AIMA'S ROADMAP TO HEDGE FUNDS

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Foreword

One of the great things about hedge funds is that they have provided a field day for academic researchers to write scholarly articles on their risks and returns. Yet, for all of this scholarship, a practical roadmap to hedge funds has remained elusive. Until now.

On behalf of AIMA's Investor Steering Committee, Alexander Ineichen has provided a reference roadmap that breaks down the world of hedge fund investing into fundamental and useful concepts. Alexander and Kurt Silberstein, who has contributed to this publication are practitioners. Kurt's "day job" requires him to invest capital in the hedge fund world whilst Alexander's role is to provide in-depth analytical insight into the hedge fund industry. Therefore, they speak with the wisdom and experience of those whose livelihoods actually depend upon making good hedge fund manager selections. This book reflects their accumulated knowledge.

In the first section of the roadmap, there is an introduction to and definition of hedge funds together with information on its growth, the overall returns, breakdown of strategies and manager locations, flow of funds and comparison to other asset classes. This section answers the fundamental question: are hedge funds worth the effort? The key is to provide a macro perspective for broader asset allocation decisions.

The second section of the roadmap hits squarely at the myths of hedge funds. Unfortunately, the hedge fund industry still remains poorly understood. Too many "myths" surround this industry and this leads to scepticism and avoidance. Alexander charges right at the myths, labelling them and explaining their lack of empirical support or theoretical grounding. For example, one myth is that hedge funds hedge market risk. Certainly, some hedge funds do just that, but many hedge fund styles take on calculated market risks with the expectation of earning superior returns than the market. More specifically, most hedge funds hedge only certain risks that they do not believe offer a sufficient return premium while loading up on risks where they believe the return premium is undervalued or will exceed the market return. The key to demystifying hedge funds is to understand their fundamental investment philosophy. Once the myths are removed, the reader will be much more educated as to the benefits and risks of hedge fund investing.

Section three gets down to the nuts and bolts of building a hedge fund program as well as identifying the main strategies. The reader is taken through a pragmatic review of how to build a hedge fund program from the ground up. It is clear from this section that they draw on their personal experience at building two of the largest hedge fund programs in the investment world. However, most investors do not have the internal resources necessary to build their own hedge fund program and, therefore, must rely upon a fund of hedge funds investment. This limitation is recognised and, consequently, the section provides an excellent discussion on the benefits of funds of hedge funds. Then, there being no uniform classification

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system for hedge funds, Alexander does as good a job as any at identifying the three major classes of hedge funds: Relative Value, Event Driven and Directional. Not only does he identify the major categories of hedge fund styles, he also begins to break down the return patterns associated with hedge funds. Alexander shows the asymmetry of returns including "fat tails" and financial shocks. He also demonstrates how hedge funds use liquidity premiums and leverage to generate their excess returns. The key benefit of this section is to get an understanding of how the different hedge fund styles produce their returns and the risks associated with those returns.

The fourth section of the roadmap touches on two topics: the value proposition of hedge funds and risk in both relative and absolute terms. The former reviews the keen appeal that hedge fund managers have for investors. It examines the less constrained investment style of hedge funds and applies the Fundamental Law of Active Management to demonstrate how hedge fund managers have a greater ability to generate a positive Information Ratio than long only managers. Also, it examines the asymmetric nature of hedge fund returns—one of the key benefits of hedge fund investing for which the term "alternative" applies. The latter acknowledges that hedge funds are often classified as absolute return investments — but what does this really mean? Is it an attempt by hedge fund managers to trick investors into ignoring benchmarks or is there a legitimate reason for claiming absolute returns? And even if a hedge fund manager is an absolute return manager, isn't there some benchmark that could apply? Indeed, Alexander addresses these questions in a straightforward manner that leaves the reader better informed about the risk-taking nature of hedge funds.

I know the reader will enjoy this roadmap as much as I did. This is a pragmatic, user-friendly book that will go a long way to breaking down the myths of hedge funds while providing the user the ability to construct an intelligent hedge fund portfolio. Along the way, the psychobabble of the hedge fund world is eschewed to provide a commonsense guide in commonsense language that all can understand. Read and enjoy!

Mark Anson
President and Executive Director of Investment Services
Nuveen Investments, Inc

Executive Summary

Executive Summary

A hedge fund constitutes an investment program whereby the managers or partners seek *absolute returns* by exploiting investment opportunities while aiming to protect 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.

The favourable *relative performance* of hedge funds is worth highlighting as it is often brushed aside and is in stark contrast to the heavy artillery the industry regularly finds itself under: a hypothetical investment in the S&P 500 Total Return Index of a $100 at the beginning of this decade stood at $92.1 by September 2008. A hypothetical investment of $100 in the HFRI Fund Weighted Hedge Fund Index stood at $172.1. We think this to be a big difference.

The pursuit of absolute returns is much older than the idea of beating a benchmark. 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. 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. The paradigm of relative returns might soon be perceived as a short blip or ideological error in the evolution of investment management.

Hedge funds are active investment managers. 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.

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.

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 ongoing 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.

Executive summary

Large parts of mainstream academia repeatedly highlights that hedge fund data is poor, markets are efficient and hedge funds engage in short put strategies, essentially defrauding their investors. What academia never seems to mention is that there are few investors who have invested in diversified hedge fund portfolios for ten years or longer yet are unhappy with their investments. Most investors who moved into alternative investments have done so for conservative, financial purposes. These investors moved away from relying fully on equities and bonds increasing in value to achieve sustainable and smooth wealth accumulation and preservation.

One of the central drivers of alternative investments in this decade is the realisation by an increasing number of investors that the source of returns from various alternative asset classes and hedge fund strategies is 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 source of return from various "alternatives" differs fundamentally.

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"If you think education is expensive, try ignorance."
Derek Bok (former president of Harvard University)

"The opposite of hedging is speculating."
Mark Twain

Benjamin Graham, arguably one of the founding fathers of investment management as a profession, distinguished investment from speculation in both his main works, Security Analysis and The Intelligent Investor, by writing:

> *An investment operation is one which, upon thorough analysis promises safety of principal and an adequate return. Operations not meeting these requirements are speculative.*

It is interesting, then, to note that in the investment management industry today, "safety of principal" is, in fact, a rare thing. Surprisingly, the emphasis on "safety of principal" is found not in mainstream traditional asset management but in the "alternative fringe" of the industry, i.e. among absolute return managers such as hedge funds and funds of hedge funds. Absolute return managers seek to exploit an edge of some sort to make profits while at the same time attempting to limit the loss of principal. Protecting principal is an essential part of their mandates. This is materially different from the traditional asset management industry, where the focus is on outperforming or replicating a market benchmark. Safety of principal is not part of a standard relative return mandate.

Preface

It is ironic then that hedge funds have been vigorously criticised (by nearly everyone except for their long-term investors) as being dangerously intransparent, unregulated and excessively levered. The irony is that banks have - until quite recently - not been criticised, are tightly regulated and therefore perceived as transparent, use much more leverage than hedge funds and, as a sector, recently lost around a half of its market value in a period where the hedge fund sector lost around 9 %. And at the time of writing the credit crunch is not over.

While hedge funds have caught the eyes of a large variety of constituencies, such as academia, governmental bodies, regulators and (campaigning) politicians, this report is designed for investors and fiduciaries who have not yet invested in hedge funds. (We assume that current hedge fund investors have already managed to circumvent all the "barriers to entry" and have dealt pragmatically with the various trade-offs that are involved.) AIMA's Roadmap has been designed to offer the reader a clear and methodical 'intermediate' analysis of the hedge fund industry, which complements the US President's Working Group Investors' Committee Report. We aim to clarify, differentiate and especially de-stigmatise and de-mystify this investment alternative. The main purpose of this report is to get investors who are not yet invested in hedge funds confident with the space.

The roadmap was written during the rather "special" financial episode of 2008 and based on research conducted throughout the decade. Last minor revisions were done in the last week of September 2008 that was arguably a month of unprecedented change. With markets moving fast and ideologies and business models being modified nearly on a daily basis, Mr. Marx and Mr. Mao were probably laughing from wherever it is communists go when they die. Some of our remarks, therefore, need to be taken with a pinch of "investment salt". Given recent market events, our brief essay on failure and survival could have been placed more prominently than in the appendix on page 142.

The author would like to thank John Ardley, Tanya Styblo Beder, Charlotte Burkeman, Iain Cullen, Richard Main, James Nicholas, Kerri Pacello, Paul Parkins-Godwin, Jerome Raffaldini and Sanjay Tikku for their invaluable comments. A special thanks goes to Kurt Silberstein from Calpers for co-authoring the report, Mark Anson from Nuveen Investments for writing the foreword and Emma Mugridge from AIMA for making it all happen. The author is solely responsible for errors and omissions. Opinions are the author's own.

What exactly is a hedge fund?

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"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 Franc

- ***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 this decade stood at $92.1 by September 2008. A hypothetical investment of $100 in the HFRI Fund Weighted Hedge Fund Index stood at $172.1. We think this to be a big difference.***

Introduction and definition

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

The global hedge fund industry has seen a very rapid expansion since 2000. Current estimates of global assets under management range between $1.8 to around $4 trillion with annual growth rates outpacing traditional investment vehicles by a wide margin. At the end of 1999, assets under management were only around $450 billion. 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.

The term "hedge fund" initially described a "hedged" fund

The 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 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]

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

What exactly is a hedge fund?

Introduction and definition

Investment opportunities exist

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.

If all risk were hedged, so would be the returns

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 process of differentiating the two, 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 anymore. There seems much more to it.

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

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

> *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.*[1]

Hedge funds are an "everything but" of the investment universe

Bookstaber goes on to argue that hedge fund investing is more an "everything but" class as it encompasses the whole universe of investment possibilities. 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

1 - See Bookstaber (2003)

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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".

"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

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. 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 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]

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

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.

