

AIMA'S ROADMAP TO HEDGE FUNDS

2012 EDITION

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Foreword

AIMA's original *Roadmap to Hedge Funds* quickly became the most-downloaded publication in the association's 22-year history, despite having been released at the height of the global financial crisis in September 2008. Four years on, it remains a powerful guide to investors seeking to create and manage a hedge fund portfolio. Written in a wry, witty style, it was a success not only because it was the world's first collaborative educational guide for institutional hedge fund investors, but because it demystified the hedge fund industry at a time when misconceptions around issues such as short-selling, fees, transparency and risk were widespread. It had a global readership and in 2010 was even translated into Chinese.

Much clearly has changed in the four years or so since the original edition was released. While much within the 2008 *Roadmap* remains relevant, there has been a recognition within AIMA and its Investor Steering Committee, which co-ordinated the original release as well as reviewing this edition, that the time had come for a substantial update to be published. This edition is what emerged from those discussions.

As with 2008, the new edition of the *Roadmap* has been authored by Alexander Ineichen, one of the leading authorities on hedge funds. Alexander started his financial career back in the 1980s, and the *Roadmap* reflects his considerable knowledge. In addition to the *Roadmap*, he is the author of the most printed research publications in the documented history of UBS - "In Search of Alpha - Investing in Hedge Funds" (October 2000) and "The Search for Alpha Continues - Do Fund of Hedge Funds Add Value?" (September 2001). He is also the author of "Absolute Returns - The Risk and Opportunities of Hedge Fund Investing" (Wiley Finance, October 2002) and "Asymmetric Returns - The Future of Active Asset Management" (Wiley Finance, November 2006).

Broadly speaking, what this new edition has set out to do is to explain the continuing relevance of hedge funds after the tumult of the last four years. All of the data from the 2008 edition have been updated, and Alexander has identified new trends and developments.

It is worth recording that amid the upheaval, hedge funds in general have recovered fairly well from the crisis. At the time of writing, the industry had just reached a new peak of \$2.2 trillion in assets under management^[1]. We believe the key force behind this rebound has been the evolving hedge fund investor base.

What is undeniable is that attitudes to hedge fund investing have changed since 2008. Hedge funds are now a truly institutional product. Pension funds have become a lot more familiar with the asset class, and, as a result, continue to seek hedge fund investments as a means to diversify away from their traditional bond/equity portfolio construction, and to seek superior risk-adjusted returns. The industry is arguably better understood, more transparent, better governed, and, as a result, more respected to service an institutional investor base.

The changing investor base is driving a structural change within the hedge fund industry. Institutions have arrived with their own set of client demands, distinctive from those of the pioneer high net worth and family office investors. They have demanded improved transparency, increased reporting and top quality risk management systems. This, coupled with a new wave of industry regulation, has resulted in real change at the hedge fund manager level. It has also driven an increase in demand for managed accounts, a trend likely to continue. Further, institutional investors have begun to put pressure on the traditional 2-and-20 fee structure. We predict that this trend will continue, and that flexible fee structures will become the norm.

This institutionalisation has inevitably had an effect on the quality and quantity of start-up hedge fund managers. Barriers to entry have increased. Higher regulatory

^[1] Hedge Fund Research Global Hedge Fund Industry Report, Q3 2012

standards translate to higher costs for a start-up. As a result, the new launch pipeline is now dominated by talent from prop desk spinouts and "second generation", high-pedigree managers. Inevitably, in an increasingly institutionalised world, only those with a strong track record, proven alpha generation capabilities, strong operational experience and tested business management will be well positioned to raise capital.

Funds of funds, still an important source of hedge fund capital, have also evolved dramatically since 2008. Many have successfully adapted their business models, and are now playing a key role alongside consultants, using their industry expertise to provide advisory assistance as well as discretionary services for the end investors.

Alexander has provided invaluable research that summarises the hedge fund industry over the past decade. His books and articles have hugely contributed to the institutionalisation of the industry. We are certain that you will enjoy reading the *Roadmap*. We trust that it will provide insightful research and relevant information (as well as many wise quotes from a wide range of sources) both for newcomers and for seasoned hedge fund veterans.

Finally, a word of thanks is due to all of those people who gave of their time and expertise during the production of both the 2008 and 2012 editions of the *Roadmap*, including of course the author Alexander Ineichen (of Ineichen Research and Management AG), Tom Kehoe of AIMA, Craig Dandurand of CalPERS and Kurt Silberstein of Ascent Private Capital Management (and formerly of CalPERS). Special thanks are due also to the CAIA Association. All of their contributions have been invaluable.

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Executive Summary

Executive summary

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. The first hedge fund was a *hedged* fund.

The favourable *relative performance* of hedge funds is worth highlighting: a hypothetical investment in the S&P 500 Total Return Index of a \$100 at the beginning of the last decade stood at \$121 by August 2012. A hypothetical investment of \$100 in the HFRI Fund Weighted Hedge Fund Index stood at \$201. We think this is a big difference.

The average hedge fund portfolio fell 20% in 2008. However, recovery was swift. It is easier to recover from a 20% loss than it is to recover from a 50% loss. The average hedge fund reached high-water mark, i.e., recovered from its 2008 losses, by October 2010, judging by HFR index data. Global equities on the other hand, have been under water since 2007 and, assuming an annual growth rate of 5%, will only have recovered their financial crisis losses by 2015.

In the ten worst quarters since 1990, a diversified hedge funds portfolio lost less than a global equities portfolio.

Managed futures delivered a positive return in 18 out of 20 equity down-markets between 1980 and 2012.

One way to look at hedge funds is as active managers. While many aspects of hedge fund investing have indeed changed since 2008, the concept of active risk management has not. In fact, we would argue that the case for active risk management has increased over the past four years.

Hedge funds are active risk managers. Active risk management is dependent on the willingness to embrace change and, more importantly, to capitalise on it. Adaptability is the key to longevity.

The term "risk-free return" stems from models in the laboratory environment of financial academia, the model world, not the real world. It describes an econometric nirvana; a place where there is no risk.

An increasing number of investors have been arguing that there is no such thing as a safe place for wealth to rest; governmental guaranteed investments included. Furthermore, while there is no such thing as a risk-free rate, there seems to be plenty of return-free risk.

The pursuit of absolute returns is much older than the idea of beating a benchmark. Defining risk as the attempt to avoid losses is materially different than trying to avoid underperforming a benchmark.

Hedge funds do not hedge all risks. If all risks were hedged, the returns would be hedged too. Hedge funds take risk where they expect to be paid for bearing risk while hedging risks that carry no premium.

Today, after equities halved not once but twice within a decade, the absolute return investment philosophy has become the norm among certain types of investors. The fact that real interest rates are negative in certain areas of the world has increased the demand for absolute returns further; thereby strengthening the investment case for managers who have capital preservation as their main risk management goal.

Preface

Every investment management professional as well as nearly every citizen of the industrial world will agree that the financial services sector is not the same as it was prior to the 2008 financial crisis. Everything has changed. For example, while the hedge fund industry is still a fraction of the size of the banking industry, it seems to have recovered better: the ratio between the market capitalisation of all the 46 European banks in the STOXX 600 index to assets under management in the global hedge fund industry was 1.2:1 at the end of 2006. By the end of Q3 2012 this ratio shrunk to 0.4:1 as the market capitalisation of European banks was 57% lower while hedge fund assets were 50% higher. And the two-decade long growth of the hedge fund industry, while interrupted by the events of 2008, has continued. In 1990, the assets under management in the hedge fund industry were 50% of the market capitalisation of Apple, Microsoft and Exxon Mobile combined. By the end of 2000, hedge fund assets were 90%, and by the third quarter of 2012 182% of the market capitalisation of Apple, Microsoft and Exxon Mobile. While there was disappointment with absolute returns in hedge funds, the average hedge fund regained its high-water mark by October 2010 and the hedge fund industry started to print new record highs in terms of assets under management by early 2012. Furthermore, whereas large parts of the financial system were perceived as too big to fail and were indeed saved by the authorities and their underwriters, the tax payer, individual hedge funds are generally small enough to fail and never in the history of hedge funds did the industry require subsidies from the tax payer.

The 2008 financial crisis has added more question marks about the role and practicability of financial economics (MPT, CAPM, alpha, correlation coefficients, autoregressive conditional heteroskedasticity, etc.). There is a big difference between the model world and the real world. The model world was always the model world and everyone knew it. US economist J.K. Galbraith brought it to the point in the side text: For believing that a government bond-heavy portfolio is investment panacea one has to ignore nearly all economic systems and socio-economic experiments that have failed. In an environment where the inappropriately named *risk-free return* has turned into return-free risk, holding on to investment dogma and ideas that worked well in the past, might be the biggest risk investors face today. Keeping an open mind could become essential to prosperity and, potentially, investment survival. This *Roadmap* needs to be read with this in mind, with certain receptiveness for different perspectives, unorthodox thought and new ideas.

We quite often come across the notion that financial economics needs its Einstein to break with the current intellectual gridlock of traditional investment thinking and belief. Einstein's insight caused—to use Thomas Kuhn's words—a paradigm shift resulting in many old beliefs turning out to be false and replaced with new-and-improved better ones. Einstein came out of nowhere, i.e., his early ground-breaking papers were published not when he was part of the academic establishment but when he was working at a patent office in Bern. We find the comparison with Darwin more apt. Einstein's revolution came out of the blue while Darwin's paradigm shifting insight did not. There was great disbelief of the prevailing orthodox paradigm over many decades prior to the publication of *On the Origin of Species* in 1859. However, *On the Origin of Species* tied all the bits and pieces together in one theory. In finance we are in the 1840s or early 1850s, i.e. there is enough evidence to claim the prevailing orthodoxy to be false but we do not have a new theory tying the "bits and pieces" together. The practical relevance of this is that regulation and accounting rules are still based on the assumption that there are indeed fairies, as Douglas Adams put it in the side text, at the bottom of the garden. MIT professor and hedge fund manager Andrew Lo once referred to the hedge fund industry as the Galapagos Islands of the financial services industry. It is there where false orthodoxy is broken and new ideas are tested.

"He who rejects change is the architect of decay. The only human institution which rejects progress is the cemetery."

Harold Wilson

"There can be few fields of human endeavour in which history counts for so little as in the world of finance."

John Kenneth Galbraith

"Isn't it enough to see that a garden is beautiful without having to believe that there are fairies at the bottom of it too?"

Douglas Adams

Both frogs and snakes live in the real world. When a frog-eating snake enters the habitat of frogs, what happens? The frogs either adapt to the new environment or become snake food. This, in the tiniest of nutshells, is how flora and fauna works. It is a robust system and it has been going for a couple of billion years, even if it can be tough for frogs at times.

Finance is different. Not all market participants live in the real world. Hedge funds live in the real world of mark-to-market accounting. They live in constant fear of margin calls and redemptions. This fear might be unpleasant for the individual at times but it strengthens the system, thereby making it more robust. Small errors are quickly revealed and corrected. Furthermore, hedge funds, more often than not, have their own wealth tied to the wealth of their investors. This means that not only are they held accountable by their agents, they feel the pain of losses as principal as well. They have skin in the game.

Not all financial services firms live in the real world of mark-to-market. For many decades, the authorities have created a financial nirvana whereby certain assets can be held at cost and thereby not holding anyone accountable for losses. This results in small errors becoming large errors and small losses becoming gargantuan losses for which the taxpayer has been, involuntarily, the underwriter. It could well be that this is in the process of changing with hedge funds becoming a larger and more important part of the financial services industry. With more actors having skin in the game, the stability of the financial system would improve. After all, whoever has washed and polished a rental car?

Many investors have noticed that hedge fund returns since the financial crisis have been disappointing, with 2011 a particularly poor year, although performance has recovered somewhat at the time of writing. A fact less well publicised is that risk taking has been low too. Returns are a function of taking risk. Many practitioners in the field of investment management have called the "risk-free return" the "return-free risk." The term "risk-free return" stems from models in the laboratory environment of financial academia, the model world, not the real world. It describes a starting point, an econometric nirvana; a place where there is no risk. Most often, the risk-free rate of return is associated with the authorities in one form or another, for example the return from T-Bills. An increasing number of investors have been arguing that there is no such thing as a safe place for wealth to rest; governmental guaranteed investments included. Sovereigns have failed before; even empires and reserve currencies have failed before. Furthermore, while there is no such thing as a risk-free rate, there seems to be plenty of return-free risk. This means that many strategies that used to work do not anymore. Survival, therefore, requires change and change requires flexibility and adaptability.

The financial market place has arguably not been and is not running as smoothly as one would wish. One reason for market malfunction is market intervention. The monetary authorities, for example, have taken over risk management, or so it seems. In the 1990s, this was called the *Greenspan put* and now is called the *Bernanke put*, while there is now also a *Draghi put*. The extent of intervention has reached a multi-generational extreme. The main differentiation of hedge funds, as this *Roadmap* will elaborate on, is active risk management. As any risk manager will attest, the current investment environment is difficult. There is a sense that a can cannot be kicked down the road indefinitely. At one state the market will indeed clear. The historically low risk that hedge funds have on their books, and subsequently the low returns, are a function of something just not being right. The current regime does not pass the capitalist-common-sense smell test. It is the

"Self-preservation is the first law of nature."
Proverb¹

"A financial system populated by smaller institutions with diverse business models monitored by other market participants with skin in the game is robust; an oligopoly of conglomerates ineffectually regulated by a public agency that lacks either technical competence or political authority is not."
John Kay²

"Bonds promoted as offering risk-free returns are now priced to deliver return-free risk."
Warren Buffett³, quoting the late investment banker Shelby Cullom Davis

"The endeavors to lower the rate of interest by means of credit expansion generate the recurrence of depression... The joint outcome of all interventionist measures is general impoverishment. It is a misnomer to call the interventionist state the welfare state. What it ultimately achieves is not improving but lowering the common man's welfare, his standard of living."
Ludwig von Mises⁴

¹ The proverb can be traced back to Cicero.

² "We must press on with breaking up banks," *Financial Times*, 15 September 2010

³ Berkshire Hathaway, 2011 letter to shareholders, 25 February 2012

⁴ Von Mises, Ludwig (1949) "The Why of Human Action," *Plain Talk*, September. Reprinted in "Economic Freedom and Interventionism - An Anthology of Articles and Essays," Selected and Edited by Bettina Bien Greaves, first published in 1990 by The Foundation for Economic Education, Inc., Irvington-on-Hudson, New York.

responsibility of the active risk manager to act responsibly even, or especially, in times where the authorities do not.

Interestingly, the authorities are making it increasingly more difficult to hedge and manage risk responsibly. One example is the various short selling bans that have been implemented either temporarily or permanently. Short selling is one of the techniques that the active risk manager uses to control risk. Banning short selling is like banning barracudas in the Amazon: It might be a positive for the fish that grew too fat and are too slow to adapt to change, but it disrupts the ecosystem and potentially kick-starts a negative feedback loop that results in collapse. Intervention restricts the operational flexibility of the active risk manager in terms of portfolio construction, short selling and the use of leverage. The result is higher cost, higher complexity (because complex instruments need to be used to circumvent the restrictions), and higher regulatory uncertainty (because the regulatory framework, and therefore the investor's habitat, keeps changing all the time). The bottom line is that the investment life is becoming more difficult. Nevertheless, hedge funds are still more flexible when compared to other pooled assets and are therefore potentially better equipped to adapt to change.

Hedge funds, by comparison to nearly all financial services firms, are lightly regulated. What is the result? Failures are quickly absorbed within the industry and without taxpayers' money.³ Furthermore, failure is permitted. Failure is an essential part of progress that is in any social system (as well as in nature) a function of trial and error. It is essential to the efficient allocation of capital, essential to innovation, to improvement, to growth, to everything. The hedge fund industry experienced a major disruption in 2008 too, like all financial service providers and investors. However, the hedge fund industry had adapted to the new environment quickly and recovered from the shock rather swiftly. Investors redeemed from those who they believed treated them unfairly as well as requiring more liquidity and transparency for new investments. Some business models and investment ideas disappeared while new ones had arisen within two years. This is how it should be. One reason why capitalism is superior to everything that has been tried is the swift reaction to a new situation and the swift and efficient reallocation of capital. The hedge fund model has adapted to change and is now reasonably robust. This obviously cannot be claimed for all parts of the financial services sector.

The *AIMA Roadmap to Hedge Funds* from 2008 was initiated prior to the 2008 financial crisis to clarify, educate, inform, and demystify hedge funds with those institutional investors who not yet had the inclination or resources to study the benefits and risks of including hedge funds in their balanced portfolios. This goal has not changed; neither has the value proposition of hedge funds. Nearly everything else has changed though.

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"My true adversary does not have a name, a face, or a party. He never puts forward his candidacy but nevertheless he governs. My true adversary is the world of finance."
François Hollande¹

"We are not far from the point where the deliberately organized forces of society may destroy those spontaneous forces which have made advance possible."
Friedrich Hayek²

¹ "Hollande hits at his 'true adversary'", Financial Times, 22 January 2012

² Hayek, Friedrich (1960) "The case for freedom," The Freeman, Volume 10, Issue 10, October.

³ No public money subsidised the rescue of LTCM. The Federal Reserve Bank of New York got involved and convened 14 banks and brokerage houses to invest \$3.65 billion of equity capital in exchange for 90 percent of the firm's equity. (While the solution was privately financed and no public money was involved, the moral hazard derived from this intervention and the indirect cost to society is a different story.)



What exactly is a
hedge fund?

What exactly is a hedge fund?

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

—Michel Sapin, former French Finance Minister, on speculative attacks on the Franc¹

- *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. The first hedge fund was indeed a hedged fund.*
- *The hedge funds/alternative investment moniker is a description of what an investment fund is not rather than what it is. The universe of alternative investments is just that - the universe.*
- *A hypothetical investment in the S&P 500 Total Return Index of a \$100 at the beginning of the last decade stood at \$121 by August 2012. A hypothetical investment of \$100 in the HFRI Fund Weighted Hedge Fund Index stood at \$201 by August 2012. We think this is a big difference.*

Introduction and definition

The global hedge fund industry has seen a very rapid—albeit interrupted—expansion since 2000. Hedge funds are estimated to manage around \$2.2 trillion as of Q3 2012², the highest amount ever. While the whole hedge fund industry is only as large as the balance sheet of a large universal bank, the industry was only around \$450 billion as late as 1999. The growing importance of hedge funds in financial markets is also reflected in their growing share of trading in equity, bond and derivatives markets, with hedge funds becoming a leading force and provider of liquidity in many segments of the financial market place. Today, hedge funds account for a growing share of revenue streams of regulated and listed financial institutions. Many fiduciaries and pension boards have been required to learn about hedge funds and determine whether to invest in hedge funds or not.

What exactly is a hedge fund? Some investors think the term is a misnomer. These investors could be right for the wrong reasons. Whatever the case might be, the term “edge fund,” as many hedge fund investment professionals like to point out, might actually be more appropriate. Not all hedge funds are hedged. However, all hedge funds claim to have an edge. Furthermore, a performance fee incentivising the hedge fund team to generate absolute returns as well as the fact that hedge fund portfolio managers invest their personal assets alongside external investors are further important distinguishing features that will be addressed in more detail in following chapters.

The hedge fund term originated in an article by Carol Loomis in 1966 with the title “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. Apparently, Alfred Jones never used the term “hedge fund” but referred to his fund as a “hedged” fund to distinguish it

“I wish Karl would accumulate some capital, instead of just writing about it.”
Mother of Karl Marx

“Edge fund” potentially the better term

The term “hedge fund” initially described a “hedged” fund

¹ From Bekier (1996)

² Source: Hedge Fund Research

from a fund that was not. Alfred Jones used the term “hedged” as an adjective; Carol Loomis used “hedge fund” as a (new) noun.¹

For his Statue of David in 1501, Michelangelo used a single block of marble. In fact, it was a block that had been started upon but abandoned by another, lesser talent, years earlier. At the time, everyone thought that this block of marble was ruined - that its potential had been exhausted, and that nothing further could be extracted from it. But Michelangelo took on this discarded block and from it he created one of the masterpieces of all times. For Michelangelo, to sculpt meant to take away, not to add, because the “the work of art” already existed inside the stone. The block of marble was just the covering of a work of art; the sculptor only had to take away the part in excess. The sculptor's hand, guided by skill and experience, could only “liberate” what was already there inside the block of marble. His task was to free the “idea” inside from the superfluous matter surrounding it.

Investment opportunities exist

The reason the term “hedge fund” is perceived as a misnomer is because there are no hedge funds that hedge all risks. If all risks were hedged, so would be the returns. Returns are a function of taking risk. Absolute return investing implies that the risk-neutral position is cash (or no risky positions at all). Adding value in investment management, we believe, by definition means to take some risk. However, there are risks that are more likely to carry a reward and risks that are less likely. The risk that carries a reward is the idea “that needs to be liberated from the superfluous matter”, i.e., risks that carry no reward. The returns are already there one “only” need to “liberate” those returns from excess risks. The process of differentiating between rewarded risk and excess risk, the “sculpting,” is then a function of intelligence, effort, experience and skill. Whether we should go on and call this “alpha”, we are not so sure. There seems much more to it.

If all risk were hedged, so would be the returns

Richard Bookstaber, arguably an authority on matters related to risk, argued that hedge funds could not be clearly defined. All analysis, classification, tracking and regulation are based on the assumption that hedge funds are homogeneous entities. This is clearly not the case. Bookstaber wrote:

Hedge funds are not a homogeneous asset class—quite the opposite

I believe there is no such thing as a hedge fund. Hedge funds are not a homogeneous class that can be analyzed in a consistent way. The hedge funds/alternative investment moniker is a description of what an investment fund is not rather than what it is. The universe of alternative investments is just that - the universe. It encompasses all possible investment vehicles and all possible investment strategies minus the “traditional” investment funds and vehicles.²

Bookstaber goes on to argue that hedge fund investing is more an “everything but” class as it encompasses the whole universe of investment possibilities.³ He argues that analysing hedge funds is like studying modern history by excluding, for example, France. Regulating such a large, difficult-to-define universe, Bookstaber finds, is like putting together a committee to develop a single set of traffic rules to apply to all modes of transportation from walking to commercial jets. “Or, actually, because alternative investments exclude traditional unlevered, long-only investment, it would be like regulating all modes of transportation except, say, passenger sedans”.

Hedge funds are an “everything but” of the investment universe

¹ We have added a brief essay on the origins of hedge funds in the Appendix.

² See Bookstaber (2003)

³ Ibid.

Bookstaber's insight is important as it stresses that what we today call "alternative" is really the full spectrum, while what we refer to as "traditional" is really a small slice of all possibilities and investment choices for the institutional investor. If oil were discovered on the moon or under Antarctica and a market existed for property options or drilling rights, some hedge funds would be likely to get involved while benchmark-oriented, long-only managers would not and could not. The hedge fund managers' field of investment is much more flexible than with traditional long-only funds. Quite often, the benchmark-oriented, long-only approach of traditional asset management is compared to playing piano by only being able to use the black keys. If we were forced to give a definition for what a hedge fund is, we would put it 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.¹

This definition highlights two important aspects of hedge funds: the attempt to generate positive absolute returns by taking risk and, at the same time, trying to control losses and avoid negative compounding of capital. Their investment philosophy is materially different from the investment philosophy of a manager who is tied to a market benchmark. In the following chapter, *From relative to absolute returns*, we discuss these two investment philosophies at length. Before we elaborate on this important differentiation in the field of investment management, we briefly examine some aspects of the hedge fund industry.²

The hedge fund industry

Performance

The long-term absolute performance of broadly diversified hedge fund portfolios was high at around 7.3% from January 1990 to August 2012. This performance is an average and it is net of two layers of fees.

Chart 1 (on the following page) shows the HFRI Fund of Funds Composite Index, one of the most frequently used proxies for diversified hedge fund portfolios compared to equities, bonds and cash. This index shows fund of funds performance net of hedge fund as well as fund of hedge funds fees. Using a fund of hedge funds index avoids discussions concerning various statistical biases in hedge fund return data as all the funds in a fund of hedge funds are real hedge funds. The HFRI Fund Weighted Hedge Fund Index, which is a proxy for a diversified hedge fund portfolio net of one layer of fees, but not adjusted for any statistical biases, compounded at an annual rate of 11.0% from January 1990 to August 2012. This is an impressive long-term return even if inflated by a couple of hundred basis points per year due to various statistical biases, although some academics now think that these biases in fact cancel each other out. Whether the long-term track record for hedge funds is relevant for institutional investors investing today, is an entirely separate discussion.

"Education is an admirable thing, but it is well to remember from time to time that nothing that is worth knowing can be taught."

Oscar Wilde

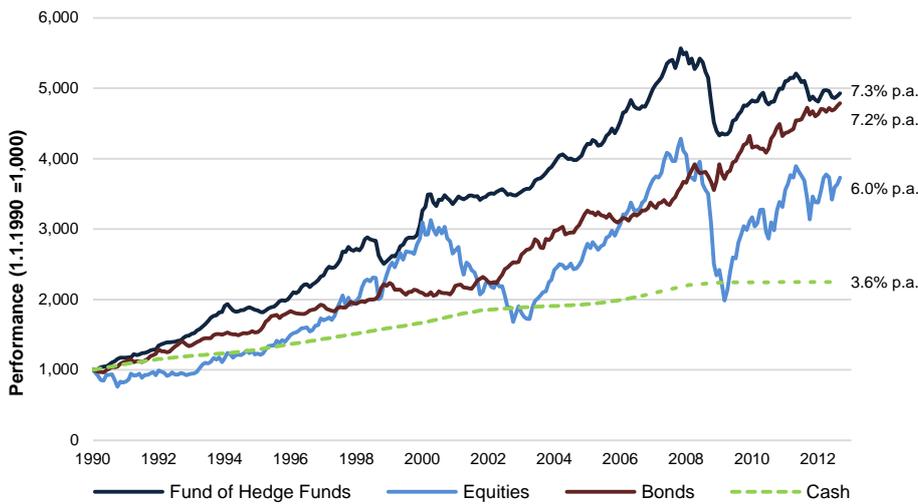
Trying to avoid negative compounding is central to the hedge fund idea

Fund of hedge funds compounded capital at around 7.3% net of all fees from January 1990 to August 2012

¹ See Ineichen (2003a), p. 34

² For more information see also the "Tenth Annual Alternative Investment Survey - Investor insights on the changing hedge fund landscape," by Deutsche Bank, February 2012, and "The value of the hedge fund industry to investors, markets, and the broader economy," by KPMG and AIMA, April 2012.

Chart 1: Long-term performance (January 1990 - August 2012)



Source: IR&M, Bloomberg

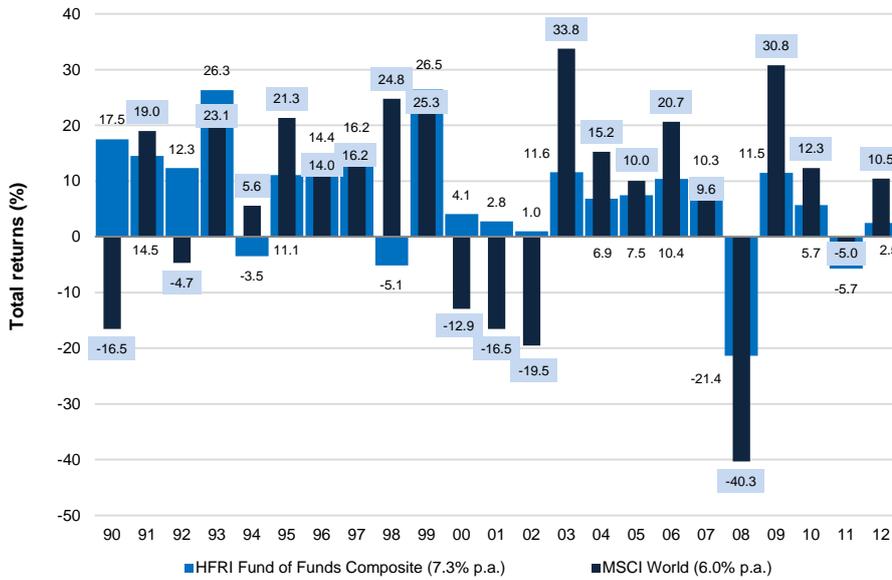
Return figure shows the compound annual rate of return (CARR). Based on USD total returns of HFRI Fund of Funds Composite Index, MSCI World Index, JPM Global Aggregate Bond Index, Bank of America Merrill Lynch US T-Bill 3M Index.

Chart 1 (above) is probably the most often used marketing graph in hedge funds. It shows outperformance even after two layers of fees are subtracted. One reason for the superior performance is smooth and stellar performance during the 1990s period of disinflation as well as positive returns for the hedge fund sector in the aftermath of the tech bubble bursting. However, most institutional investors did not start investing in 1990 but much later; some as late as early 2008, i.e., at the peak.

Chart 2 (on the following page) examines calendar year returns of the HFRI Fund of Funds Composite Index compared with the MSCI World Total Return Index. Both 2006 and 2007 experienced record inflows into the absolute return space. These record inflows occurred despite broad-based hedge fund portfolios underperforming long-only equity investments. Our interpretation of this observation was that the institutional inflows into hedge funds were of a strategic nature, rather than a tactical allocation. In other words, while hedge fund pioneers and early adopters invested in the 1990, the stellar relative performance in hedge funds in the years 2000-2003 as the tech bubble burst put hedge funds on a much broader institutional map. The flows continued despite relative underperformance in 2005 and 2006. 2008 was an entirely different story.

Record inflow despite equity bull market

Chart 2: Fund of Hedge Funds versus MSCI World (January 1990 - August 2012)

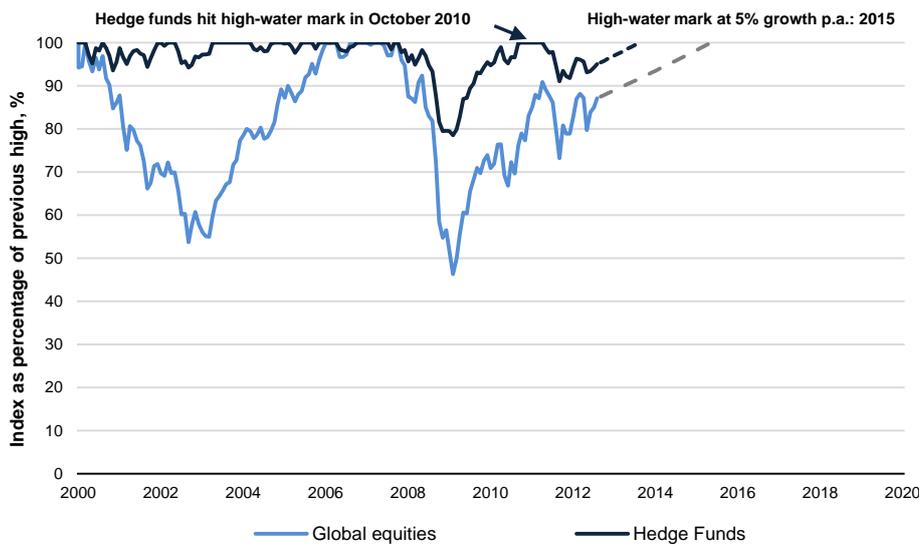


Source: IR&M, Bloomberg
 Return figure in legend shows the compound annual rate of return (CARR). Based on HFRI Fund of Funds Composite Index and MSCI World TR Index.

The year 2008 was not a good year for most investors; the year was unprecedented in many ways. While there were a couple of dozen managers who shot the lights out, most diversified hedge fund portfolios suffered from unprecedented losses. The losses were not only unprecedented, they came as quite a surprise too. Equity investors “are used to” losing 25% or more of their assets every now and then; it is in the psyche of the long-only equity investor. After all, equities had already halved once previously in the decade. However, a 20% loss from a diversified hedge funds portfolio was not within the realm of possible scenarios of the institutional investor. For those institutional investors, who made their first allocation in 2006 or 2007, the 2008 drawdown was particularly harmful, as their overall hedge fund experience turned into a loss-making venture. Earlier investors had many positive years that over-compensated the 2008 loss while late investors had not. Chart 3 (on the following page) shows the underwater perspective of hedge funds versus a proxy for global equities. The underwater perspective visualises the losses from a previous level of wealth and is calculated by measuring an index as a percentage of its previous all-time-high.

The 20% loss in 2008 came as a bit of a surprise

Chart 3: Underwater perspective (January 2000 - August 2012)



Source: IR&M, Bloomberg
 Based on HFRI Fund Weighted Composite Index and MSCI World TR Index. Author's own calculations.

One aspect that put hedge funds on the agenda of many institutional investors was the non-participation in the internet-bubble-bursting-drawdown in the early part of the 2000s. Global equities went from a new all-time high in March 2000 to 55% of that level in February 2003 to recover back to 100% in January 2006; essentially a six-year round-trip that yielded 0%. The average hedge fund portfolio produced a return of around 43% in that period; arguably a big difference.

Hedge funds didn't do as well in the second large drawdown of the decade, the financial crisis of 2008. The 20% loss of the average hedge fund portfolio came as a surprise, as mentioned before. However, recovery was swift. It is obviously easier to recover from a 20% loss than it is to recover from a 50% loss. The average hedge fund reached high-water mark, i.e., recovered from its 2008 losses, by October 2010, judging by HFR index data. Global equities on the other hand, have been under water since 2007 and, assuming an annual growth rate of 5%, will have recovered their financial crisis losses by 2015, as shown in the chart.

Assets under management

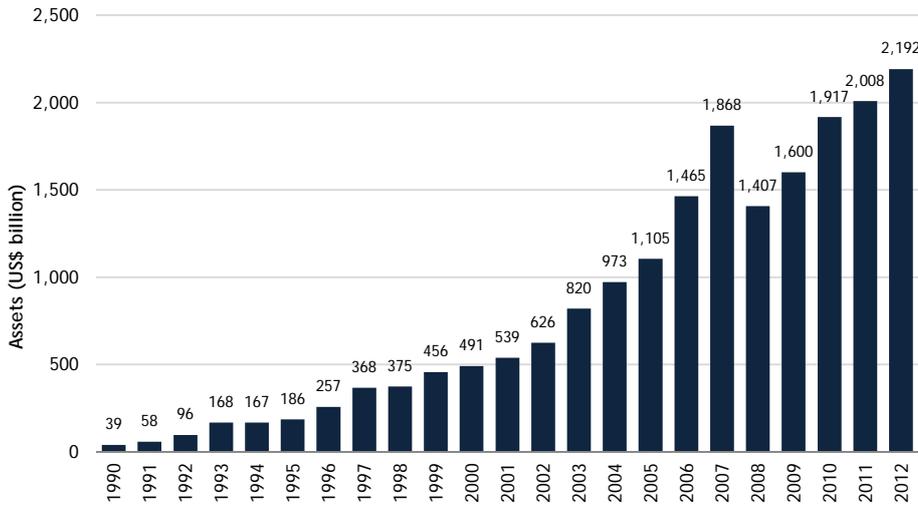
The various data providers supply different estimates as to how large the hedge fund industry really is in terms of assets under management.

Chart 4 (on the following page) shows estimates by Hedge Fund Research in Chicago.

Investors were drawn to hedge funds by exemplary relative performance during the bursting of the internet bubble

While the average hedge fund investor has recovered from the 2008 financial crisis, the average long-only equity investor has not

Chart 4: Assets under management in global hedge fund industry (1990 - Q3 2012)



Source: Hedge Fund Research
 Notes: HFR 2012 estimates are as of Q3 2012.

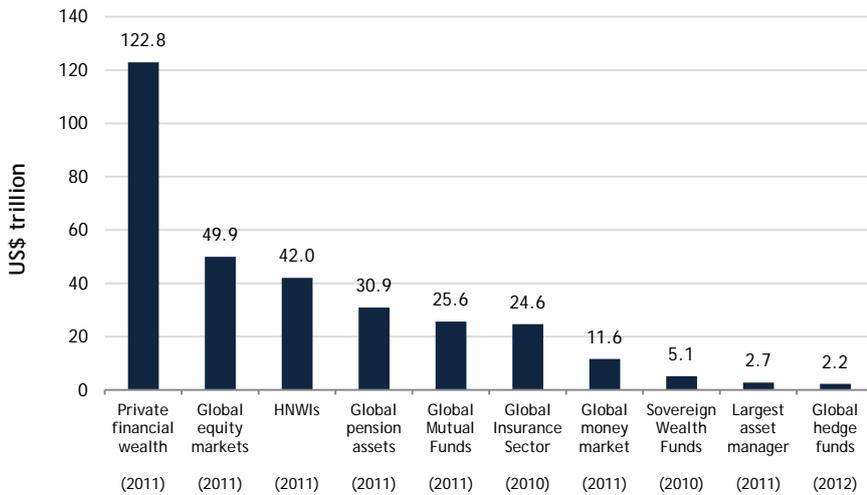
The 2000s were characterised by the institutionalisation of the hedge fund industry. In this period, from the end of 1999 to the end of 2007, hedge funds’ assets quadrupled from \$456 billion to \$1,868 billion and continued to rise going into 2008. However, assets fell rapidly due to two main factors: a negative feedback loop of losses causing redemptions and redemptions causing further losses; and the reputational loss due to the Bernie Madoff scandal.

When compared to other pools of assets, the hedge fund industry is still relatively small.

Chart 5 (on the following page) puts the estimated \$2.2 trillion of hedge funds’ assets into perspective by comparing it to other estimates of pooled assets. The global hedge fund industry at \$2.2 trillion in assets is smaller than the largest asset manager on the planet and, at the time of writing, roughly three times the size of Apple’s market capitalisation. Alternatively, in 1990, the assets under management in the hedge fund industry were 50% of the market capitalisation of Apple, Microsoft and Exxon Mobile combined. By the end of 2000, hedge fund assets were 90%, by 2005 160%, and by the third quarter of 2012 182% of the market capitalisation of Apple, Microsoft and Exxon Mobile.

The hedge fund industry is small when compared to other pools of assets

Chart 5: Hedge fund assets relative to other pools of assets

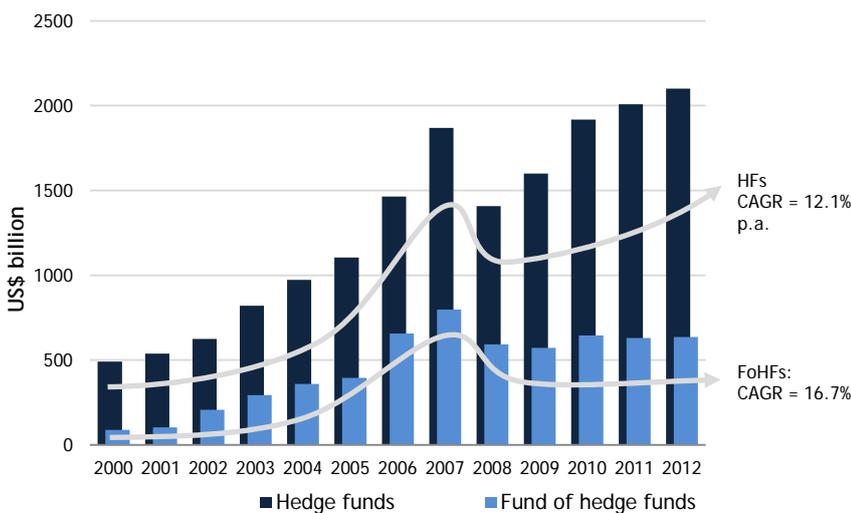


Source: IR&M, BCG, Bloomberg, Capgemini, TheCityUK, BIS, SWF Institute, Hedge Fund Research

The overall growth rate of funds of hedge funds during the period that is best described as the *institutionalisation* of the hedge fund industry is higher than is the growth rate for the overall hedge fund industry. Since the institutionalisation began around 2000, the overall hedge fund industry grew at 12.1% annually, while funds of hedge funds grew at 16.7%. These growth rates compare to compound annual rate of returns of 5.7% and 3.3%, respectively. In other words, for hedge funds overall, around 46% of the growth is explained by positive net returns, while for funds of hedge funds, around 19% of the growth is explained by positive net returns - the remainder being new money. The overall annual growth rate for the whole industry from 1990 to Q3 2012 was around 19.4% in terms of assets under management. This compares with an annual growth rate for equity mutual funds in the 1980s and 1990s of 18.6% and 32.4% respectively.¹

High growth rates explained by flows as well as returns

Chart 6: Growth of assets under management (2000 - Q3 2012)



Source: IR&M, Hedge Fund Research
CAGR: Compound Annual Growth Rate

¹ 2012 Investment Company Fact Book, Investment Company Institute

Note that the symbolised growth curves of the hedge fund industry as a whole and the fund of funds subset in Chart 6 (on the previous page) looks different.

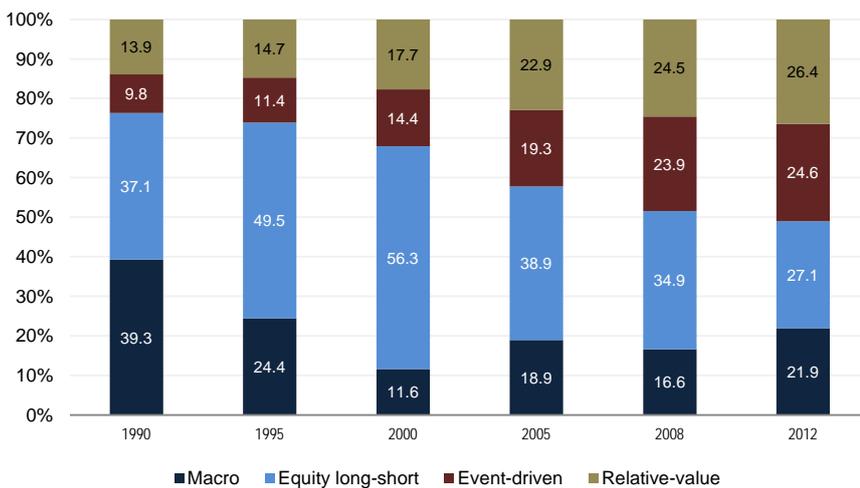
The Madoff fraud hit fund of funds particularly hard

Both growth trajectories have a dent in 2008. However, the hedge fund industry as a whole has recovered from the “dent” while fund of hedge funds have not. Fund of Funds were particularly hard hit by the Madoff fraud. Many fund of funds had exposure to the fraud. Trust was lost mainly because operational due diligence was one of the key value propositions which was used to justify the second layer of fees. FoHFs’ failure to guard investors from fraud and hedge funds’ inability or refusal to return capital upon investor request were a double blow to the hedge fund industry, especially among private investors.

Breakdown by strategy has changed materially over the past two decades

The market share by assets under management has changed materially over the years as Chart 7 (below) shows. (What the graph does not show is how the strategies themselves have changed. For instance, macro in 1990 was materially different than it is today.) Event-driven and relative-value strategies gained market share at the expense of equity long-short strategies. The market share of equity long-short peaked in 2000 with roughly 56% and fell to around 27% of all assets under management as of Q2 2012, based on information from Hedge Fund Research. (Equity long-short more than doubled in US\$ terms from 2000 to 2012.)

Chart 7: Breakdown by strategy (1990 - Q2 2012)



Source: IR&M, Hedge Fund Research

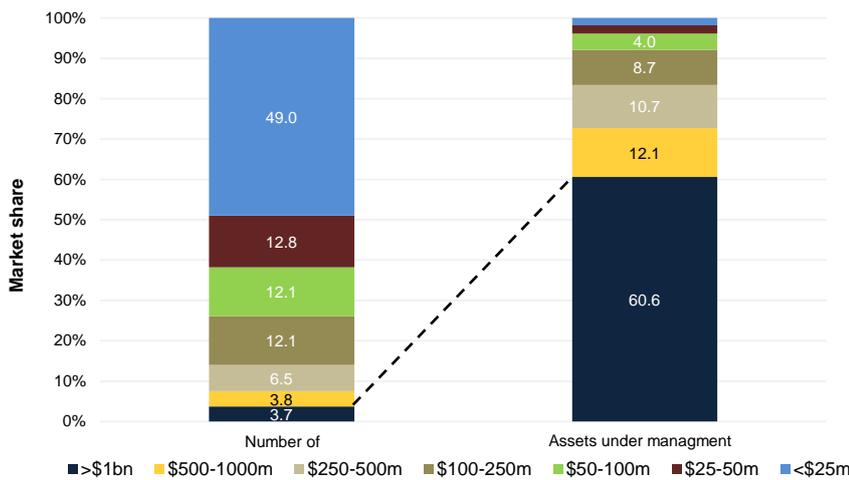
Note: Hedge Fund Research reclassified their HFRI indices in 2008. Previous versions of this sector breakdown show larger market share for Macro in the 1990s.

Most of the hedge fund assets are managed by large hedge funds run by large hedge fund firms. Around 61% of assets are concentrated in 3.7% of the hedge funds that have more than \$1 billion under management, 323 single-manager hedge funds according to Pertrac.¹ (See Chart 8 on the following page.) Put differently, the \$250m+ category represents around 14% of the number of funds and manages around 83% of the assets. The 2008 financial crisis has accentuated this trend towards blue chip names.

Hedge fund assets are concentrated among the largest funds

¹ Sizing the Hedge Fund Universe: First Half 2012, Pertrac, August 2012.

Chart 8: Hedge fund concentration (H1 2012)

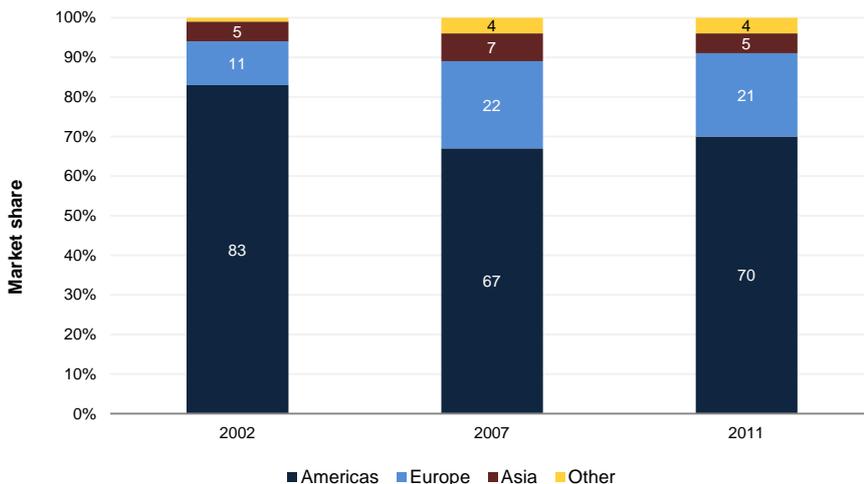


Source: IR&M, Pertrac

Hedge funds have their origin in the United States and the US has always had the largest market share, currently estimated at around 70%. (See Chart 9 below.) Europe doubled its market share in the years prior to the financial crisis from around 11% in 2002 to around 22% in 2007. Prior to the financial crisis it was generally expected that Asia would follow in the footsteps of Europe in terms of growing faster than the whole industry; thus gaining market share. However, the financial crisis changed growth trajectories for Europe as well as for Asia. The hedge fund industry in Europe historically has had a heavy bias towards strategies related to equity markets and therefore has been always more directional than the US. This means Europe suffered larger asset drainage due to losses and redemptions than did the US that has a more balanced hedge fund industry. Asia is also more directional than the US, thus the losses larger. While equity long-short funds in all regions outperformed equity market indices in 2008, only in the US did equity long-short not materially underperform in the equity rebound of 2009.¹

The United States is the hedge fund hub

Chart 9: Breakdown by manager location (2002 - 2011)



Source: TheCityUK estimates

¹ See Ineichen (2012), p 34.

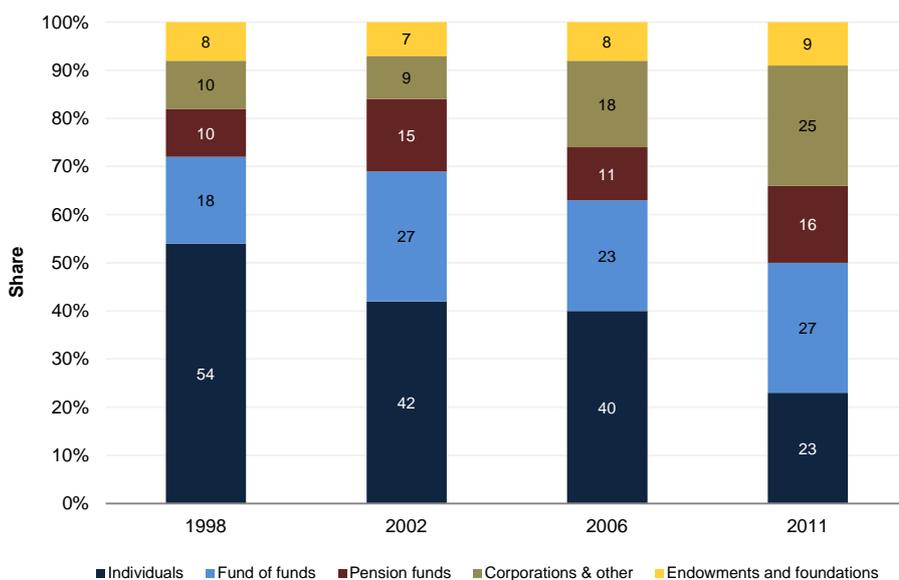
Hedge funds are predominantly managed from onshore locations. The funds can be domiciled in onshore or offshore locations. Around two thirds of the funds are registered offshore according to Hedge Fund Research. This has been constant over the past ten years. The Cayman Islands is the most popular registration location and accounted for 34% of the number of global hedge funds in 2011, down on its 39% share two years earlier.¹ They are followed by the US 24%, Luxembourg 10%, Ireland 7%, British Virgin Islands 6% and Bermuda 3%. In the post-Madoff environment and prior to the AIFMD implementation, it has become increasingly clear that some major European allocators have expressed a preference for hedge funds or alternative investments in a regulated wrapper. This has led many hedge funds that are able to do so to examine the possibility of launching dedicated UCITS hedge fund vehicles.

