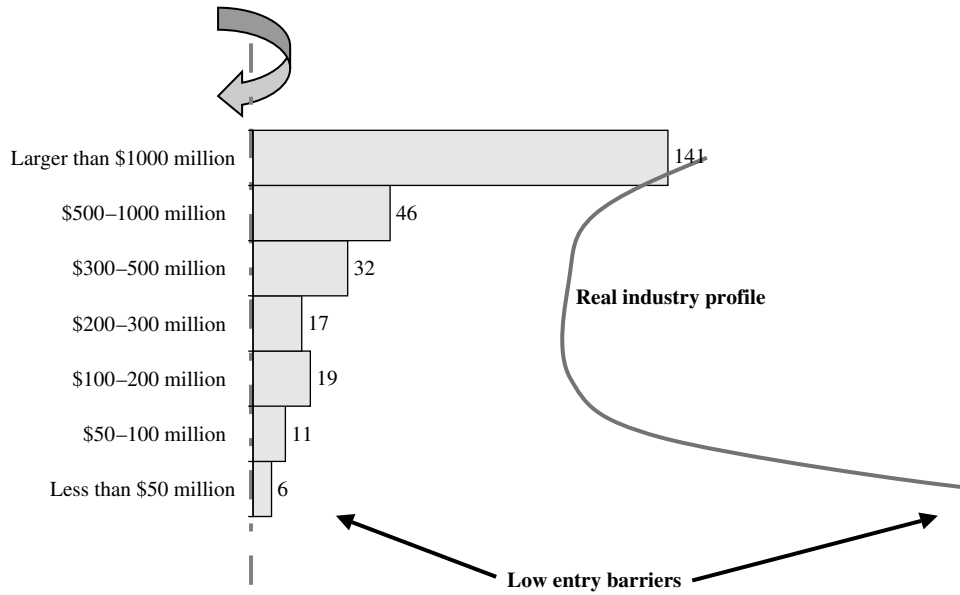


Figure 1.4 Profile of the hedge funds industry for dimensional classes at the end of 2004. Source: calculation on LIPPER TASS data

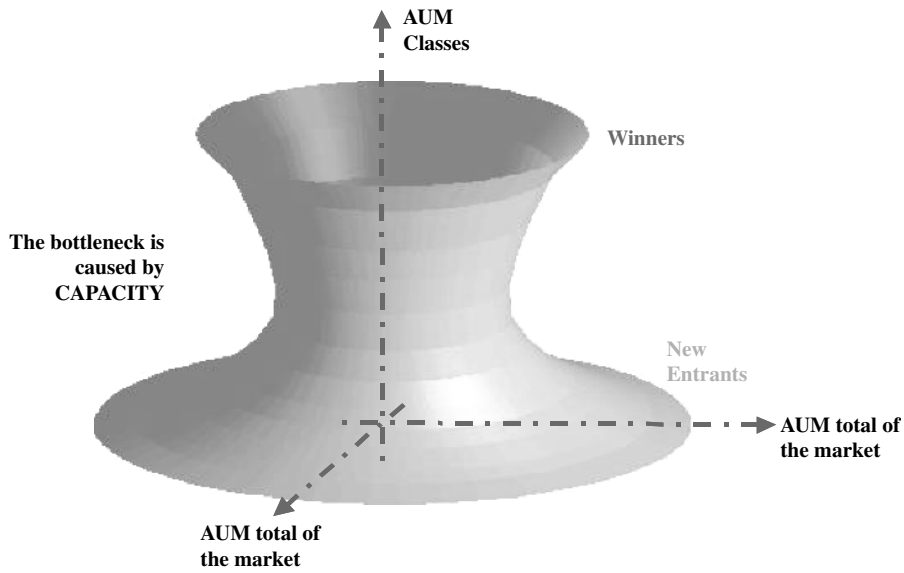


Figure 1.5 Pandora’s box?

the “vase” is represented by new entrants, as well as by hedge funds that are having trouble generating returns.

The hedge fund industry is characterized by low barriers to entry for new managers: investment banks roll out the red carpet for managers who wish to launch a new hedge

fund. The reason is that hedge funds are great clients for investment banks, as a result of the substantial brokerage fees they pay on the purchase and sale of financial instruments. In addition to brokerage services, investment banks even provide them with office space, technological infrastructures, risk management systems, and through their *capital introduction* systems, they also take care of the fund's marketing among final investors.

Low barriers to entry and the appealing fee structure brew an explosive mixture fostering the proliferation of new hedge funds. This phenomenon is heightened further by the strong demand for quality hedge funds on the part of investors. For a successful manager it is very easy to raise money to invest. As we will see in some numerical examples later on, every hedge fund manager knows all too well that the greater the amount of money he manages, the higher the fees he is going to earn. Why then do the assets managed by hedge funds not grow exponentially? The reason lies in the so-called capacity issue, which is what determines the bottleneck in the "vase" depicted in Figure 1.5.