1 - See Ineichen (2003a), p. 34

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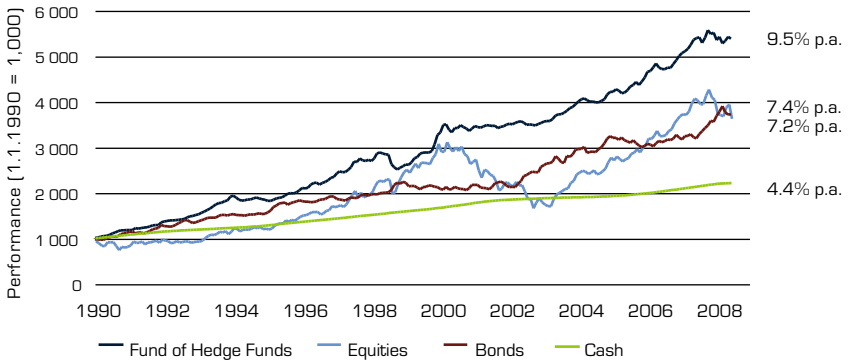
The hedge fund industry

Performance

Fund of hedge funds compounded capital at around 9.5% net of all fees from January 1990 to June 2008

The long-term absolute performance of broadly diversified hedge fund portfolios was high at around 9.5% from January 1990 to June 2008. Chart 1 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. We analyse hedge fund performance using the fund of funds index, which is net of two layers of fees as many institutional investors invest in hedge funds through funds of hedge funds and it is a more conservative display of hedge fund performance. The HFRI Fund Weighted Hedge Fund Index, which is a proxy for a diversified hedge fund portfolio net of one layer of fees, compounded at an annual rate of 13.3% from January 1990 to June 2008.

Chart 1: Long-term performance (January 1990 – June 2008)



Source: Alternative Investment Solutions, Thomson Financial
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 Government Bonds Index, Merrill Lynch US T-Bill 3M Index
PAST PERFORMANCE IS NOT INDICATIVE OF FUTURE RESULTS.

It was relative performance that put hedge funds on the agenda of institutional investors

Relative to other periods, performance of hedge funds in the first half of this decade was weak, based on an absolute as well as a risk-adjusted return basis. However, on a relative return basis, the performance of hedge funds was strong. While long-only funds lost 50% or more during the 2000-2002 bear market from peak to trough, diversified funds of hedge funds generated positive absolute returns for their investors. This relative outperformance put hedge funds on the map for institutional investors. Ironically, relative performance matters in the absolute return world, too.

What exactly is a hedge fund?

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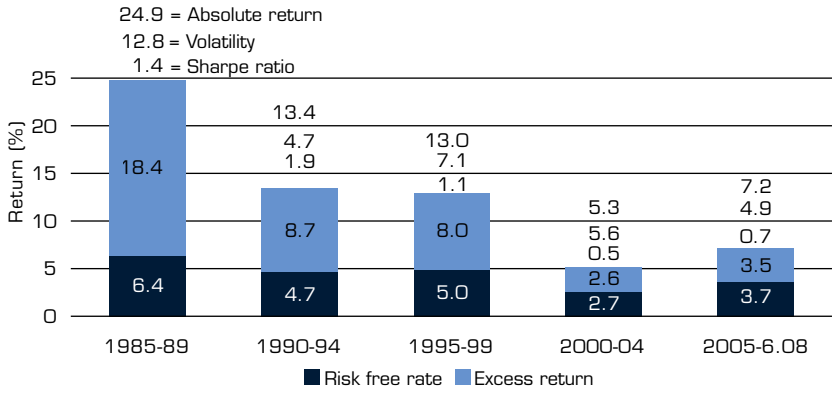
Chart 2: Excess returns (January 1985 – June 2008)



Source: Alternative Investment Solutions, Thomson Financial
Notes: 1985-89: AIS estimates (based on a basket of fund of funds); January 1990 – June 2008: HFRI Fund of Funds Composite Index; risk-free rate based on monthly average USD 3-month T-Bills.
PAST PERFORMANCE IS NOT INDICATIVE OF FUTURE RESULTS.

Absolute returns are lower than in the 1980s and 1990s

Chart 2 shows that absolute returns were clearly lower this decade when compared to the 1990s or even the 1980s. Additionally, absolute returns were higher in the second part of this decade than the first half. CARR was 5.3% from January 2000 to December 2004 and around 7.2% from January 2005 to June 2008. This compares to -2.3% and 3.5% respectively for the S&P 500 Total Return Index. Risk-adjusted returns, here measured with the Sharpe ratio, were also higher in the second half of this decade.

Expected returns of 4-6% above the risk-free rate are based on recent hedge fund history

Long-term excess returns were around 500 basis points above the US risk-free rate when judging by Chart 1.[1] When return expectations are expressed in excess returns, most investors' expectations are 400 to 600 basis points above the risk free rate of return. Excess returns during the second half of this decade are lower than the 1990s but higher than the 2000 to 2004 period.

Record inflow despite equity bull market

Chart 3 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 is that the institutional inflows into hedge funds are of a strategic nature, rather than a tactical allocation, given the fact that institutional investors continued to allocate to hedge funds despite strong performance in equity markets.

1 - Note that the number of investment professionals who think the term "risk-free rate" when referring to US T-Bills is a gross misnomer is increasing rather rapidly indeed.

What exactly is a hedge fund?

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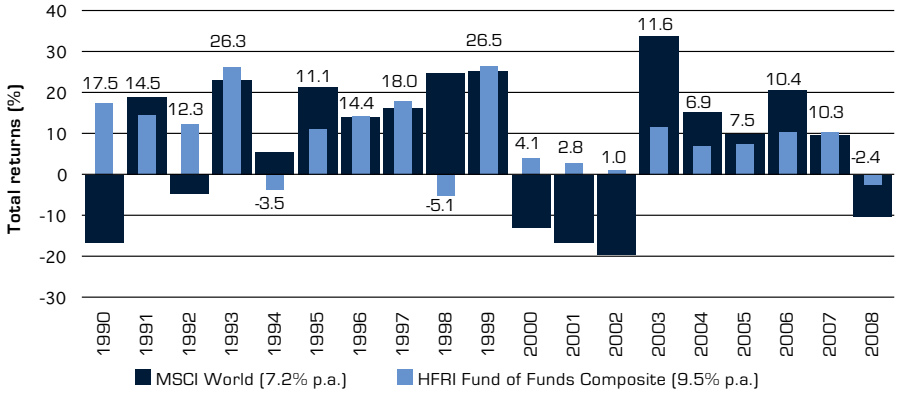
Chart 3: Fund of Hedge Funds versus MSCI World (Jan 1990 – Jun 2008)



Source: Alternative Investment Solutions, Thomson Financial
Return figure in legend shows the compound annual rate of return (CARR).
PAST PERFORMANCE IS NOT INDICATIVE OF FUTURE RESULTS.

Normally, hedge fund portfolios end the year in the black when equities are in the red

Balanced hedge fund portfolios always reported a positive return in years where equities were in negative territory when measured with a broad hedge fund of funds index. Whether this "rule" will hold in 2008 remains to be seen. By the end of the first half of 2008, both equities as well as balanced hedge fund portfolios were under water. Historically, negative hedge fund returns provided good entry points.

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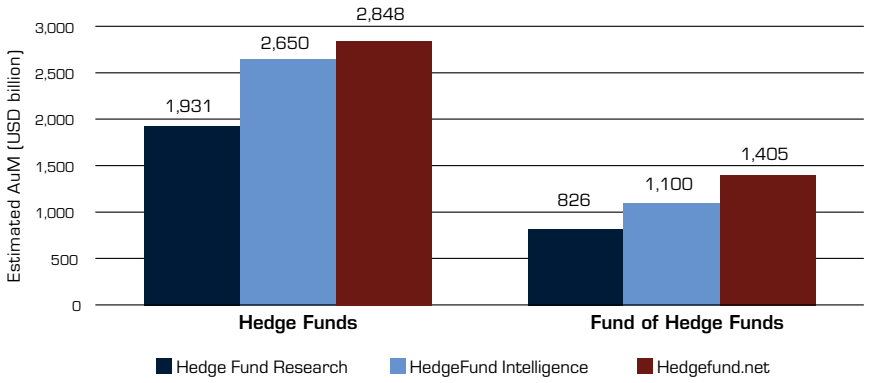
Assets under management

Estimates for assets under management vary

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 shows estimates by three different data providers. We have seen estimates as high as $4.0 trillion for the whole hedge fund industry. To us, $2.5 trillion as of June 2008 seems a reasonable estimate.

Chart 4: Assets under management in global hedge fund industry



Source: Alternative Investment Solutions, Hedge Fund Research, Hedge Fund Intelligence, Hedgefund.net
Notes: HFR estimates are as of Q2 2008. HFI estimates are as of beginning 2008. The USD1.1 trillion estimate for FoHF only includes FoHFs with USD1 billion under management or more. Including smaller FoHFs, HFI estimates that around 50% of assets under management are managed through FoHFs. Hedgefund.net estimates are as of Q1 2008.

Assets under management of the overall hedge fund industry grew by $403.9 billion to $1.875 trillion from Q4 2006 to Q1 2008, according to estimates from Hedge Fund Research (HFR). During the same period, HFR estimates that funds of funds grew by $142.7 billion to $825.9 billion.

Hedge funds could be managing around $2.5 trillion

Estimates by Hedge Fund Intelligence (HFI) are materially higher than those of HFR. According to HFI, assets under management grew by 27% in 2007 to $2.65 trillion in the beginning of 2008. Funds of hedge funds manage far more than $1.0 trillion. Chart 4 only shows the "Billion Dollar Club" that has 142 members, while HFI counts 559 funds of funds firms in total. If we had to choose one estimate for the entire industry as of June 2008, it would be $2.5 trillion for consensus and esthetical reasons. We believe around 45% ($1.1 trillion) is invested in funds of hedge funds.

When compared to other pools of assets, the hedge fund industry is still relatively small. Chart 5 puts the estimated $2.5 trillion of hedge funds assets into perspective. The global hedge fund industry at $2.5 trillion in assets is smaller than the largest asset manager.