Two thirds of all hedge funds are registered offshore

For many decades, the working capital for hedge funds was provided by private investors through their private bank or fund of funds. This started to change in 1985 when a U.S. pension fund made their first allocation to hedge funds and in the early 1990s when U.S. endowments from Ivy League universities started to invest. In the early 1980s, almost all of U.S. pension assets were invested in domestically traded securities.² It was viewed as imprudent and highly risky - and in many cases illegal - to invest in non-U.S. based securities, despite the strong academic evidence that diversifying outside the U.S. could enhance returns while reducing volatility. The process of U.S. pension plans diversifying their portfolios with investments based outside the U.S. began with a few very large and high profile pension plans adding international equity as a component of their asset allocation. Initially, they limited that exposure to 1% or 2% of their total assets, even though their asset allocation models suggested a much higher allocation. The exact same thing happened with hedge funds, just a couple of years later. Typically it is larger and higher profile institutional investors who take the lead with mid-sized investors following a couple of years later and smaller institutions following yet a couple of years later. Chart 10 (below) shows estimates of the investor breakdown from 1998 to 2011. Note that the proportion of institutional investors within the fund of funds category increased over the time span shown in the graph.

There is a herd mentality in institutional investment where large and high profile institutions invest first and are followed by smaller institutions

Chart 10: Breakdown by source of capital (1998 - 2011)



Source: IR&M, Hennesse Group LLC, FSA, TheCityUK

¹ "Hedge Funds," Financial Markets Series, TheCityUK, March 2012.

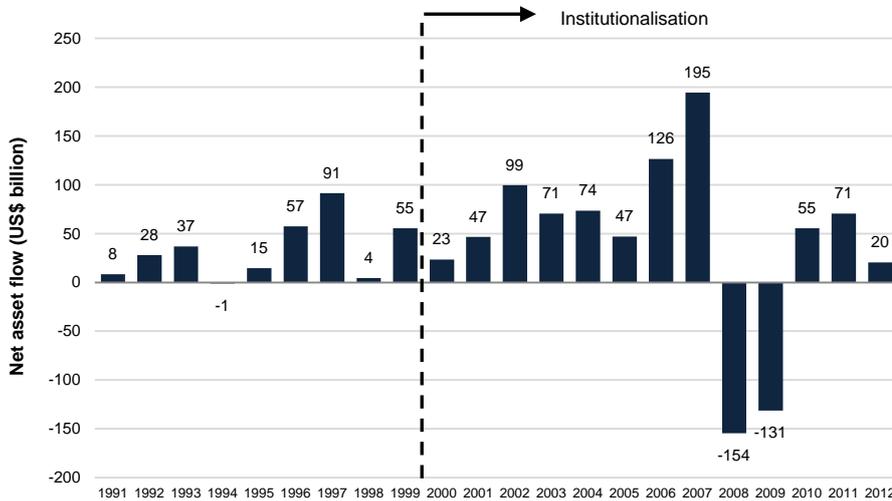
² "Pension Fund Evolution of Hedge Fund Investing," White Papers, Agecroft Partners LLC

Flow of funds

Both 2007 and 2008 were record years in terms of flows; 2007 saw the largest inflow while 2008 record outflows. Chart 11 (below) shows estimates for net new money from 1991 to the first half of 2012 based on data from Hedge Fund Research.

Both 2007 and 2008 were record years

Chart 11: Flow of funds (Q1 1991 - H1 2012)



Source: IR&M, Hedge Fund Research

The year 2007 was a record year in terms of flow of funds into the hedge fund industry, beating the record set in the previous year by a significant margin. 2008 and 2009 saw record outflows. Large parts of the inflows prior to the financial crisis could be attributed to institutional investors who were either building or growing their strategic allocation in hedge funds. It takes the average institutional investor two to three years from the time they start thinking of investing in hedge fund until they invest the first dollar. In some cases, it took materially longer. However, the decision to redeem is taken much faster, especially when under duress.

Large inflows primarily attributed to institutional investors

One aspect that put hedge funds on the agenda of many institutional investors was the non-participation in the internet-bubble-bursting-drawdown in the early part of the 2000s. Global equities went from a new all-time high in March 2000 to 55% of that level in February 2003 to recover back to 100% in January 2006; essentially a six-year round-trip that yielded 0%. The average hedge fund portfolio produced a return of around 43% in that period, arguably a big difference. Putting it differently: an investment of USD100 in global equities at the beginning of 2000 stood at around USD119 by the end of July 2012. An investment of USD100 in hedge funds at the beginning of 2000 stood at around USD200 by the end of July 2012. The problem is, of course, that many investors took their time and started allocating in, say, the 2004-2007 period. The practical experience of the pioneers and early adopters is different from the practical experience of the latecomers. With the benefit of hindsight, the witty remark in the side text from 2003 was early but very thoughtful nevertheless.

“Investors will want to make sure that they don’t start out with the money and the hedge funds start out with the experience, and then when all is said and done, the hedge funds have the money, and the investors have the experience.”

—John Webster¹

One learning experience from the financial crisis was about liquidity, or, more precisely, illiquidity. The difficulty to redeem as well as the feedback loop it caused resulted in reputational damage for the hedge fund industry immediately after the crisis. Fund of funds were hit harder from this because they had a mismatch between the liquidity of their hedge fund portfolio and the

¹ “The Alternative Balancing Act,” Greenwich Associates, 2003

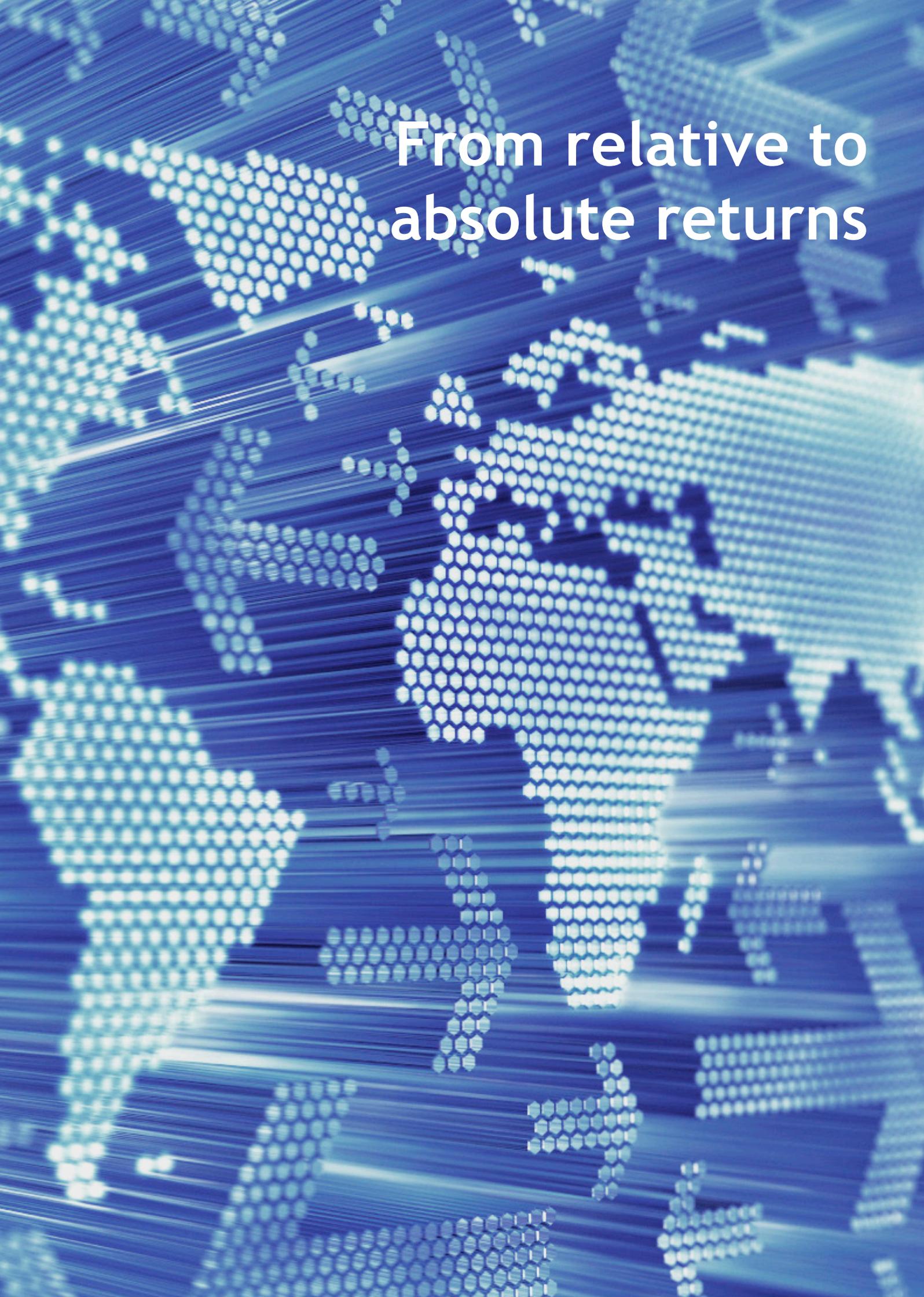
liquidity it had offered its investors. One result from the illiquidity experience is that many institutional investors require more transparency in general but regarding the liquidity provisioning in particular. There is demand for more liquid hedge funds. (A cynic could argue that investors want both, liquidity as well as the illiquidity premium.)

Concluding remarks: *what exactly is a hedge fund?*

The debate as to whether investors are better served when investing actively or passively is as old as investment management itself. What is missing in that debate is that choosing between an active or passive investment style is actually also an active decision. Furthermore, in the current environment with real interest rates below zero in many parts of the industrialised world, doing nothing is an active decision too, a very poor one, we'd like to add. One way to look at hedge funds is as active managers. While many aspects of hedge fund investing have indeed changed since our last roadmap in 2008, the concept of active risk management has not. In fact, we would argue that the case for risk management has increased over the past four years. Risk management is by definition an active undertaking. We like to argue that what we herein call active risk management is actually the opposite of tradition asset management, which is built on the premise of benchmarking, indexation, and that a passive strategy will do just fine in the long-term.

"There are costs and risks to a program of action, but they are far less than the long-range risks and costs of comfortable inaction."

John F. Kennedy



From relative to absolute returns

From relative to absolute returns

Investment is by nature not an exact science.

—Benjamin Graham

The truth is, successful investing is a kind of alchemy.

—George Soros

- *Constructing portfolios with low compound annual returns, high volatility and high probability of large drawdowns is easy. Constructing portfolios with high compound annual returns, low volatility and low probability of large drawdowns is not.*
- *The pursuit of absolute returns is much older than the idea of beating a benchmark. The paradigm of relative returns might soon be perceived as a short blip or ideological error in the evolution of investment management.*
- *Losses kill the rate at which capital compounds. Defining risk as the attempt to avoid losses is materially different than trying to avoid underperforming a benchmark.*

Managing tracking risk versus total risk

Different investors can have different investment objectives that can result in different ways they define, perceive and subsequently manage and control risk. In a relative-return context, risk is defined, perceived and managed as tracking risk. Tracking risk, or technically “tracking error”, as it is generally understood, is the probability of underperforming a benchmark. Tracking risk is reduced by adjusting ones’ portfolio closer to ones’ benchmark. In the absolute-return world, risk is defined, perceived and managed as total risk.¹ Risk management of tracking risk is driven by a benchmark (asset or liability benchmark), while risk management of total risk is determined by a profit and loss (P&L). Defining risk against an absolute yardstick (i.e., capital depreciation) is different from the relative-return approach, in the sense that the capital preservation function under the relative-return approach is not part of the mandate. In institutional investment management, the mandate to manage total risk was taken away from the manager in the 1970s (explicitly in the United States and United Kingdom) on the basis that it yielded unsatisfactory results and amplified the agency problem.

It is fair to argue that there was an asset management industry before there were benchmarks. This first stage was characterised by an absolute return focus and a low degree of specialisation on the part of the manager. Managers had “balanced” mandates in which top priority was given to asset allocation decisions rather than security selection. This approach suffered from poor performance in the mid-seventies. More fundamentally, it suffered from what is known in economics as an “agency problem”; the objectives of the manager were not aligned with those of the principal. Managers were incentivised to beat the peer-group rather than to invest in an economically sensible fashion based on their individual edge and overall opportunity set.

Defining risk as the attempt to avoid losses is materially different than trying to avoid underperforming a benchmark

Absolute returns mattered before the relative returns game became the main doctrine in institutional investment management

¹ From Ineichen (2003b, 2007)

This first stage was replaced by the second stage: the relative return game. In this second stage, managers shifted to a relative return approach. The asset allocation mandate was taken away essentially from the manager and this led, quite naturally, to higher specialisation on part of the manager. Next to poor performance and principal/agent issues, the introduction of the Employee Retirement Income Security Act (ERISA) in the U.S. in 1974 was yet another catalyst for the industry to move from the first to the second stage, that is, from absolute return focus to relative return and benchmark orientation. ERISA was enacted to protect the interests of employee benefit plan participants. This layer of governmental protection - not too dissimilar to the increase in regulation today - resulted in a narrow investment universe with little flexibility for "alternative investments." A further rationale for long-only investing lies in capturing long-term risk premiums associated with various asset classes.

"The fact that an opinion has been widely held is no evidence whatever that it is not utterly absurd."

Bertrand Russell

The introduction of an index was an improvement over the first stage as it somewhat resolved the agency problem through using a rigid benchmark.¹ Around the same time, the idea of share prices following a random walk and the Efficient Market Hypothesis (EMH) was rising to academic prominence and large parts of the investment community ideologically moved away from the merits of active asset management in general and the feasibility of stock selection in particular. The main product to emerge from these developments was the index fund. Hedge funds are (or, more precisely until recently, were) somewhat antithetical to the EMH and the widely held belief that markets were efficient.

Hedge funds are somewhat antithetical to the idea that markets are efficient

The EMH is arguably one of the intellectual bedrocks on which orthodox finance rests. However, it has been shown that perfect efficiency was impossible many decades ago.² Warren Buffett once jested that he would like to fund university chairs in the EMH, so that the professors would train financiers that are even more misguided whose money he could win. He called the orthodox theory "foolish" and plain wrong. Yet none of its proponents "has ever said he was wrong, no matter how many thousands of students he sent forth mis-instructed. Apparently, a reluctance to recant, and thereby to demystify the priesthood, is not limited to theologians."³

"The efficient market hypothesis is the most remarkable error in the history of economic theory."

Lawrence Summers after 1987 crash

There is an argument to be made that the advent of hedge funds in institutional investment management is the third stage. The third stage combines the absolute return investment philosophy from the first stage with a high degree of specialisation of the second stage. The absolute return approach seeks to solve some of the shortcomings of the relative return approach. As Peter Bernstein put it:

The absolute return approach tries to rectify some of the shortcomings of the relative return approach

One of the problems with this market has been, particularly for professional managers, "benchmarkitis" on the part of the clients. I think there are forces at work that are going to break that down. One is the hedge fund, which you can approve or disapprove of as an animal, but it's

¹ Although one could argue that benchmarking itself introduces agency risk - the difference between the investor's ultimate performance goals, the selection of a benchmark theoretically designed to achieve those goals, and the ultimate ability to perform relative to the benchmark.

² Grossman (1976) and Grossman and Stiglitz (1980) proved that, even in theory, markets cannot be fully efficient. Perfectly informationally efficient markets, they argued, are an impossibility, for if markets were perfectly efficient, the return to gathering information would be zero, in which case there would be no reason to conduct research; consequently trade and markets would soon collapse.

³ Found in Mandelbrot and Hudson (2004), p. 14.

*focused peoples' attention away from the conventional benchmarks. This is a very, very important development.*¹

Table 1 contrasts the two relative-return models, essentially indexing (index funds) and benchmarking (mutual funds), with the absolute-return model (hedge funds) in investment management. Note here that if a long-only fund is re-branded to include the "absolute returns" moniker, that does not mean that it is indeed an absolute return vehicle as defined in the previous chapter. The advent of absolute return mutual funds in the US and UCITS in Europe have blurred the borderline between these two approaches. Four years after the 2008 financial crisis, many an asset manager has the absolute return moniker in his marketing material but not necessarily the risk management process that goes with it.

Caveat emptor

Table 1: Difference between relative return and absolute return model

	Relative-return models		Absolute-return model
	(Indexing)	(Benchmarking)	
Return objective	Relative returns		Absolute returns
<i>General idea is to</i>	<i>Replicate benchmark</i>	<i>Beat benchmark</i>	<i>Exploit investment opportunity</i>
Risk management	Tracking risk		Total risk
<i>General idea is to</i>	<i>Replicate benchmark</i>	<i>Beat benchmark</i>	<i>Preserve capital</i>

Source: Ineichen (2001)

The return objective of a relative return manager is determined by a benchmark. An index fund aims to replicate a benchmark at low cost while a benchmarked long-only manager tries to beat the benchmark. In both cases the return objective is defined relative to a benchmark, hence the term "relative returns". Hedge funds do not aim to beat a market index. The goal is to achieve absolute returns by exploiting investment opportunities while staying alive.

Trying to compound capital at a high risk-adjusted rate of return is materially different from trying to outperform a benchmark

In the late 1990s, many long-only managers needed to buy starkly overvalued technology stocks because these stocks comprised a large percentage of the benchmark index. These managers were "forced" to buy these stocks for tracking risk considerations despite the obvious overvaluation. In a sense, these managers were "forced buyers" whose presence is a similar market inefficiency as the presence of forced sellers. The problem resolved itself a couple of years later as the stocks lost 80-95% of their value and therefore became a much smaller part of the benchmark.

Some believe that the relative return approach is a travesty of institutional fiduciary responsibility because the manager is not held accountable for losing the client's money

The difference between the two models (or stages in asset management), in terms of how risk is defined and managed, is more subtle. Defining risk as *tracking risk* means that the risk-neutral position of the manager is the benchmark and risk is perceived as deviations from the benchmark. For instance, a benchmarked equity long-only manager moving from equities into cash (yielding the risk-free rate) is *increasing* risk as the probability of underperforming the benchmark increases. In other words, the probability of meeting the (return) objective declines - hence the perception of increased risk. In the absolute-return space, the risk-neutral position is cash. A move from an equity long position into cash means *reducing* risk as the probability of losing money decreases. The same transaction, moving from equities

In hedge fund space, risk is defined as losing one's shirt

¹ This quote is from "Words of the Wise" - a conference call from November 2002 that was chaired by Charles D. Ellis and was published in the inaugural issue of CFA Magazine, January/February 2003. The "wise" were John Neff, Gary Brinson, Peter Bernstein, Jack Bogle, Warren Buffett, Dean LeBaron and Sir John Templeton.

into cash, can mean both increasing as well as decreasing risk, depending on how risk is defined.

For example, at the time of revising this document, in the summer of 2012, Italian insurance companies were loading up on Italian government bonds. From a relative return perspective, this makes perfect sense. In fact, it is a no-brainer as the yield is above 6% and Italian government bonds match the liability benchmark nearly perfectly. However, from an absolute return perspective Italian government bonds are far from being low risk, given the above-average debt levels and the political instability and uncertainty. An absolute return perspective would result in an entirely different asset and risk allocation than does a liability benchmark orientation.

Put simply, under the absolute-return approach, there is an investment process for the upside (return-seeking by taking risk) and for the downside (some sort of contingency plan if something unexpectedly goes wrong or circumstances change or the market is violently proving ones' investment thesis wrong, etc). This could be a sudden exogenous or endogenous market impact, excess valuations, heavily overbought market conditions, a concentration of capital at risk, a change in liquidity, the sudden death of the marginal buyer, and so on. Absolute-return investing, therefore, means thinking not only about the entry into a risky position, but also about the exit. Absolute return strategies, as executed by hedge funds, could be viewed as the opposite of benchmark hugging and long-only buy-and-hold strategies.

Under the relative-return model, the end investor is exposed to mood swings in the asset class in an uncontrolled fashion. Defining the return objective and risk management relative to an asset benchmark essentially means that the manager provides access (beta) to the asset class - that is, risk and return are nearly entirely explained by the underlying asset class. This means the investor is exposed (has access) to the asset class on the way up as well as on the way down. Investing in a long-only fashion is like driving on a hill in a car with no brakes; as long as it's going up, everything seems fine. However, when it goes downhill on the other side, additional tools and skills are required to control risk.

What exactly is risk?

Risk is arguably somewhat of a buzzword these days. Since the main difference between the largely familiar relative return approach and the absolute return approach is about how risk is defined and subsequently managed, it makes sense to digress somewhat. In this section, we elaborate on some aspects related to risk. One argument we like to make is that risk is far too complex to be captured by a single, aggregate risk figure or daily risk report. We introduce a somewhat esoteric definition of risk, where we define risk as "exposure to change".¹ Another point highlighted here is the observation that there is great confusion between risk management and measurement, and that the former is scarce and difficult, whereas the latter is not. We believe Winston Churchill was on to something when he said that "most economists use statistics like drunks use lampposts: for support more than for light". Many investment professionals today agree that risk management begins where risk measurement ends. Note that, as one risk manager once put it, "risk in and of itself is not bad. What is bad is risk that is mispriced, mismanaged or misunderstood".

"Hedge funds force you to think outside the benchmark."

Mark Anson

"When you are finished changing, you're finished."

Benjamin Franklin

A long-only investment process is like driving a car without brakes—it works perfectly well going uphill

Risk = exposure to change

¹ From Ineichen (2003b)

The boiling frog syndrome

Investors attempt to quantify risks because doing so makes risk management more precise as well as more transparent. Expressing risk in quantitative rather than qualitative terms provides some sort of "common language" for financial professionals to compare, contrast and debate. The history of risk management and its instruments, such as for example derivatives, is all about breaking down products and contracts into their single risk component. Once risk is divided into components, these risk components can be aggregated and the risk managed separately.

Risk measurement can be narrowly defined and is probably to a large extent objective, whereas risk management is a much broader task and is subjective by definition. Although the two are not entirely unrelated, the underlying skill sets required for the two are totally different. A suitable analogy is the difference between accounting and entrepreneurialism. Accounting is objective (at least in the axiomatic, fraud-free laboratory environment of the actuary). However, sound accounting does not automatically result in entrepreneurial success. Entrepreneurial success is much more complex and difficult. It requires experience, creativity, intelligence, passion, drive and so on. Most importantly, founding and running a business successfully is subjective. There is a consensus as well as objective guidelines to do accounting. However, more than one approach leads to entrepreneurial success. Accounting is taught at business schools where how to become a successful entrepreneur is not. To complete this analogy: risk *measurement* is similar to accounting where a somewhat inflexible approach (rules and guidelines) has merit, as the task requires objectivity and transparency.¹ Risk *management*, on the other hand, requires a more flexible approach, is entrepreneurial in nature, and is subjective by definition. As Tanya Styblo Beder, Chairman of the SBCC Group, put it: "Mathematics is integral to finance, but finance does not always follow mathematics".²

Risk management is at least as much a craft as it is a science. A craftsman needs a combination of skills: - that is, a balance between outright knowledge and street-smartness (practical tricks of the trade) to execute his job successfully. One could argue that this combination of skills goes far beyond, for example, econometric modelling of (historical) risk factors or the abstract theorising under laboratory conditions. Risk is about what one does not know, not about what one knows. In the practitioners' literature, risk management is often described as both art and science. Virginia Reynolds Parker, head of Parker Global Strategies, defines the art bit as follows:

*The art of risk management is the experience and skill, creating an edge, which the practitioner develops over time.*³

This definition brings it to the point: experience, skill and an omnipresent alertness and open-mindedness (as opposed to dogma, ignorance and inertia) for and towards change. In our view, far too much research in the field of finance is based on historical data. We appreciate the importance of testing hypotheses. However, in the social sciences, the aim for absolute precision can turn the undertaking into pseudoscience. Historical returns show only what did happen, not what could have happened or could happen in the future. Applying complex mathematical tools and techniques to the (often very imprecise) financial data can be misleading at best, fatally inappropriate and damaging at worst. We would go so far as to argue that

"We don't like things you have to carry out to 3 decimal places. If someone weighed somewhere between 300-350 pounds, I wouldn't need precision -- I would know they were fat."

Warren Buffett

Risk measurement is akin to accounting. Risk management is not.

"There is nothing so stupid as the educated man if you get him off the thing he was educated in."

Will Rogers

"In the long run we are all dead but make certain that the short run doesn't kill you first."

Mark Anson, presenting the risk management of hedge funds to the Calpers Board of Trustees in 2005

¹ Risk management expert Tanya Styblo Beder in an article called "VAR: Seductive but Dangerous" showed as early as 1995 that risk measurement is highly subjective too, as for example VAR calculations are extremely dependent on parameters, data, assumptions, and methodology.

² Styblo Beder (1995)

³ From Parker (2005), p. 291.

an investor who stops learning, adapting and improving in a dynamic, ever changing marketplace is essentially betting on luck not running out. This has been referred to as the boiling frog syndrome: the gradual warming of the comfortable water that finishes off the unsuspecting creature.

Nassim Taleb brings the over-use of mathematics and pseudo-precision in the social sciences, in general, and financial economics and risk management, in particular, provocatively but aptly to the point:

What has gone wrong with the development of economics as a science? Answer: there was a bunch of intelligent people who felt compelled to use mathematics just to tell themselves that they were rigorous in their thinking, that theirs was a science. Someone in a great rush decided to introduce mathematical modelling techniques (culprits: Leon Walras, Gerard Debreu, Paul Samuelson) without considering the fact that either the class of mathematics they were using was too restrictive for the class of problems they were dealing with, or that perhaps they should be aware that the precision of the language of mathematics could lead people to believe that they had solutions when in fact they had none (...). Indeed the mathematics they dealt with did not work in the real world, possibly because we needed richer classes of processes - and they refused to accept the fact that no mathematics at all was probably better.¹

One ought to think that after the bank failures of 2008 that the false precision of financial mathematics would disappear. One ought to think again. New and improved regulation (Basel III, Solvency II, etc.) still relies heavily on the premise of mathematical precision when accounting for risk; thereby largely disregarding the difference between risk and uncertainty.

Risk versus uncertainty

In financial economics there is a difference between "risk" and "uncertainty" also known as *Knightian Uncertainty*, named after US economist Frank Knight (1885-1972).² Risk describes situations in which an explicit probability distribution of outcomes can be calculated, perhaps based on actuarial data. In contrast, uncertainty describes situations in which probabilities are unknown, and more importantly, where they are impossible to calculate with any confidence due to the uniqueness or specificity of the situation. When discussing matters related to risk, we assume we know the distribution from which destiny will pick future events (quite often, we assume a normal distribution). This is the reason why financial textbooks always discuss coin flipping games or examples with dice or roulette tables. In these instances, the probabilities can be calculated *precisely*. For instance, the probability of throwing six sixes in a row with an even dice can be precisely calculated whereas the probability of finding fossils on Mars cannot. It is understood that for practical purposes, it is uncertainty that matters, not risk. We can apply rigorous quantitative analysis to matters related to risk, but not uncertainty. To deal with uncertainty requires thought and, most likely, common sense. Knight argued that profits should be defined as the reward for bearing uncertainty.

"The only certainty is that nothing is certain."

Pliny the Elder (I think)

¹ From Taleb (2001), p. 146-147.

² See Knight (1921)

We believe that a lot that has been written in the field of risk management in general and absolute-return investing in particular is focused on risk measurement. The typical method used is factor or style analysis. This approach aims to construct a model based on historical returns and come up with some risk factors that explain some of the observed variation in this time-series data. More often than not, assumptions have to be made as to how returns are distributed, that is, how the world should look, not how it does. While such an analysis sometimes yields interesting results, it only covers a small part of the complexities of risk management. Why?

As mentioned earlier, one way to define risk is as "exposure to change". This definition is very simple and unscientific but, nonetheless, we believe it is a very powerful one. In an article called "Defining Risk" in the *Financial Analysts Journal*, consultant Glyn A. Holton comes up with a very similar definition:

*It seems that risk entails two essential components: exposure and uncertainty. Risk, then, is exposure to a proposition of which one is uncertain.*¹

Risk measurement deals with the objective part. The risk measurer either calculates risk factors, simulates scenarios or stress tests portfolios based on knowledge available today according to an objective (and, preferably, statistically robust) set of rules. Any assessment of risk is based on knowledge that is available today; a backward looking view by definition.

Risk, however, has to do with what we do not know today. More precisely, risk is exposure to unexpected change that could result in failure to achieve one's desired outcome (e.g., meeting future liabilities). By definition, we cannot measure what we do not know. We are free to assume any probability distribution, but that does not imply an objective assessment of risk. In other words, risk management is complex, primarily qualitative and interpretative in nature. Risk measurement, however, is more quantitative and rule-based, and has a rear mirror view by definition. As Peter Bernstein put it in the last chapter of *Against the Gods: The Remarkable Story of Risk*:

*Nothing is more soothing or more persuasive than the computer screen, with its imposing arrays of numbers, glowing colors, and elegantly structured graphs. As we stare at the passing show, we become so absorbed that we tend to forget that the computer only answers questions; it does not ask them. Whenever we ignore that truth, the computer supports us in our conceptual errors. Those who live only by the numbers may find that the computer has simply replaced the oracles to whom people resorted in ancient times for guidance in risk management and decision-making.*³

LTCM was a very quantitatively savvy organisation; run by uber-quants of the time. Many other financial services organisations had a large number of quants in their risk management department prior to the financial collapse of 2008. Clearly, there is a lesson in these failures. Whether the regulatory bodies learnt from their mistakes and the wisdom in the side text applies to the regulatory bodies in charge, is beyond the scope of this publication; a judgment call we are happy to pass on to the informed reader.

"An education isn't how much you have committed to memory, or even how much you know. It's being able to differentiate between what you do know and what you don't."

Anatole France

"Risk comes from not knowing what you're doing."

Warren Buffett

"One of the greatest pieces of economic wisdom is to know what you do not know."

John Kenneth Galbraith

"Once again the important fact is knowing the existence of these nonlinearities, not trying to model them."

Nassim Taleb²

¹ From Holton (2004)

² From Taleb (2004), p. 165.

³ From Bernstein (1996), p. 336.

What exactly is risk management?

The term risk management is very broad and is applied to nearly any human affair ranging from road safety to mountaineering. When we talk about risk management in the context of investment management we most often mean the management of financial risk, that is, the risk of our portfolio. However, contingency plans in the case of a fire in the office canteen are also part of a company's risk management. Herein we focus on risk management of financial portfolios.

As we have elaborated before, one of the central aspects of any risk management process is how risk is defined. It is the definition of risk that later dictates risk assessment, risk measurement, risk control, risk transfer and so on. The aforementioned distinction between managing tracking risk versus managing total risk is elementary. A further important distinction is between risk measurement and risk management. The two are not the same, as mentioned briefly earlier.

The fate of Long Term Capital Management (LTCM) in 1998 is often quoted as an example of the dangers of the reliance of any risk model output in dealing with uncertainty. Note, however, that LTCM probably employed both - the best scientists (academics) in the field of risk measurement as well as the best craftsmen (traders) on Wall Street. The cause for the failure of LTCM was not at all a lack of sophistication of the risk measurement process; it was a lack of risk management judgement in relation of LTCM migrating from a market participant to becoming *the* market. The late Leon Levy, co-founder of the Oppenheimer Funds and Odyssey Partners, puts the limitation of pure science more boldly while discussing the failure of LTCM:

What can be made of this chain of events [failure of LTCM]? First and foremost, never have more than one Nobel laureate economist as a partner in a hedge fund. LTCM had two. Having had one Nobel Prize winner as a limited partner over the years, I can say that had our firm followed his advice, we too might have lost a lot of money.¹

Note that there is more praise for LTCM in Levy's *The Mind of Wall Street* than there is criticism. For example, Levy argues that the "willingness to take personal risk stands in refreshing contrast to all too many Wall Street players". As did many before him, Levy isolates hubris as the main catalyst for LTCM's failure (and not the failure to measure "risk"). In other words, our interpretation of the lesson for investors is this: a successful risk measurer comes up with an "objective" correlation matrix or any other metric for "risk". A successful risk manager, however, knows that this metric is, at best, a biased view on future relationships and, at worst, a tool upon which slavish reliance can result in disaster.

The debate between risk management and measurement is somewhat a contrast between science and being street smart, i.e., the ability to "read" the market and gain insight from observing what is going on in the market place. An extreme example of the divide between the two is the unfolding of the Boxing Day Tsunami of 2004 off the west coast of northern Sumatra. All the science of Western civilization did not help to foresee the earthquake or prevent devastation and death. One interesting aspect of this tsunami was that hardly any members, if at all, from the aboriginal tribes were killed. They were able to conclude from the behaviour of their animals that something bad was about to strike and they moved inland prior to the disaster. This is, arguably, a somewhat extreme example. However, it demonstrates that some aspects of risk are not measurable with conventional means such as statistics, extreme value theory, and all that. In the recent financial tsunami it has become apparent that it is the decision makers who are the risk managers, not the department in the other building that measures risk.

Risk management touches on many aspects

"A common mistake that people make when trying to design something completely foolproof is to underestimate the ingenuity of complete fools. "

Douglas Adams

Risk measurement is a science. Risk management is not.

"Take calculated risks. That is quite different from being rash."

George S. Patton

It is debatable whether risk taking decision making and risk management can be separated

¹ From Levy (2002), p. 146

The musical chairs effect

In the years after the dot-com bubble burst, many investors experienced risk according to the aforementioned definition (risk = exposure to change), as market environment and return expectations had changed. It has become apparent that some of the beliefs and assumptions that were formed during the 20-year bull market from the 1980s and 1990s are misleading, wrong and potentially dangerous for one's financial health.

Risk management (as opposed to risk measurement) deals with changing one's portfolio according to an ever-changing environment or changing rules that happened to have worked fine in the past. The future is uncertain. The only thing we really know for sure is that the status quo is going to change. As economist Hyman Minsky put it: "Stability is unstable". Every mariner knows that a calm sea is a storm in the making. Risk management, we believe, is the thought process that balances the investment opportunities with the probability of capital depreciation. This means that it is, as mentioned, subjective by definition. It also means that someone with investment experience will most likely have a competitive advantage over someone who has none. To some extent, investing and managing risk is like musical chairs - if you're slow, chances are you are not going to win. The reason why this is important is because it raises the question at what level should risk be managed. Should risk be managed on a pension committee level or is it more efficient if a pension fund outsources this task to someone who is closer to the market place and faster and more nimble to respond to changing circumstances. (We will address the efficiency of committee-based investing in more detail in a later chapter.¹)

In risk measurement as well as in risk management, co-dependence of returns and variance is of crucial importance. Arguably, one of the greatest achievements of modern portfolio theory is that the combination of risky assets with positive expected returns and different volatility levels can reduce portfolio risk if the correlation between them is less than one. As a result, analysts and risk measurers calculate correlation coefficients. However, measuring correlation matrixes is a different task than managing risk, irrespective of the degree of sophistication of the model or model input. Risk measurement is just one tool for the risk manager (albeit an important one).

The correlation matrix calculated using historical data is assumed to hold true for the future. However, given that we defined risk as exposure to change, true risk is manifested only when the real world deviates from the assumed (or modelled) world or precisely when the correlation matrix proves worthless. This observation is neither new nor undocumented.² As Lord Bauer, economic adviser to Margaret Thatcher, put it: "A safe investment is an investment whose dangers are not at that moment apparent".

"It is not disbelief that is dangerous to our society; it is belief."

George Bernard Shaw

Institutional investing in hedge funds could be viewed as outsourcing some risk management functionality

"I never predict anything and I never will do."

Paul Gascoigne

"It is not enough to have a good mind. The main thing is to use it well."

Descartes

¹ A Google search for "great investor" resulted in 273,000 links. A search for "great investment committee" resulted in three.

² See for example Bookstaber (1997)

Prevention versus cure

Lars Jaeger, risk management expert and hedge fund book author, makes a very valid distinction when discussing issues related to risk and risk management: the distinction between prevention and cure. The former is cheaper than the latter. In other words, in the field of risk management, *staying* out of trouble is much more desirable than *getting* out of trouble. As Jaeger puts it:

*The keys to avoiding a crisis are diversification, prudent levels of leverage and liquidity, and a continuing respect for one's own fallibility. The keys to managing a crisis are more limited and less satisfactory: either do nothing, or reduce positions sharply.*²

The two tasks are entirely different. Preventing disaster is forward-looking and creative, while responding to a disaster is reactive and stressful. We believe both are important tasks in the tool kit of the active risk manager. While preventing disaster is laudable; accidents - or worse, disasters - happen. When the accident or disaster is exogenous, the active risk manager will naturally find himself in the position of "getting out of trouble" mode. Accidents happen also to prudent and foresighted managers. Given that accidents happen, skill (or the lack thereof) and leverage (or the lack thereof) matter most. In other words: (1) experience matters and (2) a shock can be disastrous for the over-leveraged manager but a great opportunity for the well-funded investor.

Skill: experience matters

We argue that experience matters for fairly obvious reasons. Arbitrageurs who lived through and survived the autumns 1998 and 2008 have more experience than those who have not. As poet Heinrich Heine put it: "Experience is a good school. But the fees are high". We address the costs of "experience" and the idea of outsourcing parts of the risk management process in a later chapter.

In risk management, we believe the maxim of "learning by doing" applies. Someone who has dug himself out of a hole once in the past might have an edge next time around, certainly relative to someone who has thought this could never happen to him, that is, never imagined finding himself in a hole. However, there is the argument to the contrary. As David Dreman, chairman of Dreman Value Advisors, puts it:

*There is an impressive and growing body of evidence demonstrating that investors and speculators don't necessarily learn from experience. Emotion overrides logic time after time.*³

We believe there is certainly a lot of truth in this statement. Of course, there are investors who learn and those who do not and continue repeating their mistakes. This would just indicate that those who learn have an edge over those who make the same mistakes repeatedly. If this is true, we then could argue that experience is existent in the financial world though it is scarce. This could serve as an explanation as to why some investors can charge 2 + 20 (2% management fee plus 20% performance fees) and why others cannot. (A cynic might turn this notion around and argue that some investors can charge 2 + 20 because those who pay 2 + 20 have no experience.) The average hedge fund reached its high-water mark from prior to the financial crisis during October 2010. The hedge fund industry as a whole recovered to the USD2 trillion mark during spring of 2012 according to Hedge

"Diversification is the golden rule for prudent investment. If you add some judicious futures to the bonds, stocks, insurance, and real estate assets that are already in your portfolio, you can hope to sleep better at night."

Paul Samuelson¹

"Chance favours only the prepared mind."

Louis Pasteur

"Experience is a dear teacher."

Benjamin Franklin

"Lost money or money you are cheated out of, is very well invested because you are buying some useful experience."

Arthur Schopenhauer

¹ In the mid-1980s, when Merrill Lynch was putting together the first large multi-adviser futures fund, MIT Nobel Laureate Professor Paul Samuelson, a director of Commodities Corporation, the fund's trading manager, was asked for his thoughts on managed futures. His response included this comment.

² From Jaeger (2005), p 272.

³ From Warwick (2000).

Fund Research in Chicago. By comparison, banks were still under water by 80-90%. Arguably, this big difference largely can be explained, among many other factors, by risk management skill as well as the incentives to take and hedge risk.

What we believe is scarce is risk management experience where risk is defined as total risk. The complexities of derivatives (of which the pricing is both science and art, the trading a craft and the accounting a mystery), short selling and leverage (both crafts) require a skill set that is materially different from managing money relative to a benchmark. Experience in disaster management is even scarcer than risk management skill. (At least prior to the 2008 financial crisis it was.) The supply of "disaster experience" is limited because both survivors and non-survivors often exit the market (albeit for different reasons). Potentially there is a cyclical element in the demand curve for managing risk under market stress. It is just interesting to note that some investors demand it pre-disaster and others post-disaster.¹ In other words, experience matters.² Note that risk management experience is not taught at business school. As Mark Twain put it: "Don't let schooling interfere with your education".

*Experience in managing total risk is scarce.
Experience in managing tracking risk is not.
Hence the price difference.*

Note here that we do not suggest that hedge funds managers are better investment managers than long-only managers. This would be naïve and insulting. There are very good long-only managers, as there are very bad hedge fund managers. However, we do claim that managers trying to control total risk face different challenges than managers controlling tracking risk. We also claim in this report that introducing investment constraints in the presence of investment skill is paradoxical and suboptimal. The price difference of managing total risk versus managing tracking risk in the market place is huge; both prior as well as post-2008. There must be a reason for this.

Gerald Ashley, author of a book called *Uncertainty and Expectation*, has an intuitive way³ of classifying different kinds of information that we can use as a proxy for skill and experience and also for its pricing:

<i>Data</i>	<i>Facts that can be used for reasoning, discussion or calculation.</i>
<i>Information</i>	<i>Data with context, obtained from investigation, study or instruction.</i>
<i>Knowledge</i>	<i>Information with meaning and understanding.</i>
<i>Wisdom</i>	<i>This term can be ridiculed, but let's say it is knowledge with insight.⁴</i>

We would argue that the market price, i.e., the fees the agent can charge the principal, is related to the preceding list; the further down we go on the list, the more value is added and the higher the price in the market place. Data and information we get through a download from a data provider or watching CNBC. It is free for a reason. Knowledge we pick up at school or by reading cleverly written

"Experience is one thing you can't get for nothing."

Oscar Wilde

¹ As mentioned elsewhere, it was the 2000-2002 equity bear market that put absolute return investing (hedge funds) on the agenda of institutional investors. Less known is that the 1987 crash actually resulted in a similar conversion of perception, albeit on a smaller scale. Many (or some) investment professionals clearly steered away from a long-only investment style after the crash. Their argument was that a strategy that can wipe out 20% of one's money in one day is simply not an intelligent way of managing money.

² Note that there is little or no empirical evidence in the financial literature for our claim that experience matters. In convertible arbitrage in Q2 2005, one could argue, it was actually size (not the lack of experience) that caused losses due to redemptions and forced selling. Some of the larger (and more experienced) funds lost the most.

³ This classification is often referred to as the Knowledge Pyramid that shows data at the bottom and wisdom at the top of the pyramid. The Knowledge Pyramid is most often credited to Ackoff (1989). Some versions exclude "understanding". The idea also known as the "Data Information Knowledge and Wisdom Hierarchy" (DIKW) or the "Knowledge Hierarchy".

⁴ From Ashley (2003), p. 98.

books. It is not entirely free and requires an effort. Knowledge is often described as properly justified true belief. (Having the right beliefs is thus not just a matter of intellectual importance, but it is of the utmost practical importance.) Wisdom and insight we acquire through experience. Insight itself is a sort of perceptiveness or perspicacity of judgment that penetrates beneath appearances and latches onto realities. Wisdom cuts to the core. A wise person is never all ornament and no substance. Any veneer is backed by a strong reality. A wise person sees everything in its ultimate context and so does not easily mistake value. It is very unlikely that investment and risk management experience will trade cheaply any time soon.

Leverage: funding matters, too

Accidents do not just happen. In certain kinds of systems, large accidents, though rare, are both inevitable and normal. These accidents are a characteristic of the system itself. The coffeemaker or entertainment system of a commercial aircraft is not supposed to bring down the plane, but both have done so in the past, and it is within the realm of possibility that it could occur again in the future. An airliner is a perfect example of a complex system: a large mass containing explosive fuel, flying at high speeds and operating along a fine boundary between stability and instability. As chaos theory suggests, small forces can upset the system, causing a chain of events that results in the destructive release of the large amount of energy stored in the system. Interestingly, sometimes efforts to make those systems safer, especially by technological means, can make the systems more complex and therefore more prone to accidents.¹ It does not take too much imagination to adapt this analogy to the world of finance.

The capital invested in a hedge fund should be stable. There are two distinct components of this capital: the "equity" the fund receives from its investors and the "debt" it receives from its prime broker². Measures that indicate the stability of capital are the redemption periods or the portion of the fund that belongs to the managers. Hedge funds are long-term investments. Hence, hedge funds have long redemption periods and, nowadays, in some cases, long lock-ups. There is good reason for this; if a fund's capital base is not secure, there is a chance that capital might be withdrawn at exactly that moment when it is most needed. Note that many of LTCM's trades would have been profitable if it had been able to hold on to its assets for some months longer. Since LTCM in 1998, there have been both hedge funds as well as banks that found themselves in dire straits as funding was impaired. One aspect that has changed since 2008 is that investors now demand better alignment between liquidity terms and the liquidity of the underlying assets.

Assuming sound funding, an exogenous shock can be a great investment opportunity instead of a disaster. Typically, markets overreact to good and especially to bad news; that is, market prices overshoot on the downside. Weak hands and poorly funded entities become forced sellers. Citadel founder and CEO Ken Griffin made the point well many years ago:

If you're Avis and the lights suddenly go off at Hertz, you had better be in a position to make a lot of money.³

In other words, in a stressful market environment, the wheat is separated from the chaff. While the majority panic and run for the exit, some investors - the ones who have no need to worry about their funding - will be facing a great investment opportunity. This is the reason why hedge fund managers introduce lock-ups or seek "permanent capital" in the secondary markets. It is also the reason why Warren Buffett - arguably a multi-strategy absolute return manager - bailed out

"Any intelligent fool can make things bigger, more complex and more violent. It takes a touch of genius - and a lot of courage - to move in the opposite direction."

Albert Einstein

As every other business, hedge funds have strong preference for stable and secure financing

"Buy when the cannons are thundering and sell when the violins are playing."

N.M. Rothschild

¹ From Gonzales (2003) referencing Perrow (1999)

² See Appendix 3 for definitions of industry stakeholders

³ Institutional Investor, September 2001.

Salomon Brothers after the Treasury Bond Scandal in 1990/91, offered to bail out LTCM when in distress during the Russian Default in 1998, and bought banking shares in 2008. Trying to catch the proverbial falling knife obviously has its quirks as one does not know with foresight whether one is lunging for a falling, recently sharpened, battle-ready Tsurugi (a double-edged samurai sword) or a butter knife. Or as Ms. Becky Quick of CNBC's "Squawk Box" put it during the September 2008 turmoil: "Bottoms are better to watch than to try and catch".¹

Compounding matters

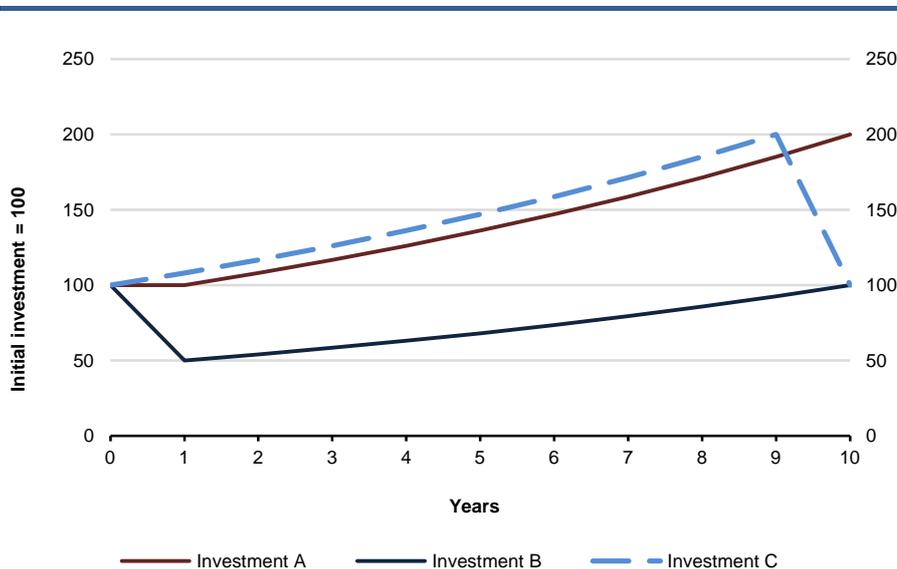
As mentioned earlier (Table 1 on page 27) an absolute return investment philosophy of hedge funds seeks to compound capital positively whereas a relative return investment philosophy has compounding capital not among its formal objectives. When compounding capital is a major objective, downside volatility and losses are of major importance. Large losses kill the rate at which capital compounds. Visualise:

- A 10-year investment of \$100 that is flat in the first year and then compounds at 8% will end at \$200.
- A 10-year investment of \$100 that falls by 50% in the first year and then compounds at 8% will end at \$100.

This, to us, seems to be a big difference. What we find puzzling is that not everyone agrees with our notion that long-term investors cannot be indifferent to short-term volatility. Note that a 10-year investment of \$100 that compounds at 8% for the first nine years and then falls by 50% will end at \$100, too.

Chart 12 (below) shows these three investments graphically. We assume that the three portfolios are diversified portfolios, i.e., idiosyncratic risk is diversified.

Chart 12: Effect of compounding



Source: author's own calculations.

"Compound interest is the eighth natural wonder of the world and the most powerful thing I have ever encountered."

Albert Einstein

The idea that short-term losses do not matter to long-term investors is—to say the least—rather puzzling

¹ "Why Risk/Reward Favors Investors," CNBC Guest Blog, Vince Farrell, 30 September 2008.