1.6 CAPACITY

The largest equity mutual fund is Vanguard's index fund S&P 500, with more than \$94 billion of assets under management, while the biggest fixed income fund is Pacific Investment Management Company's Total Return Fund, with a capital of €73 billion at the end of 2003. Vanguard and Fidelity manage \$675 and \$955 billion, respectively.

Often, hedge funds that are closed to new capital do not disclose their performance to databases and therefore elude the classifications of journalists who have but a hazy knowledge of the hedge industry. In recent years, no two similar classifications have been published with regard to major hedge funds when weighted by assets under management.

The hedge fund business is no scalable business, due to the inherent diseconomies of scale. Assets managed by a hedge fund cannot exceed a certain limit, called capacity, without negatively affecting its performance. Beyond given limits, additional capital prevents the replication of relative value strategies and dilutes returns, obliging hedge funds to take on a greater directional risk in the attempt to keep up their performance.

Because capacity limits the size of hedge funds, the assets managed by the largest hedge funds are definitely less than those managed by the largest mutual funds.

1.7 COMMISSIONS

Some funds have become famous for their performance, their size, the aura of mystery surrounding them – since they release information only to their investors and are closed to new investors – and for their commissions, which have been said by some investors to be "outrageous". If we analyze the most extreme cases, we find a group with annual management fees of 6–7% and performance fees of 20%; another group charges no management fees but its performance fees are 50% of profits; other groups charge a 3% annual management fee and performance fees account for 30% of profits.

Most hedge funds charge their clients with performance fees accounting for about one fifth of profits, but you can get as high as one fourth, one third or even half the gains generated by the hedge fund.

A hedge fund's rewarding system is asymmetric. Fund managers receive a portion of the profits but do not share in the losses. If a manager suffers a loss, he tends to take on greater risks to start showing a profit again.

The best way to solve this asymmetry is when managers also own fund units, i.e., when they share a personal interest in the fund management: managers invest their own savings in the same place where hedge fund customers put their money. Ownership is a direct and powerful incentive that can guarantee a careful asset management.

According to Van Hedge Fund Advisors International LLC, on 31st December 2003, 78 % of hedge fund managers had invested at least \$500 000 of their own savings in their hedge funds.

1.8 INDUSTRY PERFORMANCE OVERVIEW

Let us take a look at the hedge fund index data, whose structure will be analyzed in each chapter of the book.

The percentage of positive months is good (71 %), with an average performance in positive months of +1.9 %. The annualized performance is greater than the selected equity index and bond index, while volatility lies halfway between that of the equity index and the bond index.

Figure 1.6 shows the monthly returns of the CS/Tremont Hedge Fund Index from 1994 to 2004.

Figure 1.7 depicts the historical performance trend as a function of risk for the CS/Tremont Hedge Fund Index between 1994 and 2004. The chart is a squiggle showing the 12-month moving average of the average annual return as a function of the 12-month moving average of the annualized mean standard deviation. Each dot represents the average risk/return in the previous 12 months and the squiggle joining the various dots shows the historical track of the index on a risk-return plane. The moving average is used to reduce data noise. The concentration ellipsoid shows that in the last three years the hedge fund industry in general shifted towards a low volatility. The cluster represents the normality, while the “wriggles” lying outside the cluster represent deviations from normality.

Figure 1.8 becomes particularly interesting in the light of the so-called high water mark. According to Van Hedge Fund Advisors International LLC, on 31st December 2003, 93 % of hedge funds had high water marks. As the term implies, technically speaking a high water mark defines the value the fund must reach to take performance fees. The performance fee is not applied if the value of the fund unit, although higher than the previous month, does not grow above the initial value of the unit calculated in any previous month.

The chart in Figure 1.8 highlights the sharp and sudden drawdown that took place in August 1998. In that month there was a strong *flight-to-quality* caused by the default of Russia’s domestic currency debt. The drawdown lasted three months, and it took 13 months to recover the losses.

Figure 1.8 was obtained by ignoring positive performances generated in a period of no drawdown, while in the other cases we considered only the negative performances of the hedge fund industry and the time it took to recover from the negative performance and emerge from the drawdown. We observe that from 1994 to 2004 hedge funds often went “underwater”. In those below-the-watermark periods, on average hedge funds did not collect performance fees, because they had to work to return to their pre-loss levels. The periods in which hedge funds do not earn performance fees are quite tense for the management company organization. Losses could turn out to be excessive, so that some employees,