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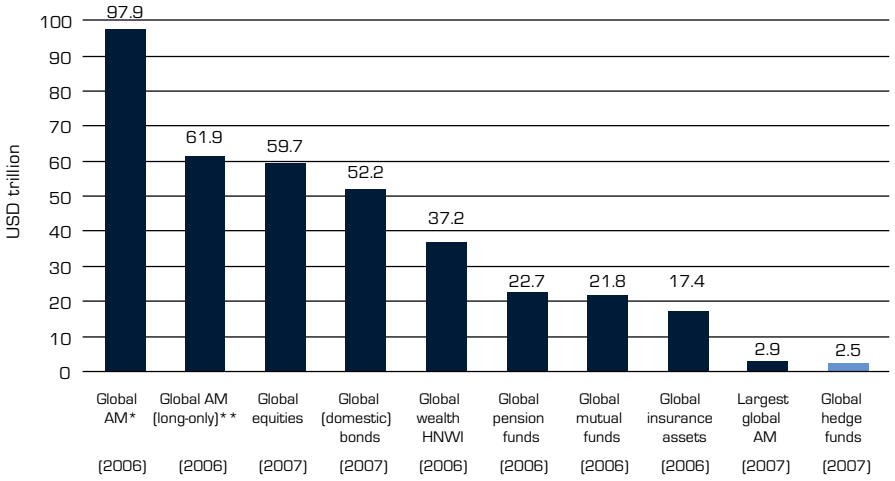
Assets under management are concentrated

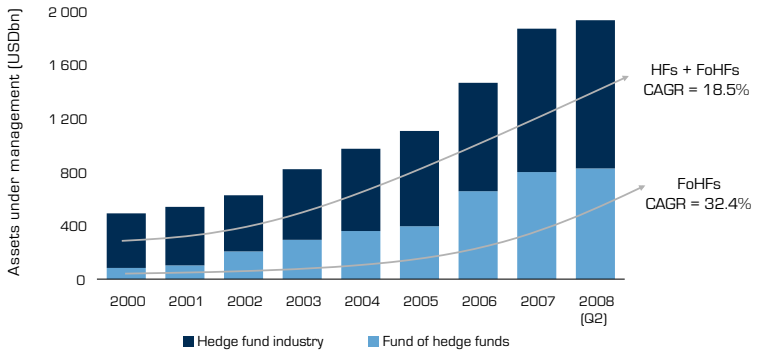
Chart 5: Hedge fund assets relative to other pools of assets



Source: Alternative Investment Solutions, International Financial Services London (www.ifsl.org.uk) based on Watson Wyatt, Merrill Lynch/Capgemini, BCG, World Federation of Exchanges, BIS
Note: Around one-third of private wealth is incorporated in conventional investment management
* Total value of assets managed on behalf of all investors (BCG estimate)
** Sum of global pension funds, mutual funds and insurance assets

Assets under management continue to be concentrated in few firms. 390 hedge fund firms each manage more than $1 billion and, together, control 80% or $2.1 trillion of the global assets as of early 2008, according to HFI. The oft-tooted fact that there are thousands of hedge funds has very little relevance for most investors. The industry has become more concentrated at the top end. The largest 100 hedge funds accounted for three-quarters of industry assets in 2007, up from 54% in 2003 according to IFSL (International Financial Services London). Chart 6 looks at growth of assets under management.

Chart 6: Growth of assets under management (Q1 2000 - Q2 2008)



Source: Alternative Investment Solutions, Hedge Fund Research
CAGR: Compound Annual Growth Rate

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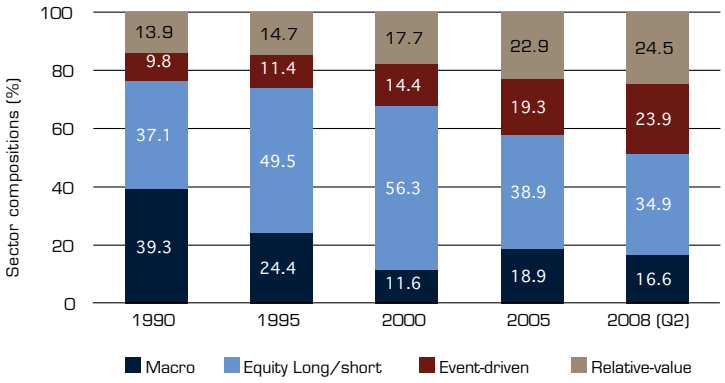
High growth rates primarily explained by new money entering the industry

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 much higher than is the growth rate for the overall industry. Since the institutionalisation began around 2000, the overall industry grew at 18.5% annually, while funds of hedge funds grew at 32.4%. These growth rates compare to compound annual rate of returns of 7.8% and 6.0%, respectively. In other words, for hedge funds overall, around 42% 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 2007 was around 23.5% in terms of assets under management.

Chart 7: Breakdown by strategy



Source: Alternative Investment Solutions, 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.

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 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. The market share of equity long/short peaked in 2000 with 56.3% and fell to around 34.9% of all assets under management as of Q2 2008, based on information from Hedge Fund Research.

Hedge *funds* can be domiciled in onshore or offshore locations. Around half of the number of hedge funds was registered offshore at the end of 2007 according to IFSL Research. The most popular offshore location was the Cayman Islands (57% of offshore funds), followed by British Virgin Islands (16%) and Bermuda (11%). The US was the most popular onshore location (with funds mostly registered in Delaware), accounting for nearly two-thirds of the number of onshore funds, with European countries (mainly Ireland) accounting for most of the remainder.[1] Hedge fund *managers* tend to be based onshore.

1 - From "Hedge Funds 2008", IFSL Research, July 2008.

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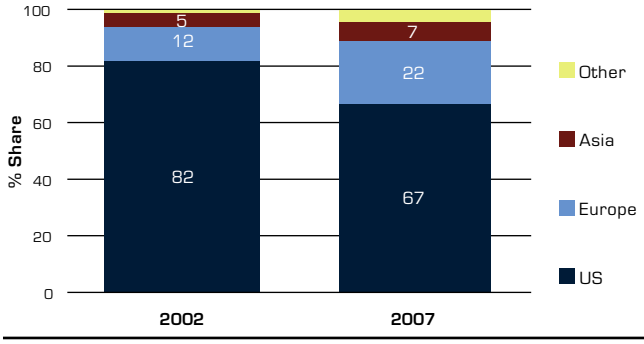
Chart 8: Breakdown by manager location



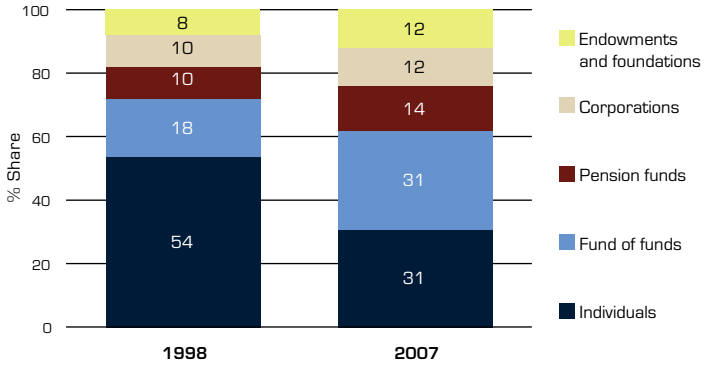
Source: IFSL estimates

Europe and Asia have been growing faster albeit from a much lower base

The US is by far the leading location for hedge fund managers accounting for nearly two-thirds of global assets managed in 2007. This observation is not surprising, considering that the US is the source of the bulk of hedge fund investments. Its share in 2007, however, was well below its 82% share in 2002; Europe and Asia gained in importance during this period as shown in Chart 8. Europe's share nearly doubled to 22% of assets, while Asian managers' share increased from 5% to 7% of the global total.

One of the main characteristics of information on hedge funds is that the different sources are inconsistent. Chart 9, therefore, shows only one estimate as to the types of hedge fund investors. For instance, the 31% invested by funds of funds shown in this chart is inconsistent with Chart 4 that suggest funds of funds were managing around 45% of the total. The reason for the inconsistency is that there is no single source to whom all managers and their funds are obliged to report.

Chart 9: Breakdown by source of capital



Source: IFSL based on data from Hennessee Group LLC

What exactly is a hedge fund?

The hedge fund industry

The involvement of institutional investors in hedge funds has increased sharply

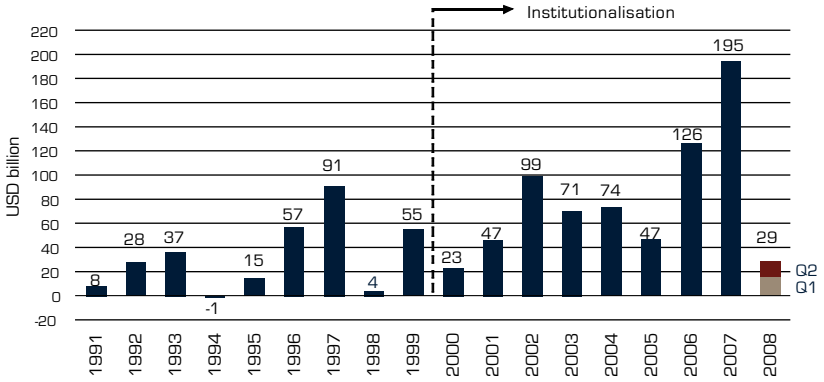
One aspect of the hedge fund industry where everyone seems to agree is with respect to the increasing involvement of institutional investors. In absolute dollar terms, the allocation of both institutional as well as private investors has increased. However, the market share of institutional investors has increased materially, both through direct investments as well as through funds of funds.

Both 2006 and 2007 were record years

Flow of funds

Investors injected $195 billion of new money into hedge funds in 2007, after $126 billion in 2006. Chart 10 shows estimates for net new money from 1991 to Q2 2008 based on HFR data. Inflows in the first half of 2008 were lower at around $29 billion. In other words, the exponential growth came to a halt in 2008 while net inflows remain positive despite what some perceive as the worst financial crisis since the 1930s.

Chart 10: Flow of funds (Q1 1991 – Q2 2008)



Source: Alternative Investment Solutions, Hedge Fund Research

Large inflows primarily attributed to institutional investors

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. We believe that large parts of these flows can be attributed to institutional investors who are either building or growing their strategic allocation in hedge funds. We believe it takes the average institutional investor two to three years from the time they start thinking of investing in hedge funds until they invest the first dollar. In some cases, it took materially longer. There are also cases where a project was initiated around 2000 and investing in hedge funds has been an open agenda item ever since. This, somewhat scarily, reminds us of the vast amount of institutional investors (mainly in Continental Europe) who waited until the late 1990s for a sizable reallocation from bonds to equities.

What exactly is a hedge fund?

The hedge fund industry

Growth expected to continue

All providers of industry growth estimates we came across continue to forecast growth of alternatives in general and hedge funds in particular. Merrill Lynch and Casey Quirk suggest that investors worldwide will continue to diversify "aggressively" their portfolios into alternative assets, accounting for over $2.5 trillion in new flows by 2011.[1] Their estimates for traditional and alternative assets were $47.0 trillion and $5.0 trillion for 2006 and $61.0 trillion and $11.0 trillion for 2011, respectively.

Most pensions expect to increase allocation to alternative investments

Citigroup Global Markets surveyed pension fund managers from the United States and Europe.[2] Approximately 84% of pension fund managers said they would increase their allocation to alternative investments over the next three years, while 13% of managers would allocate less. Only 31% of pension managers plan on increasing their allocations to hedge funds. Whether the timing of the survey, held during three weeks in summer 2007 when hedge funds were under stress, influenced the responses is uncertain.