Investment C has outperformed investment A for a long time.¹ Investment A and investment C very much resemble hedge funds and long-only equities from 1990 to 2002 as shown in Chart 1 on page 14. We believe the proper response to a presentation of outperformance is “who cares”? Any form of return examination without a discussion of the risk involved is useless. If we do not know the risk, the next period could be materially different from the past. Examining realised volatility and historical return distribution properties is a start but purely backward looking. We do not see a short cut for investors that allows intelligent investment decisions without knowing what they are doing, i.e., without having a clear as possible understanding of exposure and risk. Extrapolating past performance into the future - essentially the cornerstone of the long-only buy-and-hold investment mantra - is extremely dangerous and an accident in waiting. Again, the car with no brakes comes to mind. As Jim Rogers, investment biker and hedge fund legend, puts it:

One of the biggest mistakes most investors make is believing they've always got to be doing something, investing their idle cash. In fact, the worst thing that happens to many investors is to make big money on an investment. They are flushed, excited and triumphant that they say to themselves, "Okay, now let me find another one!"

*They should simply put their money in the bank and wait patiently for the next sure thing, but they jump right back in. Hubris! The trick in investing is not to lose money. That's the most important thing. If you compound your money at 9% a year, you're better off than investors whose results jump up and down, who have some great years and horrible losses in others. The losses will kill you. They ruin your compounding rate and compounding is the magic of investing.*²

In essence, boring is good. One of the key claims of our research efforts in this space is that compounding matters. With “compounding” we mean the positive, steady, eventless, and therefore “boring” compounding of capital. If true then the management and control of downside risk is a key ingredient to financial success and survival. Compounding is an elementary part of the successful long-term investor and the absolute return investment philosophy. We believe we can underline these assertions with three notions from the financial literature. We believe these notions apply to all investors. The first two notions are from Harry Markowitz (1952, 1959) and the third from Daniel Kahneman and Amos Tversky (1979):

- (1) More return is preferred over less;
- (2) Certainty is preferred over uncertainty;
- (3) Losses weigh stronger than profits; that is, disutility from capital depreciation is larger than utility from capital appreciation.

The first factor (more return) is obvious. More is always preferred to less as you can always give away what you do not want, so less is never preferred to more. All investors, everything else held equal, prefer more return over less. An absolute return manager, unlike a relative return manager, also actively addresses the second and third of the three notions mentioned above: first, most absolute return managers have some sort of target for *total risk* and control it accordingly. Second, capital preservation is crucial, that is, avoiding large drawdowns is a major part of the objectives as well as the investment process. In other words, the difference in

Alternative definition of an equity bull market: "A random market movement causing the average investor to mistake himself for a financial genius."

Boring is good³

The difference between a relative return and an absolute return product is most visible by examining how risk is defined and managed

¹ Investment C resembles a directional portfolio whereby disaster insurance is sold systematically: it outperforms the directional passive alternative until disaster strikes.

² From Rogers (2000)

³ “Boring is good” is obviously a pun on Gordon Gekko's “greed is good.”

market behaviour and investment process between relative and absolute return managers does not manifest itself by examining returns but by examining risk. This distinction has many aspects: risk definition, risk control, risk perception, risk management philosophy, corporate risk management culture, etc. Put simply, if a manager defines risk relative to a benchmark, the portfolio will mimic the return distribution of the underlying market benchmark. However, absolute return managers are not driven by market benchmark but by profit and loss (P&L). This means risk is defined in absolute terms. We use the term "total risk". (See Table 1 on page 27.) If risk is defined as total risk and the investment process is driven by P&L, the manager will be taking into account these three notions.

Concluding remarks: *from relative to absolute returns*

The investment philosophy of absolute return managers differs from that of relative return managers. Absolute return managers care about not only 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 running portfolios that are diversified and/or hedged against strong market fluctuations on the downside. To the absolute return manager these objectives are considered conservative.

"Diversification should be the cornerstone of any investment program."

Sir John Templeton

In the 2008 edition of The Roadmap to Hedge Funds, which had an early September 2008 editorial deadline, we wrote here:

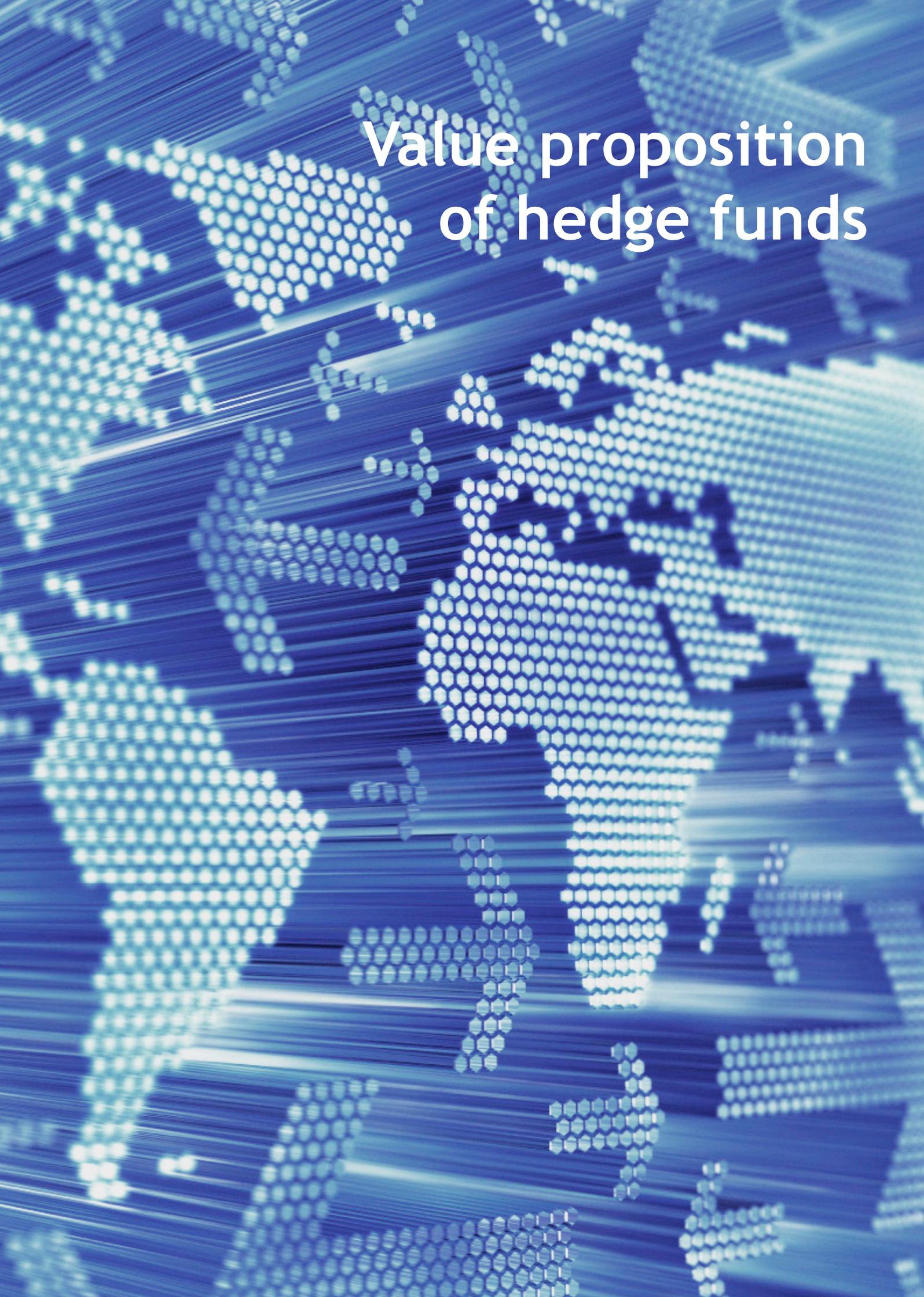
With a run on a bank in the United Kingdom in 2007 and an investment bank failure in the United States early 2008, one can easily argue that there is a lot going on in the financial service industry these days. Some argue that the current business model of a bank is flawed. A bank, essentially an intermediary of capital and facilitator of credit, is a highly leveraged institution, which holds assets that have volatilities that almost guarantee - sooner or later - that their equity will be substantially reduced or wiped out. This is especially true if these assets need to be marked-to-market, even if there is neither a bid nor a market for those assets. Expanding on this logic, some expect banking to materially change within the next ten years and potentially revert to what it once was: a rather mundane business.

If the above has merit, the banks' assets and flows are not just going to disappear; other investors will be managing parts of that business. If today's banks are indeed conceptually flawed, then - sooner or later - parts of their business will go to enterprises with other business models that are better designed to deal with sophisticated portfolio construction and management of (illiquid) assets.

The disintermediation of banks by hedge funds probably started in the mid 1990s. Some hedge funds have been functioning as intermediaries of risk or facilitators of credit for some time. Other corporate structures and business models are very likely to appear. Investors with an absolute return mind-set, an entrepreneurial bent, who are incentivised like principals and have the flexibility to adapt to changing market circumstances, are most likely to benefit from this shift.¹

¹ Ineichen and Silberstein (2008), p. 123-124.

Value proposition of hedge funds



Value proposition of hedge funds

Man had always assumed that he was more intelligent than dolphins because he had achieved so much... the wheel, New York, wars, and so on, whilst all the dolphins had ever done was muck about in the water having a good time. But conversely the dolphins believed themselves to be more intelligent than man for precisely the same reasons.
—Douglas Adams¹

- *Active investment management is dependent on the willingness to embrace change and, more importantly, to capitalise on it. Adaptability is the key to longevity.*
- *In active risk management, it is important to apply a skill that carries a reward in the market place within an opportunity set, where the risk/reward trade-off is skewed in favour of the risk-taker.*
- *The reward from skill is not constant. Profitable ideas, approaches and techniques get copied and markets become immune to the applicability of the skill - that is, markets become more efficient. Skill needs to be dynamic and adaptive - that is, it needs to evolve to remain of value.*

Active versus passive risk management

The distinction between the way risk is defined and managed in the relative return world and absolute return world discussed in the previous chapter is essential when understanding what hedge funds have on offer. Despite their name, hedge funds *do* indeed take risk. Not all risk is hedged. However, risk is defined in absolute terms and is actively controlled; that is, some risk is consciously taken while other risk is hedged. The risk to the investor is not from a market or benchmark. In essence, we could argue that what we today call a hedge fund is really an active risk manager, while a manager who is following a benchmark is not. According to this terminology, a long-only manager with a market benchmark is a passive manager for two reasons. First, the performance of the manager's portfolio or fund is largely attributed to the market benchmark. Chances are that this return stream can be acquired more cheaply other than paying an active fee. Second, the manager has no mandate to control for capital depreciation. In other words, the risk of a long-only fund is determined by the market, while the risk of a hedge fund is determined by the hedge fund manager's judgement. We claim here that we ought to distinguish between active and passive investment management more carefully.

What we today call a hedge fund is just an active risk manager

¹ Rephrased: "Institutional investors, consultants and analysts had always assumed that they were more intelligent than absolute return investors because they achieved so much... benchmarks, tracking errors, performance attribution analysis, and so on, whilst all the absolute return investors had ever done was muck about making money. But conversely the absolute return investors believed themselves to be more intelligent than institutional investors, consultants and analysts for precisely the same reasons".

Normally we use the term “active” to describe a long-only manager who has some degree of freedom to overweight and underweight securities relative to a benchmark. This terminology allows us to distinguish between a mutual fund and an index fund where the latter has zero degrees of freedom. We hence use the term “passive” for an index fund or any other financial vehicle where a moving entity is tracked at low cost. However, in an equity bear market where the market falls by 50%, a so-called “active” long-only manager is hardly distinguishable from an index fund. Both their funds will suffer losses very close to 50% of capital. A hedge fund on the other hand, might or might not experience losses when the market falls. As the hedge fund manager has discretion of the whole portfolio, he might have hedged all equity exposure or even be short on a net basis. Given that the long-only portfolio and index fund have very similar risk characteristics in a period of stress and a hedge fund might or might not be exposed to the market in a period of stress we suggest the terminology of active and passive investment management when discussing hedge funds and benchmarked or indexed products.

“It's only when the tide goes out that you see who has been swimming with their trunks off.”¹

Warren Buffett

The reason for the relative return approach to emerge and gain prominence can be tracked by some very strong beliefs regarding market efficiency and the ability of the “average manager” to beat the market. A key factor was arguably the great influence that Modern Portfolio Theory (MPT) has had on how most market participants think about risk. One of the pillars of MPT is the Efficient Market Hypothesis (EMH) or its twin brother, the idea that security prices follow a “random walk”. Charlie Munger (Warren Buffett's partner at Berkshire Hathaway) on this topic:

Some strongly held beliefs supporting long-only investing for the long-term are currently under attack

Now let's talk about efficient market theory, a wonderful economic doctrine that had a long vogue in spite of the experience of Berkshire Hathaway. In fact one of the economists who won - he shared a Nobel Prize - and as he looked at Berkshire Hathaway year after year, which people would throw in his face as saying maybe the market isn't quite as efficient as you think, he said, “Well, it's a two-sigma event”. And then he said we were a three-sigma event. And then he said we were a four-sigma event. And he finally got up to six sigmas - better to add a sigma than change a theory, just because the evidence comes in differently. And, of course, when this share of a Nobel Prize went into money management himself, he sank like a stone.²

Given the sheer complexity of the market, the dynamic interplay of numerous price drivers and the reflexive relationship between cause and effect (i.e. feedback loops), we have no doubt that is very difficult (and perhaps even impossible) to forecast the market in a persistent fashion.³ The same concept of randomness is used occasionally to explain the success of certain “star” managers. If markets and their securities follow a random walk, the logic goes, the success of these managers must be a function of randomness. In other words, those successful investors just got lucky. Warren Buffett, for instance, is just one of the lucky outliers on the right hand side of a distribution of investors who started out in the 1950s. It is an extreme form of survivorship bias where only the random winners are visible and the losers exit the game. We believe this point of view simply denies that there is such a thing as a good investor. In every field of human endeavour there is excellence. Why not in the field of investment management?

“I have noticed that everyone who has ever tried to tell me that markets are efficient is poor.”

Larry Hite

¹ In August 2008, Mr. Buffett added: “Wall Street has been kind of a nudist beach”.

² “The psychology of human misjudgement,” speech at Harvard Law School, 1995. Note that there are numerous cases where a financial professor taught EMH to a captive (and young and financially un-savvy) audience, found a market inefficiency during his tenure, was hired by an investment bank or hedge fund and made a lot of money.

³ The term “reflexivity” in relation to financial alchemy was of course coined by George Soros (1987).

In the (overall pro-index fund) financial literature, a national coin-flipping contest is often used as an example to demonstrate that out-performance is a function of luck. If every citizen were to flip coins, there would naturally be a small minority who flipped “heads” several times in a row. Due to pure randomness it is possible to get some highly superior coin flippers (managers), so the argument goes. We agree that if there were a national coin flipping contest there would be a couple of winners in the end due to pure randomness. Who exactly wins would indeed be a matter of luck. But who cares? It is the wrong analogy. A better analogy is a national chess or poker tournament. The outcome of a chess or poker tournament is not a function of randomness but mainly skill: here loosely defined as practice, experience, intelligence, acumen, talent, wisdom, etc.

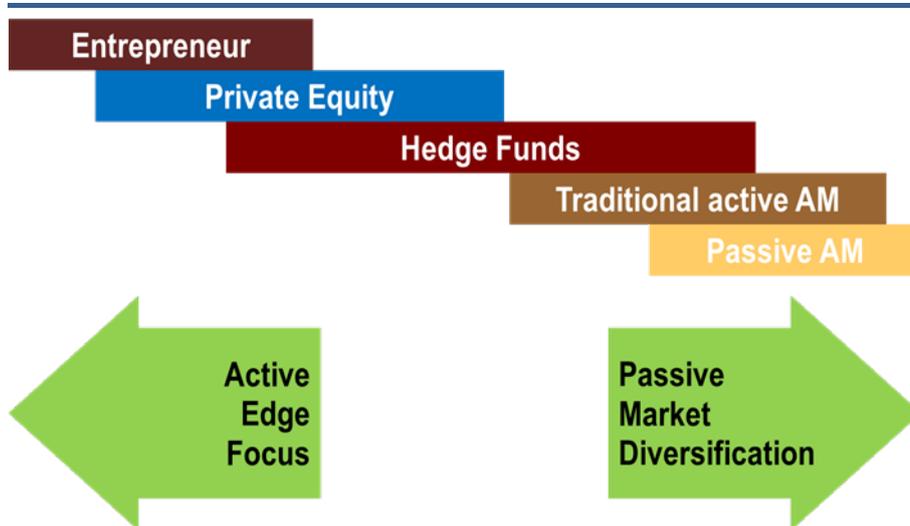
Investment management is more akin to a national chess or poker tournament than a national coin flipping contest

The leap from the “random walk” theory to the conclusion that successful investing is simply a matter of luck is, we believe, wrong. (Vendors of index funds will most certainly disagree.) To the contrary, we believe that the common denominator of successful investing is not luck (though of course it helps) but an entrepreneurial mindset in general and risk management skill in particular as adapting to change seems important for short-term as well as long-term financial health and survival. (Note here that you cannot survive the long-term if you become extinct in the short-term.) If change is part of the game, then adaptability and the flexibility to allow for it become obvious. The consequence of ignoring change is probably most evident in competitive sport where blindly following convention can result in embarrassing results. The invention of the curveball changed the face of baseball; the topspin the face of tennis; and the forward pass changed American football, not to mention what it did to those refusing to adopt it.¹ The world of investments is not immune to this concept. In fact, we would argue that active investment management is dependent on the willingness to embrace change and more importantly, to capitalise on it. In this business, the speed of adaptability is the key to longevity.

“Adapt or perish, now as ever, is nature's inexorable imperative.”

H.G. Wells

Chart 13: Active versus passive asset management (AM)



Source: Adapted and modified from Jaeger (2003) and Rolf Banz, Pictet Asset Management

Many have suggested that “edge funds” would be the better name for “hedge funds” as an *edge* of some sort is (or should be) the main part of a hedge fund’s value proposition. Chart 13 (above) is one way to illustrate the difference between active and passive management. In investment management, we generally talk about alpha and beta as the two sources of return. Beta is referred to as the return attributed to market dynamics or capturing a risk premium, while alpha is the

Alpha and entrepreneurialism is active; beta and benchmarking is passive

¹ Analogy from Lighthouse Partners’ Funds, March 2006 estimates.

return typically associated with a manager's skill. Naturally, there is a huge gray zone between the two extremes. The most passive form of asset management is indexing where the basic idea is to track an index, i.e., zero tolerance for variation from the market benchmark. The return in this case is explained entirely by the market. Often, this is referred to as "beta". Moving to the left in the chart comes benchmarking, i.e., what is largely the traditional active asset management industry. Note that there is an overlap between these disciplines. There are long-only managers with very tight tracking error risk budgets and those with very concentrated portfolios and the flexibility to move large parts of the portfolio into cash, if need be. Then further to the left come hedge funds, then private equity.

The other extreme on the left hand side of Chart 13 (on the previous page) is the entrepreneur. Setting up one's own business is still the best way to leverage (and then later monetise) one's edge. It is purely active, specific and focused. Note that there is overlap between, for example, private equity and hedge funds as the two disciplines share some common features. In addition, hedge funds have become active in the private equity space and vice versa. Hedge funds overlap with the entrepreneur as well as traditional active asset management. A hedge fund start-up is quite often an entrepreneur/investor with (hopefully) an edge setting up shop, i.e., some form of hybrid between entrepreneur and asset manager.¹ As the hedge fund survives the early years and succeeds, it moves to the right in Chart 13. From a business perspective, it becomes similar to a traditional investment manager with an operating officer, compliance officer, relationship staff, etc. However, if the hedge fund moves into private markets such as, for example, private equity it moves to the left in Chart 13. The graph therefore also shows that most generalisations regarding hedge funds are misleading as their spectrum of operandi is so large.

Nearly all successful absolute return managers might or might not have outperformed a broad index benchmark had they been given a tracking error constraint of 200 basis points. But what all these investors have in common is that they did not have such a constraint. They tried to exploit what they believed were their edge. They adopted a flexible and absolute return approach to investment management, which involves constantly assessing and reassessing risk and constantly adapting to change. In this approach, risk management is an essential and integral part of the investment process. Arguing that these gentlemen "just got lucky" is like arguing that the success of Henry Ford, Sam Walton, John D. Rockefeller, Akio Morita, Thomas Edison, Andrew Carnegie, Walt Disney, Bill Gates, Michael Dell, etc. was all due to luck. No doubt there was some luck involved.² And no doubt it is true that for every successful entrepreneur there are many who failed to achieve success in their enterprise. But we cannot conclude from this asymmetry that the aforementioned individuals are not better than those who failed but were just luckier. Entrepreneurial success is most likely a function of many variables, for instance and in no particular order: talent, intelligence, integrity, humility, hard work, diligence, drive (Lee Iacocca's "fire in the belly"), energy, passion, creativity, social network, adaptability (as in exposure to change), and, yes, some luck. (Capital also helps.) What is even more important is that all these variables, to some extent, can be assessed in advance - except luck.

"All generalizations are false, including this one."

Mark Twain

"Being a contrarian is very chic. The only trouble is that now everyone is a contrarian. ... Therefore, instead of being contrarians, perhaps we should be contracontrarians."

Barton Biggs

¹ Note that some investors argue that a hedge fund operation within a large bank is not a proper hedge fund operation because most of the entrepreneurial characteristics are absent.

² Malcolm Gladwell's *Outliers* shows illustratively that most success stories involve an element of luck or favourable circumstances. Sebastian Mallaby's *More Money than God* shows illustratively that this is also true for hedge funds. However, not all success is explained by luck; as French author and painter Jean Cocteau (1889-1963) reminds us: "We must believe in luck. For how else can we explain the success of those we don't like?"

The Fundamental Law of Active Management

The so-called Fundamental Law of Active Management is the basis, that is, the economic foundation and logic, behind giving a skilled investment manager more flexibility in his area of expertise. The fundamental law of active management in its original form has three features: the Information Coefficient (IC), Breadth and the Information Ratio (IR). The Information Coefficient is the correlation between forecasts of returns and the actual events subsequently realised. Therefore, the IC is a measure of skill. Breadth refers to the number of opportunities a successful portfolio manager has to apply his skill. As Grinold and Kahn put it:

[Breadth] is the number of times per year that we can use our skill. If our skill level is the same, then it is arguably better to be able to forecast the returns on 1000 stocks than on 100 stocks.²

The end result is the Information Ratio, which - in relative return space - is the main goal of (benchmark-constrained) "active" management.³ The framework behind the IR was one of the main advantages the relative return industry had over the absolute return industry. The IR allowed a reasonably accurate and unambiguous performance attribution analysis. This reasonably robust model allowed investors to judge (ex-post) whether their managers added value or not. An unambiguous and quantitative approach to assess the manager's value added is still not possible in the absolute return world despite vast efforts by practitioners and academia alike. Judgement is still required.

It is important to add that this "law" applies to the relative return approach and not the absolute return investment philosophy. When operating in relative return space, the IR is all that matters. This is why - in an attempt to explain away the absolute return approach - two gentlemen, M. Barton Waring and Laurence B. Siegel, argued:

Beating a benchmark is all that matters; it is the only thing that is worth paying high fees to achieve.⁴

While the law might not apply mathematically to hedge funds, the reasoning behind it does. Hedge funds do not have a benchmark that they follow or track. The mathematics behind the information ratio, therefore, does not apply. Nevertheless, the logic behind the law of active management *does* indeed apply. The idea of giving a skilled manager more leeway to operate within his area of expertise resonates well with most investors. It makes sense. The investment philosophies, including the terminologies and vocabulary used by practitioners in the relative and absolute return space, remain distinct to this day. (That said, there has been conversion in terms of vocabulary as well. Practitioners in the absolute return space use the term "alpha" - arguably a term from relative return space - quite casually whereas, practitioners in the relative return industry have now adopted the "absolute return" moniker.)

"Mc² is the Law, here as well as elsewhere."

Richard C. Grinold¹

Performance attribution analysis without an unambiguous benchmark is rather difficult

There are no benchmarks in absolute return space

¹ Grinold (1989)

² Grinold and Kahn (2000), p. 6

³ Rightly or wrongly, the IR is often referred to as a measure for risk-adjusted performance for relative return managers while the Sharpe ratio is the equivalent for absolute return managers. In this context, the information ratio is the manager's performance relative to benchmark divided by the "active risk," i.e., the standard deviation of relative returns. The Sharpe ratio is the return of the portfolio minus the risk-free rate divided by the portfolio's volatility.

⁴ Waring and Siegel (2006)

We believe there is a relationship between market inefficiencies and whether an active approach is warranted or not. Furthermore, the law suggests that both skill and the opportunity set matters. If one of these two variables (skill or number of opportunities) is zero, the ex-ante value added must be zero, as any number multiplied by zero equals zero. The number of independent decisions can be either zero or positive, while the skill can be a positive as well as negative. It is because of our interpretation of this "law" that we believe the hedge funds are not a short-term phenomenon: people with an edge of some sort will be requiring a certain degree of freedom when exploiting their edge long into the future. If we compare two managers with identical positive skills but two different opportunity sets, one is constrained within his area of expertise and the other unconstrained or less constrained; the manager with the larger opportunity set will add more value by definition.

From two identically (positively) skilled managers, the one with the larger opportunity set will add more value

Note that the qualification "within his area of expertise" is quite important. In the early days of the asset management industry, the manager was more or less unconstrained. Over time, traditional managers became more constrained through the introduction of benchmarks. However, hedge fund managers remained only self-constrained. Today, many traditional managers are trying to loosen up their constraints to be able to add more value (because their interpretation of "the law" is similar to our own). It is not entirely without irony that hedge funds sometimes seem to be going the other way - that is, becoming more constrained. Part of the impetus for this is that hedge funds that want to cater to institutional investors and want to build franchise value need to become more transparent. This (among other things) means becoming more process driven (as opposed to relying on one single key individual's gut). This leads to a form of self-constraint.¹

Hedge funds are not entirely unconstrained

We believe that searching for investment skill, finding it and then constraining it is somewhat paradoxical. Note that an absolute return manager is constrained, too, either through his discipline and process or through the investor's mandate. Therefore, one could argue that traditional and alternative asset management are not that far apart, as both managers should be doing only what they have signed up to do with their investors. In other words, the constraint in absolute return space is somewhat looser (no formal benchmark) and more self-inflicted but not non-existent.

Searching for alpha and constraining investment skill could be viewed as paradoxical

It is fair to assume that there is a relationship between the degree of efficiency and the opportunity set to add value through an active approach. The more under-researched and/or complex the situation, the higher the potential reward. Note that the strong form of the efficient market hypothesis (EMH) suggests that the price is always right. The whole hedge fund industry - or the whole idea of active asset management for that matter - is inconsistent with the strong form of EMH. However, we believe the potential to add value from actively managing assets is related positively to the degree of price inefficiency. The greater the inefficiency, the larger the prospective reward.

The idea of asymmetric returns

One of the marketing one-liners in hedge fund space is that "hedge funds produce equity-like returns on the upside and bond-like returns on the downside". While this one-liner is somewhat tongue-in-cheek, it is not entirely untrue.

*"The opposite of hedging is speculating."
Mark Twain*

¹ Potentially one need not be a cynic to argue that many of the organisational flow diagrams in the power point pitch presentation are marketing fluff while, at the end of the day, it is the key decision maker who makes the relevant decisions based on his gut. (Gut being a colloquial term for experience and wisdom, lending itself particularly well for ridicule in a scholarly setting.)

One hedge fund manager in the 1980s came to fame for one particular idea where he bought an option with 2% of the fund's capital. That 2% position returned 30% of the fund's whole principal. The attraction of this way of investing is only partly explained by the 30% return, which - after all - could be a function of luck. The 30% return as a single headline figure does not tell us anything about the risk that was involved to achieve the 30% return. The main attraction in this particular case was that the manager and his investors only would have lost 2% if the investment idea had not worked out. In other words, at the time of investment the manager knew that if the world moved in a way he expected his profits could be unlimited, whereas if he was wrong, he would only lose 2%. This example illustrates the idea of asymmetric returns: high, equity-like returns on the upside, with controlled and/or limited loss potential on the downside. The discipline that can achieve such an asymmetry in asset management is active risk management where risk is defined not in relative but in absolute terms. In earlier work¹, our claims were threefold:

1. Asymmetric returns are about finding investment opportunities where the risk/reward relationship is asymmetric - that is, situations in which the potential profit is higher than the potential loss or where the probability of a profit is higher than the probability of a loss of the same magnitude or a combination thereof.
2. Finding and exploiting these asymmetries requires an active risk management process.
3. The future of active asset management is about finding and exploiting these asymmetries.²

Our claims are simple; first, asymmetric risk/return profiles are attractive. It means nothing else than having a high probability of financial success and survival with a low probability of the opposite. Second, these profiles are not a function of randomness or market forces but a function of seeking (new) investment opportunities while actively managing risk, whereby risk is defined in absolute terms. By asymmetry, we actually mean two things: an asymmetry with respect to the *magnitude* of positive versus negative returns as well as an asymmetry with respect to the *frequency* of positive versus negative returns. If our objective is the positive, smooth and sustainable compounding of capital, one needs a combination of both of these asymmetries.

The 2008 financial crisis has caused many investment banks and hedge funds to launch what is best described as "tail risk products." The demand for these products is a direct response to the tail event that was the financial crisis 2008. It was interesting to observe that the demand mushroomed *after* the tail event while hedging and insurance needs to be conducted *prior* to the tail event. From an institutional investor perspective these products can be viewed as portfolio supplements: they introduce an asymmetric element in an otherwise symmetric risk/return profile. The experience of some investors with some of these new products is that one ought to trade these actively. The gains from the product need to be realised when disaster has struck. Many products simply mean revert after the shock.

These asymmetries that we are referring to are best explained with an example. Chart 14 (on the following page) compares two portfolios: one where risk is actively managed and one where it is not. For the active portfolio, we use a proxy for the average hedge fund portfolio, in this case the HFRI Fund Weighted Composite Index. For the passive portfolio, we have chosen a balanced portfolio comprised of 30% long-only equity and 70% long-only bonds. We have chosen this equity bond mix for

"The essence of investment management is the management of risks, not the management of returns."

Benjamin Graham

Positive compounding requires asymmetries

Tail risk products can add an asymmetry to an otherwise symmetrical portfolio

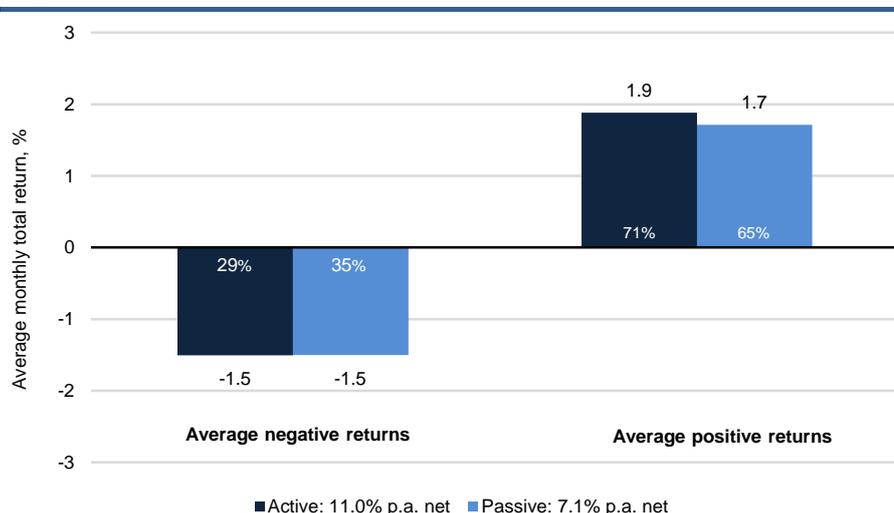
Asymmetric return streams must be analysed with measures that go beyond the historical mean and the variance

¹ From *Asymmetric Returns - The Future of Active Asset Management*, Ineichen (2007a)

² From Ineichen (2007a), p. 10

the balanced portfolio to have the same volatility as the hedge fund index of 7.1% between January 1990 and August 2012. The chart shows the average of the positive returns for the two portfolios as well as the average of the negative returns. The compound annual rate of return (CARR) of the two portfolios is shown in the legend while the frequencies of returns are displayed in the bars.

Chart 14: Example of an asymmetric return profile (January 1990 - August 2012)



Source: author's calculations, data from Bloomberg
 Active: HFRI Hedge Fund Composite. Passive: 43% MSCI World Index and 57% JPM Global Aggregate Bond Index, monthly rebalanced. All indices are based on USD total returns.

The passive, balanced long-only portfolio compounded at an annual rate of 7.1%, while the portfolio where we believe risk is actively managed compounded at a rate of 11.0%. Arguably, this is a big difference. It is very unlikely that this difference can be explained away by imperfect performance data. Neither can this difference be explained using nomenclature from the traditional investment management side, namely the concepts of alpha and beta. The terms "alpha" and "beta" are derived from a linear model, the Capital Asset Pricing Model (CAPM) and are applicable for linear (symmetrical) and static risk exposures of long-only buy-and-hold strategies but do not lend themselves very well for the non-linear (asymmetrical) and dynamic investment styles of hedge funds. (The term "alpha" has become a marketing term for traditional and alternative investment managers alike.)

Chart 14 (above) shows the two aforementioned asymmetries with respect to magnitude and frequency very well. First, the average positive returns of the active portfolio are larger than the average negative returns. The average positive monthly return was +1.9% that compares with -1.5% per month on average in negative months. In case of the passive portfolio, these averages are more or less symmetrical. The average positive return was +1.7% that compares to -1.5% on average in negative months. In other words, the average positive return is roughly as large as the average negative return. Note here that after a loss a higher return is required to bring the principal back to its initial level. A 30% loss for example requires a 43% recovery return to break even. Second, the frequency between positive returns versus negative returns is more asymmetric with the active portfolio. In case of the active portfolio, 71% of all returns were positive while only 29% were negative. This compares to 65% positive returns with the passive portfolio versus 35% negative. These differences are material when compounding capital is concerned.

The term "alpha" is derived from a linear model from the 1960s and might not be applicable to the value proposition of hedge funds

Hedge fund returns are not symmetrically distributed

If both the ratio of magnitude and the ratio of frequency were symmetrical compounding would be around zero. The passive portfolio in Chart 14 (on the previous page) experienced a positive compounding rate because there were more positive returns than negative returns. The reason for this is essentially luck. This is the reason we quoted Mark Twain saying that the opposite of hedging is speculation, earlier in this document. The global long-only, buy-and-hold investor has been lucky that between 1990 and mid 2012 there was a slight asymmetry that allowed positive compounding. The Japanese investor investing locally was not so lucky. If we repeat the exercise above using a balanced portfolio of Japanese equities and bonds, the compounding rate is barely positive. The Topix Total Return Index compounded at -4.8% over the 22½-year period examined in Chart 14.

A long-only investment style is a big bet on history treating you well

Different hedge fund strategies have different combinations of asymmetries. Table 2 compares a selection of hedge fund strategies with four long-only strategies; essentially a comparison between market-based and skill-based strategies. The aim of the table is two-fold. First, we show that different strategies can have different combinations of asymmetries with respect to magnitude and frequency. For instance, relative return strategies have only a small asymmetry with respect to the magnitude of positive and negative returns while the asymmetry with respect to the frequency is much larger. Second, we illustrate that the hedge fund portfolios, that we claim are active risk management, have more attractive asymmetries and hence higher long-term compounding rates for the same unit of risk, irrespective whether risk is defined as volatility or drawdowns. We have added a colour coding to visualise good and bad. Global equities had the lowest return and highest volatility and therefore is coloured red.

Different strategies have different patterns of asymmetry

Table 2: Symmetric and asymmetric portfolios (January 1990 - August 2012)

		CARR	Volatility	Magnitude		Frequency	
				Positive	Negative	Positive	Negative
Market based	US Equities	8.6	15.3	3.3	-3.8	64%	36%
	Global Equities	6.0	15.9	3.4	-3.8	60%	40%
	Global Bonds	7.2	5.9	1.6	-1.2	64%	36%
	Balanced	6.9	9.1	2.1	-2.1	64%	36%
Skill based	Hedge Funds	11.0	9.1	1.9	-1.5	71%	29%
	Fund of Funds	7.3	7.0	1.4	-1.3	70%	30%
	Equity Hedge	12.7	5.9	2.3	-2.0	69%	31%
	Event Driven	11.5	9.2	1.8	-1.7	75%	25%
	Relative Value	10.2	6.9	1.2	-1.1	83%	17%
	Macro	12.4	4.5	2.1	-1.1	65%	35%
	Managed Futures	11.2	7.5	2.2	-1.3	63%	37%

Source: author's calculations, data from Bloomberg

Notes: CARR: Compound annual rate of return. All indices based on USD total returns. US equities: S&P500, Global equities: MSCI World, Global Bonds: JPM Global Aggregate Bond Index, Skill based indices from HFRI. Balanced portfolio is 50% global equities and 50% global bonds, monthly rebalanced.

Long-only, buy-and-hold portfolios have more symmetrical return profiles than absolute return portfolios where managers have a mandate to control for losses. The equity portfolios and the balanced portfolio in Table 2 are nearly perfectly symmetrical in terms of the magnitude of monthly positive and negative returns. As a matter of fact there is a small asymmetry but in the wrong way: the negative returns are on average slightly larger. The bond portfolio has a slight asymmetry.

Returns of absolute return portfolios are more asymmetrical than long-only portfolios

The hedge fund portfolios have different combinations of asymmetries. Directional hedge fund portfolios as, for example, macro and managed futures have wide differences in terms of positive and negative returns. In macro the positive returns are higher than the negative returns by nearly 100 basis points (2.1% minus 1.1%). However, directional strategies have a lower asymmetry with respect of return frequency. In managed futures for example 63% of returns were positive and 37% negative which is quite similar to long-only bonds portfolios. Hedge fund strategies that aim to be more market neutral have different asymmetries. The asymmetry with respect to magnitude in relative value for example is "only" 12 basis points per month. However, the asymmetry with respect to frequency is typically much higher with these more market neutral strategies. In the case of relative value 83% of all returns over the past 22+ years were positive versus only 17% that were negative. (The danger of displaying average negative returns, such as in Table 2, is that it does not capture what is generally referred to as "tail risk". We will address the somewhat technical nature of tail risk in "Fat tails" on page 128 and in the Appendix starting on page 124.)

In summary, the value proposition of hedge funds is to have an attractive combination of these two asymmetries. These asymmetries allow high compounding of capital per unit of risk. These asymmetries can also be implemented through passive means. For instance, an equity long-only investor can buy put options to hedge his portfolio from falling when the market falls. However, in this case the investor compromises the return. The idea of a hedge fund portfolio is not necessarily to pay for insurance but to achieve these asymmetries through active risk management instead of paying for insurance that compromises returns.

Active risk management

Our interpretation of the idea of "absolute returns" is, in the simplest of terms, the positive compounding of wealth or capital while avoiding negative compounding of wealth or capital. We use the term "asymmetric return profile", which goes further than just managing portfolio volatility. If the objective were to reduce portfolio volatility, one could easily just combine any volatile asset class with cash to reduce portfolio volatility. Reducing volatility by adding cash to a risky asset narrows the return distribution in a symmetrical fashion. Both positive and negative returns are lowered, so compounding is lower. However, we believe the idea behind an investment process focusing on absolute returns is to have an idea generation process for the upside (i.e., the returns) and a risk management process for the downside (i.e., the avoidance of negative absolute returns - especially large ones). The separation of the upside and the downside should result in the asymmetries discussed above. This is in stark contrast to the investment philosophy of the long-only mantra that suggests compounding is best achieved by buy-and-hold, i.e., exposing one's capital to the whims of the markets all of the time. The main distinguishing factor between the absolute return and the relative return investment philosophy, therefore, is that the former includes active risk management on a day-to-day basis, while the latter does not. Active risk management requires certain investment skills. These skills need to be applicable to be profitable in the market place, and the skill needs to change as market environments and opportunity sets change.

Applicability and adaptability of skill

Performance in the absolute return space should - in an ideal world - be attributed to skill and should be neither a function of randomness nor the result of capturing a risk premium that could be obtained more cheaply through passive investment means. The original idea of a hedge fund, i.e., the Alfred Jones model, was to have an investment process where the return is a function of the manager's skill rather

"Be nice to nerds. Chances are you'll end up working for one."

Bill Gates

Active wealth preservation is the main part of a hedge fund's value proposition. Active risk management is also the key differentiator to traditional asset management

Active risk management requires a skill set that is both flexible and applicable in the market place

The return of an absolute return manager should be a function of applied skill, not beta or luck

than the swings of the equity market.¹ The positive returns are a function of an entrepreneurial and/or strategic task, while the avoidance of large negative returns is a function of risk management experience and skill. Both of these endeavours are active, dynamic and aim to minimise the portfolio's exposure to chance.

If the investment process is indeed a function of skill, the return is somewhat predictable (as opposed to random) as long as the particular skill is applicable and rewarded in the market place (and the bearer of the "skill" does not get run over by a bus).

Skill can be assessed

We believe these latter points to be important. Skill is skill, but it might or might not be rewarded in the market place, i.e., the applicability of skill is subject to change. For example, fundamental stock research was a brilliant idea on the advent of the mutual fund a couple of decades ago. The reward from fundamental stock analysis was huge for the few who rigorously applied the analysis to investment management as a large proportion of the investment community was ignorant about the valuation of stocks. It was the catalyst for a whole new industry: the professional investment management industry. However, that particular skill was copied *because* it carried a large reward. Consequently, today applying simple fundamental stock research does not carry as high a reward as it used to. An analyst must dig much deeper to gain an edge today that has not yet been priced into the market. In other words, markets become more efficient, i.e., they adapt and become somewhat "immune" to the skill. Under competition, the skill gets somewhat "commoditised." In other words, if the absolute return manager's investment process is supposed to deliver reasonably sustainable positive absolute returns, the skill has to evolve as the opportunity set adapts to the applicability of the skill. The hedge fund industry, therefore, is very dynamic. Old ideas are replaced quickly with new ones and the penalty for standing still is high. This is one of the reasons why hedge funds are perceived as intransparent: they keep changing all the time. One ought not to forget that adaptability, and therefore change, is the key characteristic of survival.

Skill can become commoditized

Adaptability versus style drift

A static investment strategy is easier to understand than a dynamic one. A long-only buy-and-hold strategy is perceived as more transparent than most strategies hedge funds pursue. Many merger arbitrage managers, for instance, migrated away from the traditional application of the strategy over the past couple of years and moved into other areas, typically becoming "multi-strategy" and getting involved in corporate restructuring arbitrage, distressed loans, etc. A negative interpretation of this move is calling it "style drift". A more positive view is that those managers evolved, i.e., noticed their skill might not yield as high a reward under changing market conditions and applied their skill elsewhere. In other words, they changed the applicability of the skill set to changes in the opportunity set. To us who believe everything always changes ("change" being the only constant in the universe), this actually makes a lot of sense. Whether the change is cyclical or structural is beside the point. The point is that capital at risk is reduced when the applicability of the skill carries no reward in the market place.

"The only constant is change, continuing change, inevitable change. That is the dominant factor in society today."

Isaac Asimov

Andrew Lo, MIT professor and hedge fund manager, uses the term "maladaptive" to describe an action that once worked but does not work anymore in an environment that has changed. One could argue that suboptimal behaviour in capital markets is not derived from irrationality but from applying a skill that worked well in a different regime. Related to all this, Lo wrote:

In the absolute return space, risk is reduced if the applicability of skill stops carrying a reward

¹ Please see page 124 - 127 in the Appendix for a brief synopsis of hedge fund history.

The flopping of a fish on dry land may seem strange and unproductive, but underwater, the same motions are capable of propelling the fish away from its predators.¹

A long-only, buy-and-hold strategy could be a case in point.

One needs to evolve to survive

Markets become more efficient over time as “the market” learns and adapts. In other words, markets become “aware” of how pioneers and first-movers exploit market inefficiencies. While skill may remain constant, the reward from applying the skill falls over time. Therefore, one needs to adapt the skill to changing market circumstances, i.e., one needs to evolve to survive. It goes without saying that a business model that allows for manoeuvrability and adaptability is more sustainable than one suffering from the “one-trick-pony” syndrome.

Markets learn and adapt

We believe the above to be true. However, one could also argue that there are some “constant” or non-degrading market inefficiencies. For instance, there could be a persistent market malfunction caused by the fact that participants in the market have different utility functions. Convertible arbitrage, one could argue, has been around for decades and has rewarded the arbitrageur handsomely for decades. A large part of the returns is attributed to issuance that is brought to market too cheaply. The reason for bringing the paper to market too cheaply is that the issuer has a different utility function - i.e., the benefit of funding through convertibles exceeds the benefit that would be derived by funding through equity or debt, even if the convertibles are priced below “fair” value. The cyclical nature of mispricing stems from shifts in the supply and demand imbalances. In 2005 for example, demand for cheap issuance was much larger than supply, so opportunity set was smaller and returns were therefore below average. The bottom line for all active pursuits is that one needs to adapt to survive. All strategies change. Standing still is futile.²

Active means to adapt to survive

Intellectual property versus adaptability of skill

We suspect that the belief and confidence in a purely mechanical, non-adaptive way to make money is potentially disastrous, as circumstances always change (initial opportunity changing due to increased attention, feedback loops, etc). As Warren Weaver, author of *Lady Luck - The Theory of Probability* put it: “The best way to lose your shirt is to think that you have discovered a pattern in a game of chance”.³ Potentially, raw intelligence without some form of market-savvy is probably as bad as the opposite, i.e., an unintelligent, ignorant trader. In the pursuit of pure and sustainable wealth creation, as well as survival probability, a balance between the two - intellectual property and adaptability - is probably best.

“Wealth is the product of Man’s capacity to think.”

Arthur Schopenhauer

Chart 15 (on the following page) makes the point that intellectual property and adaptability matter in an ever-changing market environment. With intellectual property, we mean an investment process that is based on some form of research as opposed to pure intuition. With adaptability, we mean the ability and flexibility to respond to change, as outlined above. Note that “over-adaptedness” is a risk to survival, too. A species of bird, for example, might have fended off predators in its natural habitat and survived because, over generations, it grew a large beak. However, at one stage the beak might become so heavy that it cannot fly anymore. If flying to the next island for food is a prerequisite for survival, it dies and become extinct. In other words, the beak was an advantage in one regime but is a disadvantage in another. Variation in the gene pool, which allows rapid innovation

Intellectual property and adaptability are complementary requirements for survival in hostile environments

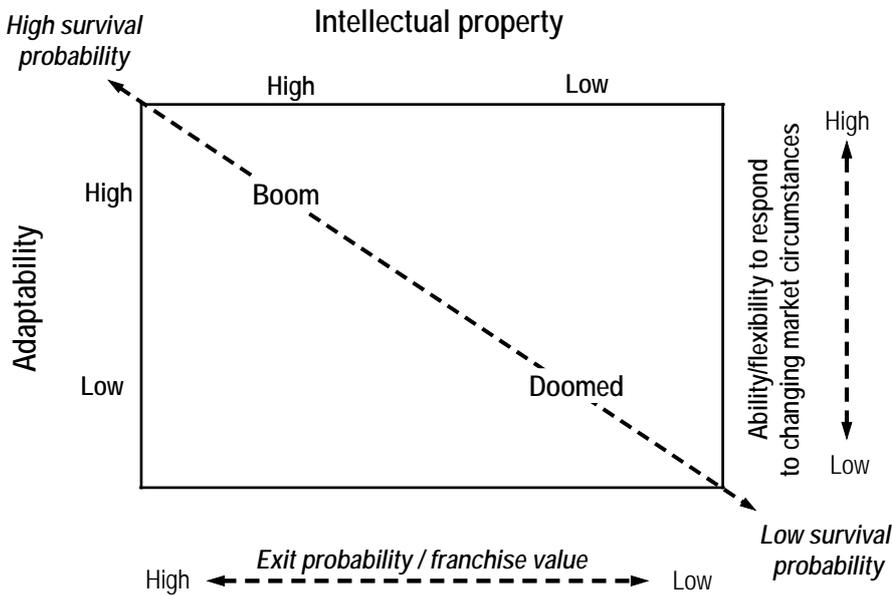
¹ See Lo (2004)

² We have added a section in the Appendix on page 132 that elaborates on the concepts of failure, survival and adaptability.

³ From Sherden (1998), p. 121.

and mutation of disciplines forms the building blocks of survival. The parallel to the asset management industry is that many investment companies have over-adapted themselves to rising stock markets and the doctrine of relative returns.

Chart 15: Intellectual property versus adaptability



Source: Ineichen (2005)

Ranking high on intellectual property as well as adaptability is the best of all worlds. As a matter of fact, we believe what we call “active risk management” and “asymmetric return profile” arrive from not being ignorant about one of the two (or both), i.e., having a fundamental understanding of what is going on as well as understanding short-term relevancies and market dynamics. Long-term investors need to pay attention to the short-term just as short-term investors need to pay attention to the long-term. Note that we do not suggest that combining the two is easy. The spread of differing personalities executing different crafts is - in our experience and putting it politely - wide. However, the rewards for investment firms that foster a culture of excellence as well as continuous improvement is high.