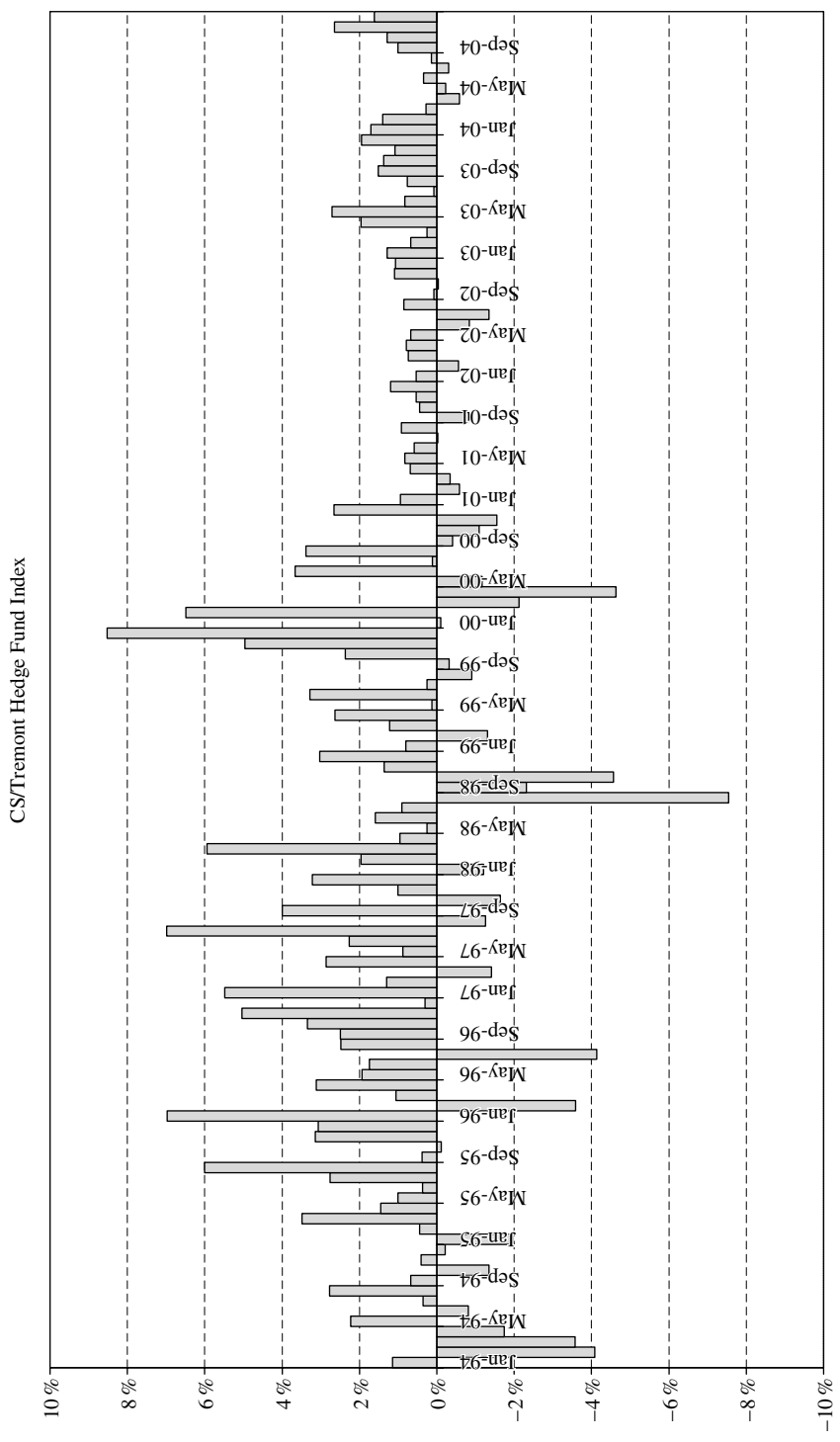


Figure 1.6 Monthly returns of CS/Tremont Hedge Fund Index from 1994 to 2004. Source: CS/Tremont Index LLC, www.hedgeindex.com. Copyright © 2006, Credit Suisse/Tremont Index LLC. All rights reserved*

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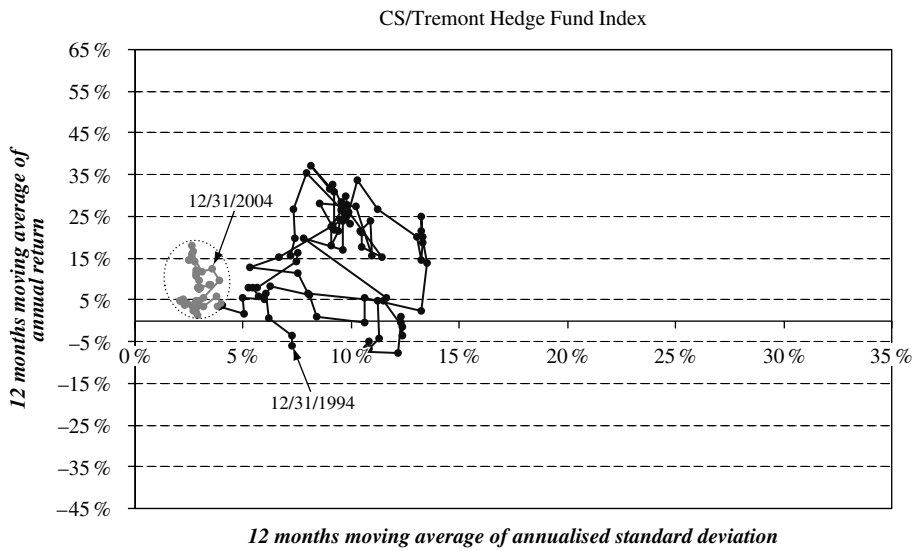