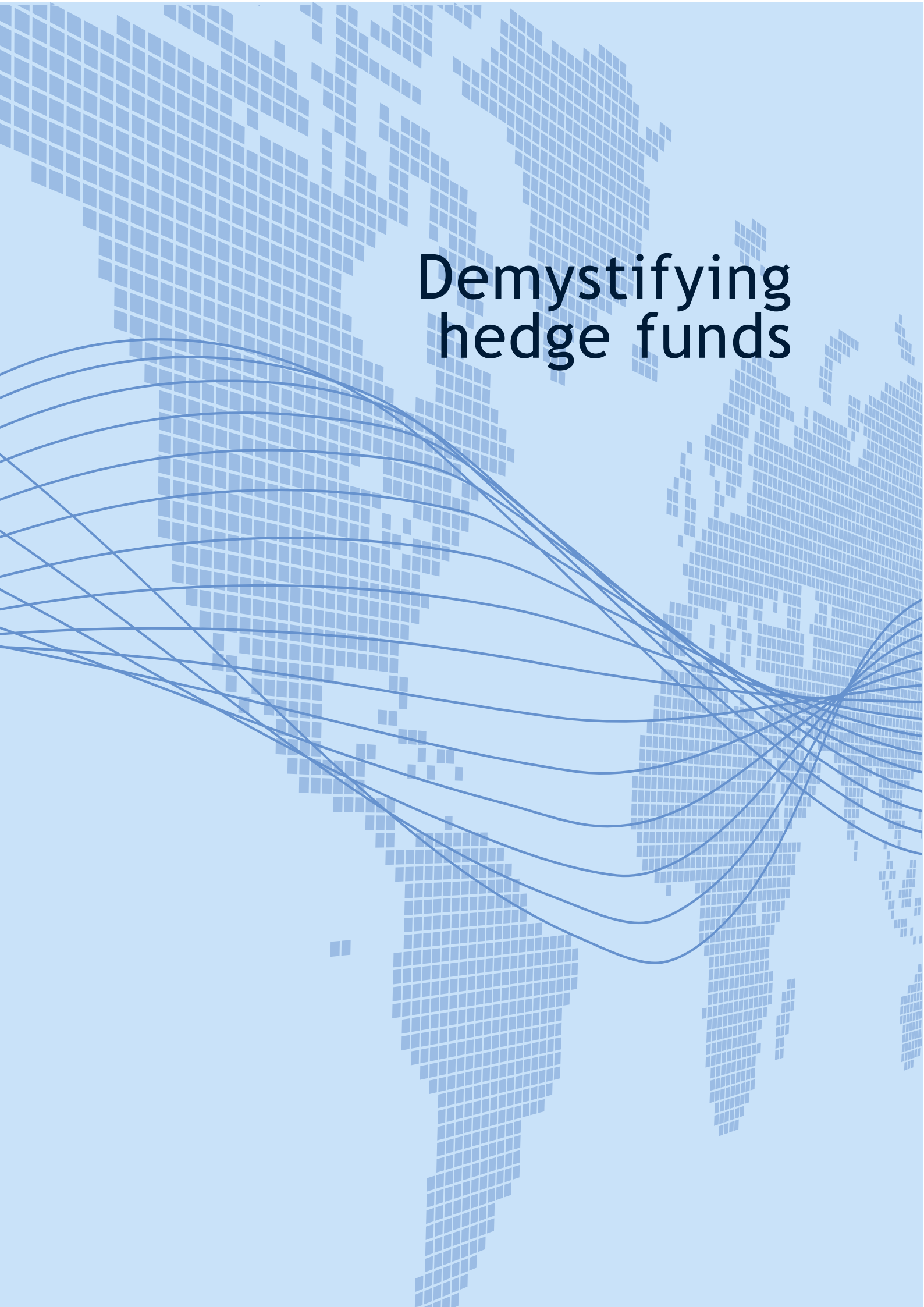
Concluding remarks: *what exactly is a hedge fund?*

"It is not the strongest of the species that survive, nor the most intelligent, but the one most responsive to change."
Charles Darwin

The hedge fund growth story is likely to continue. There are numerous investment professionals leaving existing money management (primarily traditional asset management, trading, research and financial advisory) to set up or join a hedge fund. However, there is not a single successful hedge fund manager (to our knowledge) who, after thinking things through, has decided that the long-only, buy-and-hold investment style is a superior means of managing money. (In Warren Buffett's parlance it is probably "like going back to holding hands".) We believe this observation to be based on the change of perspective that investment management is really about managing risk, not returns. According to this changed perception, active money management means that the active manager not only has a mandate to find and enter investment opportunities, but also has the flexibility and authority to exit the opportunity, once the risk/reward relationship has changed unfavourably. To an increasing number of investors this actually makes a lot of sense.

1 - "The Brave New World", Merrill Lynch and Casey Quirk, September 2007.
2 - "Chief Investment Officer Survey" Equity Research, Citigroup Global Markets, 25 September 2007. The survey was based on almost 50 CIOs of pension funds, foundations, and endowments collectively responsible for overseeing in excess of $1 trillion in assets. The survey was conducted in the last two weeks of July and the first week in August of 2007.

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

"Any fool can criticize, condemn and complain - and most fools do."
Dale Carnegie

At the time of writing, US investment bank stocks were down around 50% from their peak in 2007 and global equity markets were roughly 20% below their peak. Hedge funds lost around five percentage points from previous highs but still received a lot of bashing in the financial press. This episode makes it clear that there are still some myths and misconceptions, despite the institutionalisation of hedge funds being in its ninth year.

Myth: *hedge funds gamble*

"We are not a casino."
Anonymous institutional investor around 2000

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 closer to running a casino than spending time gambling

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 in favour of the house.

"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

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

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

Demystifying hedge funds

Myths and misconceptions

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.)

Running a lottery operation is a license to print money

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 return 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.[3])

Myth: *hedge funds always hedge*

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

Returns are a function of taking risk. Hedge funds do not hedge all risk. If all risks were hedged, there would be no return. The difference between hedge funds and long-only managers is that hedge funds hedge certain risk while consciously being exposed to risk where they expect a reward from bearing the risk.

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

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 are not really correlated to market movements. That does not mean there is no directional risk. It only means there is no directional market risk. The "directional" risk could manifest itself in being exposed to the divergence between value and growth stocks or small and large capitalisation stocks. Whether we should call this type of risk directional or not is open to debate.

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.
3 - Stop press: given that September 2008 saw extreme prohibition of short selling around the globe, one could argue that this is already happening.

Demystifying hedge funds

Myths and misconceptions

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

Myth: *hedge funds are risky*

Hedge funds, examined in isolation, are risky - as are technology stocks or energy trading companies or airline 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 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.

Hedge funds are likely to increase efficiency of a balanced portfolio

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. 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.

Myth: *hedge funds are speculative*

Hedge funds may use risky instruments for conservative ends

Hedge funds are risky (as is any other investment when compared to U.S. Government bonds and as already outlined above) 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 most 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. Some go even as far as referring to the traditional asset management as "fun management" rather than "fund management" as - according to this line of argument - it must be a lot of fun to manage other people's money without being held accountable for any losses.

People typically do not wash rental cars

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. The protection of principal is not a primary issue for the relative return manager as his mandate is outlined 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

Demystifying hedge funds

Myths and misconceptions

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

Myth: *hedge funds charge high fees*

"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

Hedge funds were once described as a "compensation scheme dressed up as an asset class". This resonates with many investors as they see, in awe, 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

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

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.

Attractive fee structures could attract most skilled money managers

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 checks and decided to train in tennis and golf rather than synchronised swimming.

1 - Swensen (2000), p. 267

Demystifying hedge funds

Myths and misconceptions

Option-like incentives are a hot potato

Most hedge fund managers have a high watermark and in some cases hurdle rates, which add optionality to the incentive structure.[1] 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 fund management industry, 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 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 has 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.

Dead weight

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

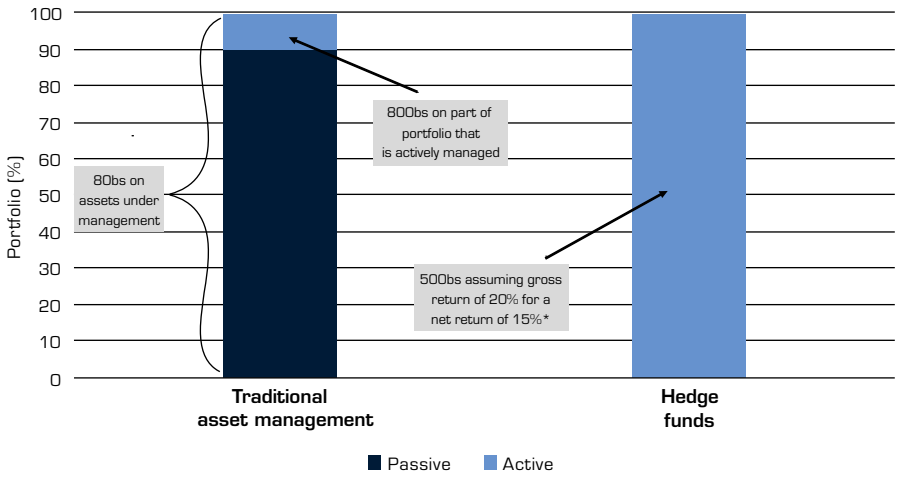
Dead weight in a portfolio results from securities owned into which the manager has no insight. A relative return investor managing risk relative to a market benchmark will hold many securities to control tracking risk. Sometimes the derogatory term of "closet indexing" is used. The reason for this term 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 1.) 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.

1 - 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.

Demystifying hedge funds

Myths and misconceptions

Chart 1: Concept of dead weight



Source: Alternative Investment Solutions
* Assuming fee structure of 1% management fee and 20% performance fee

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

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 (Chart 1). To earn the aforementioned 800 basis points, a gross return of 35% would be required.