For a business to have a valuation there needs to be some form of continuity of the revenue drivers, i.e., sustainability of some sort. In addition, the drivers need to be transferable - otherwise the business is not scalable and cannot grow. High-quality earnings are perceived as earnings with lower volatility. In other words, earnings that are continuously reoccurring are preferred over erratically random earnings and hence deserve a higher multiple. Departing from randomness and migrating towards a value proposition built on the idea of sustainable earnings or returns is driving many hedge funds today. These hedge funds have the ambition to compete (and potentially replace) the traditional asset managers with their limited offering.

The 2008 financial crisis has changed the hedge fund industry in many ways. One aspect is related to adaptability and the risk of the business (not the funds). Some hedge funds managers have become quite wealthy. Some of these organisations have grown and today are proper asset management organisations in a relatively mature industry rather than boutiques in a cottage industry as, say, hedge funds twenty years ago. The incentive to survive is always a driver for going concern. However, business survival and financial survival might not be perfectly aligned in the low return, low risk, and low leverage environment of 2012. The asymmetric fee structure of hedge funds in combination with the concept of a high-water mark gives an incentive to take risk in an asymmetric fashion, as discussed above.

Intellectual property and the fitness to adapt are key indicators in the search for excellence

Some hedge funds have an incentive to take little risk and this incentive may increase with their AuM

However, in the current environment a small loss could result in redemptions and therefore jeopardise the business. This is particularly true if the peer group is flat; that is, relative under performance can be quickly and severely punished via investor redemptions. Given that acquiring more wealth is reduced as a driver to take risk, while, at the same time, the incentive to maintain a proper business has increased, results in some of the more established hedge funds to take little risk. This would partially explain why returns have been disappointing in the most recent past. Potentially it becomes even more important given the post-crisis flow of assets to large multi-strategy hedge funds. In light of the current market environment of governmental intervention, this structural risk-aversion could be perceived as a positive: given the political and regulatory uncertainty, a conservative stance towards risk taking is warranted. However, in an environment where risk taking is rewarded, it could become a negative.

Concluding remarks: *value proposition of hedge funds*

Entrepreneurs are generally optimists; they see opportunity everywhere. Successful entrepreneurs not only see the opportunity but they are also able to exploit the opportunity in a profitable manner. Entrepreneurs probably subscribe to Mario Andretti who was quoted saying: "If everything is under control, you're driving too slow". Risk managers, on the other hand, are generally pessimists. They see risk everywhere. Their maxim is probably closer to Confucius: "The cautious seldom err".

A good hedge fund is one that has figured out a way to combine the two: trying to find a balance between seeking and exploiting opportunities in an entrepreneurial fashion while continuously controlling risk of substantial depreciation of principal. One could easily argue that this is what investing has been about all along.



Demystifying hedge funds

Demystifying hedge funds

Hedge fund managers can be tough to like, but it is difficult not to admire the great confidence and faith that they have in themselves, demonstrated by the willingness to risk their future on their skills.

—William Crerend (1998)

- *Hedge funds are often portrayed as speculators and gamblers. Interestingly, hedge funds are more akin to an operator of a lottery or casino than the gambler.*
- *Hedge funds do not hedge all risks. If all risks were hedged, the returns would be hedged, too. Hedge funds take risk where they expect to get paid for bearing risk while hedging risks that carry no premium.*
- *For compounding capital negatively, no external assistance is required, nor is it worth paying a fee for.*

Myths and misconceptions

It is no secret that the public image of hedge funds is far from pristine. Hedge funds are regularly blamed for market movement, often irrespective of hedge funds being involved in a concerted fashion. Detailed after-the-fact analysis often reveals that while hedge funds are accused of being liquidity takers, it turns out that hedge funds are often liquidity providers; thus being on the other side of private and institutional investors unloading securities in a disorderly fashion. Below we aim to demystify some of the myths that still exist, despite vast improvements on the part of the finance-savvy and specialised press.

Myth: all hedge funds gamble

We do not think that there is an award for the most hilarious remark about hedge funds. If there were such an award, a strong contender for first prize would be the institutional investor who was quoted 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."¹ The irony, of course, is that it is the long-only investor who depends most on luck and not the diversified hedge fund investor.

Hedge funds are often portrayed as speculators, or worse, as gamblers. However, we argue that hedge funds resemble more the entrepreneur running a casino than the gambler losing money to the casino. Running a casino or a lottery is a very attractive business. We could call it "statistical arbitrage". For instance, in roulette the casino collects all the money on the table when the ball stops at zero. If the wheel has 36 numbers and one zero, the casino wins on average with every 37th spin of the wheel. There is no need to win with every spin of the wheel. The odds are asymmetric; they are in favour of the house.

"Any fool can criticize, condemn and complain – and most fools do."

Dale Carnegie

"We are not a casino."

Anonymous institutional investor around 2000

Hedge funds are closer to running a casino than spending time gambling

¹ The Future Role of Hedge Funds in European Institutional Asset Management, by Ludgate Communications, March 2000.

The more a business generates its revenues from a predictable, non-random source, the better. Running a lottery or a casino are great examples. To understand why a lottery has stable cash flows that are sustainable over time and, therefore, are predictable, we need to understand the fundamentals of the trade. The reason a lottery and a casino works is because there are so many fools. From a neo-classical economic perspective, the gambler at the roulette wheel or the buyer of a lottery ticket is a fool.¹ The expected return is - in monetary terms - negative for the gambler, but positive for the operator. Any investor faintly familiar with statistics prefers to be the operator of such a game, rather than the gambler. (Assuming there are more gamblers than casinos, of course.)

The reason why the cash flows are sustainable is because the world is not going to run out of - again, purely economically speaking - fools any time soon. Neither will the buyers smarten up as they already (presumably) know that their purchase is uneconomical from a probability-weighted expected return (rational expectations) point of view. Given that the entrepreneur's returns are stable and sustainable, they are fairly predictable (especially in the absence of competition). The cash flows of a provider running a lottery operation do not follow a random walk.² A license to run a lottery is a license to print money. If there is such a thing as a benchmark in the absolute returns world, it is running a lottery operation. (Note that we have ignored social/ethical considerations while discussing lotteries and casinos. Lotteries and casinos are potentially controlled to mitigate cash flowing from a loser (the gambler) to a winner (the operator). Given that active asset management is often perceived as being a zero-sum-game, i.e., a transfer of cash flow from losers to winners, active asset management could one day be banned too.)

Myth: all hedge funds always hedge

Returns are a function of taking risk. Hedge funds do not hedge all risks. If all risks were hedged, there would be no return. One difference between hedge funds and traditional long-only managers is that hedge funds hedge the risks where the portfolio managers do not expect to be compensated for bearing the risk. A traditional long-only portfolio by contrast, is a potpourri of risks, some of which carry a reward, while others do not.

Many hedge funds do seek to hedge against various types of market risk in one way or another, making consistency and stability of return, rather than magnitude, their key priorities. Thus, some hedge funds are generally able to deliver consistent returns with lower risk of loss. Long/short equity funds, while somewhat dependent on the direction of markets, hedge out some of this market risk through short positions that provide profits in a market downturn to offset losses made by the long positions. Equity market-neutral funds that invest equally in long and short equity portfolios should not be significantly correlated to market movements. That does not mean there is no risk. It only means there is no directional market risk.

Myth: all hedge funds are risky

Hedge funds, examined in isolation, are risky - as are technology stocks or energy trading companies or banking stocks. However, most investors do not hold single-stock portfolios. They diversify stock-specific risk (idiosyncratic or non-systematic risk) by investing in a range of stocks with different characteristics. To most investors, it is regarded as unwise not to diversify idiosyncratic risk. It should be

"People think I'm a gambler. I've never gambled in my life. To me, a gambler is someone who plays slot machines. I prefer to own slot machines."

Donald Trump

Running a lottery operation is a license to print money

Hedge funds take risks that are expected to carry a reward - other risks are hedged

Hedging directional market risk does not mean nothing can go utterly wrong

"Risk, to state the obvious, is inherent in all business and financial activity."

Alan Greenspan

¹ Newer research suggests that the gambler is not a fool but has a utility function that is non-monetary or has an extremely asymmetric utility towards large gains that makes it "rational" to "invest".

² Note that the statistical tools and techniques that were designed to assess distributions of random variables are inappropriate to assess the attractiveness of a business where cash flows (returns) are not randomly distributed.

similarly unwise not to diversify risk to a single hedge fund. Note that many critics of hedge funds do not distinguish between systematic and non-systematic risk when demonising hedge funds.

Schneeweis and Spurgin (1998) and many others have shown that the addition of hedge funds to a traditionally balanced portfolio offers an attractive opportunity to diversify. In the first edition of this AIMA roadmap in 2008, we wrote the following:

“This is true even if the returns earned by hedge funds in the future are merely on a par with those of stocks and bonds. There is no need to see risk-adjusted returns as high as they have been to justify diversification benefits into hedge funds. Any investment with a positive expected return, low volatility and low correlation to the rest of the portfolio will have a great chance of reducing portfolio volatility.”¹

Over the past four years, returns of a balanced hedge funds portfolio were indeed at par with a balanced portfolio of equities and bonds, somewhat dependent on which bonds one draws on as reference. While superior performance was the main driver in the early parts of hedge funds history, in the current institutional investor driven environment, other criteria have been equally important, mainly considerations related to asset allocation and diversification.

Myth: all hedge funds are speculative

Hedge funds are risky (as is any other investment) but they are not speculative. The misunderstanding of hedge funds being speculative comes from the myopic conclusion that an investor using speculative instruments must automatically be running speculative portfolios. One of the aims of this report is to challenge this misconception. Many hedge funds use “speculative financial instruments” or techniques to manage conservative portfolios. Popular belief is that an investor using, for example, options must be a speculator. The reason why this is a misconception is that the “speculative instrument” is often used as a hedge; that is, as a position offsetting other risks. The incentive to use such an instrument or technique (for example, selling stock short) is to reduce portfolio risk: not to increase it. This is the reason why most absolute return managers regard themselves as more conservative than their relative return brethren.

The decision of an absolute return manager to hedge is derived from whether principal is at risk or not. To them, preserving wealth is conservative and not speculative. The protection of principal is not a primary issue for the relative return manager as his mandate is outlined differently and risk is defined differently. It is the absolute return manager who will think about all the risks and judge whether to hedge or not to hedge. In other words, it is the relative return manager who speculates on many variables that are not subject to the benchmark. In addition, relative return managers, more often than not, manage OPM (other people's money). So do hedge funds. However, hedge fund managers, more often than not, have their own wealth in their fund - that is, their capital, incentives and interests are aligned with those of their investors. Most people care about the risk of loss of principal - especially when it is their own. As Yale endowment fund manager David Swensen put it:

While any level of co-investment encourages fund managers to act like principals, the larger the personal commitment of funds, the greater the focus on generating superior investment returns. ... The idea that a fund manager believes strongly enough in the investment product to put a

Hedge funds are likely to increase efficiency of a balanced portfolio

Hedge funds may use “risky instruments” for conservative ends

People typically do not wash rental cars

¹ See Ineichen and Silberstein (2008)

*substantial personal stake in the fund suggests that the manager shares the investor's orientation.*¹

Myth: all hedge funds charge high fees

Hedge funds are occasionally quipped as a "compensation scheme dressed up as an asset class". This resonates with many investors as they see the headline billion dollar fees that the best of the crop take home each year. The debate on compensation is not only related to hedge funds though. In this section we discuss two notions. First, we compare differences between hedge funds and traditional asset management in terms of incentives and remuneration, and second we discuss the concept of "dead weight".

Differing incentive schemes

Mutual funds generally remunerate management based on a percentage of assets under management. Hedge funds always remunerate managers with performance-related incentive fees as well as a fixed fee. Not surprisingly, the incentive-based performance fees tend to attract the most talented - or, if not the most talented, the most entrepreneurial or most bold - investment managers to the hedge fund industry. However, it also sometimes attracts envy, puzzlement and disbelief among many market observers.

The attractive incentives in the hedge fund industry are regarded as one of the main drivers of high returns of hedge funds since it attracts managers who have - or are supposed to have - superior investment skill. Hedge fund managers may just be better than other active fund managers. It is not, after all, entirely unreasonable to think that the attractive fee structure used by hedge funds may succeed in enticing money managers with the greatest skill to the hedge fund industry. In many other human endeavours, it is similar; it is not due to luck or randomness that Roger Federer and Tiger Woods take home the greatest pay cheques and decided to train in tennis and golf rather than synchronised swimming. However, there is also some "iceberg-effect" at play: only a small fraction of the whole is visible. We see the largest pay cheques in both competitive sports as well as hedge funds. However, most professional athletes as well as hedge funds struggle to make a decent living, invisible to the press and casual observer.

Most hedge fund managers have a high watermark and in some cases hurdle rates, which add optionality to the incentive structure.² The performance fee itself is like a call option; the premium outlay is fixed and known in advance, while the upside is unlimited. If a manager has nothing of his net wealth invested in his funds, this option is actually like a call option that investors grant the manager for free as - in this particular and rare case - the manager has nothing to lose. Option-like incentives are scarce in the mutual fund industry and pension funds management, but are prevalent in the real estate sector, the venture capital sector and the hedge fund sector. US mutual fund performance-based fees must satisfy the fulcrum rule. That is, gains and losses must have a symmetric effect, in the sense that the same amount of over- and under-performance relative to a benchmark must result in the same amount of positive and negative incentive fees for a mutual fund manager. Hedge fund managers are not subject to the fulcrum rule.

The attrition rate among hedge fund managers is often regarded as quite high, although the estimates vary heavily. The attrition rate - to some extent - can be attributed to the asymmetric nature of the compensation structure. The main function of the performance fee is to give the manager an incentive to generate

"Many men of course became extremely rich, but this was perfectly natural and nothing to be ashamed of because no one was really poor, at least no one worth speaking of."

Douglas Adams

Entrepreneurs and artists can have call-option like payouts. Administrators do not.

Attractive fee structures could attract most skilled money managers

Option-like incentives are a hot potato

¹ Swensen (2000), p. 267

² A high watermark is a hedge fund feature whereby the performance fee is only eligible on new profits, not on profits recovering from previous losses. A hurdle rate is a certain level, quite often the risk-free rate of return, above which the manager charges a performance fee.

positive absolute returns. The high watermark serves as an incentive to avoid losses as the bulk of a manager's compensation is derived from the performance fee. A negative side effect of this arrangement is that the manager may have an incentive to close the fund after a large drawdown, take a break and re-open a new fund with a new high watermark set at par.

The institutionalisation of the hedge funds industry started more than ten years ago. However, the financial crisis of 2008 resulted in an acceleration of the institutionalisation as many private investors, due to a combination of losses, illiquidity and Madoff, left the hedge fund industry for good. While fees for funds of hedge funds have been under pressure since 2008, hedge fund fee structures for institutional-quality hedge funds has remained reasonably stable. The criticism of an asymmetric fee structure has now turned from hedge funds to banks. The 2008 financial crisis has really revealed the moral hazard issues. We believe that the moral hazard issue in hedge funds is well balanced by the key risk takers having their own money exposed next to that of their investors.

Dead weight

Dead weight magnifies the true cost of active management. Dead weight in a portfolio results from securities owned into which the manager has no insight. A relative return investor managing risk relative to a market benchmark will hold many securities to control tracking risk. Sometimes the derogatory term of "closet indexing" is used. The reason for this term is that quite often the only difference between an index fund and a mutual fund is the magnitude of the permissible deviation from the benchmark, i.e., the so-called *tracking error*. The proportion of the portfolio that is held to control tracking risk could be obtained passively and therefore more cheaply. It is for this reason why more and more financial professionals and market observers regard this structure as inefficient. If we assume a so-called active long-only manager has a tracking error constraint of 200 basis points it could well be that 90% of the portfolio is the benchmark itself. In this particular case, only the remaining 10% is truly active. If the manager charges a fee of 80 basis points on assets under management, this fee is really 800 basis points on the active 10% of the portfolio. (See Chart 16 below.) From this perspective, it is actually the long-only industry that is overcharging its investors; not hedge funds. The reason for this is that the institutional investor has the means to acquire the 90% that is passive at nearly zero cost.

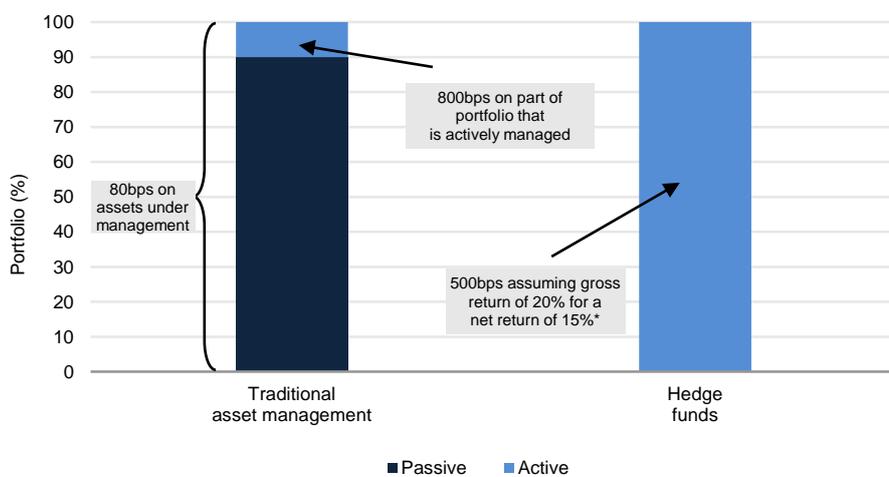
"I do it on behalf of my brothers Schubert and Mozart, who died in poverty."

Igor Stravinsky in response to the notion that his fees were outrageous

The concept of dead weight is what your local long-only manager does not want you to know

Dead weight magnifies the true cost of active management

Chart 16: Concept of dead weight



Source: Ineichen and Silberstein (2008)

* Assuming fee structure of 1% management fee and 20% performance fee

In a hedge fund, only positions about which the manager has conviction will be held long or sold short or positions that serve as a hedge. Total risk is controlled with risk management instruments or other hedging techniques, most of which require less capital than holding dead weight positions in the cash market. Consequently, a higher proportion of the hedge fund manager's capital is invested in positions about which the manager holds conviction. In addition, the management fee paid by the investor is based on a portfolio that consists of positions that are 100% managed actively. There is no dead weight. For a manager with a fee structure of "1+20" (1% management fee plus 20% performance fee), a gross return of 20% would result in fee income of 500 basis points and a net return of 15% for the investor (See Chart 16 on the previous page). To earn the aforementioned 800 basis points, a gross return of 35% would be required.

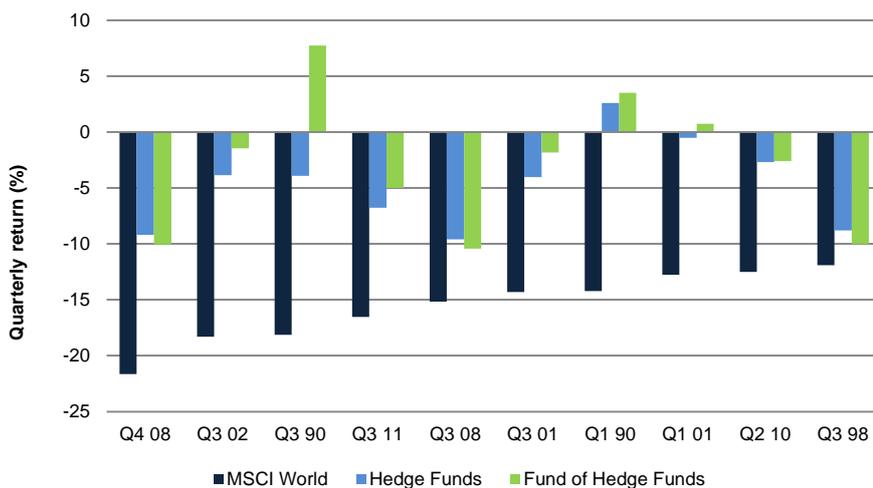
Hedge funds carry less dead weight and therefore manage invested capital more efficiently

Myth: all hedge funds generate strong returns in all market conditions

Not all market environments suit hedge funds equally well. Chart 17 (below) shows the ten worst quarters for the MSCI World Index during the period from January 1990 to June 2012. We contrast these negative returns with the corresponding quarterly returns for hedge fund and fund of hedge funds. The bars measure the total return (i.e., including dividends) in U.S. dollars for the calendar quarters.

Hedge funds sometimes report positive returns when markets fall and sometimes not

Chart 17: Hedge fund performance in ten worst quarters for equities (1990 - Q2 2012)



Source: Ineichen Research & Management, Bloomberg
Based on MSCI World Total Return Index and hedge fund indices from HFRI.

The illustration shows that hedge funds do not generate a positive return under all market conditions. Correlation between equities and hedge fund investments was particularly high during the third and fourth quarter of 2008 and the third quarter of 1998 (Russian debt crisis and LTCM collapse). However, a diversified hedge funds portfolio lost much less than an equity portfolios during the ten worst quarters for equities. Furthermore, on some occasions, hedge funds did indeed produce a positive return when equities fell sharply; thus providing the hedge fund investor with negative correlation exactly when most needed.

In the ten worst quarters since 1990, a diversified hedge funds portfolio lost less than a global equities portfolio

It is for these reasons that many hedge fund professionals and many of their investors regard being "long-only" as extremely speculative because the assets under management are fully exposed to the whims of the stock market. To them, having the same exposure to equities irrespective of business cycle, opportunity set, valuations, and market volatility is a strange way of managing money. Chart 17 (above) is an indication of what this translates to in periods of stress.

To some, the long-only mantra is weird

Myth: the lesson of LTCM is not to invest in hedge funds

Headline risk is indeed a great concern to many institutional investors. These investors do not want to be on the front cover of their local newspaper being associated with losing money with the likes of LTCM or Amaranth. Interestingly, many institutional investors perceive losing millions with single hedge fund investments as much worse than losing billions with single stock investments. After the collapse of LTCM, Thomas Schneeweis, Professor of Finance at the School of Management at the University of Massachusetts in Amherst and co-founder of the Chartered Alternative Investment Analyst Association (CAIAA), brought it aptly to the point:

There are many lessons to be learned from LTCM: (1) diversify, (2) high-return investments are also potential low-return investments, (3) trading in illiquid secondary markets is potentially disastrous in extreme market conditions, (4) an asset that returns in excess of 30% per year, as LTCM did, is a very risky investment. These are, of course, lessons that are true for all investments, and have nothing to do with the fact that LTCM was a hedge fund.²

A hedge fund is a business. Businesses, unfortunately, occasionally fail and go bankrupt for various reasons.³ This is one of the main reasons why investors diversify across businesses (i.e., diversify idiosyncratic risk). Hedge fund failures are part of investment life, as are bank failures or failures of energy or common currency zones. However, a point can be made that entrepreneurs should have exposure to idiosyncratic risk whereas investors should diversify idiosyncratic risk. In other words, investors should hold portfolios of hedge funds as opposed to a handful of hedge funds.

There are many ironies surrounding the collapse of LTCM. One is that the brightest academics in finance together with the most trading-savvy investment professionals on Wall Street could not avert one of the largest disasters in financial history. Another interesting aspect is that LTCM is the hedge fund that is most commonly known today even if the losses by LTCM seem paltry when compared to losses by banks during the financial crisis of 2008. The irony is that LTCM was a very atypical hedge fund. Its trading strategies were more in line with those of a capital market intermediary. When investors or issuers needed to change their positions or risk exposures, they would go to an investment bank or dealer to buy or sell securities or structured products. In turn, the dealer would utilise the capital markets to cover this exposure. LTCM was often on the other end of these transactions, in some sense wholesaling risk to the intermediary who was working directly with clients. LTCM viewed its main competitors as the trading desks at large Wall Street firms rather than other hedge funds. (Note that most investors in LTCM from inception to the end compounded capital at a rate of around 18% per year as LTCM repeatedly gave money back to investors, whether they wanted it or not.⁴)

"Most of academic finance is teaching that you cannot earn 40% a year without some risk of losing a lot of money. In some sense, what happened is nicely consistent with what we teach."

William Sharpe on the collapse of LTCM¹

Investors should diversify idiosyncratic risk

LTCM is, sadly, the most famous hedge fund

¹ Shefrin, Hersh (2000) "Beyond Greed and Fear," Boston: Harvard Business School Press.

² From Schneeweis (1998)

³ See also the remarks on the Iron Law of Failure in the Appendix.

⁴ According to Lowenstein (2000), p. 224

Myth: the Madoff fraud is a hedge fund scandal

The Madoff fraud did some great damage to the hedge fund industry. Many hedge fund investors lost a lot of money and some fund of hedge funds—mainly those catering to private investors—saw their businesses materially impaired. Some tried to portray the fraud as a hedge fund fraud. However, hedge fund investors were the victims, not the fraudsters. If anything, the Madoff fraud was a regulatory failure. Bernard L. Madoff Securities LLC was a broker/dealer in which the Securities and Exchange Commission (SEC) started investigating as early as 1999. Following the Madoff investment scandal, the SEC's inspector general conducted an internal investigation into the agency's failures to uncover the scheme despite a series of red flags and tips. In September 2009, the SEC released a 477-page report² on how the SEC missed these red flags and identifies repeated opportunities for SEC examiners to find the fraud and how ineffective their efforts were.

Nearly all investors today agree that operational due diligence is important when selecting hedge funds managers. However, investors need be diligent in all their financial affairs. Fraud is probably as old as civilization itself. Securities fraud and Ponzi schemes did not just start with "Bernie" Cornfeld and end with "Bernie" Madoff. One aspect derived from the Madoff fraud was an increase in demand for UCITS products, i.e., a financial structure that is more heavily regulated than off-shore vehicles. These more heavily regulated vehicles, at first inspection, cater to an investment base that believes the regulator can protect the investor.³ There is a certain irony, given the regulatory failures over the past five years. However, at a closer inspection, these regulated products also cater to investors who intentionally outsource the responsibility for due diligence to the authorities. From a career perspective it's the old IBM effect from the 1970s: Who ever got sacked for buying IBM? This moral hazard has the potential to create some serious problems in the future: Regulators cannot protect the investor's capital very well and responsibility cannot be outsourced.

Myth: all hedge funds increase systemic risk of financial markets

The idea of hedge funds being a risk to the financial system as a whole is somewhat a "former myth."⁵ When Angela Merkel invited the G8 for their 33rd summit in Heiligendamm, Germany, in the summer of 2007, systemic risk derived from hedge funds was one of the main agenda items. Systemic risk from the banking sector was not on the agenda. Ironically, it was banking, not hedge funds, which brought the financial systems to its knees a bit more than a year later. It is the use of leverage that is the big issue regarding systemic risk, not the organisational structure per se. The Financial Services Authority ("FSA") in the UK put forward in their August 2012 survey that leverage in hedge funds as well as the hedge funds' "systemic footprint" remain modest.⁶

One aspect of systemic risk is the impact of forced sellers. Forced selling occurs when a group of investor needs to liquidate in a hurry. The market impact is large when the market is homogeneous, i.e. there are no buyers to balance the forced selling. The investor who yells "Fire!" in a crowded theatre had better be very close to the door.

"If you sat down and had a conversation with him [Bernie Madoff] about his investment activities and couldn't figure out that he was being evasive, shame on you."

David Swensen¹

Responsibility cannot be outsourced

"Hedge funds are presently leveraged 1-3 times, if they're mad, 5 times, if they're insane, 10 times. But 15 or 20 times was normal for bank prop desks."

Michael Hintze, CQS⁴

An increase in regulation makes the market place more homogeneous and therefore more prone to accidents

¹ Lunch with the Financial Times: David Swensen, 8 October 2009

² Investigation of Failure of the SEC to Uncover Bernard Madoff's Ponzi Scheme, U.S. Securities and Exchange Commission, Office of Investigations, August 31, 2009.

³ Note here that some UCITS funds were affected by the Madoff scandal too.

⁴ "Hedge funds hope 'Volcker rule' will clip banks' wings," Financial Times, 30 June 2010

⁵ See also Chan, Getmansky, Haas, and Lo (2005) "Systemic risk and hedge funds" for a thorough, 109-page discussion on the topic.

⁶ "Assessing the possible sources of systemic risk from hedge funds - A report on the findings of the FSA's Hedge Fund Survey and Hedge Fund as Counterparty Survey," FSA, August 2012.

Hedge funds - as any other investor category - can stabilise as well as destabilise financial markets. When leveraged investors are overwhelmed by market or liquidity shocks, the risks they have assumed will be discharged back into the market. Thus, highly leveraged investors (be they banks, hedge funds, consumers, or sovereigns) have the potential to exacerbate instability in the market as a whole. The outcome may be direct losses inflicted on creditors and trading counterparties as well as an indirect impact on other market participants through price changes resulting from the disappearance of investors willing to bear higher risks. The indirect impact is potentially the more serious effect. Volatility and sharp declines in asset prices can heighten uncertainty about credit risk and disrupt the intermediation of credit. These secondary effects, if not contained, could cause a contraction of credit and liquidity and, ultimately, heighten the risk of a contraction in real economic activity.¹ The episodes around the fall of LTCM or Lehman Brothers are extreme cases in point.

The hot potato that is systemic risk

Hedge funds can be a stabilising market force as well. There is no doubt that hedge funds increase both liquidity as well as market efficiency. Note that an increase in market efficiency can result in an increase in volatility: one way to recognise efficiency is by the time it takes for information to be absorbed in the market place through the price mechanism. A couple of decades ago it took several days until all investors had reacted to news and the news was absorbed into prices. Today it can take only seconds. This has resulted in an increase in efficiency but also volatility surrounding new information.

Market heterogeneity increases market efficiency and therefore reduces transaction costs for all investors

One colloquial definition of liquidity is "finding a buyer when you want to sell". One example where hedge funds were liquidity providers was in summer 2002. As equity markets fell during 2002, European insurers became forced sellers of equities due to hitting actuarial solvency risk limits. At one stage during the panic selling, hedge funds were on the other side of the trade providing liquidity to the market. Whether particular hedge funds were covering shorts or buying into an overreaction is beside the point with respect to systemic risk: they were buying when a large investor group was selling; thus providing liquidity to the market place.

Hedge funds can act as providers of liquidity and therefore stabilize the system

In 1994, Soros was invited to deliver testimony to the US Congress on the stability of the financial markets, particularly with regard to hedge fund and derivative activity.² Soros believed that the banking committee was right to be concerned about the stability of markets, saying: "Financial markets do have the potential to become unstable and require constant and vigilant supervision to prevent serious dislocations". However, he felt that hedge funds did not cause the instability, preferring to blame institutional investors, who measured their performance relative to their peer group and not by an absolute yardstick. "This makes them trend-followers by definition". In 2012, George Soros' 1994 statement seems to have been confirmed by Reza et al. (2012). Using a proprietary dataset that identifies hedge funds filing 13F reports³, the authors examined whether hedge funds were more likely than other professional investors to engage in potentially destabilizing behaviours. Inconsistent with conventional wisdom, they found that hedge funds: (1) herd less than non-hedge fund institutions, (2) are less likely to engage in momentum trading than other institutions, (3) have portfolios with less overlap (i.e., crowded trades) relative to non-hedge fund institutions, and, (4) on

Introducing a benchmark and herding behaviour are potentially more dangerous for integrity of financial markets

¹ The Report of The President's Working Group on Financial Markets (1999) "Hedge Funds, Leverage, and the Lessons of Long-Term Capital Management," April.

² From Chandler (1998)

³ Form 13F is a quarterly report of equity holdings filed by institutional investment managers with at least \$100 million in assets under management. These investors include banks, insurance companies, hedge funds, investment companies, foundations, and pension funds. Form 13F only reports long positions. Short positions are not required to be disclosed and are not reported.

average, hedge fund demand appears to push prices towards equilibrium, whereas non-hedge fund institutions' demand pushes prices away from equilibrium.

Myth: selling short is the opposite of going long

Short selling is often viewed as just the opposite of buying a stock. This is a dangerous and false misconception. Selling short is not the opposite of going long. Most equity investors have a long-only mentality and are less familiar with hedging, managing risk and the dynamics of short positions. Short selling requires a special skill set that is different from buying and holding stock. The legendary strategist and investor, late Barton Biggs, arguably brought it to the point in the side text.

Short positions behave differently from long positions. The portfolio consequences of adverse price movements require greater diversification of short positions. If a stock moves against a short seller by increasing in price, the position and portfolio weight increases. To take advantage of the now more attractively priced short-sale opportunity (more attractive because the price is even higher than when stock initially was sold), the short seller faces the uncomfortable prospect of further increasing the position. Starting with a modest allocation to a particular short idea allows an increase in position size without creating an uncomfortable concentration in a single stock. Contrast the dynamics of a losing short position with the behaviour of a losing long position. As the long position's price declines, the portfolio weight decreases.

There also is a technical difference between buying ("going long") and selling short. To execute a short sale, the investor has to borrow securities to deliver to the buyer on the other side of the trade. If the lender recalls the shares, the short seller has to cover (buy back) and deliver the stock. When the market for borrowing a particular security becomes tight, short sellers face a short squeeze. Security borrowers tend to have the most trouble with small, less liquid companies, which are exactly the type of security most likely to present interesting short-sale opportunities.

Various jurisdictions banned short selling during market turmoil in 2008, 2011 and 2012. The bans were imposed because regulators feared that short-selling could drive the prices of those stocks to artificially low levels. Hedge funds were—as they often have been in the past when prices were falling—partially blamed for the selling pressure in financial stocks. The scapegoat function is an important one. In the US, it has become reasonably obvious that the regulatory framework is antiquated and failed in the 2008 financial crisis.³ Politicians cannot blame either themselves or Main Street. It needs to blame Wall Street. Hedge funds are the perfect scapegoat as they are still largely mysterious to the electorate. The origin of the credit crisis is Main Street confusing its house with an ATM (Automated Teller Machine) thereby overleveraging its balance sheet.⁴ The go-ahead for acquiring houses one cannot afford, i.e., for becoming a homeowner, was much closer to Capitol Hill than it was to Wall Street. To the best of our knowledge, it was not anyone from Wall Street saying back in 2004: "if you own something, you have a vital stake in the future of our country". The big mistake—but not the origin of the crisis—was that most market participants thought that US house prices could not fall and acted accordingly. If it were possible to sell short housing, the real estate bubble unlikely would have inflated as much as it did; the necessary adjustment would have happened earlier and the economic consequences, therefore, would have been milder.

"Short selling is not for sissies."

Barton Biggs¹

Unlike with a long position, an adverse move in a short position increases the portfolio weight of the position

For a short sale, the investor needs to borrow stock that later might be recalled to the investor's disadvantage

Hedge funds see themselves as seeker of truth by telling the market that an asset is overpriced through selling it short

"Short selling is to financial markets what free speech is to political markets."

Andrew Redleaf²

¹ Biggs (2006), Title for Chapter 4, p. 34.

² Redleaf and Vigilante (2010), p 9.

³ See for example Redleaf and Vigilante (2010).

⁴ The origin of the 2008 financial crisis is of course more complicated than stated here. According to McLean and Nocera (2011) in *All the Devils Are Here*, the financial crisis was mainly about human nature. Many "devils" helped bring hell to the economy.

The Federal Reserve Board of New York examined the effectiveness of the 2008 short-selling bans. The authors argue that the preponderance of evidence suggests that the bans did little to slow the decline in the prices of financial stocks. In addition, the bans produced adverse side effects: Trading costs in equity and options markets increased, and stock and options prices uncoupled.¹

Short selling bans didn't help shares from falling and caused adverse side effects

Myth: it's all alpha

There is not as much alpha as some hedge fund marketers may claim. Hedge fund returns can be partially replicated. The hedge fund replication industry has grown over the last five years. Thanks to contributions from both the academic community as well as to asset managers, the body of research has expanded to cover the topic from a number of different perspectives. Asset managers have also introduced numerous products to provide synthetic hedge fund exposure.

The term "alpha" was oversold

Separating returns into alpha and beta is important to determine the amount and type of fees to charge or pay. Most investors agree that it makes sense to pay a higher fee for alpha than for beta. Academia always has been leaning towards beta because the doctrine of the efficient markets idea suggests that there is no such thing as alpha, certainly not in large quantities, accessible to everyone and on a sustainable basis. However, it is an on-going debate and the active-passive debate is probably as old as institutional money management itself; and there seems no end in sight. The debate of course also reached the hedge fund industry more than a decade ago. Large parts of academia as well as some investors question whether hedge funds really provide alpha or just some "new" form of beta, often referred to as *alternative beta*.

Separating alpha from beta is important

The basic idea behind these concepts is that the main part of a hedge funds' return corresponds to risk premiums rather than market inefficiencies.² In other words, the premise is that hedge fund returns are neither alpha nor beta, hence the term "alternative beta." Alternative Beta is a concept that extends the idea of traditional passive investing into the alternative investment space. Alternative beta refers to risk premiums, which are available in the global capital markets beyond traditional equity, or fixed income related long only investments. Generally, risk premiums are returns that are compensation for taking systematic risks. Essentially a reward for risk that, in the context of modern portfolio theory, cannot be diversified away. Alternative risk premiums are those that relate to active investment strategies including techniques beyond the traditional long-only investment.

Alternative beta are non-traditional risk premiums

In contrast to traditional investments such as stocks and bonds, hedge-fund returns have more complex risk exposures that yield additional and complementary sources of risk premiums. This raises the possibility of creating passive replicating portfolios or "clones" using liquid exchange-traded instruments that provide similar risk exposures at lower cost and with greater transparency. By using monthly returns data for 1610 hedge funds in the TASS database from 1986 to 2005, Hasanhodzic and Lo (2007) estimated linear factor models for individual hedge funds using six common factors, and measured the proportion of the funds' expected returns and volatility that are attributable to such factors. They found that for certain hedge fund style categories a significant fraction of both could be captured by common factors corresponding to liquid exchange-traded instruments. They concluded that: "while the performance of linear clones is often inferior to their hedge-fund counterparts, they perform well enough to warrant serious

Hedge fund replication is probably more than a passing fad

¹ "Market Declines: What Is Accomplished by Banning Short-Selling?" by Robert Battalio, Hamid Mehran, and Paul Schultz, Federal Reserve Bank of New York, Current Issues in Economics and Finance, Volume 18, No. 5, 2012.

² See for example Jaeger (2005)

consideration as passive, transparent, scalable, and lower-cost alternatives to hedge funds."¹

Myth: there is no absolute return revolution

There are still market pundits who believe the absolute return investment philosophy of hedge funds is a fluke. These views are obviously diametrically opposed to our own, which are largely presented in this report. For instance, in a 2006 paper titled "The Myth of the Absolute-Return Investor" two gentlemen, Barton Waring and Laurence Siegel, reiterate the case for relative returns. They even claim that absolute return investors are actually relative return investors, too. (And, therefore, there is no such thing as "absolute returns".) The claim is based on what the authors call the "normal portfolio" or "home" which is a risky portfolio to which the hedge fund advisor supposedly falls back to when the managers do not know what to do with their capital. Waring and Siegel wrote:

For a purported absolute-return manager, the normal portfolio may not have been purposefully or thoughtfully designed - and may be more implicit than explicit - but somewhere in the manager's investment style lies a "home", a set of factor exposures or betas that the manager goes to when he or she has no reason to go somewhere else.²

The authors even claim that Warren Buffett is a relative return investor and has a benchmark. This clearly is inconsistent with Berkshire Hathaway's huge allocation to cash in recent years and with Mr. Buffett's own words:

When we can't find anything exciting in which to invest, our "default" position is U.S. Treasuries...Charlie and I detest taking even small risks unless we feel we are being adequately compensated for doing so. About as far as we will go down that path is to occasionally eat cottage cheese a day after the expiration date on the carton.³

The default position of the absolute return investor is cash or treasuries or gold or anything else that is perceived as safe at a particular moment in time. If this is not the case, the term of "absolute returns" does not apply as the investment decision-making and risk management process will be geared to managing tracking risk, i.e., deviations from the "normal portfolio" or "home" or benchmark. If you do not know what to do as an absolute return investor, you do not fall back to some arbitrary set of risks. Why would you want to do that? If the view of the opportunity set goes to zero, the risk of the portfolio goes to zero.

One example of this behaviour is distressed securities. Distressed securities is a cyclical strategy. This means the opportunity set changes in a business-cycle, semi-predictable and mean reverting fashion. Default rates in the US fell from 12.8% in 2002 to 1.2% in 2004. What did managers do in 2004 when the game was over? What they certainly did not do is what Waring and Siegel claim, i.e., fall back to a "normal portfolio".⁴ Some distressed funds closed and gave money back to their investors, thanked them for lending them their trust during the ride and said that they would be calling them when the next cycle began. Others, more the multi-strategy type of investors, reduced capital at risk in the strategy where the opportunity set was limited and increased it in a strategy where they thought the opportunity set was plentiful or, if nothing attractive was found, into cash. (The

Attempts to explain away the absolute return phenomena in investment management are unconvincing

The risk-neutral portfolio of the absolute return investor means no risk on the books. The risk-neutral portfolio of the relative return manager is the benchmark

"The normal-scientific tradition that emerges from a scientific revolution is not only incompatible but often actually incommensurable with that which has gone before."

Thomas Kuhn

¹ From Hasanhodzic and Lo (2007)

² From Waring and Siegel (2006)

³ From Berkshire Hathaway, annual report, 2003

⁴ To be fair to the authors, they do mention (page 18) that "sometimes, hedge funds are characterized as having a benchmark of cash." However, they view it as the exception. We believe it is the rule not the exception. Whatever the debate, we do not think that the terminology and doctrines of benchmarking and relative returns lends itself very well to what is going on in hedge fund space.

peak of the distressed cycle is somewhat the reverse of merger mania, i.e., the opportunity sets of the two strategies are somewhat reciprocal. At the most distant level this reverse-synchronicity is a function of greed and fear or exuberance and panic of investors and corporates alike.)

Waring and Siegel end their paper with the following remark:

Beating a benchmark is all that matters; it is the only thing that is worth paying high fees to achieve.¹

We believe this view to be the consensus from the mid-seventies to the peak of the bull market in early 2000. Today, an increasing number of institutional investors believe that it is not worth paying high fees for a 28% loss when the benchmark is down by 30%. For compounding capital negatively no external help is required; many investors can do it entirely on their own.

Negative compounding of capital does not require external help

Concluding remarks: *demystifying all hedge funds*

There is still a lot of mythology with respect to hedge funds. Much of it is built on anecdotal evidence, oversimplification, myopia or simply a misrepresentation of facts. Although hedge funds are often branded as a separate asset class, a point can be made that hedge fund managers are simply asset managers utilising other strategies and a wider range of investment and risk management tools than those used by relative return long-only managers. The major difference between the two is the definition of their return objective: Hedge funds aim for absolute returns by balancing investment opportunities and risk of financial loss. Long-only managers, by contrast, define their return objective in relative terms. They aim to win what Charles Ellis calls the loser's game - that is, to beat the market.²

IBM Chairman, Louis V Gerstner Jr was quoted in the late 1990s as referring to the new internet companies as "fireflies before the storm". He called the storm that was arriving the real disturbance to the system, when companies would transform themselves and seize the power of global computing and communications infrastructure (read: change). The dot-com companies he referred to as fireflies before the storm - "they shine now, but will eventually dim out".

In 2003, we adopted this analogy for the asset management industry.³ We argued that hedge funds were the fireflies before the storm. They were certainly shining in 2003 as, by and large, they delivered positive absolute returns in a period where equities halved. The storm, we mused then, was not necessarily the hedge fund structure but the absolute return investment philosophy that hedge funds pursue. We thought economic logic would suggest that successful approaches were copied.

Today, 2012, after equities halved not once but twice within a decade, the absolute return investment philosophy has become the norm among certain types of investors. The fact that real interest rates are negative in certain areas of the world has increased the demand for absolute returns further; thereby strengthening the investment case for managers who have capital preservation as their main risk management goal. Absolute return mutual funds in the US and hedge funds in a UCITS structure in Europe are further indications that the absolute returns idea is slowly but steadily replacing the relative returns doctrine in investment management.

¹ From Waring and Siegel (2006)

² See Ellis (1993)

³ See Ineichen (2003b)



Hedge fund investing

Hedge fund investing

Either you understand your risk or you don't play the game.
—Arthur Ashe¹

- *The investment process of a hedge fund investor is dynamic and can be classified into two selection processes (manager selection and portfolio construction) and two monitoring processes (manager review and risk management).*
- *Initial and on-going assessment and due diligence of the hedge fund managers is probably the single most important aspect of the investment process for all hedge fund investors. Portfolio construction and managing the risk of the hedge fund portfolio are also mission-critical in the hugely heterogeneous and dynamic hedge fund industry.*
- *Manager evaluation and monitoring has become more difficult despite increases in transparency and information flow, and it has become more labour-intensive. Investors with vast resources for research are likely to continue to have an edge over investors with little or no research capabilities.*

Investment process²

Different investors have different objectives. Different portfolio designs will serve different purposes. Given the breadth of the hedge fund industry, it is likely that some investors seek broad exposure while others might specialise in a certain investment style. Some hedge fund investors have a bias toward non-directional absolute return strategies, whereas other managers have an implicit or explicit bias toward directional hedge fund managers and strategies. The difference between directional and non-directional is probably the most general classification of the strategies in the hedge fund industry.

Once the investor knows what objectives are to be met, the actual investment process begins. At the most general level, there are two variables and two processes. The two variables are the hedge fund managers (i.e., portfolio constituents) and the apportionment of capital to these constituents (i.e., allocation). The two processes are a selection and a monitoring process. An important aspect is that these two variables and processes are dynamically interrelated. Chart 18 (on the following page) shows one way the investment process of a hedge fund investor can be graphically illustrated.

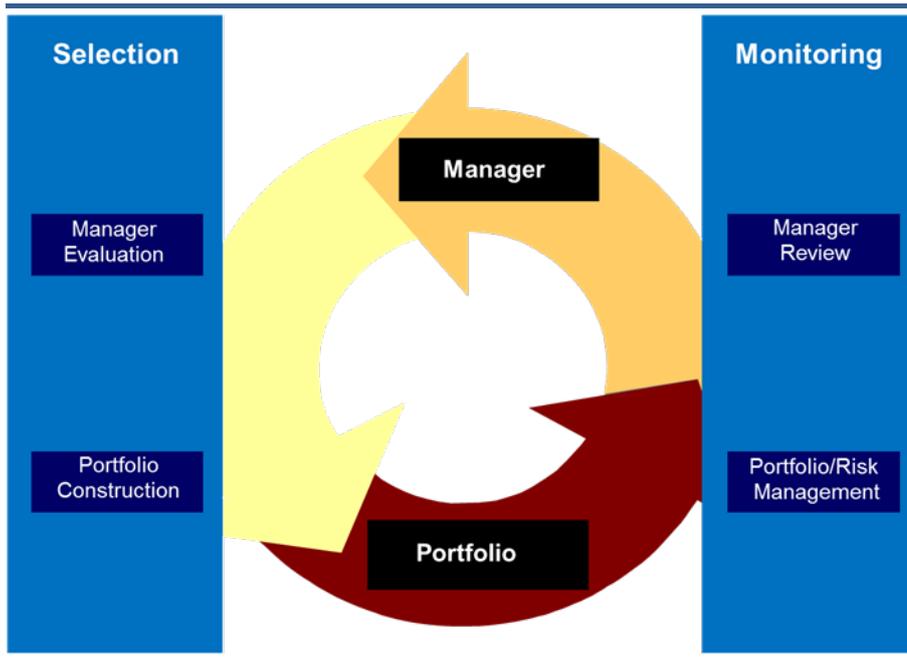
Different fund of funds have differing mandates

Investment process involves both selection of managers as well as allocation of capital

¹ From Barra advertisement.

² Parts in this section draw on material from Ineichen (2001, 2003a).

Chart 18: Dynamic investment process of a hedge fund investor



Source: Ineichen (2001)

The following section discusses the aspects with respect to the selection and monitoring process of the single hedge fund manager: the portfolio constituents. After that, we look into issues of risk management and portfolio construction: the asset allocation of a portfolio of hedge funds.

Manager selection and monitoring

Manager evaluation

Manager identification and evaluation is probably the key to success. Investing in hedge funds is essentially a people and relationship business. By allocating capital to a manager or a group of managers, the investor expects to participate in the skill of the manager or managers and not necessarily in a particular investment strategy or a mechanical process. Allocating funds to a convertible arbitrage manager, for example, does not necessarily imply participation in the classic trade of buying the bond and managing the delta through selling the stock. The strategy is more complicated than that, despite parts of mainstream academia suggesting otherwise. Other opportunities exist and they keep changing over time. The investors' expectation is to participate in inefficiencies and opportunities in the convertible bond (CB) market where a skilled and experienced manager has a competitive advantage over the less skilled - that is, the rest of the market. Hence, the term *edge fund*, as mentioned earlier, is the better term than *hedge fund*.

Manager selection is key

The opportunity set is never unlimited. There are capacity constraints. Inefficiencies and investment opportunities tend to disappear if more capital chases the same inefficiencies and opportunities. However, what is often overlooked is that a flood of new capital creates new inefficiencies itself. Good examples are merger arbitrage around 2000 and convertible arbitrage in 2005. A lot of capital went into merger arbitrage after the stunning M&A year of 2000. The fresh capital was to some extent coming from less experienced merger arbitrage managers or long/short equity managers feeling lucky. This caused spreads of announced deals to narrow much more quickly. For experienced merger arbitrage managers this opened up opportunities to "Chinese" a deal (buy acquirer and sell target) as opposed to putting the trade on the other way around. Minsky's dictum of "stability breeding instability" is ever so true to finance, in general, and in strategies depending on leverage, in particular. This is one of the reasons why

Infusion of capital always changes characteristics of opportunity set

manager selection is key; trying to re-engineer passively those strategies that worked in the past is a questionable proposition at best.