Figure 1.7 Historical performance trend of return as a function of risk for CS/Tremont Hedge Fund Index from 1994 to 2004. Source: CS/Tremont Index LLC, www.hedgeindex.com. Copyright © 2006, Credit Suisse/Tremont Index LLC. All rights reserved*

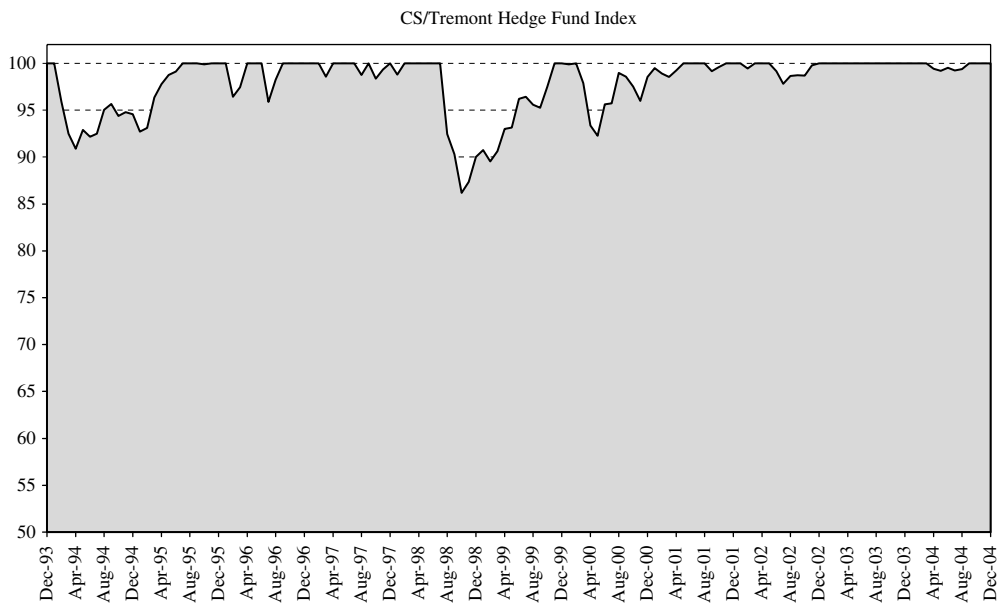


Figure 1.8 Underwater periods for CS/Tremont Hedge Fund Index from 1994 to 2004. Source: CS/Tremont Index LLC, www.hedgeindex.com. Copyright © 2006, Credit Suisse/Tremont Index LLC. All rights reserved*

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instead of working to recover the losses, may decide to resign and go to work for hedge funds that are performing well. The management company may also decide to liquidate the hedge fund that has incurred substantial losses, or even worse, the manager might take too many risks to recover the losses. Hennessee Group calculated the *attrition rate* of hedge funds (i.e., the rate of liquidated funds) based on its proprietary database. In 2004, the attrition rate was 5.3 %, while the annualized attrition rate over a six-year period was about 5 %. The rate of attrition also includes funds that shut down for reasons other than the fund's performance.

It is clear that hedge fund investors need to be aware and carefully monitor this issue.

1.9 THE HEDGE FUND MANAGER

As has already been remarked, each hedge fund tends to be unique. Hedge funds are characterized by a strong entrepreneurship and the absence of a stringent regulatory framework. Every hedge fund has its unique organizational and legal structure, particular business culture, management style, and manager's professional experience, age and education. In every hedge fund it is the manager who sets the rules of the game in full latitude: management style, investment time horizon, return and volatility objectives, target market and the fund's optimal capacity.

Perhaps the most singular aspect is the manager's experience, with quite a motley collection of backgrounds: there are sculptors, journalists, Noble laureates, nuclear engineers, physicists, mathematicians, chess champions, IT engineers, geologists, biologists, physicians, strategic consultants, lawyers, investment bankers, brokers, etc. Often the greatest innovations come from people who draw from a very different experience than most of the other players, because they can look at problems from a fresh slant.