Demystifying hedge funds

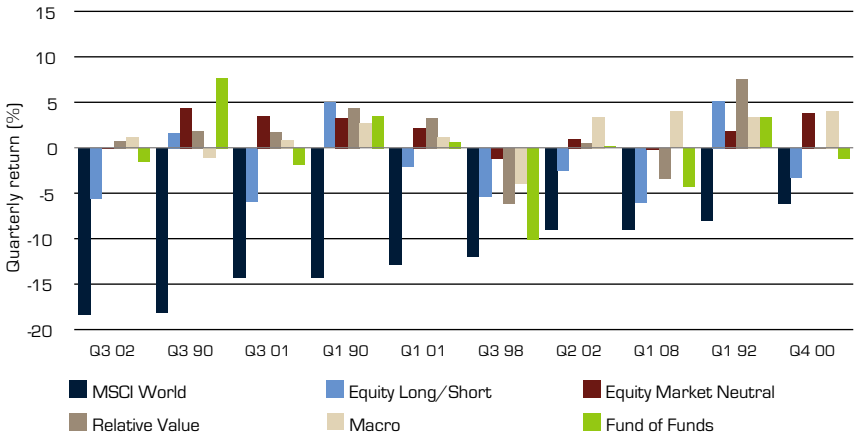
Myths and misconceptions

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

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

A persistent myth is that hedge funds are highly correlated with the stock market. If that notion were true, hedge funds and funds of funds would repeatedly report losses when equity markets fall. Fortunately, they do not. Chart 2 shows the ten worst quarters for the MSCI World Index during the period from January 1990 to June 2008. We contrast these negative returns with the corresponding quarterly returns in five hedge fund strategies. The bars measure the total return (i.e., including dividends) in U.S. dollars for the calendar quarters.

Chart 2: Hedge fund performance in ten worst quarters for equities (1990 – Q2 2008)



Source: Alternative Investment Solutions, Thomson Financial
Based on MSCI World Total Return Index and hedge fund indices from HFRI.
PAST PERFORMANCE IS NOT INDICATIVE OF FUTURE RESULTS.

Correlation between hedge funds and the equity market in down quarters is weak at best

The illustration shows that some hedge fund strategies are sometimes correlated with equities in a down market and sometimes not. If hedge funds are correlated with the stock market on the way up, that is actually fine with most people. An equity bull market has more positive returns than it has negative returns. Absolute return managers display an asymmetric return profile discussed later, i.e., have more positive returns than negative ones. When we measure correlation between a hedge fund strategy and an equity index in an equity bull market, we naturally find a measurable correlation coefficient. However, who cares? First, correlation does not prove causality. This means that the source of return of different hedge fund strategies is not the stock market despite us being able to calculate positive correlation coefficients in a bull market. Second, an absolute return-minded investor really cares about correlation and diversity of sources of returns when one part of the portfolio tanks. This means that Chart 2 is a better way to examine correlation than calculating correlation coefficients across different economic cycles.

Demystifying hedge funds

Myths and misconceptions

In equity long/short a certain correlation to the stock market can be expected

Equity long/short is a strategy where we can expect a certain correlation to the equity market. However, Chart 2 shows that equity long/short managers actually delivered a positive return in three out of the ten worst quarters for equities over the past 18½ years. Equity market neutral, essentially a sub-category of equity/long short, delivered a positive return in eight out of the ten worst quarters. The reason we can expect positive correlation is that equity long/short managers operate in equity markets and are exposed to the stock market on a net basis on average and most of the time. The average net exposure to the stock market among a large selection of long/short managers was around 35% between 2000 and 2007 with the range being from 13% in Q3 2001 and 56% in May 2007. At the end of 2007, average net exposure was around 43%, which fell further to around 32% by June 2008. When global equities fell around 8% in January 2008, the average long/short manager lost around half of that. This is within expectations as they were close to 50% net long the stock market. However, for most other strategies there is no such causality between risk taking and the stock market.

2008 is reminiscent of 1998

One quarter stands out: the third quarter of 1998 when Russia defaulted on its ruble-denominated debt, which caused the investment public to realise the sensitivity of spread risk in a flight-to-quality scenario and a drying up of liquidity. Most hedge fund style indexes were in negative territory in that particular quarter. The HFRI Fund of Funds Composite Index experienced its largest drawdown. The first quarter of 2008 was somewhat reminiscent of Q3 1998 in terms of a flight-to-quality scenario, Fed intervention and liquidity drying up. Hedge fund leverage and strategy correlation were higher in Q3 1998 when compared to Q1/2 2008.

In the quarters other than Q3 1998 and Q1/2 2008, the different hedge fund strategies behaved more or less in a different fashion. Note that, for example, the equity market neutral index was in positive territory in most equity market dislocations. Note further that in Q3 1998 the index fell by only 1.1%. This small loss illustrates a very important point: the magnitude of loss. When balanced hedge fund portfolios fall, they do not fall by the same magnitude due to the low-volatility characteristics of the portfolio. The HFRI Equity Hedge Index fell around 5% in four of the eight worst equity market dislocations (Chart 2) despite the equity market dislocation ranging from -8.9% and -18.3%. Long-only portfolios are like cars with no brakes: risk is uncontrolled on the way down. A hedge fund portfolio on the other hand might fall in times of market stress. However, it's more akin to a car with brakes, i.e., the downhill ride is somewhat controlled.

To some, the long-only mantra is weird

It is for this reason 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 2 is an indication of what this translates to in periods of stress.

Demystifying hedge funds

Myths and misconceptions

"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 LTCM [1]

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

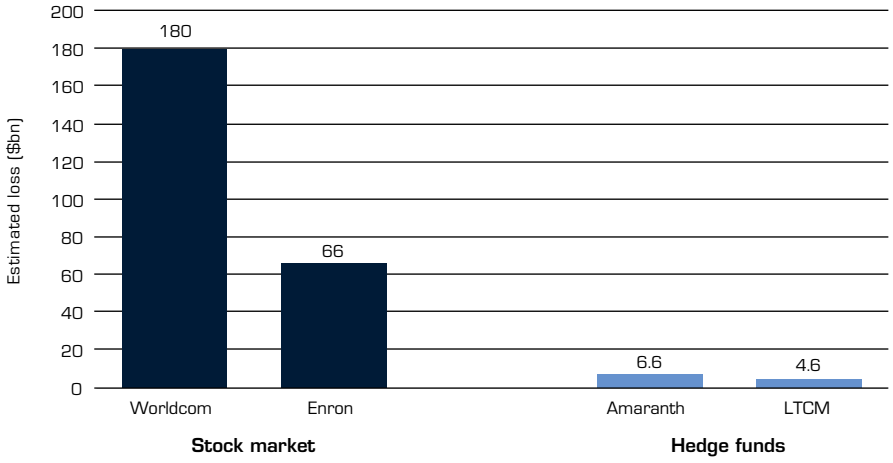
Headline risk is indeed a great concern to many institutional investors. These investors do not want to be on the front cover of their local newspaper being associated with losing money with the likes of LTCM or Amaranth. Interestingly, many institutional investors perceive losing millions with single 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]

Investors should diversify idiosyncratic risk

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 airline companies. 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. Chart 3 puts the largest losses into hedge funds in perspective with large losses in the stock market.

Chart 3: Large losses with stocks and hedge funds



Source: Alternative Investment Solutions, Thomson Financial

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 on page 136.

Demystifying hedge funds

Myths and misconceptions

LTCM is, sadly, the most famous hedge fund

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 investment banks during the credit crisis of 2007-2008. 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. When we compare losses in hedge funds, such as LTCM, with losses in the stock market such as with Enron, further ironies come to light: Enron was a listed company and therefore part of a rather tight and stringent regulatory regime. LTCM was not. Still, both failed. As a matter of fact, small investors got hurt in the case of Enron but not in the case of LTCM. So the irony is that small investors in the US and elsewhere are permitted to invest in entities that lose $66 billion but not in those that lose $4.6 billion. While we are on this subject, it is worth noting 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.[1] This was, of course, not the case with Enron and other failures of listed companies.

Myth: *hedge funds increase systemic risk of financial markets*[2]

The hot potato that is systemic risk

This is a hotly debated topic. We believe hedge funds can do both - 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 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.[3] The episode around LTCM and the 2007/2008 credit crisis are cases in point.

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

We believe the opposite, stabilising force is at work as well. Hedge funds undoubtedly increase liquidity in the market place as well as 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

1 - According to Lowenstein (2000), p. 224
2 - Stop press: by September 2008, it became apparent that it is leveraged financial investors and institutions that increase systemic risk, irrespective of their legal status.
3 - The Report of The President's Working Group on Financial Markets (1999) "Hedge Funds, Leverage, and the Lessons of Long-Term Capital Management", April.

Demystifying hedge funds

Myths and misconceptions

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.

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

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 thus increasing stability and integrity of the market place. 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 buying back shorts or buying into an overreaction is beside the point with respect to systemic risk.

"The reasonable man adapts himself to the world; the unreasonable man persists in trying to adapt the world to himself. Therefore all progress depends on the unreasonable man."
George Bernard Shaw

Improved allocation of capital, better risk-sharing, more liquid assets and more transparency are all possible channels through which economic growth is enhanced. There is strong empirical evidence that greater activity in the financial sector enhances the performance of the economy as a whole. The current rapid pace of innovation and strong economic growth in most parts of the world can at least partly be attributed to rapidly growing financial markets. This is true despite temporary (current) setbacks.[1]

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

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".

Myth: *selling short is the opposite of going long*

"Short selling is not for sissies."
Barton Biggs

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.

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

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

1 - See also Chan, Getmansky, Haas and Lo (2005) "Systemic risk and hedge funds" for a thorough, 109-page discussion on the topic.
2 - From Chandler (1998)

Demystifying hedge funds

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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.

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

There also is a technical difference between buying 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.

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

Stop press: Various jurisdictions banned short selling during market turmoil in September 2008. Hedge funds were - as they often have been in the past when prices headed downwards - 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 current crisis in its entirety. 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 current credit crisis is Main Street confusing its house with an ATM thereby overleveraging its balance sheet. The go-ahead for acquiring houses one cannot afford, i.e., for becoming a home owner, is much closer to Capitol Hill than it is 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. The rest is history.

Myth: *there is no absolute return revolution*

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

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:

Demystifying hedge funds

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> *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.*[1]

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.* [2]

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 default position of the absolute return investor is cash or treasuries. 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.

"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

One recent 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".[3] 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 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.*[4]

1- From Waring and Siegel (2006)
2 - From Berkshire Hathaway, annual report, 2003
3 - To be fair to the authors, they do mention (page 18) that "sometimes, hedge funds are characterised 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 the hedge fund space.
4 - From Waring and Siegel (2006)

Demystifying hedge funds

Myths and misconceptions

Negative compounding does not require external help

We believe this view to be the consensus from the mid-seventies to the peak of the bull market in early 2000. Today, there are more and more investors who 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.