Manager evaluation is not only the most important step but also the most cumbersome. Commercial databases on hedge funds are a starting point but are incomplete. The difficulty and effort of collecting information probably puts in place significant barriers to enter the fund of funds business in a serious entrepreneurial and institutional investor compliant fashion. Put differently, this means that investors with an operating history of a couple of decades might have a competitive advantage over investors who entered the industry recently.

Tenure and experience probably matters

Due diligence¹ is the single most important aspect of the investment process for an investor investing in a hedge funds. Due diligence includes quantitative excellence as well as qualitative judgement. Quantitative analysis of (imperfect) data is incomplete. Qualitative judgment is at least as important as quantitative analysis. This view is probably the consensus in the alternative asset management industry. Due diligence includes a thorough analysis of the fund as a business and a validation of manager information, and covers operational infrastructure, financial and legal documentation, affiliates, investment terms, investor base, reference checks and so on. Along with many others, fund of funds manager Roxanne Martino (1999) argues that “the due diligence process is an art, not a science” and also stresses the point of prudence and integrity in a loosely regulated market where the hedge fund structure provides a manager with a great deal of freedom. As Warren Buffett puts it:

Due diligence is labour-intensive and more art than science

In evaluating people, you look for three qualities: integrity, intelligence and energy. And if you don't have the first, the other two will kill you.²

This is certainly true for selecting hedge fund managers and is probably true for all other business endeavours too. However, the 2008 financial crisis has revealed some shortcomings unrelated to the investment professionals but related to the managers' operations, business and controls. The influence and veto power of operational due diligence teams has increased considerably as a result. Furthermore, the length of the due diligence process has increased too. Two thirds of investors take between three and six months to complete due diligence on a manager whereas only a third did so in 2002.³

Manager review

Manager review is a dynamic and iterative process. The due diligence process never ends. To truly understand a manager and a manager's value-added, we must first understand the sector in which they are operating. We believe that for managers to be successful in this industry, they must be able to adapt to change and employ comprehensive risk management. However, the most important aspect of this research is the appreciation for the dynamic nature of both the markets and the strategies. This is not a single exercise, but rather a continual process of evaluation and review. Over time, the emphasis of importance may shift within the strategies from one factor to another, even to a newly developed factor. For example the 2008 financial crisis has caused investor to examine the fund structure and counterparty risk more carefully than prior to the financial crisis; clearly good example of “learning by doing”.

Manager review is dynamic and iterative

¹ AIMA offers institutional investors a series of six illustrative questionnaires for the selection of managers (hedge fund and fund of funds) and service providers - available at no charge and on application at www.aima.org

² From Hagstrom (1994), p. 172

³ Deutsche Bank 2012 Alternative Investment Survey, p. 58.

The first step in the manager evaluation and review process is to determine the sources of risk and return in each strategy. This involves dissecting the strategies into their component parts and applying market knowledge to determine how a hedge fund operating within that strategy has the potential to make profits and what risks are being taken in order to achieve the returns. These points can be very subtle, particularly on the risk side of the equation, as the most significant risks are often those not found in any textbook on the subject. In these cases, first-hand trading and risk management experience is invaluable in the assessment process.

Every hedge fund is different

The identification of the risk and return drivers also leads to establishing differentiating factors for comparing managers within a strategy. Certain aspects of these drivers will have more influence than others on the future performance of the manager and must be emphasised. Additionally, some of these factors will be conditional to a particular attribute of the market or fund manager, such as liquidity or asset levels. Therefore, the differentiating factors must be used in the proper context when applied to the manager selection process.

Portfolio selection and monitoring

Portfolio construction

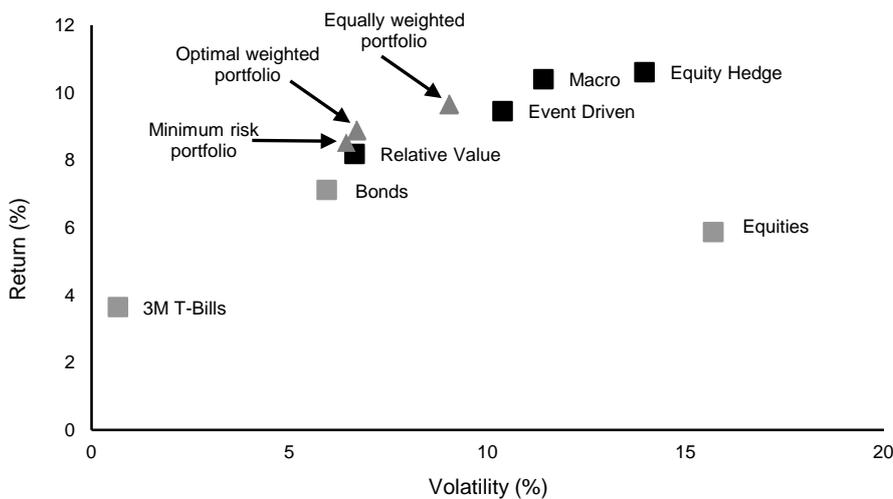
Most portfolio construction will probably blend bottom-up (manager selection) and top-down (asset allocation) approaches. Different investors will have different approaches and goals. These differences can be in terms of geographical focus, investment style or strategy. Some investors put more weight on their personal network in the industry, while others have a more econometrical approach to portfolio construction. There is no single right way of constructing a portfolio of hedge funds. Portfolios constructed in mean-variance space are a starting point but imperfect due to liquidity issues and various other important considerations. Elsewhere we argued that risk management begins where Value-at-Risk (VaR) ends. We believe that many astute investors would agree with us when we claim that portfolio construction begins where mean-variance optimisation ends.

There is no accepted consensus as to how a hedge fund portfolio should be constructed

Chart 19 (on the following page) compares proxies for long-only strategies in traditional asset classes with the main hedge fund strategies as defined by Hedge Fund Research for the period from January 1990 to July 2012. We have added the minimum risk portfolio, a mean-variance optimised portfolio and an equally weighted portfolio to the graph. For this graph, we have generously subtracted 300 basis points per year from the single hedge fund indices to adjust for all the various statistical biases that some academics argue are biasing historical hedge funds returns upward; others disagree. We have multiplied historical volatilities of these indices by 1.5 to adjust for risk that is not captured by volatility. Even given these excessive adjustments, hedge funds still have far superior risk-adjusted return properties when compared to traditional asset classes and strategies. However, the caveat is of course that one cannot buy historical returns.

Caveat emptor: One cannot buy historical returns

Chart 19: Hedge fund portfolios versus traditional asset classes



Source: IR&M, Bloomberg
 All based on USD total returns from January 1990 to July 2012. Grey squares: Merrill Lynch 3-month T-Bills Index, JPM Global Government Bond Index, MSCI World Index. Black squares: Four main strategy indices from HFRI. To adjust for any biases in the underlying data, 300 basis points were subtracted from historical annual returns and volatility was multiplied by 1.5.

The (mean-variance) optimal weighted portfolio in Chart 19 (above) has a historical return of 8.9% and a volatility of 6.7% given the two adjustments to the raw data mentioned above. (Return and volatility of the optimized portfolio in the 2008 edition of this report were 10.2% and 4.7% respectively.) The 8.9% return is 524 basis points above T-Bills which compares to 580 above T-Bills in the 2008 edition which was based on data from 1990 to June 2008.

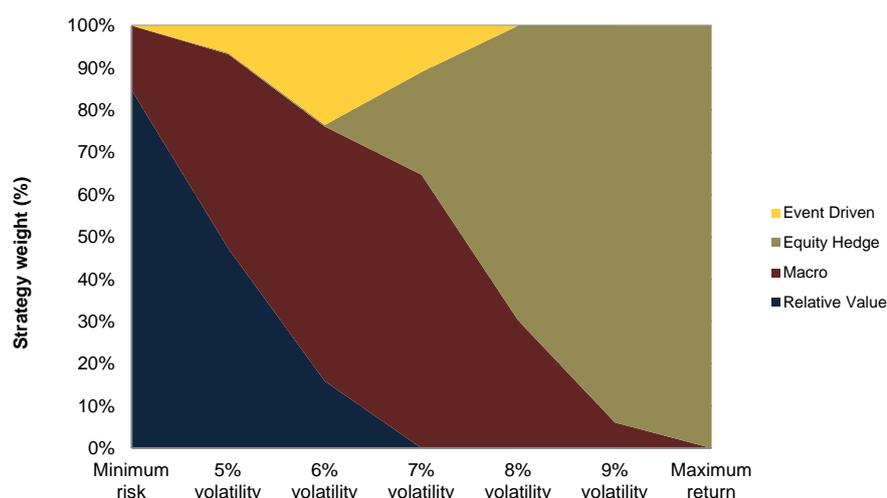
Any portfolio construction is a trade-off between expected return and risk, irrespective of how the latter is defined. Modern Portfolio Theory (MPT) suggests using the standard deviation (volatility) as a proxy for risk. In this elegant framework, the trade-offs are measurable which allows the construction of portfolios that are “efficient” according to the specifications of the model.¹ Chart 20 (on the following page) shows the portfolios with the lowest and highest volatility and all portfolios in between in one volatility percentage point intervals (horizontal axis) in relation to the optimal weight of the four strategy constituents (vertical axis). For this exercise we have not modified the data. Note again that there are some reservations about the applicability of the model and that this is a simplification of the real world, as there is great dispersion of returns among sub-strategies and, more importantly, among single hedge fund managers. Note further that the optimal portfolios change by using different time periods or a different set of indices.

Reasonably low correlation among strategies allows constructing hedge fund portfolios with equity-like returns and bond-like volatility

The 2008 financial crisis was a reminder that “volatility” is an incomplete measure for risk

¹ MPT is derived from the Brownian Motion Theory (BMT). Robert Brown (1773-1858), a Scottish botanist, observed the “erratic way that tiny pollen grains jiggled in a sample of water”. He later discovered this erratic motion over time developed into a defined pattern, later defined as normal distribution. Louis Bachelier (1870-1946), a French mathematician, applied BMT to finance. Standard deviation was used to explain and quantify the scatter of data outside the mean. Bachelier’s key model hinged on price changes being statistically independent and normally distributed. Benoit Mandelbrot (1924-2010), Polish-born French-American mathematician, showed as early as 1961 that price distributions have “fat tails” and that prices can and do vary by leaps and bounds, unlike the “neat” idea of normal distributions. Why Mandelbrot’s insight was somewhat lost on the financial profession, we do not know.

Chart 20: Mean variance optimal hedge fund portfolios



Source: IR&M, Bloomberg
 All based on USD total returns from four main indices of Hedge Fund Research from January 1990 to July 2012.

The portfolio with the lowest volatility, the so called “minimum risk portfolio,” has a volatility of 4.3%. The portfolio with the highest return is a 100% investment in the strategy that has the highest return. From the four strategies we have chosen for this exhibit, this happens to be equity hedge. The “most efficient” portfolio is a portfolio that is very close to the minimum risk portfolio. The graph shows well the trade-off between balanced portfolios with low volatility on the left versus concentrated and directional portfolios on the right. Many institutional investors and funds of hedge funds operate on the very left hand side of this exhibit as they seek risk/return characteristics they cannot find elsewhere. In other words, more often than not, these investors use the full spectrum of portfolio construction opportunities. Table 3 shows the returns, volatilities and correlations used for the portfolios in Chart 20 (above) and following analysis. We have added the figures from the 2008 edition to this table for comparative purposes.

Most hedge fund investors use full spectrum of diversification potential

Table 3: Performance characteristics for main hedge fund strategies

As of June 2008	Return	Volatility	Sharpe (5%)	Correlation			
				RV	Macro	EH	ED
Relative value	11.4	3.6	1.8	1.00			
Macro	15.0	7.8	1.3	0.40	1.00		
Equity Hedge	15.8	8.5	1.3	0.58	0.59	1.00	
Event Driven	13.6	6.4	1.3	0.66	0.55	0.79	1.00
Off-diagonal correlation				0.55	0.51	0.65	0.67

As of July 2012	Return	Volatility	Sharpe (4%)	Correlation			
				RV	Macro	EH	ED
Relative value	10.2	4.4	1.4	1.00			
Macro	12.4	7.6	1.1	0.34	1.00		
Equity Hedge	12.6	9.3	0.9	0.69	0.55	1.00	
Event Driven	11.4	6.9	1.1	0.76	0.51	0.84	1.00
Off-diagonal correlation				0.59	0.47	0.69	0.70

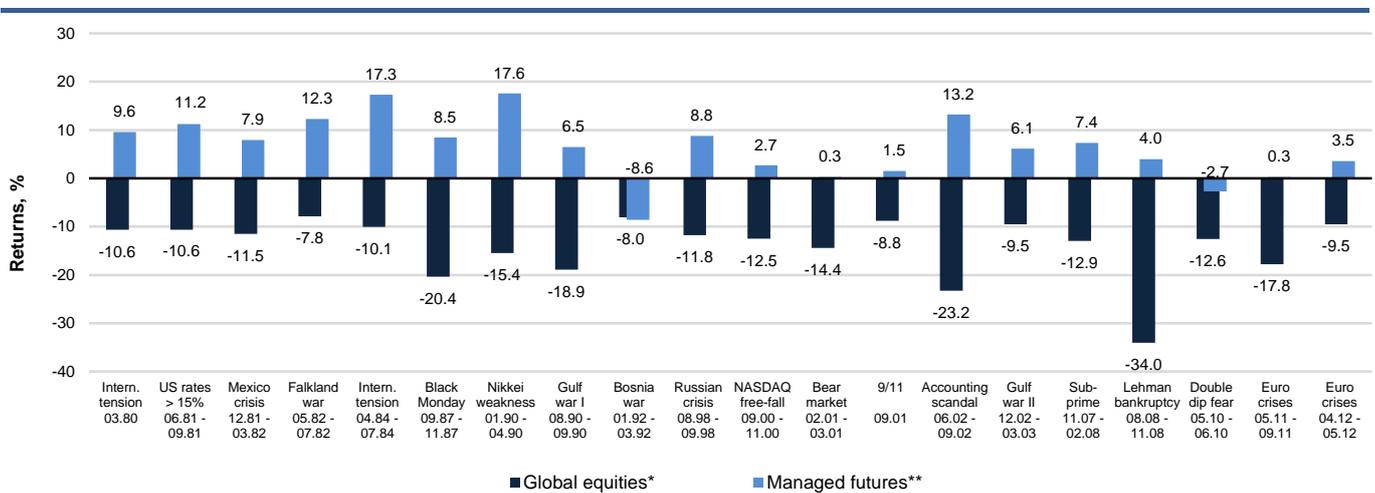
Source: IR&M, Bloomberg
 All based on USD total returns from four main indices of Hedge Fund Research from January 1990 to June 2008 and July 2012.

Note the following changes from the 2008 edition of the AIMA Roadmap.

- Returns and Sharpe ratio are lower, volatilities are higher, except for Macro.
- Off-diagonal average correlation increased except for Macro.¹ The lower volatility and off-diagonal correlation in Macro resulted in the optimiser “liking” Macro much more than in the 2008 edition; thus giving Macro a much higher weighting in the modelled portfolios in this 2012 edition of the AIMA Roadmap. Note that it is not only mean-variance optimisers that “like” Macro, institutional investors like Macro, which includes systematic trading, too. Systematic trading performed very well during the 2008 market mayhem. The return chasing behaviour of investors resulted in funds flowing into that category.

Chart 21 (below) shows all 20 occurrences where the MSCI World lost more than 7% of its value within one, two, three, or four months from 1980 to May 2012 on a month-end basis. The worst return from the four returns was chosen.

Chart 21: Managed futures in difficult market environments (1980 - May 2012)



Source: Ineichen (2012), Bloomberg
 * MSCI Daily TR Gross World USD Index; ** CISDM CTA Asset Weighted Index formerly known as CISDM Trading Advisor Qualified Universe Index to October 2010, DJ CS Managed Futures Hedge Fund Index thereafter. Due to availability, the 3.5% return for the April to May 2012 period is from the HFRI Macro: Systematic Diversified Index.

The graph speaks for itself. Managed futures delivered a positive return in 18 out of 20 negative occurrences in the equity market. In the field of investment management, there is simply nothing that comes anywhere close to this. Critics have argued that this amazing negative correlation during equity market stress is regime-specific, i.e., a function of falling government bond yields since the early 1980s. Replacing managed futures in Chart 21 (above) with a generic US 30-year Treasury bond futures reveals that US Treasury returned a positive return in “only” eleven of the 20 accidents. Nine out of those eleven occurrences of negative correlation between equities in bonds were after the year 2000 where the Federal Reserve Board started to manipulate the yield curve more aggressively. Whether the negative correlation between managed futures and equities under duress will hold or not when bond yield start to rise, only time will tell.

Managed futures typically rise when equity markets fall

¹ Off-diagonal correlation: the average correlation of an investment with all other investments in a correlation matrix except the correlation to itself.

Table 4 shows the portfolios used in Chart 20 on page 75 in numerical format plus the minimum risk as well as an equally weighted portfolio. We recommend this table to assess trade-offs between return and various risk characteristics rather than a guide to asset allocation. One of the many lessons of the financial crisis is that the various risk variables are far too unstable for mean-variance optimization to be taken seriously. Furthermore, if we were to use different indices or different time periods, the allocation to the four strategies would differ. Note that the raw data was not adjusted for any statistical biases for this analysis.

Caveat lector (let the reader beware)

Table 4: Selection of portfolio characteristics

	Minimum risk	Most efficient	5% volatility	6% volatility	Equal weight	7% volatility	8% volatility	9% volatility	Maximum return
Return	10.5	10.8	11.3	11.8	11.7	12.3	12.5	12.6	12.6
Volatility	4.3	4.4	5.0	6.0	6.0	7.0	8.0	9.0	9.3
Sharpe ratio (4%)	1.52	1.55	1.46	1.30	1.27	1.19	1.07	0.95	0.92
Worst month (%)	-5.6	-5.0	-4.8	-5.0	-6.4	-5.1	-6.4	-8.8	-9.5
Worst month (date)	Oct-2008	Aug-1998	Aug-1998	Aug-1998	Aug-1998	Aug-1998	Aug-1998	Oct-2008	Oct-2008
Worst 12-months (%)	-12.8	-9.4	-7.0	-6.6	-16.1	-9.6	-19.5	-25.2	-26.7
Worst 12-months (date)	Dec-2008	Dec-2008	Feb-2009	Feb-2009	Feb-2009	Feb-2009	Feb-2009	Feb-2009	Dec-2008
Skew	-1.1	-0.4	0.1	0.2	-0.4	0.3	0.0	-0.2	-0.3
Excess kurtosis	6.2	2.7	0.8	0.6	1.4	0.5	1.0	1.6	1.7
Correlation MSCI World	0.57	0.55	0.51	0.50	0.70	0.56	0.70	0.73	0.73
Correlation JPM Global Gvt Bonds	0.12	0.15	0.17	0.17	0.13	0.17	0.13	0.11	0.10
Negative months (%)	17	20	27	31	27	34	32	31	31
Average monthly return (%)	0.85	0.88	0.92	0.96	0.95	1.00	1.02	1.03	1.03
Avg. positive monthly return (%)	1.22	1.30	1.56	1.84	1.78	2.08	2.25	2.35	2.38
Avg. negative monthly return (%)	-0.94	-0.87	-0.85	-0.96	-1.25	-1.13	-1.53	-1.87	-1.97
Portfolio weights:									
Relative Value	85	73	47	16	25	0	0	0	0
Macro	15	27	46	60	25	65	30	6	0
Equity Hedge	0	0	0	0	25	24	70	94	100
Event Driven	0	0	6	24	25	11	0	0	0

Source: IR&M, Bloomberg

All based on USD total returns from four main indices of Hedge Fund Research from January 1990 to July 2012.

As volatility increases (moving left to right in Table 4) the following observations become apparent:

- Returns increase, but Sharpe ratios decrease.
- Correlation to the equity market increases as the incremental return is a function of more directional equity exposure.

Note that the minimum risk portfolio was determined by solving for the combination of strategies that resulted in the lowest volatility. This naturally results in having a large allocation to relative value strategies. Volatility is not by itself a good representation of risk and can often distract from the true risks of an investment. The term "minimum risk portfolio" is a standard term. However, the table shows well that the term is a misnomer. The so-called minimum risk portfolio had substantially larger losses than the portfolio that was optimised to have a volatility of 5%. When we re-run the optimiser for the minimum risk portfolio and control for excess kurtosis; the more excess kurtosis is constrained, the smaller is the weight to relative value strategies and the larger is the weight to Macro.¹ The higher the allocation to Macro, the smaller is the drawdown. This analysis reveals a further irony in the hedge funds industry: the institutional consensus prior to the financial crises was that the larger the portion to relative value strategies, the less directional the portfolio, and therefore the smaller potential losses were expected. Macro on the other hand was perceived as much higher octane and many portfolios

The portfolio diversification benefits from Macro strategies were underestimated

¹ Kurtosis is a statistical measure that shows how a return distribution differs to a normal distribution. A normal distribution has a kurtosis of three or an "excess kurtosis" of zero. Excess kurtosis is generally perceived as a measure for fat tail risk. It goes without saying that it only can measure highlight to tail events that occurred in the past. We discuss tail risk in more detail in the strategies section on 106 and in the Appendix of this document on page 128.

were constructed with a small weight to Macro and a large weight to relative value. It turned out that the other way around would have caused smaller losses. (See Chart 21 on page 76.)

The following observations are worth mentioning when Table 4 is compared to the equivalent table in the 2008 edition of this report that was based on the period from 1990 to June 2008:

- Returns and Sharpe ratios are lower, while volatility of low-volatility portfolios is higher.
- Drawdowns are higher. The worst 12-month return for the minimum risk portfolio in the 2008 edition was -1.1% that compares to -12.8% in Table 4. This is arguably a large difference and goes to show that volatility as a risk measure as well as a purely backward looking risk assessment both has its pitfalls.
- Excess kurtosis was always above zero. This means that assessing risk with measures and models that assume returns are normally distributed are ill advised or dangerous or both. Interestingly, the portfolio with the lowest excess kurtosis from both editions is the 6%-volatility portfolio in Table 4.
- The weight to Macro is much higher in the current edition. The reason is that in Macro both volatility and off-diagonal correlation has fallen, while it has risen in the other three strategies. (See Table 3.)

How do these portfolios compare with traditional assets and traditional long-only portfolios? Table 5 compares three skill-based portfolios with the MSCI World Index, the JPM Global Government Bond Index and a 60:40 monthly re-balanced portfolio between the two. The latter is a proxy for a balanced long-only portfolio. The three hedge fund portfolios are labelled "skill-based" while the long-only portfolios are referred to as "market-based". The reason for these terms is that in the former it is the skill of the portfolio manager constructing well-balanced portfolios that determines risk, while - in the latter - it is market forces that determines risk, not skill.

Difference between skill-based and market-based portfolios are best examined by examining loss properties of a portfolio

Table 5: Skill-based versus market-based portfolios

	Skill-based			Market-based		
	Minimum risk portfolio	Most efficient portfolio	Equally weighted portfolio	MSCI World	JPM Global Gvt Bonds	60:40 portfolio
Return	10.5	10.8	11.7	5.9	7.1	6.7
Volatility	4.3	4.4	6.0	15.7	5.9	10.3
Sharpe ratio (4%)	1.52	1.55	1.27	0.12	0.52	0.26
Worst month (%)	-5.6	-5.0	-6.4	-18.9	-3.9	-12.7
Worst month (date)	Oct-2008	Aug-1998	Aug-1998	Oct-2008	Nov-2010	Oct-2008
Worst 12-months (%)	-12.8	-9.4	-16.1	-46.8	-6.7	-31.7
Worst 12-months (date, 12m to)	Dec-2008	Dec-2008	Feb-2009	Feb-2009	Jan-2000	Feb-2009
Skew	-1.1	-0.4	-0.4	-0.6	0.1	-0.5
Excess kurtosis	6.2	2.7	1.4	1.2	0.4	1.3
Correlation MSCI World (all)	0.57	0.55	0.70	1.00	0.27	0.98
Correlation JPM Global Gvt Bonds	0.11	0.15	0.13	0.27	1.00	0.48
Negative months (%)	17	20	27	41	36	38
Average monthly return (%)	0.85	0.88	0.95	0.58	0.59	0.59
Average positive monthly return (%)	1.22	1.30	1.78	3.48	0.88	-2.35
Average negative monthly return (%)	-0.94	-0.87	-1.25	-3.66	0.18	2.36

Source: IR&M, Bloomberg

All based on USD total returns from four main indices of Hedge Fund Research from 1990 to July 2012.

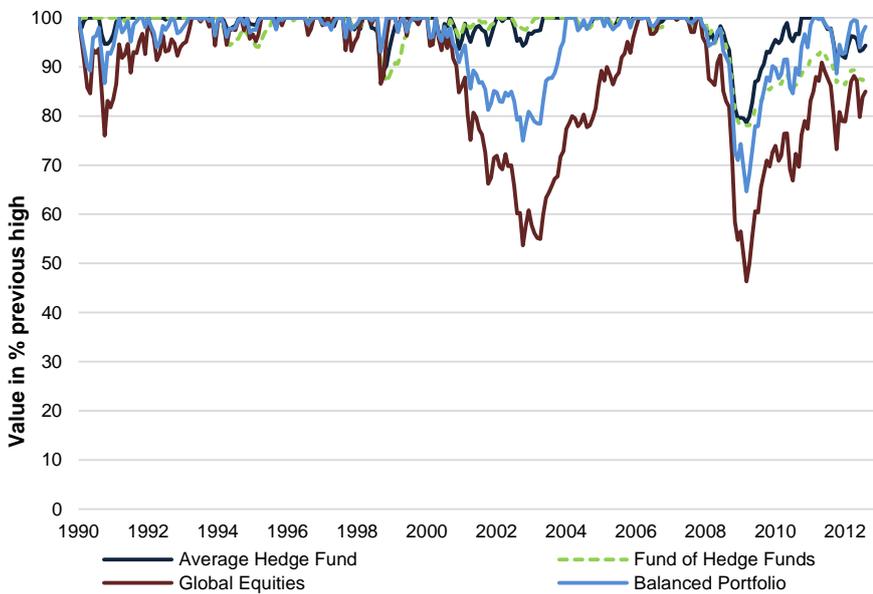
- Absolute returns and risk-adjusted returns were higher than with market-based strategies such as equities, bonds, and combinations thereof. Note that we did not adjust for any statistical biases and included to Greenspan put area of the 1990s in this analysis. This means the skill-based returns were lower than

shown here and the difference between skill-based and market-based is less extreme.

- The big difference between skill-based and market-based portfolios is the magnitude of losses. This was even more pronounced in the 2008 edition of this report, which included the Asian crisis, and the bursting of the internet bubble. Table 5 encompasses the 2008 financial crisis. The bottom line does not change: with skill-based strategies, the drawdowns are controlled while for a market-based strategy, by definition, they are not. These large drawdowns kill the rate at which capital compounds.

Losses are one aspect of risk. Another aspect is the recovery from large drawdowns. It takes a 100% return to recover from a 50% loss. That might take a while. Chart 22 (below) shows two skill-based indices and two proxies for a long-only portfolio. The indices are shown as a percentage of its previous all-time-high. This method allows visualising the magnitude of the losses as well as the recovery time from those losses.

Chart 22: Underwater perspective (January 1990 - July 2012)



Source: IR&M, Bloomberg
 All based on USD total returns. Balanced portfolio is based on 60% MSCI World TR Index and 40% JPM Global Government Bond TR Index, monthly rebalanced.

- Hedge funds and fund of hedge funds did exceptionally well during the bursting of the internet bubble. This exceptional relative performance resulted in the historical track record looking good at a time when mainstream institutional investors were looking into investing in hedge funds in a greater fashion. This track record clearly helped institutional investors getting comfortable with the hedge funds space.
- In the second large equity drawdown of the past decade, hedge funds did not fare as well. The average hedge fund and fund of hedge funds lost about 20%. The difference between the tech bubble bursting and the 2008 financial crisis was the difference between a market event and a market breakdown. Hedging against a falling market is reasonably straightforward. Hedging against a failing market is an entirely different matter. Nevertheless, hedge funds had

"I'm not worried about markets trading down. I'm worried they won't trade at all."
 Peter Fisher, Head trader for the NY Federal Reserve visiting LTCM¹

¹ From Lowenstein (2000), p. 297.

recovered their losses, on average, by October 2010 while the average fund of hedge funds is still under water.

- Global equities, by comparison, lost more than 50% and have had not yet recovered from that loss by July 2012. A balanced portfolio, as defined herein, lost around 35%. However, the multi-year bond rally resulted in a swift recovery. The balanced portfolio had recovered from its drawdown by February 2011.

In the following two sections, we examine fund of hedge funds (“FoHF”), the role of the prime broker and managed accounts.

Fund of hedge funds

At the most general level, a FoHF manager is - as the name implies - a fund manager who creates and manages portfolios of hedge funds. A FoHF simplifies the process of choosing hedge funds by blending together funds to meet a range of investor risk/return objectives while generally spreading the risks over a variety of funds to diversify idiosyncratic risks. This blending of different funds and strategies aims to deliver a more consistent return than any of the individual funds. A FoHF can be diversified broadly or highly concentrated to a fund, style or region.

FoHF manage around \$627 billion, i.e., around 30% of hedge fund assets of \$2.2 trillion according to estimates by Hedge Fund Research. FoHF have been the vehicle of choice for most new institutional entrants and experienced a boom phase prior to the financial crises of 2008. Lacklustre returns, unexpected illiquidity and the Madoff fraud have caused—and this putting very mildly—trouble for FoHF. FoHF experienced net outflows since 2008. Many have thrown in the proverbial towel as going concern while having been exposed to Madoff is difficult. Others have merged with other, stronger entities while some have adapted by changing their business model to include other services such as advisory or managed account platforms. The FoHF sub-industry has certainly been consolidating over the past four years.

The performance of FoHF is sometimes described as “boring”. Interestingly, boring is exactly what funds of funds set out to deliver: that is, more or less stable and consistent absolute returns, which is the prerequisite of long-term compounding of capital.

Funds of hedge funds construct and manage hedge fund portfolios thereby diversifying idiosyncratic risk

Fund of funds have been vehicle of choice for new entrants

FoHF returns are boring; which is a good thing

Table 6: Ranking of fund of funds with other investment choices

1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	CARR
17.5	19.0	12.3	26.3	5.6	21.3	14.4	16.2	24.8	26.5	12.6
11.8	15.5	4.5	23.1	4.2	19.5	14.0	16.2	15.1	25.3	12.0
8.4	14.5	3.9	12.3	1.3	11.1	5.3	5.3	5.2	4.9	7.7
-16.5	6.4	-4.7	3.2	-3.5	6.0	4.4	1.4	-5.1	-6.2	5.3
2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	CARR
6.2	4.4	17.3	33.8	15.2	10.0	20.7	10.3	7.2	30.8	7.1
4.7	2.8	1.8	12.8	9.7	7.5	10.4	9.7	2.1	11.5	4.0
4.1	2.6	1.0	11.6	6.9	3.1	6.8	9.6	-21.4	6.1	3.0
-12.9	-16.5	-19.5	1.1	1.3	-4.4	4.9	5.0	-40.3	0.2	0.2
2010	2011	2012				CARR	CARR			
12.3	6.1	10.5				6.4	7.3			
5.7	0.1	3.3				5.4	7.2			
5.0	-5.0	2.5				0.8	6.0			
0.1	-5.7	0.1				0.1	3.6			

Source: IR&M, Bloomberg
 Notes: 2012 includes August. All based on USD total returns. CARR stands for compound annual rate of return. FoHF: HFRI Fund of Funds Composite Index; Equities: MSCI World Index; Bonds: JPM Global Government Bond Index; T-Bills: Merrill Lynch 3-month T-Bills Index.

Table 6 (on previous page) shows a ranking of annual returns of FoHF compared to equities, bonds, and T-Bills. We have added the compound annual rates of return (CARR) per decade to the table as well as the CARR for the whole 22+ years in the lower right hand corner of the table. The table allows us to make some observations and draw some conclusions on FoHF performance:

- FoHF returns have been mostly positive over the past 22+ years except 1994, 1998, 2008 and 2011.
- In the 1990s, FoHF ranked first; in the 2000s, second; and FoHF rank third in the current 2010s, barely beating T-Bills.
- The idea that FoHF always generate a positive return when equities are negative does not hold true anymore. The increase of correlation to equities has been one of the more negative surprises. While losing 21% or 40% remains a big difference, the correlation in on the downside in 2008 and 2011 came as a surprise as well as a disappointment.
- FoHF ended up with highest compounding rate over the past 22+ years largely due to controlling large drawdowns. It seems Mr. Buffett was on to something when he made the quote in the side text. Sadly, the quote does not apply to FoHF as well as it did four years ago.

The next section examines the investment philosophy of FoHF.

Investment philosophy of a fund of funds manager

As mentioned earlier, the hedge fund industry is heterogeneous when compared with the traditional long-only asset management industry. This heterogeneity allows one to pursue different strategies. The two extreme choices are to (1) minimise portfolio volatility or (2) maximise expected return, as outlined in the previous section. Most funds of funds will opt for a blend of the two extremes with a bias toward either directional or non-directional strategies.

Among important considerations is whether the FoHF manager believes in market timing. Many investment professionals have developed an aversion to market risk, which they perceive as being exposed to chance. Behaviourists argue that we have a hard time discerning probabilities of events and cannot distinguish a long-shot prediction from something that is likely to occur by pure chance. Other FoHF managers argue that their clients can capture the pure beta more cheaply with vehicles other than FoHF. Those investors will find attraction in strategies where the manager's value added is isolated from market risk and the manager will have some reservations with respect to market timing.¹ The other extreme will be biased toward timing the market. These managers will include more opportunistic, directional strategies. Note that the goal of the first hedge fund (Alfred Jones) was to reduce exposure to chance (market risk) and increase exposure to skill (stock selection). Note also that the hedge fund boom of the early 1970s ended because funds were long and leveraged; the industry shrank dramatically after departing from its origins. The impact of the 2008 financial crisis on the hedge fund industry was not a repeat of the 1970s. However, history might have rhymed at least a little bit. George Soros certainly hit the proverbial nail on the head in November 2008:

"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."

Warren Buffett

Market heterogeneity allows constructing conservative portfolios

The fund of funds managers' investment philosophy is one of the key considerations about which to gain insight

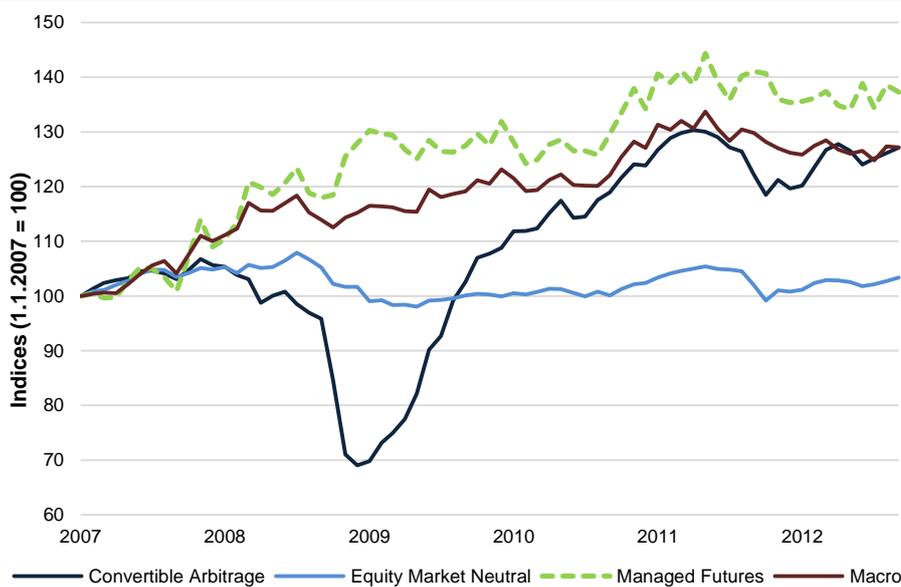
¹ Peter Lynch was quoted as saying, "I don't believe in predicting markets" and that market timers "can't predict markets with any useful consistency, any more than the gizzard squeezers could tell the Roman emperors when the Huns would attack." From Sherden (1998), p. 106.

During the current financial crisis, many hedge fund managers forgot the cardinal rule of hedge fund investing which is to protect investor capital during down markets.¹

One of the first decisions a FoHF manager either implicitly or explicitly will take, therefore, is whether to focus on the left- or right-hand side of Table 4 on page 77. Strategies on the right-hand side include directional market risk; strategies on the left do not or do so to a much lesser extent. Most FoHF managers will blend directional with non-directional strategies. The diversification benefits due to low correlation are too great not to be utilised in constructing a portfolio of hedge funds. Ironically, poorly balanced FoHF portfolios with heavy weightings in non-directional strategies and no or miniscule weightings in directional strategies, especially managed futures, experienced above average losses during the financial crises of 2008.

Most fund of funds managers blend directional with non-directional strategies

Chart 23: Negative correlation during financial crisis (January 2007 - August 2012)



Source: IR&M, Bloomberg
Based on HFRI indices. Index level on 1 January 2007 was set to 100.

Chart 23 (above) shows two non-directional strategies (convertible arbitrage and equity market neutral) as well as two strategies that are perceived as being directional (managed futures and macro). The chart shows how negatively correlated convertible arbitrage and managed futures were when it most mattered, namely in 2008. Note that portfolios that included a large allocation to convertible arbitrage experienced above average losses in 2008 but also recovered swiftly during 2009. Equity market neutral strategies have more or less done nothing over the past five years. No one talks about portable alpha anymore; a direct result of the non-performance.

Convertible arbitrage and managed futures were negatively correlated when it mattered most

Risk management experience and other intangibles

The ability to identify and understand risk characteristics is one of the most important issues when investing in hedge funds. A FoHF manager will have to demonstrate the skill as well as experience in the field of the most complex financial instruments and trading strategies. This expertise will allow the FoHF

Having been around the block a couple of times probably helps

¹ Statement of George Soros before the U.S. House of Representative Committee on Oversight and Government Reform, 13 November 2008.

manager to assess potential drawdowns for each manager in each strategy irrespective of his historical track record.

One of the intangibles of allocating funds to any money manager is motivation. This is probably true for selecting a FoHF manager in the traditional asset management arena as well in alternative fund management. A highly motivated manager is more likely to go the extra mile in terms of negotiating fees, capacity, liquidity and transparency than a less motivated manager. However, intangibles, such as risk management experience or motivation, are impossible to measure or model. A qualitative judgment is required. Qualitative aspects need assessment.

Intangibles are impossible to measure or model. They need to be assessed

Incentives

One question a hedge fund manager is often asked by evaluators is how much of his own money is in the fund. The general perception is that a manager with 20 years of savings in the fund is, everything else held equal, superior to a manager who puts only last year's bonus at risk. The argument is that interests between manager and investor are aligned when both have their funds tied together. The alignment of interests is obviously also relevant between a FoHF manager and an investor. It is possible that business models in investment management in the future will require the agent to invest alongside their investors. In the absolute return world, this is already the case. Ownership matters, or as Warren Buffett put it: "After all, who ever washes a rental car?"

Principal and agent co-investing could easily become the norm in investment management

However, the net amount invested by the manager is not necessarily a good indication of motivation. It does not account for potential option-like characteristics that are observed in incentive schemes. For example, a 28-year-old investment professional with three years' experience might set up a hedge fund, initially investing his full net wealth of \$1 million along with investors. In this case, applying the logic outlined earlier, this manager would be highly motivated to do well. However, we would argue that this is not necessarily the case. He has little to lose. If the venture does not work out, he will go back to his Wall Street job having lost his savings of three years plus six months of work. He does not "have a lot of skin in the game". Such an incentive is similar to, as suggested by Mark Anson (2001), a free or cheap call option: unlimited upside profit potential with limited measurable downside risk.

Incentive structures - apart from being a hot potato - bear optionality the investor needs to understand

The other extreme is the hedge fund veteran who might have 90% of \$1 billion net wealth in his own funds. This structure might also have odd incentive characteristics especially when combined with hubris. For example, the prestige of winning a certain trade might weigh more strongly than the risk of a huge loss. However, a huge loss would not have an effect on the lifestyle of the manager. The manager might still prefer a game of bridge rather than managing a crisis. A loss may or may not affect self-confidence, but not the manager's personal economics. The late Barton Biggs, Wall Street veteran and hedge fund manager, suggested that, with all too many seasoned hedge fund managers, the competitive drive from yesteryear is allocated more to lowering ones' golf handicap than increasing the net asset value of the funds.¹

"I'm more concerned about the return of my money than with the return on my money."
Will Rogers

A manager fading away is just another example of reversion to the mean. A manager who has compiled an excellent historical record gradually turns into just another manager, with higher risk than before and lower return. Maybe he has lost his competitive edge, his hunger for success. Maybe his historical record was just a fluke: not really a symptom of genuine investment skill but a result of randomness and good luck. Or maybe the inefficiency he is an expert at exploiting has

Some managers revert to the mean and below

¹ See Biggs (2006)

disappeared as others have copied his style. In any case, what looked like an exceptional investment opportunity turns into a disappointment.¹

Evaluating the compensation equation for the investment employees at the hedge fund manager is hugely important, i.e., is equity widely spread or do employees at least know what they will earn if the fund does well. Can the partnership regenerate itself? Added to compensation, the culture of a hedge fund is very important too. What is their tolerance for losses? How do they hire skill and perceive talent and skill? Where do they recruit talent?

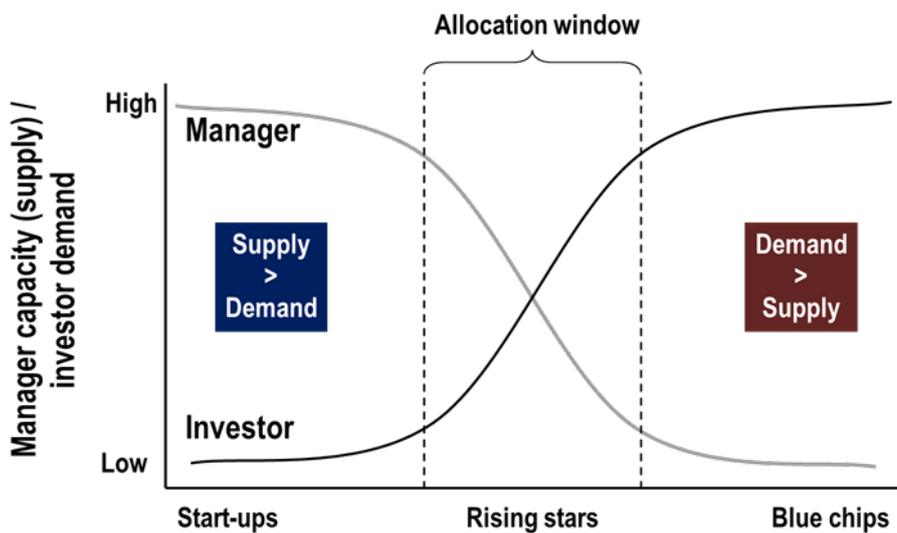
Compensation and culture are important when assessing hedge funds

Allocation window

As in any market, there are supply and demand imbalances. This was especially the case in the early days of the institutionalisation of the hedge fund industry. Today the market functions better than, say, five years ago. Chart 24 (below) shows the mechanics.

The incentive to gather assets and generate wealth are not perfectly aligned

Chart 24: Supply / demand imbalance and allocation window



Source: RMF

A start-up manager is willing and able to raise a larger amount than investors are willing to allocate. Supply exceeds demand as investors wait and see how the manager performs. However, once a manager is well established demand from investors can exceed the amount the manager is willing to raise. Given the character of the option-like fee structure, it is not always optimal - both from an investment as well as business perspective - to maximize assets under management. In between these two imbalanced scenarios, there is an "allocation window" where the market clears. Investors can allocate the amounts they seek to invest at the terms they find agreeable, while the manager raises the amounts he thinks are optimal for his enterprise. It goes without saying supply and demand for the whole hedge funds space varies over time. Most hedge funds will concur (and stating the obvious) that raising assets prior the financial crisis of 2008 was somewhat easier than it is today.

Maximising assets under management is not always optimal

A FoHF manager or a well-established hedge fund investor can have a wider allocation window than other investors due to a combination of investor pedigree and relationships. Furthermore, extensive bottom-up manager research can widen the allocation window to the left. Research allows finding and, more importantly, gaining comfort with a less established manager. The degree of confidence gained

Funds of funds might have a wider allocation window than investors with less resources

¹ From Jaeger (2000), p. 75.

through the research is elementary when constructing portfolios and sizing positions. An investor with vast resources at his disposal is likely to have an edge over an investor who has no or much fewer resources. The assets of the hedge funds industry always have been concentrated among the largest and most established managers. However, the financial crisis resulted in this characteristic becoming extreme.

An investor might also be able to expand the allocation window in Chart 24 (on the previous page). By gaining a high degree of confidence early, the investor can secure capacity for future allocations. However, this capacity argument is somewhat weaker than it was a couple of years ago. First, the market for information on hedge funds is not as opaque anymore as it has been. Second, hedge fund managers have found ways to increase their capacity - rightly or wrongly - to match investor demand. Many hedge funds have opted to run unhedged portfolios and funds, thereby being able to raise assets. There is no capacity constraint to long-only asset management when compared to a risk-controlled asset management.

Ability to secure capacity is still important but not as important as it once was

A further aspect to FoHF allocations is a change in investor preference on part of the hedge fund manager. Many years ago, FoHF sold their offering based on access to the "hottest hedge fund manager". In the very early days of the hedge fund industry, a hedge fund took assets from wherever and whoever was willing to invest. This is not necessarily the case anymore. Today, some hedge funds eschew FoHF, mainly because of their untimely redemptions during the 2008 financial crisis. Today, many hedge funds that are set up for institutional allocations prefer sophisticated institutional investors where the assets are perceived as "sticky" and long-term. Many FoHF needed to reinvent themselves because of both changes in the investor as well as manager landscape. FoHF today focus their offering on portfolio construction, risk measurement, performance reporting, performance attribution analysis, advisory, operational due diligence, monitoring, knowledge transfer and education, etc. Furthermore, more and more FoHF invest early thereby being able to negotiate better terms and distinguish them from other allocators. The environment for FoHF has changed. FoHF adapted accordingly.

Hedge fund investor preference has changed

Talent search and identification

One could argue that the search for talent or skill is the single most important issue in the whole investment process of investing in alternative investments in general and hedge funds in particular. One aspect of manager selection is reputation. Reputation is probably the closest thing to brand recognition in the world of intangibles. We even came across the notion that the talent of a manager is negatively correlated with the number of sales staff in his hedge fund. Although we would not go as far as that (it would be politically incorrect to do so), there is a huge difference in a few of the successful launches and the many me-too products.

*Is it a "war for talent" or a "talent bubble"?
We assume the former*

A hedge fund investor has to be inside the information loop of high-calibre investment talent. This will enable him to spot talent early in the evaluation process. Some investors identify and track skilled investment professionals before they announce that they are launching a hedge fund. In other words, an investor who has superior information on key staff in the main investment centres will have a competitive advantage.

Successful hedge fund investors need to be in the loop

We have mentioned elsewhere how concentrated the hedge fund industry is becoming. The practical relevance in terms of talent search is that larger hedge funds potentially have massive advantage in hiring and training talent. Some large and very reputable hedge funds are stronger than banks who fed the industry in the first place with talent. They can hire the best. Part of their edge is training risk takers to become even better and manage increasingly larger amounts of risk, overcoming a psychological barrier of only being able to manage a certain amount of dollars.

Large and reputable hedge funds have an advantage

Due diligence and track record

The due diligence done by the FoHF manager is part of its value proposition. Whether a FoHF manager is able to pick the best manager is, by definition, uncertain and is continuously open to debate. As most bottom-up equity fund managers will claim to have superior stock picking skill, most FoHF managers will equally claim to have superior hedge fund picking skill. There is no definitive guide to manager evaluation. Here is an incomplete list of some factors:

Strategy	identifiable opportunity sets, embedded market risks, definition of investment process, market knowledge in defined strategy
Experience	portfolio management and risk management ability, strategy implementation, experience of different market conditions, understanding of the impact of market flows, independent research, overall trading savvy
Assets	manageable amount, ability to manage growth, quality and diversity of investors
Operation	back office infrastructure and reliability, fee structure, decision and execution process, quality, stability, compensation, and turnover of staff
Intangibles	integrity, energy, lifestyle, attitude, etc.

Most investors are familiar with the statement “past performance is not indicative of future results”. Every disclaimer in financial services carries this warning. Relying on past performance is tantamount to driving down a twisty mountain road while looking only in the rear-view mirror. However, many investors seem to focus on track record when evaluating investments in the hedge fund industry. Yet, quantitative analysis has its limitations when evaluating and selecting hedge fund managers. At best it should be used to support in-depth qualitative research and rigorous due diligence. Quantitative analysis is more relevant for risk monitoring than it is for manager selection.

A proprietary database that includes qualitative information is important. The qualitative information can be scored and used in a ranking process to compare different managers within a strategy. A ranking process also allows elaborating on the strengths and weaknesses of each manager. The weakness of one manager can then be balanced through the strength of another manager in the portfolio construction process. This option is not available to the investor who does not have qualitative information.