1.10 ALPHA AND BETA

Based on the theory of the Capital Asset Pricing Model, we can break down the returns generated by a hedge fund into a linear alpha and beta function, where alpha measures the extra-return which cannot be linked to market trends and beta measures the sensitivity of rates of return to market performance variations. The returns of a hedge fund depend on the manager's skill, as well as on market conditions, that are not related to the single talents of managers. However, when analyzing single investment strategies, we shall see that this model does not fit in well with hedge fund performance. The source of returns varies significantly, depending on the different investment strategies adopted by hedge funds, among individual hedge funds, and over time. Hence, we would rather use a theoretical model that allows for a more efficient explanation of the performance of hedge funds, and to this end we distinguish between traditional beta and alternative beta, and between structural alpha and "skill" alpha (Figure 1.9).

Traditional sources of beta are the stock market, bond duration and credit spreads. Even though these factors are not normally distributed and, as such, their risk is not well measured by beta, we find it valuable to identify the sources of beta.

Alternative sources of beta are liquidity, volatility, correlations, the risk inherent in corporate events, beta of commodity markets and the complexity inherent in the modeling of corporate events or structured products.

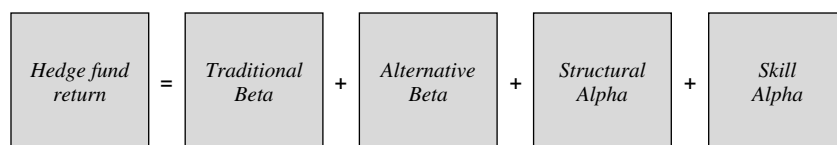


Figure 1.9 Break up of the hedge fund return. Source: Copyright Harcourt

Structural alpha is linked to the structural advantages enjoyed by hedge funds, for example the greater regulatory freedom, the latitude offered by having no benchmark, flexibility and nimbleness, and limited size.

Alpha linked to the manager's talent is represented by his analytical skills, the ability to produce fresh investment ideas, and his portfolio management and risk management skills. Alpha appears in the presence of a highly talented manager who enjoys an information advantage. Real time information today is a commodity, because of the Internet. An excellent manager is a person, who with special insight digests a huge amount of information and is able to attach a meaning to it. Consider for example a manager who has been working for 15 years in a strategic consulting company, dealing only with the car industry. His knowledge of the car industry has been acquired in the field through the delivery of strategic plans of many car companies. This person could thus build an in-depth knowledge of the industry's dynamics, together with a network of liaisons with managing directors of the major companies of this sector, and knowledge about the suppliers of car manufacturers, customers and internal competition. This example clearly illustrates the existence of the hedge fund manager's alpha. A piece of news covering a specific car manufacturer or the price trends of raw materials will not just click on a light in the manager's head, but rather an entire Christmas tree flooding with lights. A given piece of news takes on quite a different meaning for him than for most other investors, and this gives him an information advantage, i.e. a unique competitive edge.

Throughout this book, for each hedge fund investment strategy, we shall refer to Figure 1.9 to identify the market factors that affect hedge fund performance.

1.11 INVESTMENT STRATEGIES

Mutual funds are classified by breaking them down into the markets and sectors in which they invest, whereas hedge funds are classified first by the investment style followed by the manager and second in terms of market or sector. However, often hedge funds are managed along multiple styles and therefore they may straddle various categories. Within a given investment strategy, there are managers who have such a peculiar style as to be unique. This book is not intended to solicit investments or express judgments on the validity of one strategy over another. Its aim is to describe the "state-of-the-art" of hedge fund investment strategies and give an overview of the heterogeneous hedge fund industry. Investment strategies are so vast and complex that a whole book could be written for each of them.

An investment strategy stems from the manager's experience and creativity, endowing it with nuances that make it almost unique. There is no single classification of hedge fund strategies, and what is more, hedge fund strategies are no static universe, rather they are subject to constant change and expansion.

In 1735, the Swedish botanist Carl von Linné, best known under the Latinized name of Carolus Linnaeus, published the book *Systema Naturae*, where he designed a classification system for plants and animals, from which the current system takes origin. Linnaeus assigned a binomial Latin name to each species: first the genus of belonging, then the specific “shorthand” name.

Confronted with a huge variety of investment strategies adopted by hedge funds, we may well apply Linnaeus’s classification system to hedge funds, and thus identify five similar “genera”:

1. Relative value
2. Event driven
3. Directional/Trading
4. Long/short equity
5. Other strategies

Each genus is then subdivided into different identified species, as in Figure 1.10.

Classifications are by themselves limited, but they do help us gain a better understanding of the vast and heterogeneous world of hedge funds.

Relative value strategies are arbitrage transactions that seek to profit from the spread between two securities rather than from the general market direction. Relative value strategies include merger arbitrage, convertible bond arbitrage, fixed income arbitrage, mortgage-backed arbitrage and capital structure arbitrage.

Event driven strategies seek to capitalize on opportunities arising during a company’s life cycle, triggered by extraordinary corporate events, such as spin-offs, mergers, acquisition, business combinations, liquidations and restructuring.

Directional/Trading strategies seek to take advantage of major market trends rather than focusing their analysis on single stocks. Directional/Trading strategies include the managed futures and macro strategies.