Concluding remarks: *demystifying 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 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.[1]

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.[2] 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. However, the storm is not necessarily the hedge fund structure but the absolute return investment philosophy that hedge funds pursue. Economic logic suggests that successful approaches are copied.

1 - See Ellis (1993)
2 - See Ineichen (2003b)

How do hedge funds work?

Hedge fund investing

"Either you understand your risk or you don't play the game."
Arthur Ashe[1]

- ***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 ongoing 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 process[2]

Different investors have differing mandates

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.

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

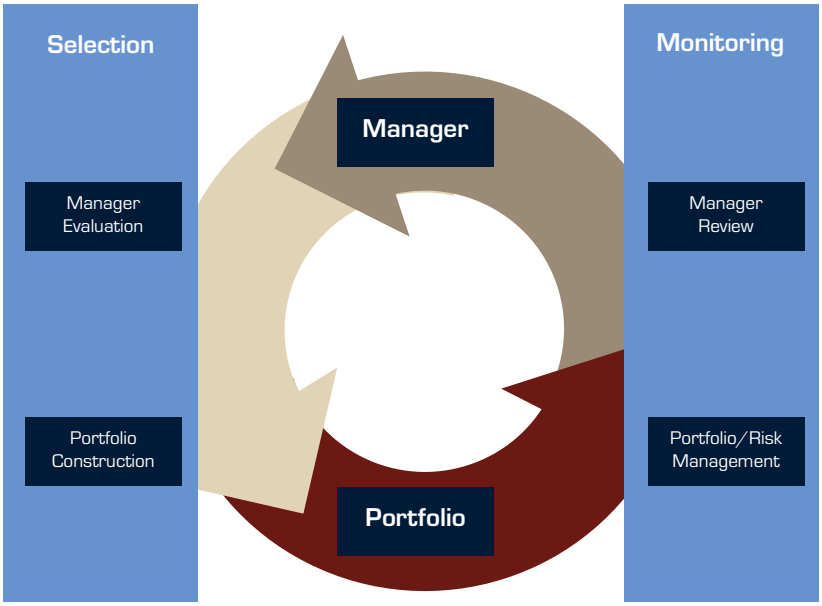
Once the investor knows what objectives are to be met, the actual investment process begins. At the most general level, there are two variables and two processes. The two variables are the hedge fund managers (i.e., portfolio constituents) and the apportionment of capital to these constituents (i.e., 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 1 shows one way the investment process of a hedge fund investor can be graphically illustrated.

1 - From Barra advertisement.
2 - Parts in this section draw on material from Ineichen (2001, 2003a).

Hedge fund investing

Investment process

Chart 1: 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 selection is key

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.

Hedge fund investing

Investment process

Infusion of capital always changes characteristics of opportunity set

The opportunity set is never unlimited. There are capacity constraints. Inefficiencies tend to disappear if more capital chases the same inefficiency. 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 manager selection is key; trying to re-engineer passively those strategies that worked in the past is a questionable proposition at best.

Tenure and experience probably matters

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.

Due diligence is labour-intensive and more art than science

Due diligence[1] is the single most important aspect of the investment process for an investor investing in a hedge fund. 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:

> *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.

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

Hedge fund investing

Investment process

Manager review

Manager review is dynamic and iterative

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.

Every hedge fund is different

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.

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

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

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.

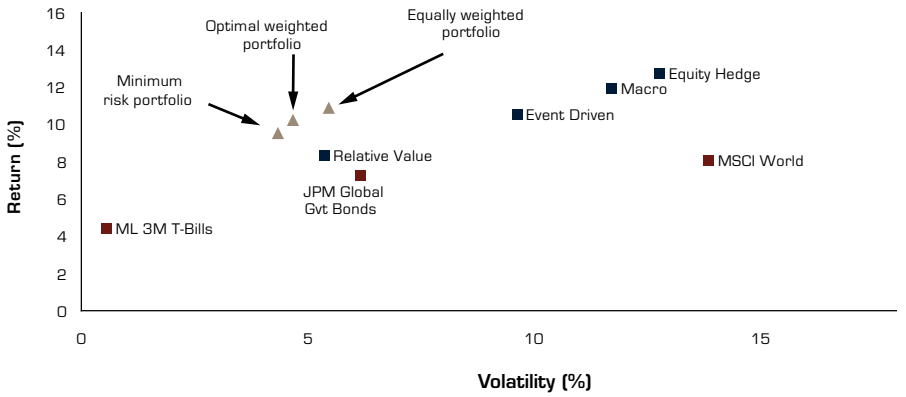
Hedge fund investing

Investment process

Caveat emptor: One cannot buy historical returns

Chart 2 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 June 2008. We have added a mean-variance optimised portfolio and an equally weighted portfolio to the graph. For this graph, we have subtracted 300 basis points per year from the single hedge fund indices to adjust for all the various statistical biases that mainstream academic research keeps reminding us are biasing historical hedge funds returns upward. We have multiplied historical volatilities of these indices by 1.5 to adjust for any liquidity issues. 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 superiority is irrelevant for two reasons. First and most obviously, investors cannot buy historical returns. The superior historical performance is also the reason why there are few investors who have invested in diversified hedge fund portfolios for ten years or longer and have not wished to have had a larger allocation. The purpose of this report is to get investors who are not yet invested in hedge funds confident with the space, rather than showing off attractive historical risk/reward trade-offs. Second, many investors who invest in single hedge fund managers directly do not hedge single manager risk perfectly. In chart 2 single manager risk is perfectly diversified. Note that had we included sub-strategies, more efficient portfolios would have been the result. Given the heterogeneity of sub-strategies and even more diversity on a single manager level, it is possible to construct portfolios with equity-like returns with volatilities that are lower than most bond portfolios.

Chart 2: Optimized hedge fund portfolios versus strategies and traditional asset classes



Source: Alternative Investment Solutions, Thomson Financial
All based on USD total returns from January 1990 to June 2008. 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.
PAST PERFORMANCE IS NOT INDICATIVE OF FUTURE RESULTS.

Hedge fund investing

Investment process

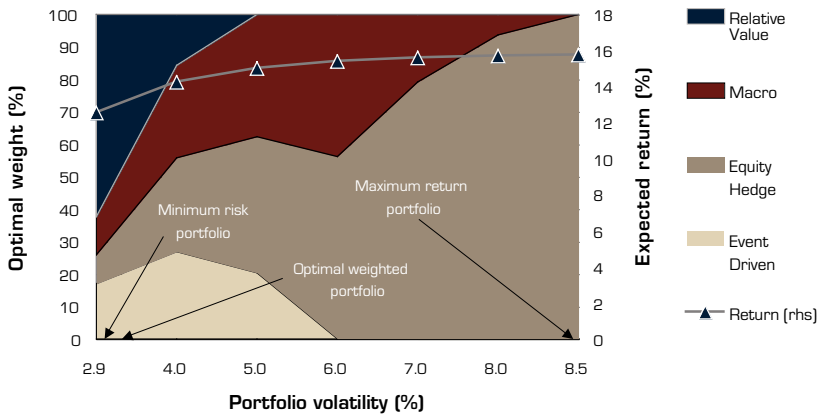
Reasonably low correlation among strategies allows constructing hedge fund portfolios with equity-like returns and bond-like volatility

The (mean-variance) optimal weighted portfolio in Chart 2 has a historical return of 10.2% and a volatility of 4.7%. This compares with return and volatility of the HFRI Fund of Funds Composite Index of 9.5% and 5.5% respectively. In other words, balanced funds of funds normally use the full range of strategies to construct their portfolios that have equity-like returns on the upside and bond like characteristics on the down-side. The 10.2% return is 580 basis points above T-Bills, which is within today's consensus return estimate for a diversified hedge fund portfolio of between 400 and 600 basis points above the USD risk-free rate. (Most likely the "consensus return estimate" is a function of historical returns.)

The unfolding credit crunch is a reminder that "volatility" is an incomplete measure for risk

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 3 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.

Chart 3: Mean variance optimal hedge fund portfolios



Source: Alternative Investment Solutions, Thomson Financial
All based on USD total returns from four main indices of Hedge Fund Research from January 1990 to June 2008.
PAST PERFORMANCE IS NOT INDICATIVE OF FUTURE RESULTS.

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), 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.

Hedge fund investing

Investment process

Most hedge fund investors use full spectrum of diversification potential

The portfolio with the lowest volatility, the so called "minimum risk portfolio," has a volatility of 2.9%. 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 1 shows the returns, volatilities and correlations used for the portfolios in Chart 3 and following analysis.

Table 1: Performance characteristics for four main HFRI strategies

				Correlation			
	Return	Volatility	Sharpe	RV	Macro	EH	ED
Relative Value (RV)	11.35	3.56	1.78	1.00			
Macro	14.95	7.79	1.28	0.40	1.00		
Equity Hedge (EH)	15.75	8.50	1.27	0.58	0.59	1.00	
Event Driven (ED)	13.55	6.40	1.34	0.66	0.55	0.79	1.00
Off-diagonal correlation				0.41	0.39	0.49	0.50

Source: Alternative Investment Solutions, Thomson Financial
All based on USD total returns from four main indices of Hedge Fund Research from January 1990 to June 2008.
PAST PERFORMANCE IS NOT INDICATIVE OF FUTURE RESULTS.

Hedge fund investing

Investment process

Caveat lector (let the reader beware)

Table 2 shows the portfolios used in Chart 3 in numerical format. We have added the equal weight portfolio for comparison purposes. We recommend this table to assess trade-offs between return and various risk characteristics rather than a guide to asset allocation. If we were to use different indices or different time periods, the allocation to the four strategies would differ.