Given the importance of qualitative research and due diligence, an investor evaluating a FoHF manager will want to assess whether the manager is equipped to manage the laborious task of due diligence on an increasing number of funds. One could argue that the job of the FoHF manager used to be to pick one outstanding manager per quarter from ten new managers. Today this task is much more laborious and requires, ideally, a global footprint. Some FoHF responded to the financial crisis by offering a modular set-up where the institutional investor can pick and pay for certain tasks (for example operational due diligence) but not for others (for example portfolio construction).

Manager selection has become more difficult as well as labour-intensive over time, this despite the whole industry becoming more transparent and more information being available. A couple of years ago, a FoHF would have argued that his value proposition was based on generating “alpha”. Today, the value-added of a FoHF manager is probably better described as offering a laborious service at a lower cost that could otherwise be obtained by the investor directly. However, the financial crisis caused many institutional investors to question parts of the value proposition

Manager due diligence is an important and integral part of the fund of fund managers value proposition

Driving with a rear-view only has its limitations

Qualitative information is important and essential for manager assessment

Some FoHF have a modular offering

Manager selection has become more difficult and labour-intensive despite increase in transparency and information flow

of FoHF and a certain degree of disintermediation has taken place, with institutional investors increasingly being comfortable with investing directly.

Chart 25 (below) is an attempt to classify vehicles in the absolute return world contrasting between strategy and manager diversification. A *balanced* fund of funds is fully diversified across strategies as well as managers.

In a fund of funds both strategy and manager risk is diversified

Chart 25: Diversification characteristics of hedge fund vehicles

		Strategy diversification		
		Yes	Some	None
Manager diversification	Yes	Balanced Fund of Funds		
	Some		Concentrated Fund of Funds	Strategy Baskets
	None		Multi-Strategy Hedge Funds	Single-Strategy Hedge Funds

Source: Ineichen and Silberstein (2008)

A *concentrated* FoHF in most cases has more manager diversification when compared to a multi-strategy fund. The reason is that operational risk is concentrated in the case of a multi-strategy fund. There is only one independent risk manager. With a concentrated fund of funds with, say, ten managers the operational risk is much lower; there may be ten independent risk management processes and ten independent risk managers. This, we believe, is a material difference that was somewhat disregarded and trivialised prior to the Amaranth incident. The near collapse of the multi-strategy hedge fund Amaranth in September 2006 made this differentiation painfully clear. Note that the multi-strategy approach also has some advantages over the fund of funds approach, the main of which is that the flexibility and speed of reallocating capital is mostly higher in the case of a multi-strategy fund.

The key to manager diversification is to have numerous and independent risk managers and risk management processes

Note further that generalisations in the very heterogeneous and dynamic hedge fund world such as the ones made above are tricky. The border between multi-strategy and single-strategy in Chart 25 (above) for example is dotted. Some multi-strategy funds might have concentrated risk in one particular strategy, whereas some single strategy hedge funds might be somewhat diversified across some related strategies without feeling the urge to being reclassified. The borderline between the two is blurred. In addition, funds change throughout their operating lives but might or might not be re-classified. Amaranth, for example, was classified as a multi-strategy fund at inception but in the end was anything but.

Some single-strategy hedge funds might run better diversified portfolios than some concentrated multi-strategy funds

Leverage

Another hot topic in the hedge funds arena is the use and misuse of leverage. However, leverage is not a concept that can be uniquely defined nor is it an independently useful measure of risk. Nevertheless, leverage is important to investors, counterparts and fund managers because of the impact it can have on the three major quantifiable sources of risk: market risk, credit risk and liquidity risk. A FoHF manager must, therefore, have the ability to monitor accounting-based and risk-based leverage.

"A ship in port is safe, but that's not what ships are built for."

Oscar Wilde

No single measure captures all of the elements that market participants, regulators or market observers attribute to the concept of leverage. Indeed, *Sound Practices for Hedge Fund Managers*¹ (2000) shows examples in which a risk-reducing transaction increases some leverage measures while decreasing others. This leads to the observation that leverage is not an independently useful concept but must be evaluated in the context of the quantifiable exposures of market, credit and liquidity. Experienced hedge fund professionals will arguably have an edge in assessing risk over inexperienced professionals.

Assessing leverage can be tricky

Risk of style drift

A further on-going risk factor to be monitored by the hedge fund investor is style drift. Style drift is the risk to investors that hedge fund managers drift away from their areas of expertise where they have an edge into fields where they have a competitive disadvantage. Historical examples have been fixed income arbitrageurs investing in non-domestic equity markets or equity managers investing in Russian debt. However, distinguishing style drift from seeking new opportunities in related areas of investment is not that easy. Nearly all corporations change over time, due to either endogenous factors (e.g., expansion) or exogenous factors (e.g., adaptation to changing environment). This is, of course, true for hedge funds too.

Distinguishing between style drift and seeking new opportunities is not always straight forward

There are probably two types of style drift: short-term opportunistic styles drift as well as a continuous departure from a manager's area of expertise. A permanent shift will force reassessment of the investment. One could argue that a short-term opportunistic drift into a related area is probably not as negative for the investor as a permanent shift. The short-term shift is both a risk to the investor as well as entrepreneurial expansion through exploiting economies of scale: an opportunity. A convertible arbitrage manager, for example, has a competitive advantage in areas of analysing changes in credit and volatilities. There are related trading opportunities through exploiting inefficiencies left behind by less informed investors. Furthermore, strategies change over time. One could easily argue that for example convertible arbitrage today is not what it was, say, ten years ago. Things change.

Exploiting new opportunity and adapting to change nearly by definition means drifting from the original style

Over the years, there has been an increasing tendency for hedge fund managers to employ multiple strategies. The value of creating a more stable stream of returns over different market cycles has attracted hedge funds to adopt a multi-strategy approach. By investing in a manager attempting to achieve absolute returns, one automatically invests in the skill of the manager and not in an asset class or mechanical execution of an investment technique, strategy or process. This implies a higher degree of flexibility for the manager. The hedge fund manager is not restricted to replicate a benchmark but has a mandate to exploit investment opportunities or market inefficiencies. The basic question is how far a hedge fund manager should be allowed to drift away from his initial core area of expertise.

Manager flexibility to adapt to changing circumstances is an embedded characteristic of the hedge fund structure

¹ This publication was as a result of the US President's Working Group Report on *Hedge Funds, Leverage and the Lessons of Long-Term Capital Management*. Participating hedge fund managers were Caxton Corporation, Kingdon Capital Management, Moore Capital Management, Soros Fund Management and Tudor Investment Corporation.

Restrictions work in both ways. On the one hand, restrictions reduce risk; on the other, they limit the set of opportunities to add value. Every market changes over time. Change and its derivative, uncertainty, are the most certain variables in any social science. Market inefficiencies, for example, have a tendency to disappear, as they become known to the market and attract capital. If manager restrictions were too tight, the manager would not be able to exploit inefficiencies in a neighbouring or related market as they appear, thereby missing the first-mover advantage.

"In economics, the majority is always wrong."

John Kenneth Galbraith

Legal and compliance

Hedge fund investors' legal/compliance personnel must have the authority and resources to operate independently and effectively. This function should seek to actively manage the legal risks presented by the hedge fund manager's trading by focusing on the documentation governing trading relationships and individual transactions. The importance of the legal and compliance function is sometimes under-appreciated as this area is many times seen as a cost and as the police that prevents funds from making money. However, recent history is an excellent source of why this function should not be viewed this way; several hedge funds that have not had tightly controlled compliance areas have faced an enormous amount of time and money to defend their actions. This distracts management from trading and portfolio construction, and sometimes results in large investor redemptions and jeopardising the firm itself. The hedge fund investor will have to ensure that hedge fund managers pursue a consistent and methodical approach to documenting transactions so that the legal consequences of periods of market stress or performance declines may be more clearly anticipated and managed. The legal aspect should allow risk monitoring with useful input in the evaluation of a hedge fund's projected liquidity in stressed environments, including inputs derived from the fund's transaction documentation (e.g., terms regarding termination, collateral and margining). This is labour-intensive. Again, investors who take operational short cuts on the documentation aspect are essentially giving away out-of-the-money put options.

Taking operational short cuts is akin to selling out-of-the-money puts

Hedge fund operations and related third-party partners

The role of prime brokers

Prime brokerage is a 'bundled' service provided by banks or securities firms to hedge fund clients, including both core and value-added services.¹ Prime brokers may also act as the gateway into the rest of the bank's service offering, including direct market access trading platforms, research, sales & trading and investment banking relationships. The core services provided by a prime broker include financing, securities lending, custody, clearing, settlement and reporting as well as on-going asset servicing (corporate actions processing, dividends, etc.). These services provide the operational infrastructure that allows a hedge fund to trade with multiple brokerage houses while maintaining centralised accounts with one or more prime broker. Beyond settlement, prime brokers also act as custodians and are responsible for safeguarding and servicing the hedge fund's assets. Prime brokers have client services teams responsible for assisting hedge fund clients with daily operations and reporting issues.

A hedge fund generally borrows securities as a means of facilitating a short sale. As such, securities lending is an essential part of what a prime broker does. Most prime brokerage departments of investment banks grew out of the securities lending business. The ability to source hard-to-borrow securities can differentiate one prime broker from another.

Prime brokers are often gatekeepers for difficult to borrow stocks

Hedge funds obtain leverage from their prime brokers through the use of margin accounts and swap accounts. Most prime brokers can offer leverage across multiple asset classes and will recognise appropriate risk offsets where the fund has appropriate risk mitigating and offsetting positions. A prime broker provides financing depending on the value of the client's portfolio, the risks of the portfolio being financed and the overall credit worthiness of the fund. The 2008 financial crisis showed a certain dependency of hedge funds towards their prime brokers. The crisis showed that investment banks' appetite for providing leverage could be reduced significantly during periods of duress. Some hedge funds were forced to liquidate risky assets during this time as their credit lines were recalled.

Prime brokers provide financing and leverage to hedge funds

Re-hypothecation

Re-hypothecation is a common feature of the financing model employed by prime brokers. The practice allows the prime broker to "appropriate" or "reuse" assets of a fund in order to provide efficient and cost effective financing. When a hedge fund borrows cash or securities from its prime broker it will typically cover that loan from a third party who will in turn require collateral to support the transaction with the prime broker. Re-hypothecation allows a hedge fund's own assets to be used to cover those loans and is a significantly cheaper and more scalable financing model than "unsecured" alternatives (i.e. using the bank's own capital). Caps are placed on the amount of assets that the prime broker may appropriate and is linked to the fund's indebtedness. Prime brokers provide full details of all re-hypothecated positions including a calculation of indebtedness to clients as part of the daily reporting suite.

¹ In 2012, AIMA published guidelines aimed at hedge fund managers who wish to select a prime broker, whether establishing an initial relationship or choosing an additional broker for their business. www.aima.org

In addition to the core custody, clearing and financing services that are provided, prime brokers have invested heavily in developing new technology and reporting capabilities for their clients such as client web portals detailing all trades, cash and positions, automated trade capture and processing, full details of all re-hypothecated positions including a calculation of indebtedness to clients. Other value-added deliverables such as business consulting and capital introduction services. Business consulting services consults on all components of a hedge fund's business model, both during the initial start-up phase and throughout the fund's lifecycle. This area of prime brokerage assists hedge funds with regulatory approval applications, company and fund structure considerations, operational processes and systems, outsourced services, staffing, and related third party service provider selection. They also provide market colour and content related to the business in the form of industry benchmarking studies, newsletters, conferences and events, etc. The capital introduction group provides tailored marketing consulting to hedge funds while also facilitating introductions with investors, hosting events, and organising road shows.

Prime brokers have widened their offering massively over the past few years

Hedge fund operations and outsourced partners

Hedge funds have varying degrees of in-house infrastructure, in which executing brokers, prime brokers, fund administrators and systems vendors play an integral part. In some instances, managers elect to build out and run their own technological, operational and accounting infrastructure and, in other instances, they choose to outsource. Fund administrators act as the official books and records for the fund, and provide core services of fund accounting and investor servicing, and producing a Net Asset Value (NAV) of each share in the fund on which investors may subscribe or redeem their investment. These services have long been a normal part of the European and Asian hedge fund model, however prior to the credit crisis and Madoff in particular, the majority of US managers preferred to manage these functions internally. Post-Madoff, investors have indicated their strong preference for these managers to appoint independent third party fund administrators, which is now the norm. Most fund administrators today have also significantly enhanced their service and technology offering to include middle-office services and systems, risk and investor reporting portals.

Hedge funds' internal operations varies

Hedge funds need to work with these external parties in order to execute, hold and administer trades. Typically, there are three external parties that a hedge fund interacts with throughout the trading process: an executing broker, a prime broker and a fund administrator. An executing broker accepts trade orders (either via a voice trading or direct market access products), executes trades in the marketplace and then confirms the trade with both the hedge fund and the prime broker. After the trade is executed, the hedge fund or out-sourced middle office provider reports the execution details to its prime broker, which then books those trades and compares the execution details against a trade confirmation received from the executing broker. The hedge fund or outsourced middle-office provider is responsible for liaising with the executing broker on any discrepancies in the trade details that are reported to the prime broker. Using the prime broker's daily reports, the hedge fund can then work through any reconciliation issues, respond to margin calls and corporate actions.

The administrator receives data files on a daily basis from both the prime brokers and the hedge fund, and performs a daily "Tri-party" reconciliation between the hedge fund's positions, those reported by the prime broker, and their official fund accounting system. In producing a dealing NAV, they keep track of portfolio accounting, accruals and expenses, cash movements and wire payments, FX hedging between share classes and shareholder subscriptions and redemptions.

While this section addresses the roles of the prime broker it should be noted that certain illiquid holdings e.g. bank debt, trade claims, direct lending, private investments and general OTC, etc., are away from the prime brokers. Many of

these trades are captured on separate systems at the fund or fund administrator; in many cases, spread sheets or a basic database is used. As such, the reconciliation process at the manager and administrator is done with the executing brokers and as such (1) is more disbursed and hence more complex, and (2) counterparties do not always provide regular valuation reports to facilitate the NAV process.

Impact of Lehman Brothers

The immediate shake up in the prime brokerage industry following the Lehman collapse led to three significant changes. First, "multi-prime" became mainstream practice. Whilst it was by no means a new concept, prior to the crisis managers with relatively small AUM might have only employed one prime broker and added another as their AUM grew. The fundamental shift in practice has seen even modest start ups look to hire two prime brokers from the outset and what may have passed as an accepted benchmark AUM figure for adding a third, fourth or more providers is now much lower than in the past.

From the investors' point of view, multi-prime brokerage has been an entirely positive development: managers are no longer concentrating risk with a sole provider and they benefit from access to wider pools of liquidity to cover their securities financing and leverage needs whilst keep providers honest with price comparison. Furthermore, from an operational perspective most fund administrators were already able to reconcile client accounts and had been doing so for some time.

The second key change was the focus on counterparty risk. Managers now place far greater value on the creditworthiness of their prime brokers than before crisis. Prime brokers responded to this change by developing custody solutions that enabled unencumbered assets to be held in bankruptcy remote accounts. There are several variations of this including the use of third party global custodians whilst some prime brokers set up affiliates designed purely to house these customer assets. In addition prime brokers have followed the well established trend amongst fund administrators to open their operating policies and procedures to scrutiny in order to achieve SAS 70/ISAE 3402 type certifications from external audit firms. This is now increasingly commonplace and symptomatic of the trend to greater transparency.

The third key change related to re-hypothecation, a common financing practice among prime brokers as described above. Post-Lehman, the FSA updated their CASS rules now requiring prime brokers to provide more granular reports including details of assets re-hypothecated and other exposures funds have to prime brokers.

Managed accounts

Managed accounts gained popularity post the 2008 financial crisis. Based on Deutsche Bank's 2012 Alternative Investment Survey, 43% of investors now use managed accounts compared to 22% in 2004.¹ Of which, 10% allocate more than 40% of their entire hedge fund portfolios to managed accounts. The report concludes that the number of investors who invest in managed accounts is expected continue growing over the next twelve months, with 23% of investors looking to increase the proportion of hedge fund investments made through managed accounts.

Managed accounts offer investors similar returns to a manager's main hedge fund offering. However, they differ from direct investments in several key respects, offering improved liquidity, transparency and investor control. They also allow clients to segregate their investments in vehicles separate from the manager's main hedge fund, meaning investors retain control over their assets, usually with

Tri-party reconciliation

Managed accounts have become more popular

Managed accounts improve liquidity, transparency and investor control

¹ 2012 Deutsche Bank Alternative Investment Survey, p 84.

the ability to redeem much more frequently than the main fund. The cornerstone of the managed account platform concept is to separate the functions present within a hedge fund vehicle into its constituent parts. Hence, the hedge fund manager is appointed to trade the portfolio within the risk and operational controls of the platform, while platform entities take overall governing and operational control.

The investor base for managed accounts is broad, encompassing family offices, private banks and a range of institutional investors such as pensions, insurance and sovereign wealth. The trend over the last two years has been an accelerated move by larger institutions investing directly into managed accounts and by fund of hedge funds and consultants implementing managed account solutions for their larger institutional investors. So what's driving this trend and what are the implications for investors and managers?

Demand for managed accounts is broad

While hedge fund managed accounts and managed account platforms have existed in various forms for many years, the basic benefits offered remain the same: enhanced transparency, liquidity, independent pricing and fraud protection. Their significant rise in popularity was a result of the 2008 financial crisis that had a profound impact on the way that hedge fund investors viewed their investments. The Madoff fraud is often cited as the key catalyst in bringing hedge fund managed accounts to centre stage. While it - and other smaller frauds - has undoubtedly had a meaningful impact, we have found that, several years on, it is the liquidity issues that the industry suffered that seem to have left the most indelible impression.

Liquidity issues are the main drivers

The problem going into 2008 was an asset-liability mismatch between the liquidity offered to investors in the hedge fund vehicle compared to the liquidity of the underlying portfolio. In the second half of 2008, investors were requesting to redeem significant amounts of capital from hedge funds during a period of extreme market illiquidity. Unable to meet their redemption orders many hedge fund managers suspended investors' redemptions from their funds, gated them or transferred the most illiquid portion of the portfolio into a separate side-pocket vehicle. Leaving investors unable to retrieve their investment and access their capital.

The 2008 financial crisis revealed the asset-liability mismatch

These crisis-related difficulties prompted a reassessment by investors of how best to tackle hedge fund investment. In the period after the 2008 financial crisis, many hedge fund managers reacted positively to investors' increased requirements for more control over their liquidity and custody arrangements and, generally, to receive more detailed information regarding their investments. This manifested itself in numerous ways including an increased flexibility to allow investors to implement managed account solutions where the investor has meaningfully more control over their own investment. Many hedge funds are now increasingly open to the idea of managed accounts and the concept of providing associated levels of transparency and liquidity. Furthermore, some funds are in a better position to offer managed accounts because they have addressed the asset-liability imbalance, typically by removing the illiquid portfolio component that proved so troublesome during the crisis.

Hedge funds adapted to more stringent investor demand

Firms are also looking closely at their investor bases, the concentration of which contributed to difficulties during the crisis. They are concluding that the traditional offshore fund structure will not capture a sufficiently diverse investor base and actually precludes them from many investor types. Offering managed accounts is an important tool being embraced by many managers because managed accounts - and managed account platforms in particular - are attractive not only to existing hedge fund investors but, more importantly, to an entirely new client base. Another development on this theme is for firms to offer their funds in regulated UCITS vehicles, either as single funds or in index products that combine a series of managed accounts into a UCITS compliant index that can be wrapped as a fund or ETF. Such combinations of liquid, transparent and risk controlled managed

Managed accounts enlarges and enriches the hedge funds investor base

accounts combined with UCITS regulation has proved very popular with some investors over the last 18 months.

Concluding remarks: *hedge fund investing*

Passive investment strategies are gaining momentum everywhere around the globe due to lower costs and wide acceptance among mainstream academia. The expense ratio of the most active Exchange-Traded Fund (ETF) in the United States is only ten basis points while institutional investors can get equity beta even cheaper than that.

The current trend into alternative investments in general and hedge funds in particular could be viewed as a counter-trend to investors going "passive." Hedge funds, almost by definition, employ an active investment style. Their focus is absolute returns, which could be viewed as exactly the opposite of relative returns, i.e., benchmarking a portfolio to a market index or replicating it.

Although hedge funds occasionally are portrayed as a separate asset class, the point could be made that they are not. One could view the strategies executed by hedge funds as a different investment style to the traditional long-only, buy-and-hope investment mantra. We could argue that value and growth styles are sub-groups of relative-return managers, whereas long/short and market-neutral strategies are sub-groups of absolute-return managers. From this point of view, hedge funds are just an extension of investment styles in asset management.

Strategies



Strategies

If you're hot, you're hot; if not, not.
—Saying

- *Most investors who moved into alternative investments have done so for financial conservative purposes. These investors moved away from fully relying on equities and bonds increasing in value to achieve sustainable and smooth wealth accumulation and preservation.*
- *One of the central drivers of alternative investments is the realisation by an increasing number of investors that the sources of returns from various alternative asset classes and hedge fund strategies are not identical. While there are varying complicating matters such as valuation and liquidity issues as well as non-linear payouts, the bottom line is that the sources of return from various "alternatives" differ fundamentally.*

Classifying hedge funds

Hedge funds are categorised into a range of strategies. Different strategies have different risk-return relationships as well as differing sources of returns, which allow the investor to capture diversification benefits by investing across strategies. However, classifying hedge funds is notoriously difficult. Providers of data and information use widely varying ways to classify the universe. Furthermore, strategies change over time, requiring managers to adapt. With this in mind, the following classification is only one of many ways to examine hedge fund strategies.

One of the most important issues from an investor's perspective in terms of investing in hedge funds is knowledge about the different investment styles in the hedge fund industry. Equity investors are typically familiar with the fact that the equity market has different regions, sectors and styles to invest in and that the different styles have different return, risk and correlation characteristics. The same is true for alternative investment styles in general and for hedge funds in particular. Many absolute return strategies differ widely from the Alfred Jones model. Chart 26 (on the following page) shows one way of classifying the universe of what today is referred to as "alternative investments".

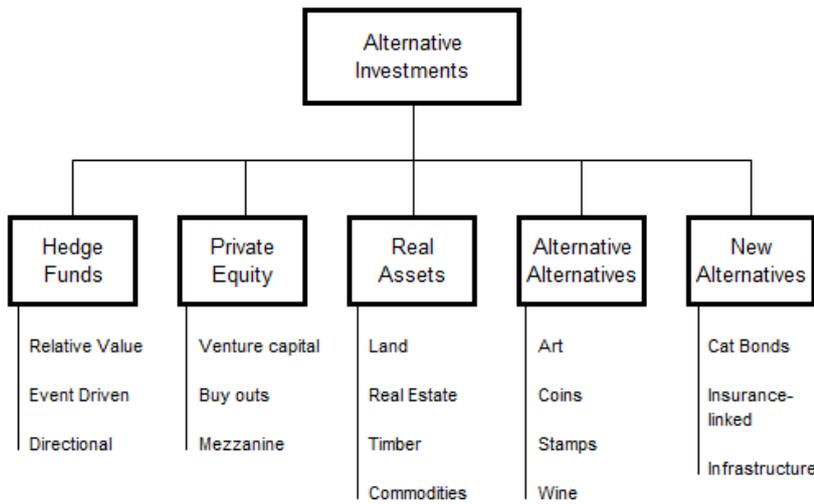
Classifying hedge fund strategies is difficult

"The universe of alternative investments is just that – the universe."

Richard Bookstaber¹

¹ From Bookstaber (2003). See also page 11 of this report.

Chart 26: Classifying the universe of alternative investments



Source: compiled from various sources

Many investors view hedge funds as a separate asset class akin to bonds or private equity. However, as outlined in this report, a hedge fund is probably better understood as an investment vehicle that differs in many respects from the traditional long-only buy-and-hold strategy. They are “everything but” buy-and-holders.

Hedge funds are not “buy-and-holders”

The universe of alternative investments is very diverse, and the hedge fund universe is no exception. Categorising hedge funds is difficult and any classification is, therefore, subjective, inconsistent with some hedge fund data vendors and incomplete. Any classification of hedge funds is an attempt at fitting something into a box that by its very nature does not fit into a box very well. That said; classifying hedge funds is valuable despite the ambiguity and impreciseness. (We know a bear, be it a grizzly or polar bear, is not a giraffe; a macro fund, be it systematic or discretionary, is not a merger arbitrage fund.) It allows ordering the investment universe and simplifies the construction of portfolios. However, any classification must be used with the knowledge of the imperfections. Below, therefore, is an *attempt* to classify hedge funds. Note that multi-strategy hedge funds and funds of hedge funds are not part of this exhibit as both invest in various strategies at the same time.

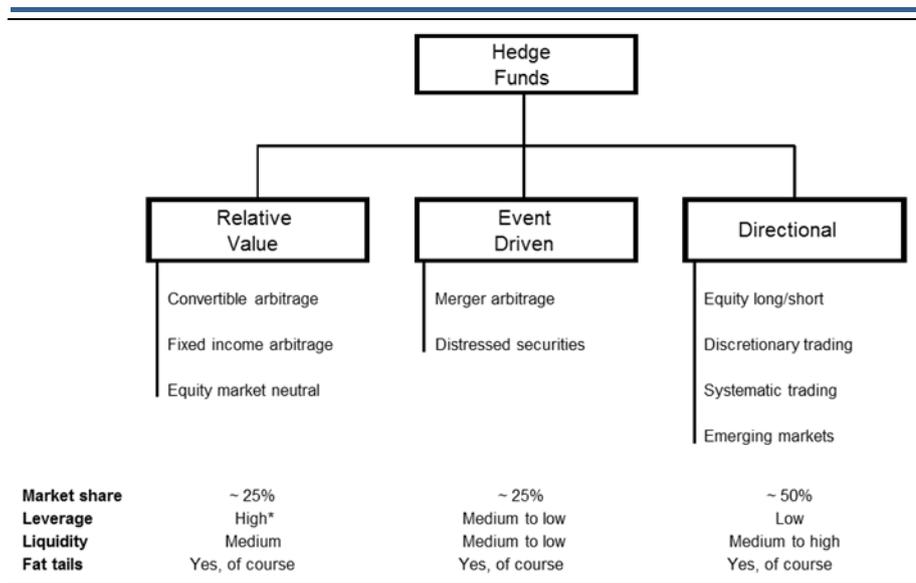
Hedge funds do not easily fit into a box

Chart 27 (on the following page) first divides the universe into relative-value, event-driven and directional strategies. We have added market share and some general characteristics to the chart to be discussed in further detail below. The logic behind this classification is that the directional bias increases from left to right. Note that the term “relative-value” is often used as synonym for “market-neutral”. Strategies in this category are typically strategies that have very little or no *directional* market exposure to the underlying equity or bond market. The event-driven strategies in the middle section are essentially, as the name implies, strategies where the underlying investment opportunity and risk are associated with an event. In merger arbitrage (aka risk arbitrage), this is normally an announced merger. In distressed securities, this is a company in distress. The difference between the two is that the latter has a directional bias, whereas merger arbitrage does not. The last category is called “directional”. Essentially, all

One way to classify hedge funds is by their directional exposure to equity and bond markets

hedge fund styles that have a directional bias and do not fit the narrower definitions of the other two categories.¹

Chart 27: Classifying hedge funds by strategy and sub-strategy



Source: Adapted and modified from Ineichen (2000)

* Low, when compared to banks.

Many hedge funds start out in one single sub-strategy. However, as a manager grows its asset base, it often ventures into different strategies. These separate sub-strategies can be offered either as separate funds or in one fund under the banner of “multi-strategy”. Growing the asset base is only one incentive to move towards a multi-strategy offering. A further incentive is the efficiency gain on a portfolio level by venturing into sub-strategies that are not perfectly correlated with the original sub-strategy. It is left to the investor to gauge whether the efficiency gain accrues to the manager’s benefit, the investor’s benefit, or both.

There are different ways institutional (and private) investors can access hedge funds. In many jurisdictions, there are vast hurdles and restrictions to invest directly into hedge funds, usually due to the perception of riskiness and opacity. This is interesting because there are no restrictions to invest in equities, many of which (especially banks) use much more leverage than hedge funds. Some jurisdictions require “wrappers” that are typically offered by investment banks. Ian Morley on the difference between banks and hedge funds in relation to taking risk and leveraging up:

To me it was fairly simple: if you give someone great reward for taking risks with someone else’s money, while at the same time they are not obligated or even not allowed to risk their own money, you create an asymmetry between their personal reward (large or enormous) and their personal risk (small). This is moral hazard, and reflects the way many of our large investment banks were run and the egregious rewards for those running the in-house proprietary desks. Many of them felt they played

Multi-strategy hedge funds are even more difficult to classify than single strategy hedge funds

“Hedge funds are presently leveraged 1-3 times, if they’re mad, 5 times, if they’re insane, 10 times. But 15 or 20 times was normal for bank prop desks.”

Michael Hintze²

¹ The intricacies of the various sub-strategies are beyond the scope of this report but have been extensively analysed and discussed in the hedge fund literature. See for example Lake (1999), Nicholas (1999), Parker (2000), Jaeger (2002), Lhabitant (2002, 2006), Jaeger (2003), Rahl (2003), or, if still unconvinced, Ineichen (2000, 2003a).

² “Hedge funds hope ‘Volcker rule’ will clip banks’ wings,” Financial Times, 30 June 2010

*the casino brilliantly and deserved the rewards they got, but in fact they partially owned the casino and made up the rules!*¹

At the beginning of the institutionalisation of hedge funds, say around 2000-2002, some institutional and private investors required capital guarantees in form of structured products for their fund of hedge funds investment. The reason for this was primarily the unfamiliarity of the asset type as well as heightened risk aversion due to a free-falling equity market at that time. The demand for capital guarantees has been falling in lieu with risk appetite increasing post the equity bear market.

Demand for capital guaranteed fund of hedge funds structures has declined

Another idea that appeared around 2003 was the launch of so-called tradable indices. The idea was geared towards primarily the institutional demand for transparency and liquidity. A tradable index is typically a portfolio of hedge funds where the hedge fund manager agrees to full transparency and liquidity on a real time basis. This basket is traded on a platform. The main advantage of tradable indices are transparency and liquidity while the great disadvantage is underperformance, mainly due to a negative selection bias as the best managers presumably do not want (and do not need) to be part of such a program. A hypothetical investment of \$100 in the HFRX Global Hedge Fund Index (a tradable index) at inception in March 2003 grew to \$114 by 31 August 2012. This compares to \$180 for a hypothetical investment in the HFRI Fund Weighted Hedge Fund Index that is a non-investable index and a proxy for an average, well-diversified hedge fund portfolio net of one layer of fees. (A hypothetical investment in the HFRI Fund of Funds Composite Index over the same period stood at \$136 at the end of August 2012.)

Tradable indices have underperformed and comprise only a tiny slice of overall market share

A further idea that surfaced prior to the 2008 financial crisis was the idea that hedge fund returns, that are arguably returns from active asset management, can be replicated passively, i.e., and therefore be offered to investors more cheaply. The idea goes by the name of *hedge fund replication* or *alternative beta*. Three basic methods can be used to replicate hedge fund returns. Factor replication uses regression analysis to determine the factors that explain returns on hedge fund indices. Distribution replication attempts to emulate the typical return distribution for hedge funds by combining traditional assets in a portfolio that has similar risk characteristics. Mechanical trading strategies attempt to emulate the hedge fund manager activities, such as merger arbitrage and distressed securities. These various strategies are then combined to replicate hedge fund beta or hedge fund like returns.

"You can't program a computer with management skills from Jack Welch's book and expect it to run General Electric."
Ed Easterling

A comparison between hedge fund indices and hedge fund replicators is tricky. Often the time series of the latter is gross of fees while hedge fund indices are net of fees. Nevertheless, hedge fund replication has a reasonably strong footing in academia and the idea seems to have some longevity, unlike, for example, the 130/30 or portable alpha ideas that seemed to have vanished after the financial crisis of 2008. The *gross* returns for five early hedge fund replication products from five different investment banks available through Bloomberg for the period from January 2008 to August 2012 was -30.3%, -2.8%, -2.5%, 5.4%, and 7.9%. This compares with the *net* returns from the HFRI Fund of Funds Composite Index of -10.6% and 5.0% for the HFRI Fund Weighted Index.

"Academics talking about hedge funds is like nuns talking about the kama sutra."
Prof. Sandy Grossman

¹ "Hedge funds don't cultivate moral hazard - they expose it," Ian Morley, absolutereturn-alpha.com, 24 March 2010

Returns, volatility, Sharpe ratios and all that

The presence of hedge funds as truly active investment managers is very much inconsistent with the efficient markets view heralded by mainstream academia over the past four decades, namely that markets are largely efficient, stock picking makes no sense and we therefore all should be investing in index funds. It is, therefore, not too surprising that when the institutionalisation of hedge funds began - around 2000 - parts of financial academia tried to explain away the phenomena of superior risk-adjusted returns by claiming the data is of poor quality, i.e., suffers from various biases of which survivorship bias is the most prominent. The data is indeed of poor quality. Single strategy hedge fund returns, especially prior to 1994, are upwardly biased between 50 and 300 basis points per year, according to various academic papers on the subject. This means that a diversified portfolio of equity long/short managers did not compound at 12.7% from 1990 to August 2012, as implied in Table 7 below, but might "only" have compounded at around 9.7% per year. We have added a colour coding to accentuate best (green) and worst (red).

Historical single strategy hedge fund returns could be upwardly biased

Table 7: Hedge fund strategy performance characteristics (Jan 1990 - Aug 2012)

Index	Annual return (%)	Volatility (%)	Sharpe ratio (4%)	1M Returns		12M Returns		Drawdowns / losses			Negative returns (%)
				Best (%)	Worst (%)	Best (%)	Worst (%)	Worst (%)	Trough (date)	Recovery (months)	
MSCI World	6.0	15.7	0.13	11.3	-18.9	55.2	-46.8	-53.7	Feb 2009	s.u.w.*	40
JPM Gov. Bonds	7.2	5.9	0.53	6.6	-3.9	21.7	-6.7	-9.4	Oct 2008	2	36
ML US 3M T-Bills	3.6	0.7	-0.53	0.7	0.0	8.4	0.0	0.0	n.a.	n.a.	2
HFRI Fund Weighted Composite	11.0	7.0	1.00	7.7	-8.7	39.0	-19.1	-21.4	Feb 2009	19	29
HFRI Fund of Funds Composite	7.3	5.9	0.56	6.8	-7.5	33.5	-21.4	-22.2	Dec 2008	s.u.w.*	30
HFRI Relative Value	10.2	4.4	1.41	5.7	-8.0	27.3	-18.0	-18.0	Dec 2008	10	17
HFRI Event-Driven	11.5	6.9	1.09	5.1	-8.9	31.9	-21.8	-24.8	Feb 2009	14	25
HFRI Equity Hedge	12.7	9.3	0.93	10.9	-9.5	55.2	-26.7	-30.6	Feb 2009	24	31
HFRI Macro	12.4	7.6	1.10	7.9	-6.4	55.1	-7.1	-10.7	Apr 1994	15	35
HFRI Macro: Systematic Diversified	11.3	7.5	0.97	6.5	-4.4	33.4	-7.0	-7.0	Apr 2012	s.u.w.*	38

Source: IR&M, Bloomberg

* s.u.w.: still under water.

Long-term hedge fund returns are attractive even after adjusting for any biases of a couple of hundred basis points per year. However, in this report (as well as elsewhere) we argue that investors should not buy historical returns. Rather, investors should familiarise themselves with what hedge funds are and, more importantly, are not. We are inclined to argue that historical returns can cause a lot of damage. Long-only buy-and-hold investments in equities, for example, are often sold on the premise that equities offer attractive and positive average returns in the long-run. However, what this argument fails to reveal is that in the short-term, say the next 10 or 20 years, an equity portfolio can compound at a negative rate when adjusted for inflation. At the end of August 2012 for example, the Japanese stock market was still around 70% below its peak from 1989 in *real* terms. This means a Japanese long-only equity investor compounded at an annual rate of around -5.2% from 1990 to August 2012, that is more than 22 years, in *real* terms and assuming dividends were not taxed but reinvested.

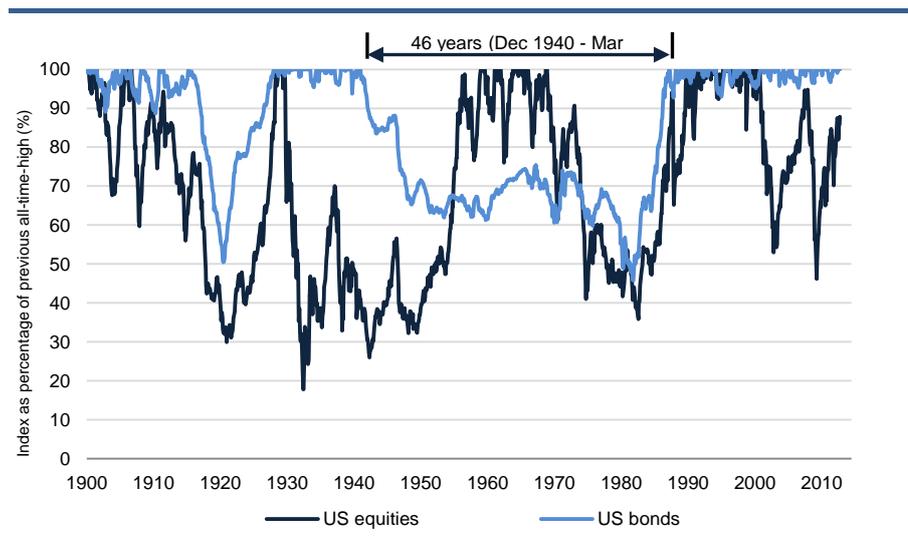
Returns fluctuate; extended periods of negative compounding is a historical fact and a statistical possibility

Negative compounding of equities and bonds can happen elsewhere too. Investors who have embraced the absolute return investment philosophy wholeheartedly and essentially perceive risk as compounding capital at a very low or negative (real) rate of return for an extended period. This is, of course, materially different as defining risk as the standard deviation of monthly returns or the possible deviation away from one's benchmark. Chart 28 (below) shows the underwater perspective of equities and bonds in the U.S. Bonds can spend a long time under water. The 46-year period to March 1987 in the chart is outside of most investors' memories (and almost all investors' careers) but VaR-enthusiasts as well as disciples of the long-only-buy-and-hold doctrine do not appear to think this is a big deal. Professor Galbraith was certainly on to something in the side text.

"There can be few fields of human endeavour in which history counts for so little as in the world of finance."

John Kenneth Galbraith

Chart 28: US equities and bonds (Jan 1900 - Aug 2012, real total returns terms)



Source: IR&M, Global Financial Data, Bloomberg
 Equities: S&P 500 TR Index, estimate prior to 1988; bonds: BarCap US Aggregate TR Index, estimate prior to 1976. Indices adjusted with CPI.

Other research suggests that long-term equity returns very much depend on the valuation at entry. In the United States, for example, buying an equity portfolio resembling the S&P 500 Index results in an annual real ten-year return of around 0% if the investor enters the market in 20% of occurrences where the market is most expensive. This all means that it is indeed true that equities go up in the long-term; it's just that one might not live long enough to experience it. As Keynes put it:

"In the long run, we are all dead."

John Maynard Keynes

... the long run is a misleading guide to current affairs. In the long run, we are all dead. Economists set themselves too easy, too useless a task if in the tempestuous seasons they can only tell us that when the storm is long past the ocean will be flat.¹

To Keynes, arguably an authority on investments and probability, the "tempestuous seasons" are the norm. The ocean will never be flat soon enough to matter. In Keynes's philosophy, equilibrium and central values are myths, not the foundations on which we build our structures. We cannot escape the short run. The long run is made of many short runs. As mentioned earlier, long-term survival and prosperity is pre-conditional on surviving in the short term.

Long-term survival and prosperity is pre-conditional on surviving in the short run

¹ From Bernstein (1991)

Normally a market crisis has a moderating effect on investors as their pre-crisis beliefs are shattered. For instance, the 2008 financial crisis crushed the ideas that U.S. home prices never decline and that financial risk had been permanently reduced through financial engineering. However, the long-only buy-and-hold investment philosophy seems somewhat immune to refutation despite extended periods of equities and bonds compounding negatively at the same time for decades in real terms. Most investors who have, today, partially abandoned the idea of long-only and bought into various alternative assets and investment styles have done so for financial conservative purposes. These investors moved away from relying fully on equities and bonds increasing in value to achieve sustainable and smooth wealth accumulation and preservation. These investors diversified. Arguably, diversification is financially conservative. Spreading ones' bets increases the probability of achieving positive returns while reducing the probability of experiencing a sharp, potentially crippling financial loss or compounding capital negatively over an extended period. Two aspects that need addressed in this respect are valuation and liquidity.

It requires an extended bear market for investing in hedge funds to become apparent

Valuation

In the not so distant past, valuation methodologies and policies were less an issue as compared to today. This was attributable to ample liquidity in the markets, hedge funds investing primarily in public markets and the performance being generated was, for the most part, consistently positive. Furthermore, the vast majority of hedge fund investments were marked-to-market on a daily basis where the marks actually reflected where the market was transacting. However, this has changed.

The financial crisis has emphasised the importance and the complexities of valuing less liquid assets

Valuation has turned into a big issue for financial institutions in general and hedge funds in particular. In the most recent past, uncertainty as to the reliability of a security's quoted price has risen. Different broker-dealers can quote different prices for the same security, all of which can differ from a price from a trade execution. This makes it more difficult to calculate a month-end NAV. Additionally, accounting principles typically do not permit liquidity discounts for large holdings of a company's issued share capital; it is questionable whether it is appropriate to value such a holding at the last traded price, as it would be highly unlikely to close out the holding at this price given a large position size. To add to an investor's anxiety, a large number of hedge funds are invested in a variety of thinly traded structured notes and other credits that are difficult to price during liquid markets. This problem is compounded when credit markets become illiquid and thinly traded as in 2008. To add insult to injury, some hedge fund investors are now finding the valuation terms in the documents are not necessarily aligned in their best interests about deriving an objective price or on the timing when it comes to redemptions. For example, some funds allow the managers to select the price they feel best reflects market value among a wide range of prices, allowing potential manipulation from period to period. Additionally, some funds have grown the percentage of their portfolio that is illiquid (more than 50% at times), which they fair value internally. This is done without any third party valuation agent helping to assess the reasonableness of the value. Investors must be cognisant of this risk as they are paying management and many times performance fees on these subjective valuations.

Investors need to understand the valuation process on which the fees are based

The current market environment necessitates a sound valuation policy, which is consistently enforced by the non-investment personnel who monitor the valuation process. A growing trend in more recent times has been the creation of a pricing/valuation committee at the manager to oversee implementation and execution of this valuation policy. This has brought greater accountability and transparency to the process. The ramifications of signing on to a weak valuation policy can have a significant impact on a fund's NAV. The importance of these issues can become magnified during volatile and/or less liquid market conditions

A sound valuation policy is prerequisite for all financial institutions, including hedge funds

when a pricing dispute arises and the language is not clear or grants too much discretion to the hedge fund in pricing securities.

A number of respected associations have addressed the valuation issue in one way or another. One of the most comprehensive and publicly available guides to valuation is AIMA's Guide to Sound Practices for Hedge Fund Valuation released March 2007. This document consists of AIMA's 15 Recommendations for Hedge Fund Valuation. The document provides a number of principles-based guidelines in assessing the full gamut of valuation issues such as governance, transparency, procedures and methodology.¹ An update to this guidance taking into account the various global legislation impacting the industry will be published by AIMA in early 2013.

Leverage

Greek mathematician, Archimedes is said to be the first to have fully recognised the immense power of leverage: "Give me a lever long enough and a fulcrum on which to place it, and I shall move the world". He also recognized the risk of excessive leverage, stating that it could literally throw the earth off its course. In 2006, we wrote:

As in mechanical systems, well-deployed financial leverage can greatly enhance performance. Nearly every corporation and every homeowner uses it in forms of loans, mortgages and so on. However, excessive leverage can be ruinous. This is true for corporations and homeowners as well as hedge funds.²

All this might or might not be more apparent today than it was a couple of years ago. Prior to the 2008 financial crisis adversaries to hedge fund investing made their case by stressing that hedge funds use leverage. Indeed this is true and was true five years ago. It is also true that banks, businesses and homeowners use leverage. However, what seems apparent to everyone now is that it was banks and homeowners, not hedge funds, that misjudged the dangers of leverage. It is not leverage by itself that is dangerous; it is excess leverage that is dangerous to the entity using the leverage as well as the overall (financial) system. Many of the most recent financial crises (S&L crisis, junk bonds, LTCM, current credit crisis, etc.) were a function not of leverage but partly due to excess leverage. Although an exact definition of "excess leverage" is difficult to obtain and probably varies through time, the bottom line is that drinking a glass of claret in the evening can be good for you while downing a double magnum most certainly is not.

When investors borrow funds to increase the amount that they have invested in a particular position, they use leverage. Investors use leverage when they believe that the return from the position will exceed the cost of the borrowed funds. Sometimes, managers use leverage to enable them to put on new positions without having to take off other positions prematurely. Managers who target very small price discrepancies or spreads will often use leverage to magnify the returns from these discrepancies. Leveraging can magnify the risk of the strategy as well as creating risk by giving the lender power over the disposition of the investment portfolio. This may occur in the form of increased margin requirements or adverse market shifts, forcing a partial or complete liquidation of the portfolio. We do find it worth noting that hedge funds did a relatively good job of adjusting the amount of leverage they deployed through the 2008 financial crisis, especially relative to banks and some other financial institutions.³ The responsiveness of hedge funds at

Leverage is both risk and opportunity

Using leverage is akin to walking a tightrope – it requires both skill and a good sense for balance

Hedge funds used leverage skillfully when compared to other financial institutions

¹ See also publications by IAFE (International Association of Financial Engineers) and HFSB (Hedge Fund Standards Board) for further information on valuation and leverage in relation to hedge funds. (www.iafe.org, www.hfsb.org)

² From Ineichen (2006)

³ See for example Ang et al. (2010)

inflection points and market mayhem are examples of what we referred to as “active risk management” and the idea of achieving an “asymmetric return profile”.

Institutionally, leverage is defined in 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 obtain economic leverage in various ways, such as with repurchase agreements, short positions and derivatives contracts. At times, the choice of investment is influenced by the availability of leverage. Beyond a trading institution's risk appetite, both balance sheet and economic leverage may be constrained in some cases by initial margin and collateral at the transaction level, and by trading and credit limits imposed by trading counter-parties. For some types of financial institutions, regulatory capital requirements may constrain leverage, although this limitation does not apply to hedge funds. Hedge funds are limited in their use of leverage only by the willingness of their creditors and counter-parties to provide such leverage.

To say that one fund is leveraged 2:1 while another is unleveraged does not necessarily mean that the leveraged fund is more risky or more likely to encounter liquidity problems. If the leveraged fund were invested in government securities, while the unleveraged fund is invested in equities, accounting-based leverage would lead to erroneous conclusions about the riskiness of the two funds. In this sense, accounting-based measures of leverage are arguably deficient since they convey the least information about the nature and risk of the assets in a portfolio.¹

One of the main issues with leverage in general is that it can amplify both returns as well as losses. The main issue with losses of a leveraged investor or institution is that it can cause forced liquidation. It is a mathematical certainty that losses increase the leverage ratio and hence increase risk exposure. For example, assets of \$100 funded by equity of \$20 are viewed as to have a leverage ratio of 5:1. If assets fall by 10% from \$100 to \$90 the leverage ratio jumps from 5:1 to 9:1 as the debt remains at \$80 and the equity shrinks to \$10. If the investor wants to reduce risk to the initial 5:1 leverage ratio, it needs to sell \$40 of assets, i.e., reducing assets from the current \$90 to \$50. If the market is homogeneous (for example through regulation or a market boom) then all market participants have similar positions, similar leverage and need to sell at the same time.

The temptation to increase leverage when returns are positive, i.e., in good times, is immense. Prudently sizing positions and, especially, overall leverage is tremendously important. When prices turn negative, selling and risk-reducing behaviour can result in a vicious circle of selling begetting more selling, market panic and distressed sellers as positions are unwound. Liquidity dries up and some market participants, as Warren Buffett puts it, “are left with their trunks off as the tide goes out”.²

Avinash Persaud, an authority in risk management discussed the mechanics of herding, contagion and distressed selling in an award-winning paper in 2000. The implied circularity in Chart 29 (on the following page) is a good illustration of both the trigger as well as the mechanics of forced selling.

Use of leverage varies

Accounting based measures for leverage can be highly misleading when assessing risk

Leverage amplifies both gains and losses

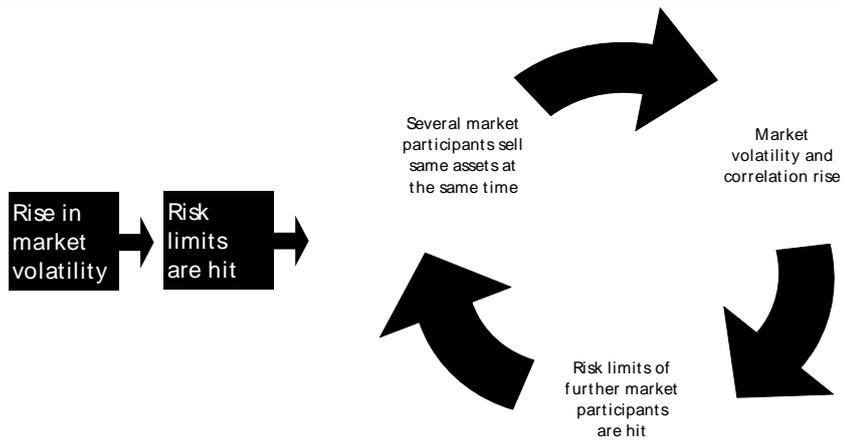
“Reality is always far messier and more complicated than models can capture.”
Robert Rubin

The “VAR vicious circle hypothesis” does not only apply to hedge funds

¹ Sound Practices for Hedge Fund Managers (2000), p. 50.