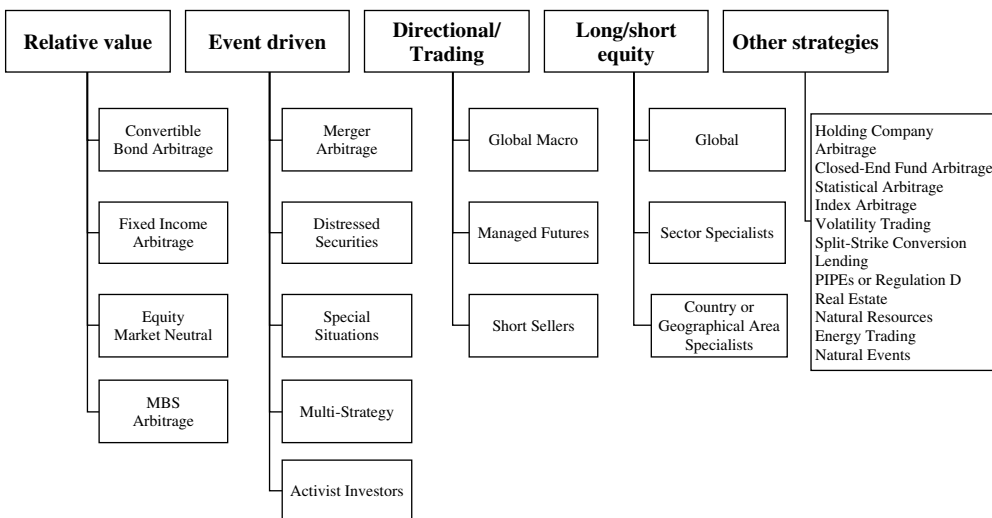


Figure 1.10 The investment strategies

Long/short equity strategies is where the manager takes a long position on stock he feels the market is underpricing and short sells stock he perceives is being overpriced. This is by far the largest discipline among hedge funds, maybe the easiest to understand but at the same time one of the most difficult to implement.

Other strategies is a residual category where we included all the most recent and innovative strategies.

The hedge fund industry is always on the shift, and since the early 1990s it has completely reshaped, as shown in Figure 1.11: according to Hedge Fund Research, in 1990, 71 % of the industry was made up of hedge funds managed along the macro strategy. The losses incurred by this strategy in 1994 and 1998 brought about a deep change throughout the whole hedge fund business.

To date, approximately 50 % of the hedge fund industry is comprised of relative-value based funds, while in the last decade the weight of the long/short equity strategy remained practically unchanged, starting at about one third, inching up to 50 % in 1999 and 2000, and then slipping down again to 36 %.

The change in the weight of the various strategies over time reflects the ups and downs of their returns. In the twilight of macro funds, the hedge fund industry shifted towards arbitrage strategies and the long/short equity strategy.

The analysis of hedge fund investment strategies helps understand that they should not be made to bear the blame if some listed stocks go down the drain. Sweeping generalizations are never correct: from a philosophical point of view it is like deriving a general principle from a particular instance, making it clear that the logical process of induction is not applicable.

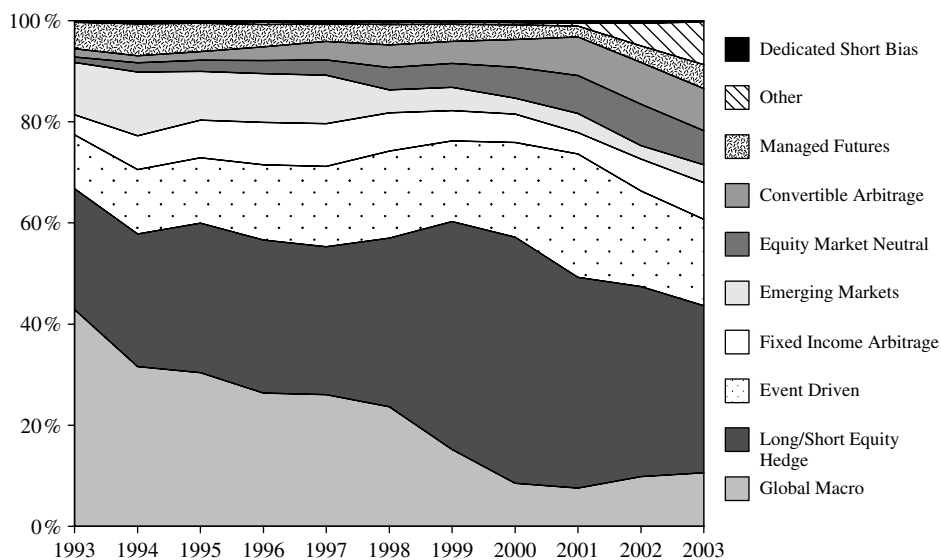


Figure 1.11 Shift of the assets under management of the hedge fund industry divided by investment strategy from 1993 to 2003. Source: calculation on TASS Research, Tremont Capital Management, Inc. data

1.12 EXPLORERS AND FRONTIERS

According to a metaphor introduced by Professor Goetzmann of Yale University, hedge funds are explorers that operate on the frontiers of markets. Once discovered, analyzed and “cleared”, the frontier recedes and explorers must constantly re-adapt to new frontiers.