Table 2: Selection of portfolio characteristics

	Minimum risk	Most efficient	Equal weight	4% volatility	5% volatility	6% volatility	7% volatility	7% volatility	Maximum return
Return	12.54	12.96	13.90	14.24	15.00	15.40	15.58	15.70	15.75
Volatility	2.89	2.97	3.64	4.00	5.00	6.00	7.00	8.00	8.50
Sharpe ratio (5%)	2.61	2.68	2.44	2.31	2.00	1.73	1.51	1.34	1.27
Worst month (%)	-6.23	-6.28	-6.40	-6.42	-6.26	-5.90	-6.81	-7.39	-7.65
Worst month (date)	08-1998	08-1998	08-1998	08-1998	08-1998	08-1998	08-1998	08-1998	08-1998
Worst 12-months (%)	1.12	0.50	-0.72	-1.15	-2.34	-3.28	-6.09	-7.66	-8.30
Worst 12-months (date. 12m to)	01-1995	01-1995	01-1995	01-1995	01-1995	01-1995	09-2001	09-2001	09-2001
Skew	-0.66	-0.49	-0.21	-0.15	0.06	0.24	0.18	0.16	0.15
Excess kurtosis	3.81	2.52	1.24	1.03	0.77	0.81	1.22	1.39	1.44
Correlation MSCI World (all)	0.59	0.61	0.63	0.63	0.62	0.61	0.64	0.64	0.64
Correlation JPM Global Gvt Bonds	-0.03	-0.02	0.01	0.01	0.03	0.04	0.00	-0.02	-0.03
Negative months (%)	18.0	19.4	24.3	24.8	27.5	29.7	28.8	28.4	28.4
Average monthly return (%)	1.01	1.05	1.12	1.14	1.20	1.22	1.24	1.25	1.26
Average positive monthly return (%)	1.43	1.53	1.83	1.90	2.13	2.29	2.33	2.38	2.41
Average negative monthly return (%)	-0.86	-0.97	-1.08	-1.16	-1.22	-1.23	-1.44	-1.59	-1.65
Portfolio weights:									
Relative Value	62.3	50.7	25.0	15.7	0.0	0.0	0.0	0.0	0.0
Macro	11.7	15.9	25.0	28.5	37.7	43.8	20.8	6.3	0.0
Equity Hedge	8.9	13.8	25.0	28.9	41.9	56.1	79.2	93.7	100.0
Event Driven	17.0	19.6	25.0	27.0	20.4	0.1	0.0	0.0	0.0

Source: Alternative Investment Solutions, Thomson Financial
All based on USD total returns from four main indices of Hedge Fund Research from January 1990 to June 2008.
PAST PERFORMANCE IS NOT INDICATIVE OF FUTURE RESULTS.

As volatility increases (moving left to right in Table 2):

- Sharpe ratios decrease;
- drawdowns (losses) increase in both magnitude and frequency; and
- the asymmetry between positive and negative return is reduced, to the disadvantage of the investor.

"The real difficulty in changing any enterprise lies not in developing new ideas, but in escaping from the old ones."
John Maynard Keynes

In other words, the more volatility that is accepted through adding market directional risk to the portfolio the more the hedge fund portfolio resembles long-only portfolios that have, by comparison, low Sharpe ratios, large drawdowns, higher percentage of negative months and little to no asymmetry between positive and negative returns. In other words, the essence of portfolio construction is to utilise all available opportunities to diversify risk and use available optionality to hedge unwanted risk. The most efficient portfolio in Table 2 has a return that is only 320 basis points lower than the maximum return portfolio. However, the volatility of the most efficient portfolio is nearly a third (2.9% versus 8.5%) of the volatility of the maximum return portfolio. To us - who think in practical as well as absolute return terms - reducing volatility by 65% is conservative.

Hedge fund investing

Investment process

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

How do these portfolios compare with traditional assets and traditional long-only portfolios? Table 3 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 labeled "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 and intelligent portfolios that determines risk, while - in the latter - it is market forces that determines risk, not skill.

Table 3: Skill-based versus market-based portfolios

	Skill-based			Market-based		
	Minimum risk portfolio	Most efficient portfolio	Equal weight portfolio	MSCI World	JPM Global Gvt Bonds	60:40 portfolio
Return	12.54	12.96	13.90	7.24	7.37	7.56
Volatility	2.89	2.97	3.64	13.91	6.27	9.03
Sharpe ratio (5%)	2.61	2.68	2.44	0.16	0.38	0.28
Worst month (%)	-6.23	-6.28	-6.40	-13.32	-4.30	-6.89
Worst month (date)	08-1998	08-1998	08-1998	08-1998	04-2004	08-1998
Worst 12-months (%)	1.12	0.50	-0.72	-27.87	-6.53	-15.84
Worst 12-months (date. 12m to)	01-1995	01-1995	01-1995	09-2001	12-2005	03-2001
Skew	-0.66	-0.49	-0.21	-0.49	0.16	-0.26
Excess kurtosis	3.81	2.52	1.24	0.59	-0.02	0.23
Correlation MSCI World	0.59	0.61	0.63	1.00	0.13	0.96
Correlation JPM Global Gvt Bonds	-0.03	-0.02	0.01	0.13	1.00	0.40
Correlation 60:40 Portfolio	0.53	0.56	0.58	0.96	0.40	1.00
Negative months (%)	18.0	19.4	24.3	38.7	39.2	35.1
Average monthly return (%)	1.01	1.05	1.12	0.66	0.61	0.64
Average positive monthly return (%)	1.43	1.53	1.83	3.17	1.74	2.14
Average negative monthly return (%)	-0.86	-0.97	-1.08	-3.30	-1.15	-2.12

Source: Alternative Investment Solutions, Thomson Financial
All based on USD total returns from four main indices of Hedge Fund Research from 1990 to 2007.
PAST PERFORMANCE IS NOT INDICATIVE OF FUTURE RESULTS.

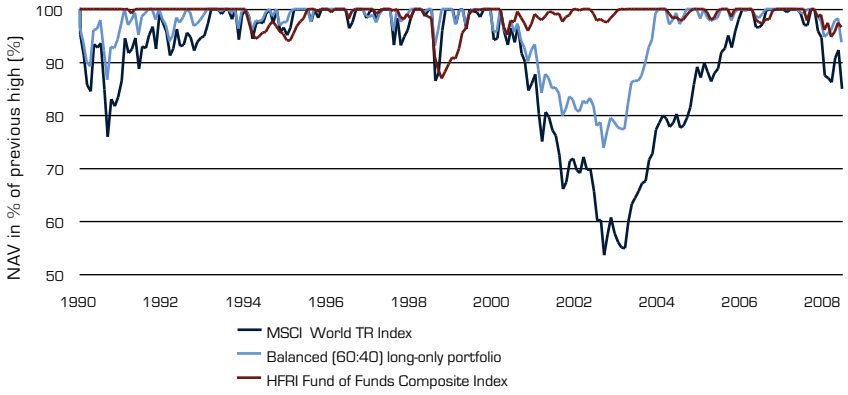
Not all portfolios are treated equally

The minimum risk and the most efficient portfolios had monthly drawdowns that were actually akin to the 60:40 long-only portfolio. However, the big difference is in the negative compounding. The skill-based portfolios had a small but positive return as their worst 12-month return. The 60:40 portfolio suffered a 15.8% loss to March 2001. This is a big difference when compared to a well structured hedge fund portfolio. We believe the returns of these skill-based portfolios shown in the table are largely a function of avoiding such long stretches of negative compounding.

Hedge fund investing

Investment process

Chart 4: Underwater perspective (January 1990 – June 2008)



Source: Alternative Investment Solutions, Thomson Financial
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.
PAST PERFORMANCE IS NOT INDICATIVE OF FUTURE RESULTS.

Balanced hedge fund portfolios - unlike long-only portfolios - have avoided extended periods of negative compounding

Chart 4 shows this difference graphically. For this exhibit we measure the net asset value (NAV) of a portfolio as a percentage of its previous all-time high. It allows us to visualise losses, the length of negative compounding as well as the time spent "underwater". Note that hedge fund portfolios do not avoid all losses and market stress. However, the magnitude of losses is limited while long periods of negative compounding have not occurred. Note further that HFRI indices went live in 1994. The quality of the data prior to 1994 therefore is lower than when the index was live.

Hedge fund investing

The role of prime brokers

The role of prime brokers

Prime brokerage is a 'bundled' service provided by banks or securities firms to hedge fund clients, providing them with the operational infrastructure requisite for running their business. The core services that a prime broker provides include custody, clearing and financing as well as ongoing 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 a centralised account with its prime broker. All trades are cleared and settled with the prime broker. Beyond settlement, the prime broker also acts as a custodian and is 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.

Prime brokers are often gatekeepers for difficult-to-borrow stocks

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. The ability to source hard-to-borrow securities can differentiate one prime broker from another.

Prime brokers provide financing and leverage to hedge funds

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.

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

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 real time P&L, risk reporting, direct market access trading, etc. as well as creating other valued added deliverables such as business consulting services and capital introduction services. Business consulting services consult 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, staffing, third party service provider selection, ongoing consultative analysis, etc. The capital introduction group provides tailored marketing consulting to hedge funds while also facilitating introductions to investors, hosting events and organising road shows.

Hedge fund investing

The role of prime brokers

Hedge funds' internal operations vary

Prime brokers serve as an integral part of a hedge fund's operations. Hedge funds have varying degrees of in-house infrastructure. In some instances, they elect to build out and manage their own technological and operational infrastructure and, in other instances, they choose to use an administrator that can offer market data services, portfolio accounting systems and risk reporting, and that can support trade order management/routing, pre-settlement matching and post-trade reconciliation.

Hedge funds need to work with 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, 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 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 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 react accordingly.

Administrators receive data files from the prime brokers detailing the activities of the hedge fund and they compare those data files with ones they receive from the hedge fund. They then reconcile the books and records of the hedge fund and keep track of portfolio accounting, official Net Asset Value (NAV) and shareholder registry. The executing broker, prime broker and fund administrator all support the hedge fund in its operations but the prime broker, in particular, plays a crucial role in reconciling, clearing and serving as a custodian for hedge fund assets.

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; in many cases spreadsheets 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.

Hedge fund investing

Fund of hedge funds

Fund of hedge funds

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

At the most general level, a fund of hedge funds manager is - as the name implies - a fund manager who creates and manages portfolios of hedge funds. A fund of funds 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 strategies aims to deliver a more consistent return than any of the individual funds. A fund of funds can be diversified broadly or highly concentrated to a fund, style or region.

Fund of funds have been vehicle of choice for new entrants

Funds of funds have grown at an annual rate of 32.4% per year due to positive performance and new money since the institutionalisation of hedge funds began in 2000. Funds of funds have been the vehicle of choice for most new entrants. Today, funds of funds manage, depending which survey one wants to believe, between 40% and 50% of a hedge fund industry that overall has, as mentioned earlier, around $2.5 trillion under management.

The performance of funds of funds 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.