² We have added a numerical example of how leverage is used in equity long/short in the Appendix on page 120.

Chart 29: VAR vicious circle hypothesis



Source: Adapted and modified from Persaud (2000)

Mr Persaud applies this hypothesis to banks and the dangers that are introduced by normalising risk management across the market (Basel accords) that can cause “herding”. According to Mr Persaud, the problem is that in a world of herding, tighter market-sensitive risk management regulations and improved transparency can, perversely, turn events from bad to worse, creating volatility, reducing diversification and triggering contagion. Mr Persaud uses DEAR (daily earnings at risk) limits where we alter his hypothesis and use “risk limits”. We also have replaced “several banks” with “several market participants”. Thus, we apply Mr Persaud’s hypothesis more generally to the whole market place including any investor that uses leverage and has a quantitative risk assessment, rather than just banks.¹ The 2008 financial crisis has bared ferociously that investors need not only worry about exogenous factors but also that endogenous risk is something to be monitored as well. The VAR vicious circle hypothesis explains the mechanics of how risk emanates from within the financial system.

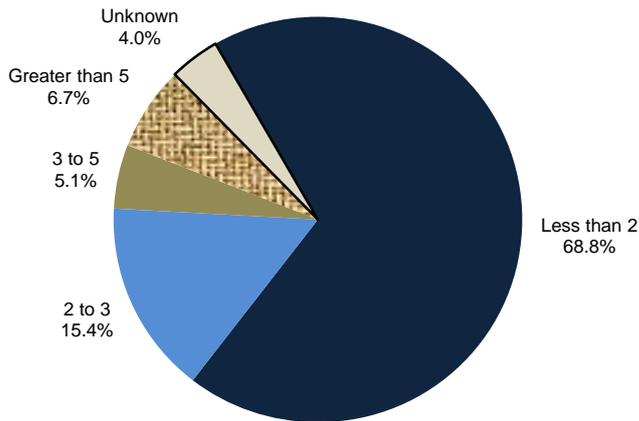
“Nothing is more obstinate than a fashionable consensus.”
Margaret Thatcher

Quantifying leverage is not as straightforward as one would like it to be. There are different definitions and different methodologies to measure leverage. Chart 30 (on the following page) is an attempt to quantify the use of leverage in the hedge fund industry. The data used for this analysis pre-dates the fall of LTCM; a time when leverage in the hedge fund industry was perceived to be very high. The main message of this and the following charts is twofold: First, hedge fund leverage is miniscule when compared to banks. Second, only a very small portion of the hedge fund industry uses leverage in excess of, say, five.

Quantifying leverage for the whole hedge fund industry is difficult

¹ Risk management professor Philippe Jorion replaced DEAR with VAR and coined the term “VAR vicious circle hypothesis” in a 2002 paper.

Chart 30: Breakdown of hedge fund industry by leverage

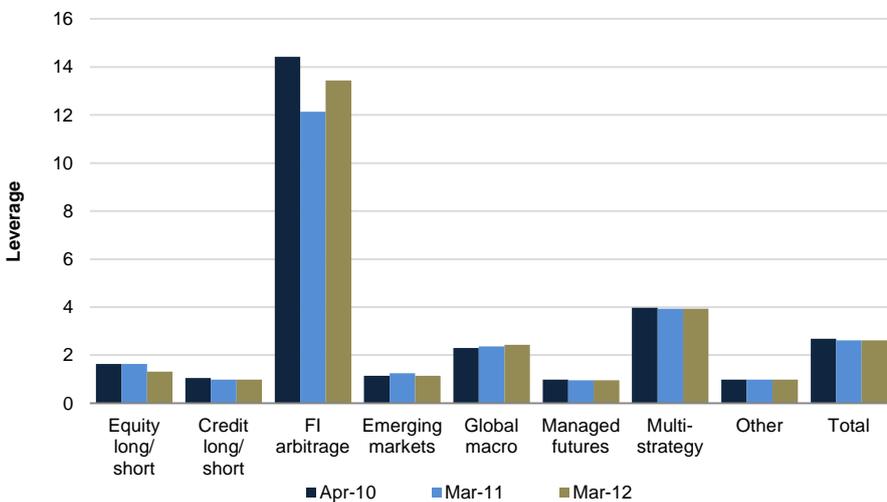


Source: From Basso (2000) based on MAR Hedge's Performance Evaluation Directory, first half of 1998

Equity long/short managers comprise a large part of the hedge fund industry, as mentioned elsewhere. These managers are mostly in the "less than 2" category as their gross exposure is typically below 200%. This is also largely true for many emerging markets and distressed securities managers. Discretionary and systematic trading managers are probably in the "2 to 3" or "3 to 5" category, whereas many of the arbitrage strategies can have leverage higher than five times equity. Note that most hedge fund managers that blow up and hit the headlines are in the small "greater than 5" category that is in no way representative for the whole industry. Chart 31 (below) shows estimates of leverage (here defined as borrowing plus NAV as a multiple of NAV).

Excessive use of leverage is not a representative characteristic for the hedge fund industry

Chart 31: Aggregate fund leverage



Source: Financial Services Authority (FSA)
Aggregate fund leverage: Borrowing + NAV as multiple of NAV

In conclusion, leverage per se is not good or bad. However, use of leverage needs to be balanced with opportunity set and strategy. There are no established limits to the amount of leverage; however, it needs to be continuously monitored for variations. Strategies that are highly levered, such as fixed income arbitrage, typically receive a smaller allocation in the portfolio given the potential losses in a stressed market environment. Concentration risk can pose an even greater portfolio challenge, particularly if the underlying securities are illiquid.

Liquidity

Leverage and liquidity are interconnected. Both, occasionally, turn the laws of economics upside down, because lower prices bring out less demand and more selling. Disciples of the Austrian School of Economics, most notably Ludwig von Mises, have been arguing since the 1940s that it is credit that matters, not money. Economist Hyman Minsky coined the term "stability causes instability" by arguing that each stage of the business cycle nurtures forces that lead to its own destruction. George Soros, in *The Alchemy of Finance*, first published in 1986, argued that blind adherence to economic orthodoxy plus leverage lead to boom-bust mania. These perspectives are all very much related.

As concluded above, it is not leverage that is bad; it is the excessive use of leverage that is bad. Most examples of financial disasters involved an excess use of leverage. The tipping point where boom turns into bust is when liquidity dries up. A sound risk management system relates open positions with liquidity. In other words, analysing a hedge fund's risk control systems, risk management skill and experience is extremely important, much more important than with other money managers who are restricted and/or regulated by internal and/or external regulatory bodies. The hedge fund managers' flexibility to use leverage adds a layer of complexity for the hedge fund investor that is just not relevant when evaluating "normal" managers.

Hedge fund money is generally perceived as medium to long-term money. Hedge fund investors cannot flip in and out of hedge funds like, for example, ETFs. Hedge fund managers lock up their money for months or years. Hedge funds are viewed by their investors as medium to long-term but not as long-term as, for example, private equity where the investment horizon often exceeds ten years. Much harm was done when some investors wanted their money back during or immediately after the Lehman collapse in September 2008 and found out the hard way, that investing in hedge funds is not the same as investing in liquid equities and bonds. Today some investors require full liquidity and full transparency. Many investors seem to want it all: liquidity, transparency *and* superior performance. Potentially this is a mirage. Potentially one cannot have it all. Potentially - and most likely - the superior risk-adjusted performance of hedge funds comes at a price, for example less liquidity, less than full transparency, etc. Note that in the *2012 Deutsche Bank Alternative Investment Survey* liquidity terms and transparency only rank fifth and seventh),¹ refer to Chart 32 (on the following page.) This means many investors do indeed understand that one cannot have it all; that trade-offs are a part of investment life. However, there are geographical differences with US investors much more willing to accept lock-ups.²

"Illiquidity and leverage can be a toxic cocktail"

Larry Summers

"In a hedge fund, returns should be dependent on risk management, not just on stock-picking"

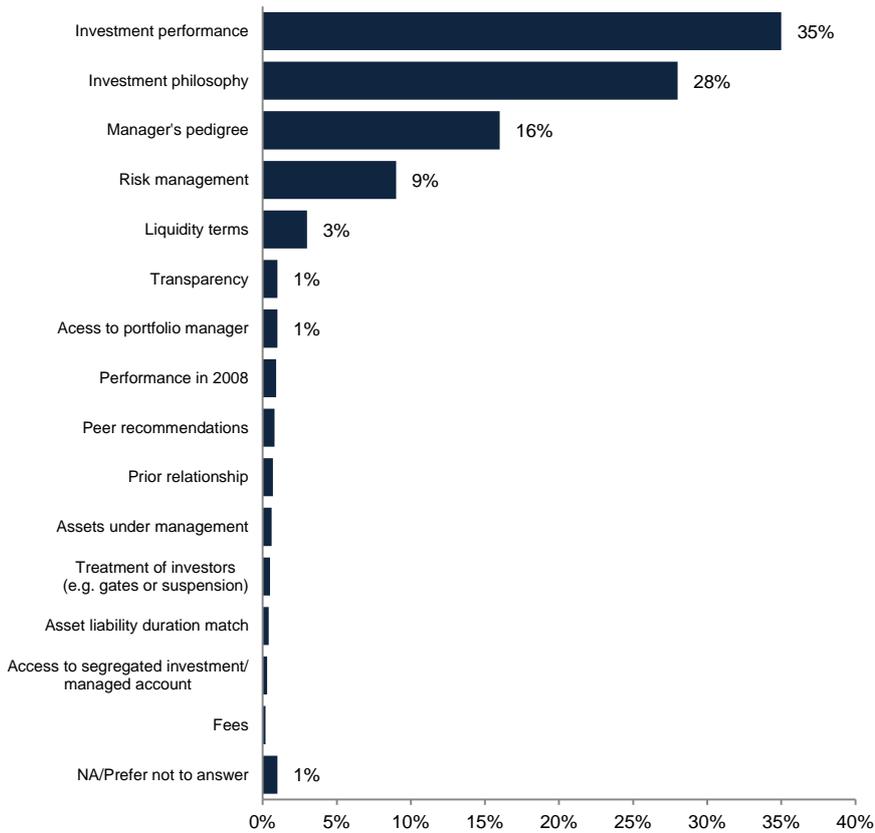
Ian Wace

Investment horizon for hedge fund investments is medium to long-term

¹ In the 2011 survey a year earlier, transparency ranked sixth and liquidity terms seventh. *2011 Deutsche Bank Alternative Investment Survey*, p 53.

² 2012 Deutsche Bank Alternative Investment Survey, p 91.

Chart 32: What is the most important factor when assessing a hedge fund manager?¹



Source: 2012 Deutsche Bank Alternative Investment Survey

Some absolute return strategies are long-term by nature. Investments in distressed securities, for instance, are most often long-term and illiquid. Long redemption periods, therefore, are the norm. Frequent liquidity windows of one year or more (for example quarterly) work against the nature of the strategy. A hedge fund manager will seek a long-term commitment from his investors. It is essential that the managers have a large pool of committed capital so that liquidity is not a problem. The length of any particular bankruptcy proceeding is notoriously hard to forecast and the outcome is always uncertain - both of which make the duration of distressed securities strategies unpredictable. In addition, managers who participate on creditor and equity committees must freeze their holdings until an arrangement is reached.

Some strategies involve illiquidity and long lock-ups are warranted

The late Peter Bernstein - in an article stressing the importance of understanding that the investment environment of the past could be profoundly different from the one we face today - argued in favour of picking up a premium for liquidity:

A liquidity premium is a function of opacity and the willingness and ability to pick it up

Liquidity is a function of laziness. By this I mean that liquidity is an inverse function of the amount of research required to understand the character of a financial instrument. A dollar bill requires no research. A bank draft requires less research than my personal check. Commercial paper issued by JP Morgan requires less research than paper issued by a bank in the boondocks. Buying shares of GE requires less research than buying shares of a start-up high-tech company. A bond without an MBIA (once-upon-a-time anyway) guarantee or a high S&P/Moody's rating

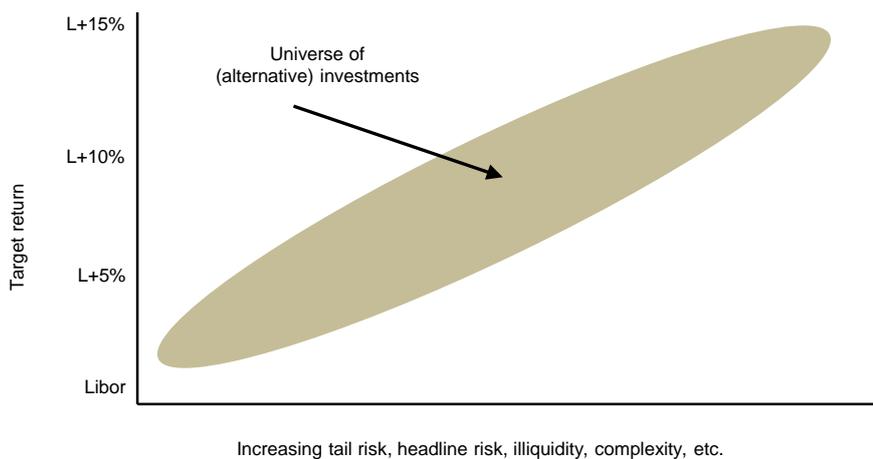
¹ Ibid., p 54.

requires less research than a bond without a guarantee or lacking a set of letters beginning with "A" from the rating agencies. The less research we are required to perform, the more liquid the instrument - the more rapidly that instrument can change hands and the lower the risk premium in its expected returns.¹

Luck might not be such a great explanatory factor of superior investment performance after all

We could rephrase and argue that most investment opportunities are opaque to differing degrees. The liquidity premium then becomes a function of the willingness and ability to acquire the required transparency and confidence to put capital at risk. This arguably requires an effort. From this perspective, we can easily explain why some institutional investors have done so much better than others have for many years, instead of trying to explain superior investment performance with luck, as many market observers still do. Along these lines, we could go further and expand on the textbook mean-variance idea where volatility is a proxy for risk. Instead of the expected return being a function of volatility, the target return of an investment above the risk-free rate becomes a function of the illiquidity, tail risk (to be discussed in the next section), headline risk, complexity, etc. In this framework, we do not need to rely on luck to explain the Warren Buffetts and Yale Endowments of this world. Chart 33 (below) suggests that there are some investors who are simply better at controlling risk, and gaining transparency and confidence with illiquid, opaque and complex investments. The flipping of coins - the favourite task of authors of textbooks in finance - has nothing to do with it.

Chart 33: Alternative risk-reward trade-off



Source: Adapted and modified from Horizon 21 Schematic illustration

David Swensen wrote:

Active managers willing to accept illiquidity achieve a significant edge in seeking high risk-adjusted returns. Because market players routinely overpay for liquidity, serious investors benefit by avoiding overpriced liquid securities and locating bargains in less widely followed, less liquid market segments.²

¹ From Bernstein (2008)

² From Swensen (2000), p. 56

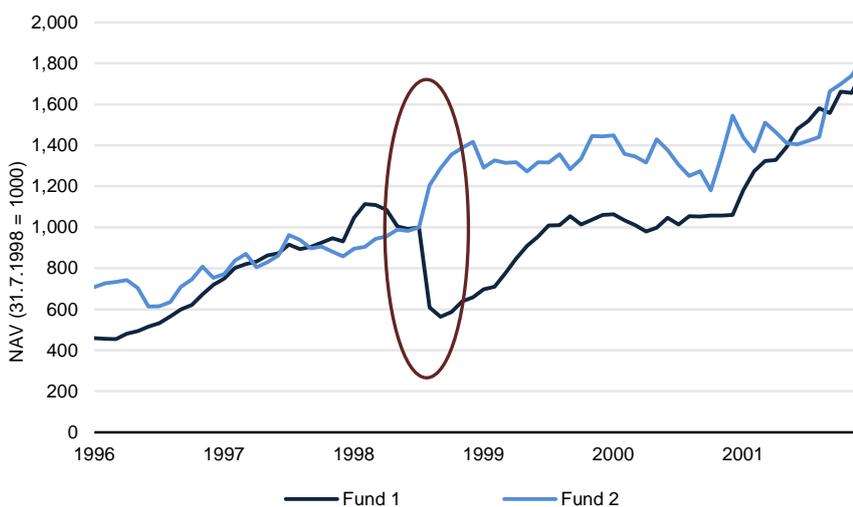
There are many differences between the various strategies and funds. One of the generalisations about hedge funds is that hedge funds pick up a premium for liquidity. This means the hedge fund buys a security that is less liquid in the market place and thus trades at a discount while hedging the market risks with a short position in a security that is liquid and fairly priced. Under normal circumstances, this is a profitable strategy as the locked-in discount narrows over time. However, under market stress there is often a so-called "flight to quality", which means investors switch from assets with lower quality and liquidity into higher quality and liquidity assets. In other words, the spread widens temporarily during market stress to narrow after the panicky investors have cooled down somewhat. While this generalisation is not entirely untrue, it does not hold true in all cases. Hedge funds, again generally speaking, can be both a liquidity taker as well as a liquidity provider.

Hedge funds can be long as well as short "liquidity"

Although hedge funds have the flexibility to take short positions, they can also be the first to take long positions in, for example, currencies that have depreciated in the wake of a speculative attack, providing liquidity to illiquid markets and helping the currency establish a bottom. Clients' expectations that hedge funds will make above normal returns will likely discourage managers from buying the same assets being purchased by other investors since these asset prices already reflect others' moves. They are often incentivised to go the other way.

Hedge funds are often contrarian by nature except for trend-following managers

Chart 34: Winners and losers in liquidity shock



Source: Ineichen (2007a), p. 234, data from Alternative Investment Solutions

Chart 34 (above) shows an extreme example of two funds in the liquidity crisis of autumn 1998. The graph shows NAVs from 1996 to 2001, whereby values of 31st July 1998 (last date before the 1998 trouble started) were indexed to 1,000 for presentation purposes. Fund 1 follows a relative value strategy where Fund 2 is a systematic trading fund. These two funds were chosen with the benefit of hindsight. However, when constructing portfolios it is essential to understand which strategies and/or managers are heavily exposed to liquidity events and which strategies and managers might benefit from such an event. As an aside: an equally-weighted and monthly rebalanced portfolio with only the two funds shown in Chart 34 had an annual return of 22.0% with a volatility of 12.9% over the six year period shown. This compares to a return of 12.7% and a volatility of 17.0% for the S&P 500 Index. This example shows that it is not correlation that matters in portfolio construction but "correlation of the negative and fat tails," which brings us to the next subject. When everything goes up, i.e., all investments are positively correlated, most investors are actually quite happy. It is when one part of the portfolio is under duress where we want the other parts to have a low or even negative correlation.

Understanding liquidity characteristics is crucial when constructing absolute return portfolios

Fat tails

The term “fat tails” is associated with a distribution of returns.² In financial economics, most often it is assumed that prices of securities are statistically independent, that returns are randomly distributed around an average return, and that the shape of the return distribution resembles a normal distribution. The idea that returns are normally distributed has been under attack since the 1960s - most notably by Benoit Mandelbrot and, more recently, by Nassim Taleb - but somehow survived all attacks and today can still be best described as “financial orthodoxy”. Financial economists acknowledge that their model world is an abstraction, a simplification of reality. For this reason, departures from the normal distribution are examined, so called “higher moments,” rather than ditching the assumption of returns being normally distributed. The term “fat tails” refers to such a higher moment called “excess kurtosis”, i.e., observations on the very left and right hand side of the normal distribution. Normally we mean the *left* hand side of the distribution when discussing fat tails, i.e., large *negative* returns. Most investors seem happy with fat tails on the *right* hand side of the distribution and rarely complain.

When we classified hedge fund strategies and sub-strategies in Chart 27 on page 98, we said “yes, of course” under the section labelled fat tails. We meant that all hedge fund strategies have fat tails. However, so do all other investment asset classes, styles and strategies. The reason for mentioning this - perhaps somewhat tongue-in-check - is that the hedge fund bashing part of mainstream academia constantly points out that hedge fund returns have fat tails as a distinguishing feature and the investor therefore invests at his own peril. We are repeatedly warned that investing in hedge funds is like “picking up nickels in front of a steamroller”; it goes well for a while until total loss occurs, somewhat akin to a short put strategy. This line of argument is misleading and incomplete for two reasons. First, the normal distribution has no meaning in the real world of social phenomena, in general, and investment management, in particular. Second, all investments have fat tails. Fat tails are not a distinguishing factor of hedge funds versus other investments. One of the favourite quotes we apply to this subject is from Lord Bauer, economic adviser to Margaret Thatcher, which we already used once in this:

A safe investment is an investment whose dangers are not at that moment apparent.

This means that even if the historic time series of an investment does not have measurable excess kurtosis - the scientific term for fat tails - it does not mean that the investment is safe. Accidents happen. A long period of no accidents can lead to a false sense of safety, complacency and an underestimation and under-appreciation of risk. This is true in life, business life as well as in investment life. Things just always *can* go wrong.

We can even go further and argue that Murphy's Law applies to all investments: if something can go wrong, it will - eventually.³ Applying *Murphy's Law* is rephrasing the idea of stability causing instability mentioned earlier. Is this true for investing in hedge funds? Of course it is. Sometimes it happens that you have a weak economy, are hit by an earthquake, by a tsunami, and by a nuclear disaster all at the same time. Accidents happen and sometimes Murphy's Law does indeed apply. The reason for mentioning these accidents is our belief that risk management is a thought process rather than a quantitative exercise. Risk measurement, one could

The idea of returns being normally distributed seems to be immune to attacks of reason

“No amount of observations of white swans can allow the inference that all swans are white, but the observation of a single black swan is sufficient to refute that conclusion.”
David Hume¹

Assuming returns are normally distributed with anything is misleading

Accidents happen

Things that can go wrong actually sometimes do just that

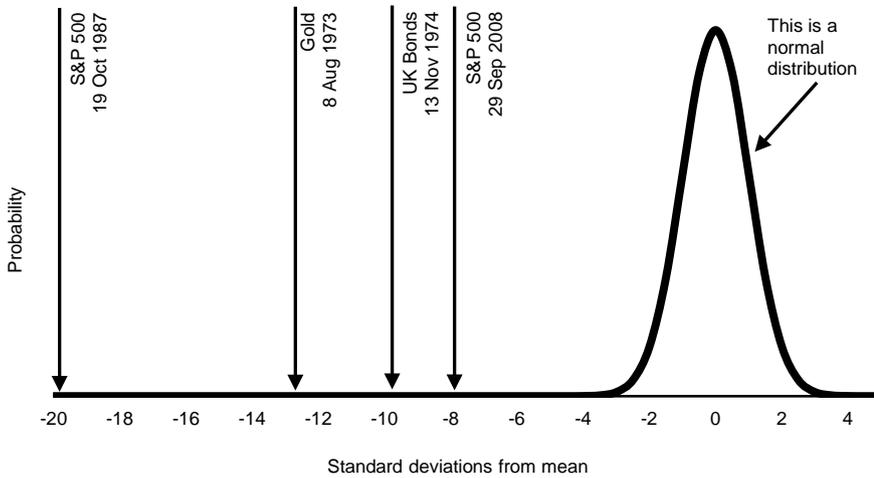
¹ From Taleb (2004), p. 100

² A further discussion on tail risk is in the Appendix of this report on page 128.

³ See also economist Paul Omerods' “Iron Law of Failure,” highlighted in the Appendix on page 116.

argue, is a quantitative exercise. If risk management is indeed a qualitative exercise where thoughtfulness matters, it is healthy to think about what could wrong, even if that leads us away from MPT, VaR, and alphas and betas for a moment.

Chart 35: Normal distribution and its real world explanatory power



Source: IR&M

Chart 35 (above) shows a normal distribution that suggest around 99.7% of observations should lie within plus or minus three standard deviations. This means that, when examining daily returns and assuming returns are normally distributed, we can expect one return *below* three standard deviations from the mean every three years. A return lower than five standard deviations from the mean should occur once every 13,418 years (roughly twice the age of civilisation) and a daily return below 7.21 standard deviations once every 13.7 billion years (roughly the age of the universe). In 2008, the S&P 500 Index experienced a negative daily return of more than -7.21 standard deviations not once but four times.

A further shortcoming of standard deviations or, in its annualised form the volatility, is that it assumes daily or monthly swings as independent events. This is misleading too. Today's return is built on yesterday's information and all history prior to yesterday. All investors - or most investors - are smarter today than they were yesterday. This means that the prices from yesterday and today are not independent, but linked. In addition to this, markets, asset classes and strategies can trend or move in cycles. This means that, not only are the returns not independent, the mean of the return distribution is very unstable, too. It is for this reason that many practitioners in the absolute return world have moved away from volatilities and Sharpe ratios and looked at losses (drawdowns) or the probability of losses, especially large ones, when assessing risk. A drawdown is typically understood as a loss from peak to trough. For instance, the fall in the S&P 500 Index from around 1,500 to 750 would be considered a drawdown of 50%. The bad thing about large drawdowns, apart from being mentally and in some cases physically painful to the bearer, is that it takes a long time to recover. A drawdown of 50% requires a 100% return for the principal to recover.

Chart 36 (on the following page) shows a selection of historical drawdowns in *real* terms, i.e., adjusted for inflation. The graph is upwardly biased and therefore too optimistic for two reasons. First, the graph suffers from survivorship bias. The graph only includes equities and bonds from the largest four economies on the planet. The graph does not include contenders who could have become among the largest economies but failed. One hundred years ago, Russia and China and, perhaps, Egypt and Argentina were all in a good position to prosper in the

The idea that returns are normally distributed is not the pinnacle of investment wisdom

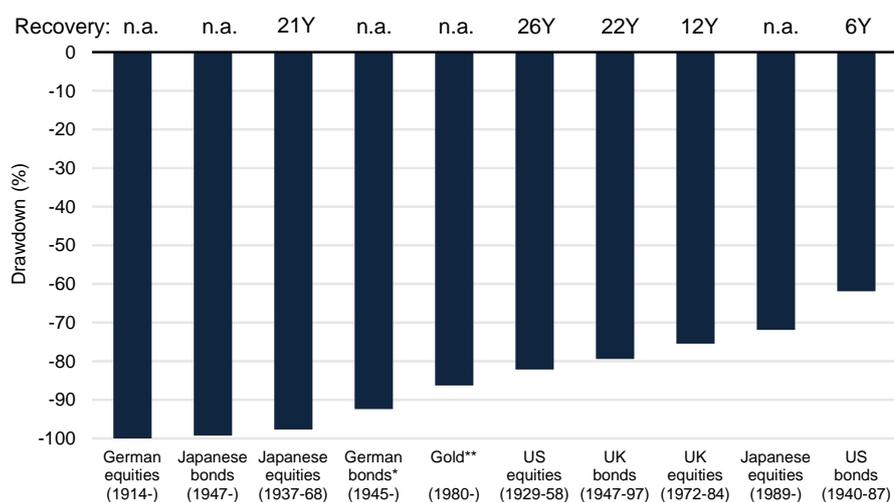
Returns are not independent

"The only thing we learn from history is that we learn nothing from history."

Friedrich Hegel

twentieth century but did not. Their drawdowns were pretty much on the left hand side in Chart 36 (below). Second, we show total returns which means the graph implicitly assumes any proceeds are not taxed but are fully re-invested. Note that there is no recovery from an investment that goes to zero. German equities and bonds have not recovered from hyperinflation; they had a fresh start. The same is true for nationalisation like in Portugal in the 1970s or France in the 1980s. Nationalisation and other forms of appropriation of capital are potentially outside of the collective memory of the investor profession.

Chart 36: Historical drawdowns in the Twentieth Century



Source: IR&M, Global Financial Data, Bloomberg

All based on local currency real total returns, adjusted by local CPI. Gold adjusted by US CPI. Years in brackets indicate the period under water, i.e., period from one peak to the next. Recovery shows period in years it took from trough to recover drawdown fully. There is no recovery from a total or near total loss.

*Data starts 1923. Prior drawdowns would be analogous to equities.

** Gold hit \$835 in January 1980. This is around \$2,463 in today's money.

In risk management, it is common to start with a return estimate and an assumption of how future returns vary around the average. A VaR figure, for example, can tell us that in 99% of all occurrences (days, months, years) our returns should be higher than, say, -5%. The model does not tell us how bad things could get in the remaining 1% of occurrences. For this purpose, risk management analysts have suggested modified forms of the model and, more importantly, complementing any model output with stress test and scenario analysis. Irrespective of the sophistication of the model and complementing analysis, the flow of thought is always from normality, for example, the average return, towards the left hand side of a distribution, i.e., the tails.

We suggest here - as a thought experiment - to work the other way. Let us start at the very left and then move towards normality (whatever that might be). For this, we have to think of the ultimate worst-case scenario. This calamity is ultimately severe and radically improbable. One suggestion for the ultimate worst-case scenario is described by British author Douglas Adams in *The Hitchhikers' Guide to the Galaxy* whereby an alien race of bureaucrats, the Vogons, vaporise Earth to make way for a "hyperspace bypass".¹ This is arguably the worst-case scenario. This improbable scenario is furthest to the mean we can think of. (Well actually, two humans survive the incident, which means it could have been worse.) It goes

There is a scenario or two where the best asset allocation and risk management will fail

¹ "The Hitchhiker's Guide to the Galaxy - A Trilogy in Five Parts," Douglas Adams, London: William Heinemann, 1995, first published in 1979.

without saying that if the worst-case scenario occurs, the size of the allocation to hedge funds does not really matter that much.

We could go on describing unpleasant events, but we will not. The main point is that it is uncertainty that matters to absolute return investors, neither tracking error of some sort (an assets/liability mismatch is a form of tracking risk) nor the annual standard deviation of supposedly independent and randomly distributed returns, aka "risk". We do admit that bringing Vogons into the equation might be a tick over the top. However, treating the "risk-free rate of return" as a risk-free rate of return - as many investors still do - is over the top too, just on the other side of the bull-bear spectrum. If the perma-bears have their way, we might be entering a period whereby relying on old truths and orthodox thinking is the worst course of action.

"Hope for the best. Expect the worst. Life is a play. We're unrehearsed."

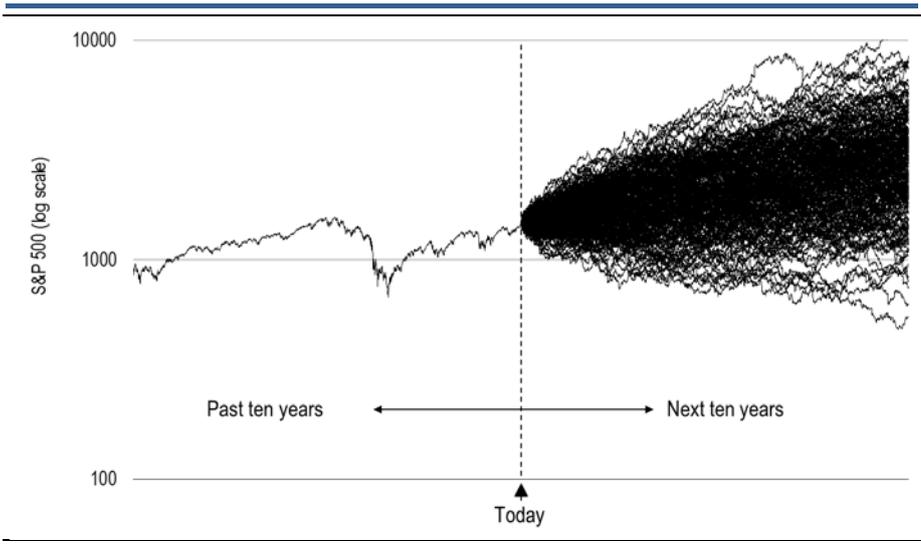
Mel Brooks

Once we have established the worst-case scenario, we can move towards the right on our virtual probability distribution and discuss scenarios that are pretty bad, too, but not as bad as the worst-case scenario. This means that, when assessing risk, we are looking at events and scenarios that are somewhere between the worst-case scenario (the very left hand side of the distribution) and the norm; that is, we are looking for a scenario that is unlikely to occur and is also harmful but not as improbable and harmful as being vaporised. Many of the prosperity destroying events and periods over the past one hundred years have been wars, inflation and governments toying with flawed socio-economic ideologies resulting in nationalisation or some other form of appropriation, i.e., total loss. One possible scenario could be that the European Parliament nationalises all companies. This also classifies as a tail event, as its occurrence is improbable and its impact to investors severe. However, nationalisation or governmental entities toying with flawed socio-economic ideologies that do not work are not as improbable as being vaporised. There have been numerous occurrences of the former over the past one hundred years, while, to the best of our knowledge, no inhabited planets have been vaporised to give way for a hyperspace bypass. Yet.

Wealth-destroying events are not foreseen, typically. Some argue that they are not foreseen by definition, as per accidents. If accidents were foreseen, they would not happen. There were many articles and books predicting the financial crisis. However, there were even more articles and books predicting all kinds of other scenarios. Looking back, we know who got it right. However, looking forward, we do not know who will get it right. The reason for this is that looking back we only see one history. By viewing this history, all other scenarios become impossible; they fade entirely. However, looking forward, we have no clue what is going to happen. Many things *can* happen. Chart 37, (on the following page) for example, shows the past ten years of the S&P 500 Index and the next ten. (Index at 1,466 as of 14th September 2012). The index could well compound at 6.4% over the next ten years and reach 2,728 (the median estimate from the simulation in Chart 37). However, the range of end scenarios is from 550 to 13,300 index points with the worst simulated path falling to 481. This means that the long-only US equity investor could compound at -9.4% in nominal terms over the next ten years if unlucky or at 24.7% if lucky. Both scenarios are in the realm of possibilities and are not unprecedented scenarios in financial history. (If the US goes Zimbabwe or Weimar, as some forecasters muse, then the index of course will go much further than 13,300 in nominal terms.) This is the reason why the "we are not a casino" quote from an institutional investor in relation to hedge funds in 2000 mentioned earlier (page 56) is so funny. It is actually the long-only investor who bets on luck and hopes that compounding will be positive. It is the hedge fund investor, to the contrary, who bets on investment and risk management skill. It goes without saying that both can fail in a true worst-case scenario.

Accidents are impossible to predict

Chart 37: Past versus future



Source: Updated from Ineichen and Silberstein (2008)
 Past: S&P 500 Index past ten years to 14 September 2012. Future ten years: simulation (bootstrapping with replacement) using daily returns from inception (January 1964) to 14 September 2012.

The discipline, as mentioned in previous chapters, which deals with these bizarre, wealth-destructing scenarios is active risk management. This activity is dominated not by trying to guess any weird scenario that could be harmful, but to construct portfolios that at least are somewhat resistant to the avoidable pitfalls, the so-called “known unknowns” and, ideally, also protect us from the “unknown unknowns”, whatever that might be. Portfolio construction is a forward-looking exercise whereby we are humble about what could happen. In portfolio construction, we build a portfolio where diversification and hedging of risks are our main tools. With *diversification* we mean combining assets or strategies where it is reasonable to assume that the tails are not correlated. If the positive returns are positively correlated in normal times, this is fine with us. With *hedging* we mean offsetting risks by combining assets or strategies that are negatively correlated. Risks that carry no reward are unnecessary and should be hedged.

The historical drawdown graph (Chart 36 on page 113) could be perceived as being scary. However, it is not - or at least is not intended to be. We find it very important to stress that current tools and doctrines in finance might or might not be helpful when managing risk. Alpha and beta are terms from a linear model from the 1960s. Volatility is not a good proxy for risk. Returns are not independent and normally distributed, markets not frictionless and investors are not always rational, cannot lend and borrow at the risk-free rate, do not share a common investment horizon, do not view stocks in mean-variance space, and - in most cases - need to pay taxes. In addition, tail risk is only a proxy for risk, albeit a better one than volatility. The main risk for nearly any investor is negative compounding over an extended period. Chart 36, therefore, is a reminder that it is indeed negative compounding that is the issue for the long-term investor. In addition, the graph demonstrates that extended periods of negative compounding do happen. This begs the question:

Who should be managing risk?

One alternative to manage risk is to outsource some parts of the risk management function to someone else. A pension fund investing in a fund of hedge funds, for example, outsources two layers of risk management to independent risk managers. Hence, the two layers of fees. The underlying hedge fund manager has the task to manage risk at the securities and market level, whereas the fund of funds manager

Portfolio construction is a forward-looking exercise

Q: What is the definition of a long-term investment?

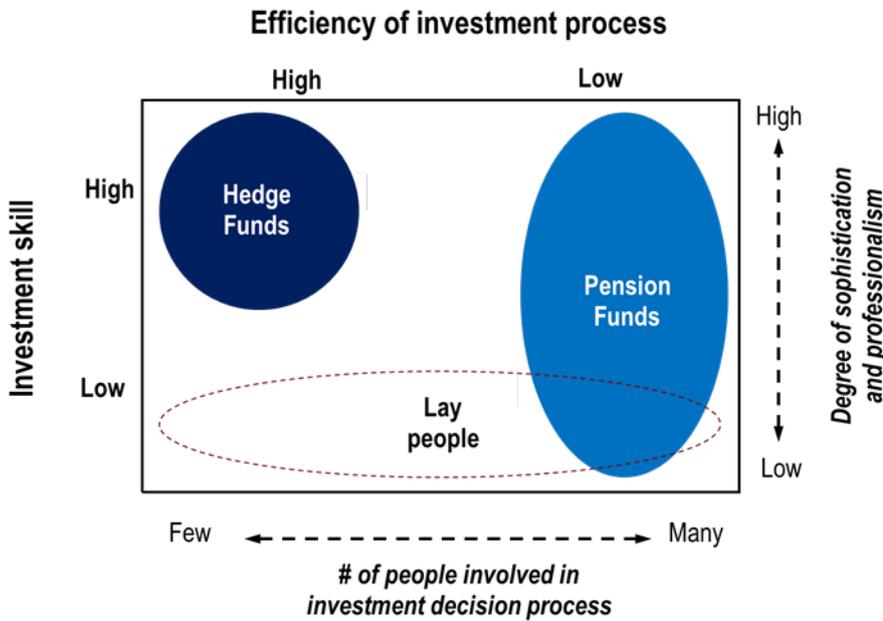
A: a short-term investment that went wrong Saying

Outsourcing risk management is an option

has the task to construct well-balanced hedge fund portfolios and manage risk at the hedge fund level. One element of outsourcing is cost. The next question is:

What does the investor get in return?

Chart 38: Efficiency versus investment skill



Source: Ineichen and Silberstein (2008)

Chart 38 (above) is an attempt to classify different investor types into a grid. All investors are placed somewhere in this exhibit. The vertical axis shows investment skill where essentially we mean the degree of sophistication and professionalism. There is empirical research suggesting that long-only managers do outperform their benchmark gross of fees but underperform their benchmark net of fees. However, somewhat less prominent is the research comparing portfolios of laypeople with professionally managed portfolios. There the difference is not measured in basis points but percentage points, i.e., the underperformance is much larger. The horizontal axis shows schematically the efficiency of the investment process. We have labelled an investment process where there are only very few decision makers as efficient and a process where many individuals with different agendas as inefficient. The basic idea of outsourcing is to move closer to the upper left hand corner in Chart 38. For some pension funds, this is a horizontal move to the left; for others it could be moving from the lower right to the upper left. Note here that the underlying assumption is that a leaner organisational setup is better equipped to deal with short-term changes in market sentiment and investment environment from an active risk management perspective than a large group of individuals. Note further that for investors who deem the short-term as irrelevant for long-term success, the exhibit has no meaning.

Investment skill can be high with both hedge funds and pension funds. In some pension funds, laypeople are involved in the investment decision process. This, to the best of our knowledge, is not the case with hedge funds. David Swensen notes that:

long-term success requires individualistic contrarian behaviour based on a foundation of sound investment principles. Establishing a framework that

"In an institutional environment with staff and committees and boards, nearly insurmountable obstacles exist. Creating a decision-making framework that encourages unconventional thinking constitutes a critical goal for fund fiduciaries."

David Swensen¹

The task to manage risk can be outsourced to investors more skilled or more nimble or both

"Madness is the exception in individuals but the rule in groups."

Friedrich Nietzsche

¹ From Swensen (2000), p. 325

overcomes the handicap of group decision-making encourages well-considered risk taking and increases the opportunity to add value to the portfolio management process.¹

We claim here that the difference between the two is not necessarily one of investment skill but primarily of implementation. Pension funds often have many layers of decision-making and approval before an investment can be made. This almost by definition means that the investment style will be an orthodox, non-contrarian one. New ideas take a long time to be approved. Adding laypeople, as is the case in some instances, to an already large investment committee with individuals with differing agendas does not improve efficiency. A hedge fund on the other hand is more nimble, has - more often than not - independent research and can stick the proverbial toe into the water in an unconstrained fashion should a new opportunity arise. Superior investment performance nearly by definition requires a contrarian view. Keynes wrote of the contrarian investor, "it is in the essence of his behaviour that he should be eccentric, unconventional and rash in the eyes of average opinion". Given the hedge fund coverage in the popular press and the rhetorical acrobatics by European socialists, this quote seems applicable to this day. David Swensen, as so often in institution investment management, put it most aptly:

Two important tenets of investment management - contrarian thinking and long-term orientation - create difficulties for governance... Because large, bureaucratic organisations invariably use groups of people (investment committees) to oversee other groups of people (investment staff), the investment process becomes greatly influenced by consensus-building behaviour. Unless carefully managed, group dynamics frequently thwart contrarian activities and impose shorter-than-optimal time horizons on investment activity. Creating a governance process that encourages long-term, independent, contrarian investing poses an enormous challenge to endowed institutions.³

If this point of view has merit, we can view the involvement of pension funds and other large institutional fiduciaries in hedge funds as outsourcing the task to seek new and non-traditional investment opportunities while managing short-term risk. If hedge funds indeed are professional investors who are well positioned and equipped to seek these opportunities that remain unexploited by the organisationally less efficient, then outsourcing can make sense despite the costs. Note that the outsourcing discussed here is only one way to increase decision-making efficiency with respect to implementation. Many pension funds have delegated more authority to its staff in an effort to address the issues arising from committee-based decision-making. Some institutional hedge fund research teams have grown significantly over the past couple of years. In essence, both outsourcing as well as "insourcing" certain risk management functionality can increase decision-making efficiency.

Concluding remarks: *strategies*

The universe of alternative investments in general and the broad range of strategies in the hedge fund industry in particular are one of the main drivers for institutional investors' involvement. While there are complicating matters related to valuation, liquidity, or non-linear payouts, the bottom line is that more and more institutional investors are seeking return sources that are different from long-only equities and bonds. This expansion of the institutional investors' investment landscape is most likely to continue.

"Worldly wisdom teaches us that it is better for reputation to fail conventionally than to succeed unconventionally."

John Maynard Keynes²

"Anyone taken as an individual is tolerably sensible and reasonable – as a member of a crowd, he at once becomes a blockhead."

Bernard Baruch

¹ From Swensen (2000), p. 344

² Keynes (1936)

³ From Swensen (2000), p. 320

Closing remarks

The background is a vibrant blue with a digital, data-driven aesthetic. It features a world map where the continents are defined by a grid of small, glowing hexagons. A prominent, bright white and yellow light flare or lens flare effect streaks diagonally across the center of the image, creating a sense of motion and energy. The overall composition is clean and modern, typical of a corporate or academic presentation slide.

Closing remarks

Simplicity is the ultimate sophistication.

— Leonardo da Vinci

Nothing you can't spell will ever work.

— Will Rogers

Hedge funds: risky game or game of risk?

Financial economics is a very new discipline. Economics is about 250 years old, while financial economics is only about 60 years old. In finance, we are still operating with the first set of theories. The business of institutional investment management is even younger. Unlike many other fields of human endeavour, financial economics has not yet witnessed a paradigm shift where, either gradually or in one dramatic moment, old theories become obsolete and are replaced with new ones. The advent of hedge funds in institutional investment management could come close to such a moment.

Financial economics and modern portfolio theory (MPT) grew out of economics. If there is a single starting point, it was a short paper titled "Portfolio Selection" in the March 1952 issue of the *Journal of Finance* by an unknown 25-year old graduate student from the University of Chicago named Harry Markowitz. The idea of investing in equities was quite a freak idea in the 1950s. By 1952, stocks in the United States had not yet recovered from their losses from the Great Depression twenty years earlier. Stock ownership was considered so risky that the stocks of some of the best companies were paying dividends nearly three times the interest being paid on savings accounts. Investors' scars from the Great Depression and World War II were still too great for equities to become a legitimate investment alternative. Many investors and the public all perceived the stock market as little more than a playground for speculators. In essence, equities were once an alternative asset class, too.

Markowitz was motivated by the question of how people can make the best possible decisions in dealing with the inescapable trade-offs in life. Economists insist that you cannot have your cake and eat it. If we want more of something, we have to give up something else; guns for butter, saving for consumption, employment for leisure, etc. Therefore, investors cannot hope to earn high returns unless they are willing to accept the risk involved and risk means facing the possibility of losing rather than winning. Markowitz's *Portfolio Selection* is nothing more than a formal confirmation of two old rules of investing: 1. nothing ventured, nothing gained. 2. Don't put all your eggs in one basket. Markowitz defined these familiar rules with scientific precision, using mathematics to solve the puzzle of the investor's trade-off. The desire to quantify the unquantifiable, i.e., uncertainty, has been one of the important drivers that shaped the current investment landscape ever since.

The idea of diversification is very old. Supposedly, it is the only free lunch. The idea has entered the English language as “don't put all your eggs in one basket.” It has entered investment management orthodoxy via Harry Markowitz and modern portfolio theory (MPT). The idea of spreading risk by diversifying risk is much older than MPT though. The Oxford Dictionary traces the “eggs in the basket” idea to 1710, referencing an Italian source of proverbs from 1662. The idea of diversifying risk can be traced even further. The Talmud suggests:

Let every man divide his money into three parts, and invest a third in land, a third in business, and a third let him keep in reserve.²

The concept Markowitz developed to deal with the investor's trade-offs transformed the practice of investment management beyond recognition. Mean-variance optimisation put some sense and some system into the haphazard manner in which most investors were assembling portfolios. Most human beings are naturally risk-averse, i.e., preferring known outcomes to uncertainty. Nevertheless, the literature on investing up to 1952 either had ignored the interplay between risk and return or had treated it in the most casual manner. In addition, John Maynard Keynes thought that diversification was a flawed concept and called it a “travesty of investment policy”. Gerald Loeb, book author and famous Wall Street pundit in the 1950s, best described Wall Street's thinking on diversification: “Once you obtain confidence, diversification is undesirable... Diversification is an admission of not knowing what to do and an effort to strike an average”. *Portfolio Selection* moved away from the idea of portfolio concentration and formed the foundation of all subsequent theories on how financial markets work and how risk can be quantified. Contemporary concepts such as Value at Risk (VaR) and all regulatory funding requirements for institutional investors including banks are descendants from a 25-year-old musing about the trade-offs of life in the 1950s.

Modern portfolio theory, as this branch of financial economics is still called, suggests that investors should seek the most efficient portfolio. This is a portfolio that offers the highest expected return for any given degree of risk or that has the lowest degree of risk for any given expected return. Harry Markowitz formalised this concept in 1952. He used volatility, i.e., the annualized standard deviation of returns, as a proxy for risk. Today, it has transpired that volatility is not a very good measure for risk, especially when alternative investments such as hedge funds, private equity, real estate and other tangibles are involved. However, while the mathematics of mean-variance optimisation for alternative assets does not work, it is the idea of diversification that is driving the demand for alternatives today.

For financial professionals in the space of alternative investments it is taking a long time for some institutional investors to embrace their products. The reason for this is threefold: First, there seems to be a human tendency to shun the new and stick with the status quo. We are all victims of what Milton Friedman called the “tyranny of the status quo”. The status quo is more familiar, while the new is “unchartered territory”. Not every pension fund has the desire “to boldly go where no man has gone before”. As mentioned before, it took many decades and the extended bull market of the 1950s and 1960s for equities to become en vogue for the “prudent” investor. Second, the 1980s and 1990s were extremely favourable for long-only strategies in both equities and bonds in the developed world ex Japan. Everything came together that favoured an equity/bond mix: the fight against inflation was won, vast privatisation initiatives, deregulation, peace dividend, globalisation and new technology. Third, hedge fund performance since the trough of 2008 has been mediocre. The peer pressure of a well performing investment theme or asset class is not there.

“Given that I'm never sure, I don't want to have any concentrated bets.”

—Ray Dalio¹

“[Individuals who break through by inventing a new paradigm are] almost always...either very young or very new to the field whose paradigm they change....These are the men who, being little committed by prior practice to the traditional rules of normal science, are particularly likely to see that those rules no longer define a playable game and to conceive another set that can replace them.”

Thomas S. Kuhn

¹ “Mastering the machine - How Ray Dalio built the world's richest and strangest hedge fund,” *The New Yorker*, 25 July 2011.

² From Swedroe, Larry E., and Jared Kizer (2008).