Today, it is the emerging markets such as Russia, China, India and Korea that represent geographical frontiers.

New frontiers are also new types of assets, as options were at the end of the 1970s, securitizations in the 1980s, index derivatives in the 1980s and 1990s, credit derivatives at the end of the 1990s, and as energy trading and structured finance are today. Hedge fund managers are market makers for these new assets. When a new financial market is created for a new asset, it is affected by the problem of low liquidity, as investors are not familiar with the new financial instruments.

Hedge fund managers spend time analyzing the information structure and digesting information so as to be always surfing out in the front of the information flow. Transparency removes the motivation to explore and develop new frontiers, but new investment styles shall emerge and disappear as the financial market frontier shifts.

The macro-frontier is represented by the development of models for making links across the different economies. The new research micro-frontier is represented by models to track market trends.

1.13 SEC’S VIGILANCE

The exponential growth enjoyed by the hedge fund industry led the US Securities and Exchange Commission (SEC) to take a closer look at this phenomenon. In September 2003, the SEC conducted a comprehensive study (*Implications of the growth of hedge funds*, a 113 page report) on US hedge funds, based on which, on 26th October 2004, it introduced the requirement for hedge fund management companies with at least 15 clients and \$30 million of assets under management to register with the Commission starting from 1st February 2006. Only the hedge funds with at least two years lock-up are exempted from registering.

The registration means that management companies will be required to make periodical disclosures regarding their organizational structure, and they will be subject to periodical compliance examinations by the Commission staff.

1.14 CONSIDERATIONS ON PERFORMANCE SUSTAINABILITY

To examine and reflect on the hedge fund business, we have identified a number of short *business cases* that allow us to draw some useful considerations. Let us start with a very simple example, and take an individual willing to invest an initial capital of €100 000 on financial markets. If the investment generates a 20 % net profit yearly for ten years running, and if profits are reinvested, at the end our investor will own a capital of €619 174, with a six-fold increase over the initial capital. However, although on year one he should earn €20 000, on year ten he should earn €103 196, that is, five times the profit realized on year one. As Table 1.1 shows, with each passing year it gets more and more difficult for our investor to meet the objective of a net 20 % annual performance, because each year he has to gain more and more money.

Table 1.1

<i>Year</i>	<i>Capital at year-end</i>	<i>Gain during the year</i>
0	€100 000	
1	€120 000	€20 000
2	€144 000	€24 000
3	€172 800	€28 800
4	€207 360	€34 560
5	€248 832	€41 472
6	€298 598	€49 766
7	€358 318	€59 720
8	€429 982	€71 664
9	€515 978	€85 996
10	€619 174	€103 196

A hedge fund manager needs to find new opportunities quickly enough to keep up with the growth in assets under management. This explains why a very successful hedge fund at some point or another has to redeem to its investors part of their investments due to capacity saturation.

It also explains why, once they reach a given size, successful hedge funds must necessarily turn into macro or multi-strategy funds to generate satisfactory returns.

1.15 CAPACITY AND PERFORMANCE SUSTAINABILITY

Let us take into consideration a macro hedge fund that starts managing \$5 billion and generates a 30 % performance per year for 32 years in a row.

The fund's capitalization at the end of year 32 would amount to approximately \$22 000 billion, namely equal to the current capitalization of US equity markets: this means that this hypothetical fund would own all the stocks traded on US markets. Clearly a paradox. It is now quite intuitive that high performances can be sustained only on relatively small AuM.

1.16 ABILITY OR CHANCE?

Another very simple example allows us to understand how every year there are some investors who can boast exceptional performances. Let's assume that every year there are n investors who, lacking any managing skill, invest at random, and let's assume that the probability they will achieve a positive return is 1 out of 2, and the probability they get a negative result is once again 1 out of 2. Let's assume that k is the number of investment years. The probability that among n managers there are a few who obtain k consecutive positive returns is measured by the following formula:

$$\binom{n}{k} \cdot \left(\frac{1}{2}\right)^k \cdot \left(\frac{1}{2}\right)^{n-k}$$

where

$$\binom{n}{k} = \frac{n!}{k! \cdot (n-k)!} \text{ and where } n! = 1 \cdot 2 \cdot \dots \cdot n$$

The probability of having 10 positive results in a row is 0.10 %, namely 1 out of every 1000 investors.

The probability of having 9 or 10 positive results over a 10-year period is 1.07 %, or 10 out of 1000 investors.

The probability of having 8 or more positive results over a 10-year period is 5.47 %, or 50 out of 1000 investors.

The hedge fund picker will always bump into a fund that started to short the NIKKEI in 1990 or the NASDAQ on March 2000, but it is difficult to determine if it was by pure chance or due to the manager's skills. True enough, past performance is not indicative of future returns, but no doubt it provides us with precious information on the manager's behavior when confronted with successes or failures along his managing business.

1.17 THE IMPORTANCE OF AVOIDING LOSSES

This last example tells us how important the first investment rule is: never lose. According to Warren Buffett, this rule should be etched into the mind of investors.

Let us assume that an investor wants to get a net annual 20 % profit and instead suffers a 20 % loss in year five. On year six, to recover the loss and to meet his return objective of 20 % per year, the investor cannot just generate a 20 % or even 40 % performance, but rather has to get up to +80 %. This clearly shows that it is extremely difficult to recover a loss (Table 1.2).

In the book, *Creative Destruction*,² it is suggested that long-term studies on the creation, survival and disappearance of US companies clearly show that the corporate equivalent of El Dorado, i.e. a golden firm that is constantly over-performing, has never existed: it is a myth. Consider, for example, that in 1917 the US monthly magazine *Forbes* published the list of the top 100 US companies. Seventy years later, in 1987, *Forbes* published once again the original list and showed that 61 companies of the original top 100 had gone out of business. More than that: the surviving 39 companies had down-performed the market by 20 %.

Table 1.2

Year	Capital at year-end	Gain during the year	Performance (%)
0	€100 000		
1	€120 000	€20 000	+20 %
2	€144 000	€24 000	+20 %
3	€172 800	€28 800	+20 %
4	€207 360	€34 560	+20 %
5	€165 888	€ - 41 472	-20 %
6	€298 598	€ + 132 710	+80 %
7	€358 318	€59 720	+20 %
8	€429 982	€71 664	+20 %
9	€515 978	€85 996	+20 %
10	€619 174	€103 196	+20 %

² Foster, R. and Kaplan, S. (2001) *Creative Destruction: Why Companies That Are Built to Last Underperform the Market – And How to Successfully Transform Them*, New York: Doubleday.

We may well draw an analogy with the hard sustainability of hedge fund performance. It is evident that those who wish to invest in this asset class would be better off relying on fund of hedge fund managers, who are in a position to manage a periodical portfolio turnover, while conducting a due diligence on hedge funds included in the portfolios.

1.18 DECREASING RETURNS WITH LONGER INVESTMENT HORIZONS

Let us assume we invest €100 000 in a stock that turns out to be a great investment. Let's say that we sell the same stock for €150 000. It is self-evident that the longer the time necessary to close our investment, the greater the return decrease. However, it might be surprising to visualize how rapidly our return actually deteriorates. Let's see what happens to our return if, instead of one year, we have to wait longer to sell (Table 1.3).

The annual return declines rapidly from +50 % to +8.4 % after five years. How important the time necessary to close an investment turns out to be!

Table 1.3

<i>Years</i>	<i>Annual return (%)</i>
1	+50.0 %
2	+22.5 %
3	+14.5 %
4	+10.7 %
5	+8.4 %

1.19 BUSINESS CASE: A HEDGE FUND START-UP

Let us consider as an exemplification the start-up of a hedge fund. Let's try and estimate the profit of a fund management company, whose fee structure is 1.5 % management fee and 20 % performance fee. To make things simple, let's say that fees are collected at year-end, capital follows a linear growth, management fees are collected first, followed by performance fees, and that management fees are calculated based on the average asset value. We won't consider income taxes. Let's assume also that overhead costs, namely personnel costs, office rents and the depreciation of IT equipment, like servers and PCs, amount to \$1.5 million per year (Table 1.4).

Table 1.4

<i>Case number</i>	<i>Gross performance generated by the manager (%)</i>	<i>Initial capital of the hedge fund in million dollars</i>	<i>Profits generated by the management company in million dollars</i>
1	10 %	\$ 100	\$ 1.76
2	20 %	\$ 100	\$ 3.82
3	10 %	\$ 200	\$ 5.02
4	20 %	\$ 200	\$ 9.14

It is clear that the manager would make a much greater profit than the wage he would get as an employee in charge of a proprietary trading desk for an investment bank.

But the other side of the coin is what happens if during the year the manager starting a hedge fund with an initial capital of \$100 million delivers a gross performance of -10% ? In this case, the management company would suffer a \$75 000 loss. With such a poor performance, however, few investors would keep their money invested in the fund, and therefore the fund could be hit by a wave of redemptions that might cause its liquidation.

This example shows clearly how appealing the idea of opening a new hedge fund may be for a talented manager.

The next chapter describes the meaning of arbitrage in the hedge fund world in order to be able to later understand the arbitrage strategies. It is one of the most important chapters of the book, because arbitrage plays such an important role in much of the hedge funds thinking.