The majority of academic finance literature suggests that time diversifies risk. This means investing for the long-term, which is of course laudable, reduces risk. Disciples of buy-and-hold strategies also believe in the idea of time diversification. The logic is that if one has an investment horizon of 50 years or longer, one can recover from large dislocations. The counter argument is that time actually amplifies risk. The logic here is that over the longer term, more bad things can happen and the probability of failure (i.e., non-survival) is higher. The probability, for example, of San Francisco being wiped out by a large earthquake over the next 200 years is much larger than over the next 200 days. This observation is one reason why a ten-year put option on the S&P 500 index costs more than a one-year put option. If accidents happen in the short-term, one might not live long enough to experience the long-term. After all, the long-term is nothing else than many short-term periods adjoined together. Elsewhere we have shown that it is possible for a balanced long-only equity/bond portfolio to compound at a negative annual rate over a twenty-year period. In a regime of rising or falling interest rates, both equities and bonds are correlated.

As mentioned above, the discipline of institutional investment management is fairly new. Most of the approaches and processes in institutional investment management stem from a period that represents a statistical outlier in terms of long-term returns despite the foundations going back to the 1950s. Most financial professionals today grew up, professionally speaking, in this very sound environment from 1982-1999. It is possible that some of the approaches and processes that worked in this recent, happy regime will not work during periods that are more normal. It is for this very reason that the more astute institutional investors started to diversify into alternatives in the late 1990s.

The 2008 financial crisis made it apparent that the science we refer to as *finance* and which is built on *Portfolio Selection* has its shortcomings. Volatility might not be a good proxy for risk after all. Quoting Lord Bauer for the last time: "A safe investment is an investment whose dangers are not at that moment apparent". Accidents happen. This is true in life as well as investing. Things can go wrong and volatility has very little to do with it. Risk management begins where VaR ends.

Albert Einstein was once quoted saying "not everything that can be counted counts and not everything that counts can be counted". As far as we can tell, Mr Einstein was not referring to Wall Street's exposure to subprime credit. However, the quote applies very well to the profession of risk management. Economics and financial economics at the academic and especially theoretical level have become purely mathematical and hardly assessable for any "experimentalists", that is, practitioners. This is often referred to as "physics envy" that describes applying mathematical rigor to a science to make it look more like physics - the mother of all sciences - irrespective of whether it makes sense or not. The observation that the mathematical rigour that makes sense when examining the motion of planets or molecules might not apply to some of the social sciences was somehow overlooked by many. Only a few argued against using mathematics in the social sciences. In his acceptance speech when picking up the Nobel Prize in 1974, Friedrich Hayek for example argued against the use of the tools of hard science in the social sciences. Potentially a case could be made that financial economics is not only in need for an overhaul with respect to finding new ways of explaining the Darwinian fight for survival under competition in hostile environments but also a simplification of the theories for them to be of value to practitioners making decisions under uncertainty. We ought to simplify.

"Forever is composed of nows."

Emily Dickinson

"A random market movement causing the average investor to mistake himself for a financial genius."

Alternative definition of an equity bull market

"If you give a pilot an altimeter that is sometimes defective, he will crash the plane. Give him nothing and he will look out the window. Technology is only safe if it is flawless."

Nassim Taleb¹

"Any intelligent fool can invent further complications, but it takes a genius to retain, or recapture, simplicity."

Economist E.F. Schumacher

¹ Jorion, Philippe (2007) "Value at Risk - The new benchmark for managing financial risk," Third edition, New York: The McGraw-Hill Companies, p. 553. (Originally in "The World According to Nassim Taleb," *Derivatives Strategy*, December/January 1997.)

While some institutional investors have a legacy of including real estate to their equity/bond mix, the portfolios of most institutions in the United States until quite recently resembled a mix of 60% equities and 40% bonds while the allocation in the United Kingdom is closer to 70/30. An outsized allocation to equities violates sensible diversification principles. Committing more than 50% of a portfolio to a single asset type exposes investors to unnecessary risk. The consequences of a concentration in (often domestic) equities are exacerbated by significant correlation between stocks and bonds. The level of interest rates play an important role in the valuation of equities as well as bonds as both are future claims discounted to today. Increasing interest rates normally cause stocks and bonds to fall simultaneously and vice versa. This was not much of an issue in the regime of disinflation as interest rates were falling and, hence, equities and bonds had risen. Today it is.

Potentially the idea of risk parity is a trend. Risk parity is a strategy where the allocations to various asset classes are determined by the risk of the various asset classes. If risk is defined as volatility, an asset allocation of 50:50 between equities and bonds can result in a risk allocation of 90:10. This means moving from traditional asset allocation towards risk allocation (or risk parity), generally speaking, results in a smaller allocation to equities. One idea associated with risk parity is to have each 25% of equity risk, interest rate risk, credit risk, and inflation risk, and then fill the first three buckets with hedge-fund-type risks, rather than plain long-only risks.

Leonardo da Vinci is quoted saying, "simplicity is the ultimate sophistication". Potentially this quote is applicable to the current divide between finance on a scholarly level and how investors do and should manage risk. The "ultimate sophistication" of institutional investment management going forward could simply be that one should not put all eggs in one basket and nothing ventured, nothing gained.

"We must base our asset allocation not on the probabilities of choosing the right allocation but on the consequences of choosing the wrong allocation."

Jack Bogle¹

"Diversification should be the cornerstone of any investment program."

Sir John Templeton

¹ "The Gospel According to Barton Biggs," Real Money, Doug Kass, 2 May 2012



Appendices

Appendix 1

The origins of hedge funds

The most often used reference for the origins of hedge funds was 1949 when Alfred Winslow Jones (1900-1989) opened an equity fund that was organised as a general partnership to provide maximum latitude and flexibility in constructing a portfolio.¹ 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 enhanced performance using leverage. Today the term "hedge fund" takes on a much broader context, as different funds are exposed to different kinds of risks. The first fund of hedge funds, Leveraged Capital Holdings, was created by Georges Karlweis in 1969 in Geneva.

Alfred W. Jones was born in 1900 in Melbourne, Australia, to American parents and moved to the United States when he was four. He graduated from Harvard University in 1923 and became a US diplomat in Berlin during Hitler's rise to power in the early 1930s. In 1941, he earned a doctorate in sociology at Columbia University. During the 1940s, Jones worked for Fortune and Time and wrote articles on non-financial subjects, such as Atlantic convoys, farm cooperatives and boys' prep schools.²

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%.

In 1952, Jones altered the structure of his investment vehicle from a general partnership to a limited partnership and added a 20% performance fee. He, thereby, became the first money manager to combine short selling, leverage and alignment of interests, i.e., shared risk with a compensation plan based on skill, i.e., investment performance. His leverage was often around 1.5:1, composed of 110% long positions and 40% short positions. This is quite similar as to how equity long/short funds operate today.

While a few investors, including Warren Buffett and the late Barton Biggs, adopted the structure that Jones created, he and his structure were not widely known. 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. In April 1966, Carol Loomis wrote an article titled "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. Apparently, Alfred Jones never used the term "hedge fund" but referred to his fund as a "hedged" fund to distinguish it from a fund that was not. Jones' fund was outperforming the best mutual funds even after a 20% incentive fee. Over the prior five years, the best mutual fund was the Fidelity Trend Fund yet Jones outperformed it by 44%, after all fees and expenses. Over 10 years, the best mutual fund was the Dreyfus Fund yet Jones outperformed it by 87%. The news of Jones' performance created excitement and, by 1968, approximately 200 hedge funds were in existence.

The hedge fund idea predates the concept of trying to beat a benchmark

A hedge fund is an enterprise and therefore most often starts with an idea and the entrepreneurs themselves risking their own money

Imitation is the sincerest form of flattery

The term "hedge fund" was coined in 1966

¹ Note that Lhabitant (2006) puts the start date at 1930 when, apparently, a gentleman with the name of Karl Karsten set up what, today, can be determined as the first hedge fund and summarised most of the key principles of running a hedge fund in a book titled *Scientific Forecasting* that was published in 1931.

² Alfred Jones was a special character. A detailed biography is found in Mallaby (2010).

Jones merged two investment tools - short sales and leverage. Short selling was employed to take advantage of opportunities of stocks trading too expensive 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".¹

Speculative techniques for conservative ends

Jones charged his investors 20 percent of the upside, claiming that he had been inspired by Mediterranean history. He told his investors that his profit share was modelled after Phoenician merchants, who kept a fifth of the profits from successful voyages, distributing the rest to their investors. Jones's performance fee (termed a "performance reallocation" in order to distinguish it from an ordinary bonus that would attract normal income tax) was happily embraced by successive generations of hedge funds.²

The 20 percent performance fee was modelled after Phoenician merchants

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.

*Many hedge funds perished in the two bear markets in the early 1970s as they departed from the discipline of controlling risk
Alignment of interest between principal and agent is a key characteristic of a good hedge fund*

Jones kept all of his own money in the fund, realising 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. The alignment of capital and interest was obviously in stark contrast to many traditional investment management firms. 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 multi-manager hedge fund by bringing in Dick Radcliffe to run a portion of the portfolio. 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.

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".

A hedge fund where the managers have a substantial part of their net wealth at risk is a call option. If no own capital is at risk, it is a free call option.

By 1971 there were no more than 30 hedge funds in existence, the largest having \$50 million under management.³ The aggregate capital of all hedge funds combined was probably less than \$300 million.

No more than 30 hedge funds by 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. Typically, each fund consisted of two or three general partners, a secretary and no analysts or back-office staff. The main characteristic was that every hedge fund specialised in one strategy. This, too, is different from today.

Hedge funds went more or less unnoticed during the 1970s

¹ From Caldwell and Kirkpatrick (1995)

² From (Mallaby), p. 30.

³ From Elden (2001)

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 unnoticed. This resulted in relatively little competition for investment opportunities and exploitable market inefficiencies. In the early 1970s, there were probably no more than 100 hedge funds.

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's Steinhardt Partners were compounding at 40% 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% and Jaguar was up 20%, while the S&P 500 was down 3% and the Morgan Stanley Capital International (MSCI) World index was down 16%. The press began to write articles and profiles drawing attention to these remarkable funds and their extraordinary managers.

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 advertising and instead relied on word-of-mouth references to grow their assets. The majority of funds were organised 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 fuelled the development of the more tax-efficient offshore funds.

Hedge funds re-entered the investment community in May 1986, when Institutional Investor ran a story about Julian Robertson. The article, by Julie Rohrer, reported that Robertson's Tiger Fund had been compounding at 43% during its first six years, net of expenses and incentive fees. This compared to 18.7% 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.

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 market in equities. 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. Correlation between hedge funds fell as the source of returns became more disperse. This trend allowed funds of funds and other investors to combine risky hedge funds to construct conservative portfolios. This trend was important for the institutionalisation of the whole hedge fund industry.

Bottom line

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., the attempt of beating a benchmark). One could conclude that the way hedge funds manage assets is going back to the roots of investing. Trying to win what Charles Ellis calls a loser's game, therefore, could be viewed as only a short blip in the evolution of

In the 1980s, hedge funds awe-inspired the investment public mainly through stellar performance

"If we were allowed to advertise our performance figures, the mutual fund industry would be history."
Donald J. Halldin (founder of a fund of hedge fund)

Hedge funds resurfaced in 1986

Migration from Manhattan to Connecticut or City to Mayfair not only financially motivated

Wide dispersion between sources of return is required for constructing conservative portfolios with risky constituents

The paradigm of relative returns might one day be perceived as an ideological error

investment management. The paradigm of relative returns might one day be perceived as an ideological error. Communism does not work because the agents entrusted with day-to-day decision making about scarce resources do not care whether resources are efficiently employed or not. Analogously, one could argue that the idea of relative returns has little survival value, too, as the agents in charge over the principal have no incentive to avoid large losses and protect their principals assets.

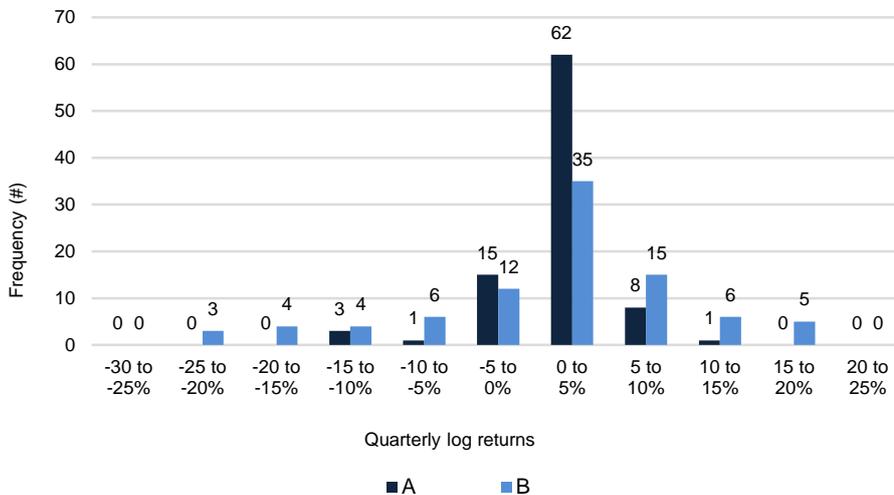
Some technical aspects about tail risk

In this report (and elsewhere) we claimed that diversified hedge fund portfolios deliver equity-like returns on the upside and bond-like returns on the downside. This asymmetry allows compounding of capital at a higher rate than with long-only equities (because the losses are smaller) with less downside risk. This sounds too good to be true. We also claimed that this asymmetry is a function of active risk management. However, large parts of academia do not see it that way. In innumerable scholarly papers, they argue that hedge funds are in the business of “picking up nickels in front of a steamroller”. Even highly reputable academics argue that hedge funds have little or nothing to do with risk management. For example, Professor Andrew Lo from MIT argues that - among other things - “risk management is not central to the success of a hedge fund” when characterising “a typical hedge fund manager’s perspective”.^{1,2} We however have argued herein that it is indeed risk management that is the main differentiator between traditional asset management. In this chapter, we discuss some technical aspects of tail risk. Managing tail risk is only relevant for the absolute return manager. The relative return manager has no incentive to control tail risk. After all, if there is a tail event, the benchmark goes down too.

Active risk management is the main differentiator to the relative return approach

Chart 39 (below) shows the distribution of quarterly returns from two different investments: Investment A, as in alpha and investment B, as in beta. There were 90 quarterly returns spanning the 22½-year observation period from January 1990 to June 2012. The ratio between positive and negative returns in the case of A was 71:19. The relationship with investment B was 61:29. In other words, investment A is “skewed” towards positive returns, as there are many more positive returns than negative returns.

Chart 39: Distribution of quarterly returns (Q1 1990 to Q2 2012)



Source: IR&M, Bloomberg
 A: HFRI Fund of Funds Composite Index; B: MSCI World Total Return Index

¹ See Lo (2008), p. 2

² Generally speaking, we commend Andrew Lo’s insight, as he is both academic as well as hedge fund manager. We especially recommend his work on hedge funds in relation to systemic risk to those readers who seek further reading.

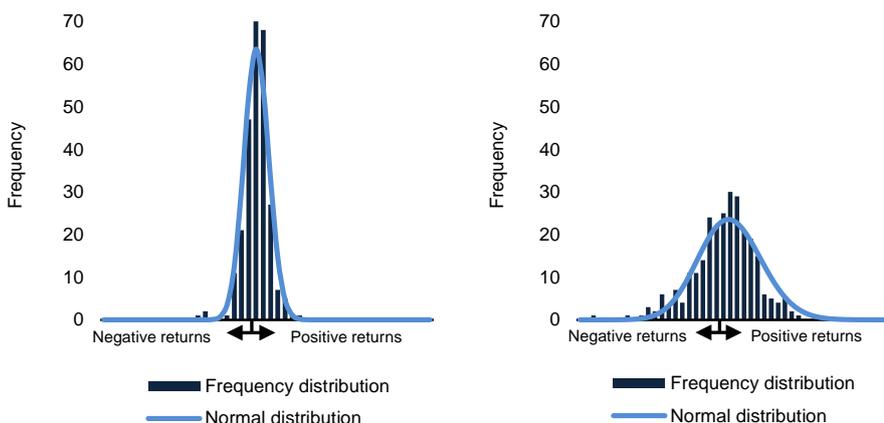
Viewing Chart 39 (on the previous page) and not knowing the underlying indices, which bars would most investors prefer? We would argue - judging by intuition alone - most investors would opt for the dark bars. However, large parts of academia went to great length arguing that it is the dark bars that suffer from fat tails. The intuitive response to the dark bars suffering from fat tails (implicitly assuming that the grey bars do not) is "you must be kidding". That is exactly the response by many absolute return practitioners when confronted with some of the conclusions coming from the hedge fund bashing fraternity of academia. After all, the fat tails are indeed with investment B. ("B" as in beta.) The returns of investment B are not "manufactured" by human ingenuity; they are given by the brute market forces. These returns are "unhedged" returns; hence, some of them fall so far to the left hand side. The returns of investment A (as in alpha) are "manufactured". These are net returns where the investor pays two layers of fees for risk management services. The first layer is risk management on a securities level while the second layer is on the manager level. These two risk management layers are not fully bulletproof. Accidents still happen. However, as the chart reveals, accidents happen less often and their impact is smaller.

"Finance academia, unlike the physics establishment, seems to work like a religion rather than an empirical science with beliefs that have resisted any amount of empirical evidence. Financial theory being a fad, not a science, it may take a fad, and not necessarily a science, to unseat its current set of beliefs."

Nassim Taleb¹

Note here that we present the data somewhat differently than the "standard" way in finance. The "scholarly-approved" way of looking at the abnormality of a return distribution is by looking at the third and fourth statistical moments of a distribution. The first two moments are the mean, i.e., average return, and the standard deviation of returns, which, in its annualized form, is referred to as volatility. These two variables are enough to explain a normal distribution. However, since the normal distribution in finance is an extremely unrealistic approximation of reality (since October 1987 it is difficult to argue otherwise) variables that show a departure from normality are also added. The third moment of a return distribution is the skew or skewness. A positive number will tell us whether it is somewhat more likely to have a return above the mean relative to a return below the mean. The fourth statistical moment is the kurtosis or excess kurtosis. A normal distribution has a kurtosis of three or an excess kurtosis of zero. This fourth moment of the return distribution is also designed to show a departure from a normal distribution. A positive excess kurtosis means that there are more returns closer to the mean than suggested by a normal distribution and more returns in the tails of the distribution. The term "fat tails" therefore means high (excess) kurtosis.

Chart 40: Tale of two return distributions (January 1990 - August 2012)



¹ Taleb, Nassim (2004) Book review of "The (Mis)Behavior of Markets: A Fractal View of Risk, Ruin, and Reward," by Benoit Mandelbrot and Richard Hudson, Basic Books, www.fooledbyrandomness.com.

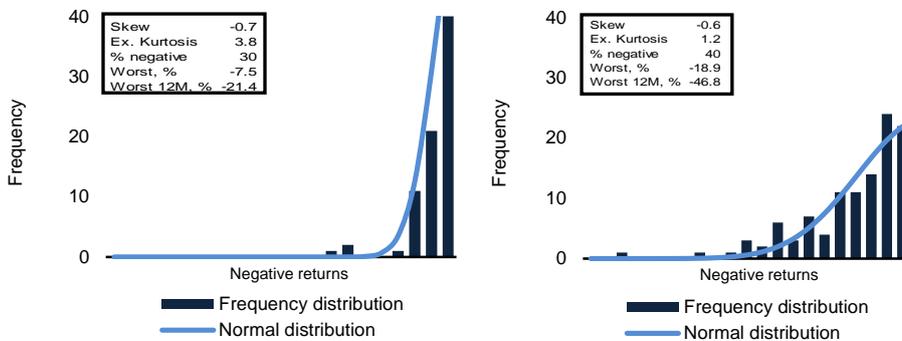
Source: IR&M, Bloomberg
 A: HFRI Fund of Funds Composite Index; B: MSCI World Total Return Index

Chart 40 (on the previous page) compares the two monthly return distributions of investment A and B. Both exhibits in the chart show the frequency distributions (bars) and the normal distribution (line). A normal distribution is, sort of, a proxy for a model world whereas a frequency distribution is essentially, what happened in the past in the real world. Our claims are easy: we think achieving return distribution A is difficult whereas capturing B is not.

Being exposed to the vagaries of market moods unhedged is not that difficult

The frequency distributions (grey bars in Chart 40 are based on 272 monthly USD total returns from January 1990 to August 2012. The compound annual rate of return (CARR) of investment A was 7.3% over the 22½-year period. The normal distribution serves as a comparison and was calculated using the mean monthly return from the index of 0.60% and the standard deviation of monthly returns of 1.69%. The CARR of investment B was 6.0% with a mean and standard deviation of 0.59% and 4.52% respectively. Chart 41 (below) shows the tails of investment A and B in more detail with some added statistical information.

Chart 41: Tale of two tails (January 1990 - August 2012)



Source: IR&M, Bloomberg
 A: HFRI Fund of Funds Composite Index; B: MSCI World Total Return Index

Large parts of academia perceive investment A as being quite scary. In the laboratory environment of the financial scientist, things can indeed look quite scary. We pick this up by looking at the extremes, i.e., those returns that do not fit into our model world of normal distributions. Investment A has indeed an outlier on the left hand side of the distribution. This one observation inflates the excess kurtosis statistic to a whopping 3.8. In investment B the line (model world) is much more aligned with the bars (real world). In other words, it is investment B that academia likes as there is no big departure from what they believe the world should look like and the world they empirically can observe. The excess kurtosis is much lower, in this case only 1.2.¹

Loss averse investors should prefer risk controlled exposure to markets

Investors who are not indifferent to losses and who prefer compounding wealth positively rather than negatively should actually have a stark preference for investment A over B. The percentage of losing months is much lower, 30% versus 40% in investment B. The worst losses over one and twelve months of investment A were 7.5% and 21.4% respectively. This compares to losses of 18.9% and 46.8% in the case of investment B.

¹ Interestingly, it was 0.6 in the 2008 edition of this report, which included return data until March 2008.

One paper by Brulhart and Klein (2005) on higher moments actually stands in refreshing contrast to most articles on the subject. As collaboration between a practitioner and an academic, the paper won the 2005 AIMA Canada Research Award. In this paper, the authors argue that - strictly statistically speaking - skew and excess kurtosis are actually not synonymous with third and fourth moment of the return distribution, despite everyone treating them as such. Referencing statistical papers, the authors argue that the skew and kurtosis measures are "normalised" by the standard deviation. So their findings show that skew and kurtosis are more inflated with absolute return strategies because volatility is lower whereas third and fourth moment that are not normalised by the volatility are much lower when compared to long-only strategies. We made this point in Ineichen (2004) and stressed this (somewhat) excessively in this report: when comparing systematic risk with systematic risk, it is a long-only strategy that exposes the investor to tail-heavy-event-type risk; not an absolute return strategy, where managing total risk is a major objective. This is why the analysis of drawdowns shows a different picture than the examination of excess kurtosis and skew. The drawdown measure is not normalised by the volatility but shows the absolute (historical) loss either relative to time (e.g., 12 months) or previous level of wealth (e.g., peak to trough).

The excess kurtosis statistic does not really measure fat tail risk

An interesting aspect of all this is that retail investors and, in some jurisdictions institutional investors are prevented from investing in investment A but are allowed to invest in investment B. This is not necessarily obvious. As a matter of fact, some market participants are actually spinning what can be best described as a conspiracy theory that suggests that there is such a thing as a "long-only lobby" that wants the investing public not to know about investment A so the providers of investment B can continue charging fees for their arguably inferior products. One of the two main objectives of a regulator is to "protect" investors: (the other main objective being maintaining market integrity, i.e., managing systemic risk.) The irony is that investment B is the one with the big and frequent losses whereas investment A has fewer and smaller losses.

Failure, survival and the Adaptive Market Hypothesis¹

Most businesses fail. Extinction is common in business and life. 99.99% of all biological species that have ever existed are now extinct. On a somewhat shorter timescale, more than 10% of US firms go extinct annually. Even large, successful, monopolistic corporations are not secure. Not only species and corporations fail: policies and governments fail, too. Economist, Paul Ormerod calls this the *Iron Law of Failure*:

*The Iron Law of Failure appears to extend from the world of biology into human activities, into social and economic organisations. The precise mathematical relationship, which describes the link between the frequency and size of the extinction of companies, for example, is virtually identical to that which describes the extinction of biological species in the fossil record. Only the timescales differ.*²

The parallels between species, people, firms, governments and, of course, financial institutions including hedge funds are striking in terms of failure. They are all complex entities that try to survive in dynamic environments, which evolve over time but eventually fail. Despite striking parallels between the social and economic world and the world of biology, there is a fundamental difference between the two: the process of evolution in biological species cannot be planned. Species cannot act with the intent of increasing their fitness to survive. In contrast, in human society, individuals, firms and governments all strive consciously to devise successful strategies for survival. They adapt these strategies over time and alter their plans as circumstances change.

However, there are limits to planning. An early critic of conventional economic analysis was Austrian economist Friedrich August von Hayek. While most 20th century proponents of the dismal science suggest economics should be conducted in a similar fashion to physics, where theories depict mechanical systems and mathematics can precisely describe these systems, Hayek's views were much more rooted in biology. He believed individual behaviour is not fixed, like a screw or cog in a machine, but evolves in response to the behaviour of others. According to Paul Ormerod, Hayek, unlike most modern-day economists, understood and admired the achievements of other intellectual disciplines, especially anthropology. The complex interactions between individuals, in Hayek's view, give rise to inherent limits to knowledge of how systems behave at the aggregate level. No matter how smart the planner or how much information he or she gathers, there are inescapable limits to how much can be known about the systems.

In a book called *Normal Accidents*, Charles Perrow examines failures of man-made systems (power plants, airplanes, etc.).³ He makes the point that it is human nature to find someone to blame for an accident. We want to know the "cause". However, Perrow argues that the cause of an accident of a man-made system is to be found in the complexity of the system. An accident that results in a catastrophe is a series of small events that, viewed by themselves, seem trivial. It is the interaction of multiple failures that can explain the accident. Patient accident reconstruction often reveals the banality and triviality behind most catastrophes. In other words, great events have small beginnings.

Failure is quite normal

Social entities can plan

There are limits to planning

The problem of complex systems is complexity itself

¹ This section draws on material from Ineichen (2007b)

² From Ormerod (2006)

³ See Perrow (1999)

Evolutionary biologists have tracked extinction events over the past 600 million years. Although the data on such events is much less comprehensive and agreed upon than the data on economic history, biologists use them to mark the evolutionary calendar. Some of these scientists suggest that extinction events are numerous and rather regular, occurring roughly every 26 million years. Further, extinction seems to obey a power law, that is, a law that is magnified by some power - squared, cubed, to the tenth power, etc. In other words, there seems to be some law governing failure, that is, some non-randomness or predictability exists with respect to its probability distribution.

Failure is to some extent predictable

In biology, we know extinction will occur in the future. We can elaborate on its distributions and probabilities. However, we do not know which of the species is going to become extinct.¹ This scenario, we believe, is quite similar for hedge funds. We know that there will be failure and collapse in the future. We can also assess probabilities. The reason behind sizing hedge fund investments appropriately within a portfolio is the direct result of this fairly robust and difficult to challenge prediction that there will be failure in the future.

Diversification is a response to anticipated failure

Failure and survival are two sides of the same coin. Who will survive? It is not entirely random as to who survives in stressful situations or hostile environments and who does not. In mountaineering, it is not the best climbers who survive an accident but those who are best prepared and have no "reality deficit," i.e., no mismatch between perceived risk and true risk. Chance, as nearly everywhere else in the universe and human affairs, also plays a role. Louis Pasteur's statement that "chance favours only the prepared mind" seems to hold true when survival in extreme sports is concerned. It also holds true for hedge funds. Active risk managers can get into dire straits under stress or the market "turning against them" (hostile environment). They can also either fail or endure, but those who have an edge in aligning true risk with perceived risk may improve their chances of survival. We suspect that active managers with a "prepared mind" have higher chances of survival.

A "prepared mind" increases survival probability

Aviation is an area of study where survival is concerned. Laurence Gonzales, who spent his whole life seeking risk and thinking and writing about survival, starts his commendable book on the subject by telling the story of his father who, at the end of World War II was shot down when piloting a B-17 over Dusseldorf.² Somehow, his father survived the crash from 27,000 feet, while all other crewmembers did not. Heavily injured, he watched a local peasant walk up to the window, point a pistol at his head and pull the trigger. Fortunately, the gun malfunctioned. What are the chances?

In aviation, one often hears flight instructors say that, once airborne, the pilots' IQ is halved. The logic of this notion is that the human brain, from an evolutionary perspective, is not "designed" to deal with some of the modern vagaries. To put it differently, the time for the species - in this case, us - was too short to adapt to the new environment (i.e., modernity). In hang-gliding, for example, one needs to land against the wind. (If the pilot lands with the wind the speed of the glider is added to the wind instead of subtracted, which is not good.) Wind direction is normally marked by a windsock in the landing zone. The windsock points in the opposite direction from where the wind comes. The pilot needs to fly a rectangle over the landing zone where the actual landing happens into the wind. The speed of the glider is thus reduced by the wind. Given that the pilot needs to deal with three dimensions (for which evolution did not have enough time prepare the human brain, yet) and needs to focus on the landing procedure, it can happen that the pilot sometimes misinterprets the direction of the windsocks and lands with the

Evolution has not prepared our brain for some modern-day phenomena

¹ There is the idea that the more complex a species, the lower is its ability to adapt to change and the less likely is its long-term survival.

² See Gonzales (2003)

wind instead of against the wind. Interpreting from where the wind comes by observing a windsock under normal circumstances is easy. However, under the stress of landing, the obvious can become fuzzy - hence, the aphorism of the pilot not having his full IQ at his disposal.¹

Stress releases cortisol² into the blood. It invades the hippocampus and interferes with its work. Stress causes most people to focus narrowly on the thing that they consider most important and it may be the wrong thing. Under extreme stress, the visual field actually narrows. This reaction is referred to as tunnel vision. Gonzales states that it has happened numerous times that airline pilots were ordered to abort landing and simply did not hear the warning from the tower or did not see the snow plough in the middle of the runway. Tunnel vision is one of the reasons why commercial airlines have a co-pilot.

Under stress, emotion takes over from the thinking part of the brain, the neocortex, to affect an instinctive set of responses necessary for survival. This has been referred to as the "hostile takeover of consciousness by emotion".³ Emotions are genetic survival mechanisms, but they do not always work for the benefit of the individual. They work across a large number of trials to keep the species alive. The individual may live or die, but over a few million years, more mammals lived than died by letting emotion take over; and so emotion was selected as a stress response for survival.

Moods are contagious and the emotional states involved with smiling, humour and laughter are among the most contagious of all. Laughter does not take conscious thought. Laughter stimulates the left prefrontal cortex, an area in the brain that helps us to feel good and to be motivated. There is evidence that laughter can send chemical signals to inhibit actively the firing of nerves in parts of the brain, thereby dampening fear. Whether hedge fund investors share a laugh when their portfolio starts the year with a 3% drawdown, we do not know. According to the referenced research, they should.

Only in recent years has neuroscience begun to understand the detailed physiology of emotional states, such as for example fear. The neocortex is responsible for your IQ, your conscious decisions, your analytical abilities. However, the amygdale stands as sort of a watchdog for the organism.⁴ It is not a lack of fear that separates elite performers from the rest of us. They are afraid, too, but are not consumed by it. They manage fear. They use it to focus on taking correct action.

One of the lessons Gonzales suggests from studying survival in aviation and extreme sports is to remain calm under stress (i.e., not to panic). Because emotions are called "hot cognitions", this is known as "being cool". "Cool", as a slang expression, goes back to the 1800s, but its contemporary sense originated with African American jazz musicians in the 1940s. Jazz was "cool" compared with the hot, emotional bebop it had begun to overshadow. "Being cool" means to remain calm, to channel emotions and to be able to turn fear into focus. The ability to concentrate one's attention on the matter at hand is a prerequisite for a survival strategy in a hostile environment or when under stress.

Our brain can malfunction under stress

Emotions take over when under stress

"Not a shred of evidence exists in favor of the idea that life is serious."

Brendan Gill

Fear is good

Be cool

¹ This is something your author knows from personal experience, not from the literature.

² Cortisol is a corticosteroid hormone produced by the adrenal cortex (in the adrenal gland). It is a vital hormone that is often referred to as the "stress hormone" as it is involved in the body's response to stress. It increases blood pressure, blood sugar levels and has an immunosuppressive action.

³ From Gonzales (2003), p. 37.

⁴ From Gonzales (2003), p. 64.

While humour and controlled fear is good, hubris is not. Hubris is a human trait that many financial professionals can relate to. According to many market observers, including the author of *When Genius Failed - The Rise and Fall of Long-Term Capital Management*, Roger Lowenstein, it was hubris that brought down LTCM. It is very unlikely that hubris only applies to hedge funds.¹

Hubris is dangerous

Gonzales tells the story of a US Army Ranger, arguably someone well trained for survival in hostile environments, who took a guided commercial rafting trip, fell off the boat and drowned in shallow water. The Ranger refused being rescued (Army Rangers fail the training program if rescued; their credo is "death before dishonour"). He floated calmly downstream. He felt he was in no real danger because of all the training he had under much worse conditions. Then he arrived at a place where a big rock blocked the middle of the current. He was sucked under, pinned and drowned. The official report said, "The guest clearly did not take the situation seriously".²

Ignorance is dangerous too

The take-away of this story is twofold. First, elite training can cause overconfidence or an underestimation of risk. In the case of the Army Ranger, this was clearly the case. Other examples include mountain climbers who climbed in the Himalayas yet died at their local beginners' mountain that they thought they knew well. Second, experience is certainly good. Most professionals with experience and training know that they have experience and training, which inflates confidence. This self-confidence is probably beneficial when the experience and training applies to the current environment. However, experience and training can turn into ignorance when circumstances change and the experience and training does not apply anymore. Changing environments can cause a mismatch between true risk and perceived risk and impact one's abilities to deal with it. In finance, there is now a theory to go along with all these elaborations on survival. Andrew Lo, MIT-professor and hedge fund manager calls, it the "Adaptive Market Hypothesis" or AMH.³

Circumstances change and ones' skill might or might not be applicable in the new environment

Professor Lo referred to the hedge fund industry as the "Galapagos Islands of Finance".⁴ We find that the reference to Darwin could not be more appropriate in the current environment of thinking about economic affairs in general and finance and financial markets in particular. Darwin, putting it quite casually, showed that many beliefs and paradigms that humans cherished and thought of as the truth turned out to be false or very improbable. It took a while for people to become acquainted with the new fact that their ancestors - purely from an evolutionary biological point of view, of course - had been monkeys. This new piece of evidence caused quite a stir at the time.

Enlightenment is not for everyone

The reason why Andrew Lo referred to hedge funds as the Galapagos Islands is that the presence of hedge funds challenges the current paradigm in ways that need to be viewed as material. Markets are not always in equilibrium, a static concept; they fluctuate daily. Additionally, investors are not Mr Spock-like rational economic agents maximising their marginal utility. Market participants are driven by their desire not to fail. They want to survive.

Working example of how leverage can be used⁵

When exploiting market inefficiencies, leverage is often used because the inefficiencies are too small to be economically meaningful without the use of

¹ Note that some market participants argue that the idea of some central bank individuals steering the economy thereby acting more intelligently than hundreds of millions of individuals is the ultimate form of hubris.

² From Gonzales (2003), p. 60.

³ Lo (2004)

⁴ "The Adaptive Markets Hypothesis: Market Efficiency from an Evolutionary Perspective," Said Business School Finance Symposium, Oxford, UK, November 8, 2006.

⁵ From Ineichen (2006)

leverage. The relevant question for the investor is to know which risk factors have been amplified and which have been reduced as a function of the manager using leverage. We found a very intuitive way to show the use of leverage in Ainslie III (1999).

In equity long/short strategies, the net exposure is commonly viewed as the main measure when assessing risk. This is probably true when assessing portfolio volatility. However, the gross exposures and the ratio between longs and shorts give more insight into the degree of hedging. Net exposure indicates what percentage of assets are net long the market. Gross exposure, the sum of long exposure and short exposure, measures capital at risk. However, the long/short ratio describes the balance between longs and shorts. It is this ratio, as Mr Ainslie III points out, that is a more significant determinant than net exposure of a portfolio's ability to perform in difficult environments and to produce uncorrelated returns to the market.

Table 8: Example

	Portfolio A	Portfolio B
Long exposure	150%	75%
Short exposure	-100%	-25%
Net exposure	50%	50%
Long/short ratio	1.5x	3.0x

Source: Ainslie III (1999)

Table 8 demonstrates the difference. Both portfolios have the same net exposure of 50% but differ in terms of the long/short ratio and gross exposure. Portfolio A uses leverage and the gross exposure is 250% of principal. Portfolio B is unleveraged and therefore has a higher long/short ratio. If the market falls by 15% one can assume both portfolios to lose half of that according to the net exposure of 50%:

$$\text{Portfolio A} \quad (150\% \times -15) + (-100\% \times -15\%) = -7.5\%$$

$$\text{Portfolio B} \quad (75\% \times -15) + (-25\% \times -15\%) = -7.5\%$$

The idea behind equity long/short is stock picking skill. This means that if a manager has stock picking skill and the market falls by 15%, it is possible that the longs only fall by 10%, i.e., outperform the market, while the shorts can fall by say 20%, i.e., underperform favourably. The two portfolios would display the following return pattern:

$$\text{Portfolio A} \quad (150\% \times -10) + (-100\% \times -20\%) = +5.0\%$$

$$\text{Portfolio B} \quad (75\% \times -10) + (-25\% \times -20\%) = -2.5\%$$

The use of leverage allowed manager A to produce positive returns despite the market falling 15%. The example shows how the skilled manager can lever his skill, in this case stock picking skill. Assuming skill is positive, the risk/return profile of the fund is asymmetric. There are more positive returns than negative returns and/or the positive return are on average larger than the negative returns. This asymmetry would be difficult to implement without the use of leverage. If we apply the logic of the law of active management from page 45 to all of this, it becomes unreasonable why a manager with stock picking skill should not be using leverage.

Appendix 2

Practical next steps

AIMA's roadmap has been designed to offer the reader a clear and methodical 'intermediate' analysis of the hedge fund industry, which complements work published by the public sector (most notably the US President's Working Group Investors' Committee Report).

If you (your organisation) is considering making allocations to hedge fund strategies, it is vital that you know the questions to ask - of a hedge fund consultant or of a hedge fund manager, for instance. Ultimately, experience is the best test of knowledge. Working with organisations and/or individuals that can demonstrate a deep knowledge of the industry will always be the best option.

In addition, the hedge fund industry and, subsequently, policy and regulatory organisations have developed materials over the last 15 years to provide you with access to an extensive range of information on hedge fund industry practices. Your consultant(s) should have knowledge of much of these and you can also access them directly. We encourage you to make full use of them. They are all practical in nature, rather than theoretical; and will provide you with a wealth of information. Most items are also available either directly from the owners' websites, or as per the reference listed below, which offers users a simple method of identifying any of the existing practices document for any hedge fund topics, such as valuation, then drills down into the guidance, if the user wishes.

Item	Producer	Availability
<i>AIMA's Series of Illustrative Due Diligence Questionnaires - for selection of hedge fund manager, funds of hedge funds manager, hedge fund administrator and prime brokers</i>	AIMA	<i>Available to AIMA members only</i> www.aima.org
<i>Best Practices for the Hedge Fund Industry (2008)</i>	PWG	http://www.treasury.gov/about/organizational-structure/offices/Domestic-Finance/Documents/Investors%20Report%20%20Final.pdf (amcreportapril152008.pdf)
<i>Guide to Sound Practices for Business Continuity for Hedge Fund Managers (2012)</i>	AIMA	<i>Available to all</i> www.aima.org
<i>Guide to Sound Practices for European Hedge Fund Managers (2007)</i>	AIMA	<i>Available to all</i> www.aima.org
<i>Guide to Sound Practices for Hedge Fund Administrators (2004)</i>	AIMA	<i>Available to all</i> www.aima.org
<i>Guide to Sound Practices for Hedge Fund Valuation (2007)</i> <i>Note: An updated version will be published in Q1 2013.</i>	AIMA	<i>Available to all</i> www.aima.org

Item	Producer	Availability
<i>Hedge Fund Standards: Final Report (2012) including the Hedge Fund Standards</i>	HFSB	www.hfsb.org
<i>Model Due Diligence Questionnaire for Hedge Fund Investors (2007)</i>	MFA	www.managedfunds.org
<i>Offshore Alternative Fund Directors' Guide (2008)</i>	AIMA	<i>Available to AIMA members only</i> www.aima.org
<i>Principles for the Valuation of Hedge Fund Portfolios (2007)</i>	IOSCO	www.iosco.org (IOSCOPD240.pdf)
<i>Sound Practices for Hedge Fund Managers (2007)</i>	MFA	www.managedfunds.org

AIMA - Alternative Investment Management Association

MFA - Managed Funds Association

HFSB - Hedge Fund Standards Board

IOSCO - International Organization of Securities Commission

PWG - US President's Working Group

Appendix 3: Glossary and references

Definitions of hedge fund industry stakeholders¹

Stakeholder	Definition
<i>Administrator</i>	An entity, usually independent of the Investment Manager, who provides a range of services to the Fund under the terms of an administration agreement. Services provided include NAV production, shareholder services, anti-money laundering, reconciliation and record-keeping functions. Some Administrators offer "integrated" solutions, which allow Investment Managers to outsource some of their own back-office functions.
<i>Auditor</i>	The Auditor issues a written opinion upon the fair presentation of the Fund's annual financial statements, in accordance with the Fund's applicable accounting and auditing standards, on the basis of a year-end audit of the Fund's books and records.
<i>Custodian</i>	A bank, trust company or other financial institution that holds and protects a Fund's assets and provides other services, including collecting money from investors, distribution redemption proceeds, maintaining margin accounts, registering investments and exercising options. Usually a Fund's Prime Broker(s) will perform the role of Custodian. Under the provisions of the AIFMD, the custodian may act as a depositary.
<i>Fund</i>	<p>The Fund is a collective investment scheme, typically established in the following ways:</p> <ol style="list-style-type: none"> 1. In offshore jurisdictions such as the Cayman Islands, the Fund will usually be established as a Limited Liability Company. 2. Funds established under the laws of a US state such as Delaware usually take the form of a Limited Liability Partnership. 3. Some Funds in offshore jurisdictions are established as Unit Trusts, although this is a comparatively rare structure <p>The Fund has a legal identity but in practice decisions on its behalf will be made by its Governing Body.</p>
<i>Governing Body</i>	<p>A Governing Body generally supervises and oversees the conduct of its Fund's affairs, even though it will delegate day-to-day functions to other parties such as the Investment Manager and Administrator.</p> <p>The composition of the Governing Body will depend upon the Fund's structure and jurisdiction:</p> <ol style="list-style-type: none"> 1. A Fund established as a Company will have a Board of Directors as the Governing Body. The Board may include representatives of the Investment Manager and directors selected by the Investment Manager although there is an increasing trend for independent non-executive directors of stature to be appointed to hedge fund Boards. 2. A Fund established as a Partnership will usually have a General Partners as Governing Body. Typically the General Partner will be the Investment Manager. 3. A Fund established as a Trust will have a Trustee as the Governing Body. The Trustee is usually an independent licensed company.

¹ Definitions are taken from AIMA's Guide to Sound Practices for Hedge Fund Valuation (© AIMA)

Stakeholder	Definition
<i>Investment Manager</i>	<p>Often referred to as the Investment Advisor in the United States.</p> <p>The Investment Manager enters into an agreement with the Fund to make investment decision on its behalf, usually on a discretionary basis, in return for a management fee (based on NAV) and a performance fee (a percentage of NAV appreciation over a given period). The performance fee is sometimes also referred to as an incentive fee.</p>
<i>Investor</i>	<p>Investors in hedge funds can be categorised in many ways but the most clear distinction is between fund of hedge funds managers, direct investors and latterly hedge fund consultants:</p> <ol style="list-style-type: none"> 1. Fund of hedge funds managers: These entities manage diversified portfolios of hedge funds (usually in the form of collective investment schemes), and provide their investors with services such as fund selection and risk management in return for a fee. 2. Director investors: Hedge funds are aimed primarily at institutional and sophisticated investors. Director investors include pension funds (public and private), endowments, foundations and family offices. 3. Hedge Fund Consultants: These entities consult primarily to sophisticated institutional investors and act as the investor's agent. They typically develop a preferred list of hedge funds with due diligence performed on that list for a fee. The clients choose from that list to develop their own portfolio. Where a hedge fund is removed from such list, this will likely result in the client redeeming from the hedge fund.
<i>Prime Broker</i>	<p>A large bank or securities firm that provides various back-office and financing services to hedge funds and other professional investors. Prime Brokers can provide a wide variety of services, including trade reconciliation (clearing and settlement), custody services, risk management, margin financing, securities lending for the purpose of carrying out short sales, recordkeeping and investor reporting. A prime brokerage relationship does not preclude hedge funds from carrying out trades with other brokers, or employing others as Prime Brokers.</p>
<i>Registrar</i>	<p>The organisation that maintains a registry of the share owners and number of shares held for a hedge fund. Usually the Fund's Administrator also performs the role of Registrar.</p>
<i>Regulator</i>	<p>Independent organisation, usually governmental, that oversees financial markets, transactions and participants. Often seen as the protector of individual investors. Most, but not all, hedge fund Investment Managers are registered with their national Regulator.</p>

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Appendix 4: About AIMA, the Sponsor and Principal Author



AIMA

As the only representative global hedge fund association, AIMA, the Alternative Investment Management Association, has over 1,300 corporate members worldwide, based in 50 countries.

Members include hedge fund managers, fund of hedge funds managers, prime brokers, legal and accounting services and fund administrators. They all benefit from AIMA's active influence in policy development, its leadership in industry initiatives, including education and sound practice manuals and its excellent reputation with regulators and policy makers, worldwide.

AIMA is a dynamic organisation that reflects its membership's interests and provides them with a vibrant global network.

AIMA is committed to developing industry skills and education standards and is a co-founder of the Chartered Alternative Investment Analyst designation (CAIA) – the industry's first and only specialised educational standard for alternative investment specialists.

Its objectives are:

- ≈ To provide an interactive and professional forum for our membership and act as a catalyst promoter of the industry's global development;
- ≈ To provide leadership to the industry and be its pre-eminent voice; and
- ≈ To develop sound practices, enhance industry transparency and education, and to liaise with the wider financial community, institutional investors, the media, regulators, governments and the other policy makers.

AIMA Investor Steering Committee

AIMA is the founder of the AIMA Investor Steering Committee – an advisory group of institutional investors whose activities cover pension plans (public and private), endowments, foundations and family offices. Its role is to advise AIMA and the industry on political and other issues relating to the hedge fund industry – on behalf of the global investor community. It also offers strategic and practical guidance on how to best serve the educational and informational needs of the hedge fund industry.

Members of this global committee include representatives from California Public Employee Retirement System, APG Asset Management, GM Asset Management, Oakhill Investment Management, University of Texas Investment Management Company, Kaust Investment Management Company, Ascent Private Capital Management, Universities Superannuation Scheme, British Airways Pension Investment Management, Pensionskasse Stadt Zurich, Kedge Capital Fund Management and Hong Kong Jockey Club.

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Deutsche Bank is a leading provider of financing, prime brokerage and markets clearing solutions to the global hedge fund industry. Deutsche Bank partners closely with its clients to offer integrated prime brokerage services that transcend borders, delivering streamlined operations in over 90% of the investable markets around the world. Client service is at the foundation of the model, providing seamless coverage, multi-asset financing solutions and global access. Deutsche Bank's markets prime finance solution has consistently led the industry and been voted no.1 Global Prime Broker for five consecutive years in the Global Custodian Survey and Best Global Prime Broker by Euromoney in 2012.

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Alexander Ineichen is founder of Ineichen Research and Management AG, a research firm founded in October 2009 focusing on risk management, absolute returns and thematic investing.

Alexander started his financial career in derivatives brokerage and origination of risk management products at Swiss Bank Corporation in 1988. From 1991 to 2005 he had various research functions within UBS Investment Bank in Zurich and London relating to equity derivatives, indices, capital flows and alternative investments, since 2002 in the role of a Managing Director. From 2005 to 2008 he was a Senior Investment Officer with Alternative Investment Solutions, a fund of hedge funds within UBS Global Asset Management. In 2009 he was Head of Industry Research for the hedge fund platform at UBS Global Asset Management.

Alexander is the author of the two publications "In Search of Alpha—Investing in Hedge Funds" (October 2000) and "The Search for Alpha Continues—Do Fund of Hedge Funds Add Value?" (September 2001). These two documents were the most often printed research publications in the documented history of UBS. He is also author of "Absolute Returns—The Risk and Opportunities of Hedge Fund Investing" (Wiley Finance, October 2002) and "Asymmetric Returns—The Future of Active Asset Management" (Wiley Finance, November 2006). Alexander has also written several research pieces pertaining to equity derivatives and hedge funds including AIMA's Roadmap to Hedge Funds (November 2008) which also has been translated into Chinese and at the time was the most often downloaded document from their website.

Alexander holds a Bachelor of Science in Business Administration with Major in General Management from the University of Applied Sciences in Business Administration Zürich (HWZ) in Switzerland. Alexander also holds the Chartered Financial Analyst (CFA) and Chartered Alternative Investment Analyst (CAIA) designations and is a certified Financial Risk Manager (FRM). He is on the Board of Directors of the CAIA Association and is a member of the AIMA Research Committee.



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