Table 4: Ranking of fund of funds with other investment choices

1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	CARR
17.5	19.0	12.3	26.3	5.6	21.3	14.4	16.2	24.8	26.5	6.2	4.4	19.4	33.8	15.2	10.0	20.7	10.8	4.8	9.5
11.8	15.5	4.6	12.3	4.2	19.3	14.0	16.2	15.3	25.3	4.1	2.8	1.8	14.5	10.1	7.5	10.4	10.3	1.2	7.4
8.4	14.5	3.9	3.2	1.3	11.1	5.3	5.3	5.2	4.9	2.3	-0.8	1.0	11.6	6.9	3.1	5.9	9.6	-2.4	7.2
-16.5	6.4	-4.7	23.1	-3.5	6.0	4.4	1.4	-5.1	-5.1	-12.9	-16.5	-19.5	1.1	1.3	-6.5	4.9	5.0	-10.2	4.4

Equities | Bonds | T-Bills | Fund of Hedge Funds

Source: Alternative Investment Solutions, Thomson Financial
Notes: 2008 includes June. All total returns in USD. Equities: MSCI World Index; Bonds: JPM Global Government Bond Index; T-Bills: Merrill Lynch 3-month T-Bills Index; Fund of Hedge Funds: HFRI Fund of Funds Composite Index (net of all fees). CARR: Compound Annual Rate of Return.
PAST PERFORMANCE IS NOT INDICATIVE OF FUTURE RESULTS.

"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

Table 4 shows a ranking of annual returns of funds of funds compared to equities, bonds, T-Bills and commodities. Funds of funds returns:

- have been mostly positive over the past 18 years except 1994 and 1998;
- rarely are the best investment in any given year, rarely the worst, hence the term "boring"; and
- ended up with the highest compounding rate over the past 18 ½ years largely due to avoidance of large drawdowns. It seems Mr. Buffett was on to something when he made the quote in the side text.

Hedge fund investing

Fund of hedge funds

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. The former aims to capture stable returns in the region of 4-6 percentage points above the risk-free rate. The latter expects high absolute returns in the high 10s. Most funds of funds will opt for a blend of the two extremes with a bias toward either directional or non-directional strategies.

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

Among important considerations is whether the fund of funds 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 funds of hedge funds managers argue that their clients can capture the pure beta more cheaply with vehicles other than funds of funds. 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.

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

One of the first decisions a fund of funds manager either implicitly or explicitly will take, therefore, is whether to focus on the left- or right-hand side of Table 3 on page 48. 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 funds of funds managers will blend directional with non-directional strategies. The diversification benefits due to low correlation are, putting it simply, too great not to be utilised in constructing a portfolio of hedge funds.

Having been around the block a couple of times probably helps

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 fund of funds 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 fund of funds manager to assess potential drawdowns for each manager in each strategy irrespective of his historical track record. This assessment will allow the fund of funds manager to get a feel for the risk of the overall fund when 25%, 50% or even 75% of managers experience a drawdown at the same time. Note that in a bad

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.

Hedge fund investing

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month, such as August 2007 or January 2008, around 70-80% of managers had a *negative* return. As we mentioned before, the lowest single manager returns pop up as newspaper headlines. What does not get mentioned is, that in a bad month, 20-30% of managers report a *positive* return. In August 2007 and January 2008, the top decile of managers reported returns of around 3.0% and 4.4%, respectively. These positive returns help dampen the loss in market stress. These positive returns prevent the hedge fund portfolio to go into free fall.

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

One of the intangibles of allocating funds to any money manager is motivation. This is probably true for selecting a fund of funds manager in the traditional asset management arena as well as 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.

Incentives

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

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 fund of funds 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 Warrant Buffett put it: "After all, who ever washes a rental car?"

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

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.

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

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

Hedge fund investing

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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. Barton Biggs, Wall Street veteran and hedge fund manager, suggests 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]

Some managers revert to the mean and below

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 disappeared as others have copied his style. In any case, what looked like an exceptional investment opportunity turns into a disappointment.[2]

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 5 shows the mechanics.

Maximising assets under management is not always optimal

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.[3]

1 - See Biggs (2006)
2 - From Jaeger (2000), p. 75.
3 - Stop press: during the month of September 2008 even managers who have been "hard closed" were willing to take fresh capital.

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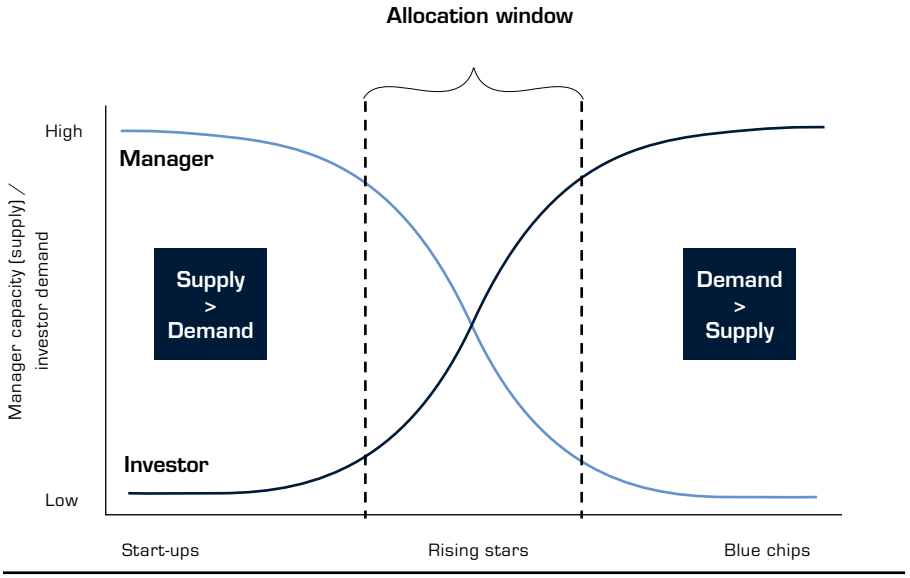
Chart 5: Supply / demand imbalance and allocation window



Source: RMF

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

A fund of funds 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 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.

Ability to secure capacity is still important

An investor might also be able to expand the allocation window in Chart 5 to the right. 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 increasing investor demand.

Talent search and identification

Is it a "war for talent" or a "talent bubble"?

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

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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.

Successful hedge fund investors need to be in the loop

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.

Due diligence and track record

Manager due diligence is an important and integral part of the fund of funds manager's value proposition

The due diligence done by the fund of funds manager is part of its value proposition. Whether a fund of funds 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 fund of funds managers will equally claim to have superior hedge fund picking skill.[1] However, an investor can assess the due diligence capabilities of the fund of funds manager in advance by assessing the level of experience of the fund of funds managers in the field of absolute return strategies. This is the reason why most fund of funds managers will list the fund managers' number of years in the industry in the marketing prospectus.

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.

Driving with a rear view only has its limitations

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.

1 - This is slightly unfair, because the hedge fund picker is operating in an inefficient market whereas a stock picker in, say, U.S. large caps is operating in a transparent and price-efficient market. The opportunity to add value is, by definition, larger in an inefficient market than in an efficient market. The value propositions of the two, one could argue, are diametrically opposed.

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Qualitative information is important and essential for manager assessment

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.

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

Given the importance of qualitative research and due diligence, an investor evaluating a fund of funds 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 fund of funds manager used to be to pick one outstanding manager per quarter from ten new managers. Today this task is probably more like picking one or two managers out of approximately 100 new funds per quarter, while, at the same time, avoiding the one or two managers who should not be bidding for business.

Fund of funds have a cost advantage relative to most investors

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 fund of funds would have argued that his value proposition was based on generating "alpha". Today, the value-added of a fund of funds manager is probably better described as offering a laborious service at a lower cost that could otherwise be obtained by the investor directly.

The Amaranth incident of 2006 caused fund of funds disintermediation to reverse

For some time it looked like funds of funds were about to be disintermediated by some consultants moving assets from funds of funds to multi-strategy funds. The underlying logic was that both funds of funds as well as multi-strategy funds manage diversified portfolios. This was true for strategy diversification as both funds of funds and multi-strategy managers were diversified across numerous strategies. If this were the only criteria, multi-strategy managers would be the more attractive option as they only charge one layer of fees: (assuming, of course, that the one layer of fees from the multi-strategy manager was overall lower then the double layer of fees from the fund of funds). The flaw of the argument was that while strategy risk was diversified in both cases, manager risk was not. The near collapse of the multi-strategy hedge fund, Amaranth, in September 2006 made this differentiation painfully clear and also put funds of funds' disintermediation into reverse as well as some consultants out of business.

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

Chart 6 is an attempt to classify vehicles in the absolute return world contrasting between strategy and manager diversification. Arguably, the most important lesson for hedge fund investors following the Amaranth incident is about manager diversification. A multi-strategy hedge fund is not a perfect substitute for a fund of funds despite there being - at least until quite recently - an argument suggesting otherwise. *A balanced* fund of funds is fully diversified across strategies as well as managers.

Hedge fund investing

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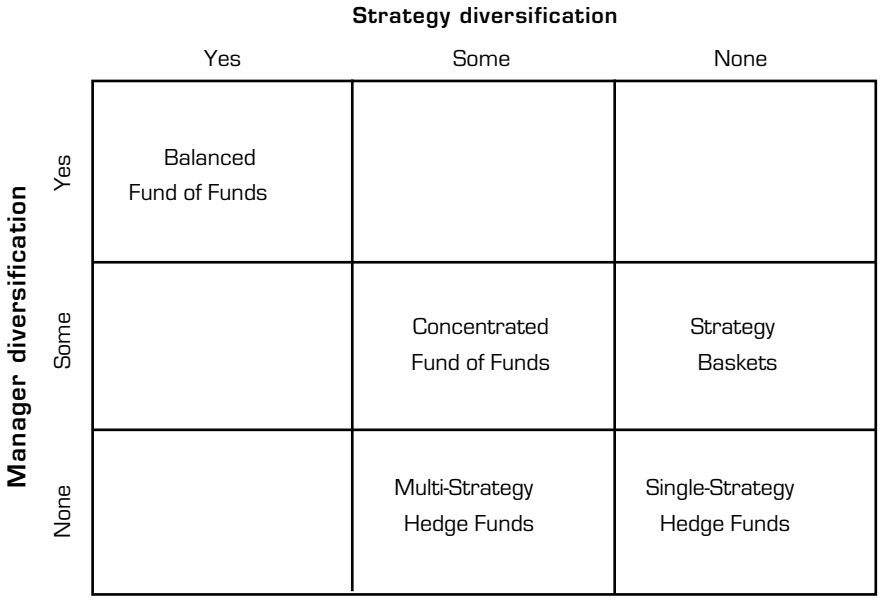
Chart 6: Diversification characteristics of hedge fund vehicles



Source: Alternative Investment Solutions

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

A *concentrated* fund of funds 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. 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.

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

Note further that generalisations in the very heterogeneous and dynamic hedge fund world such as the ones made above are tricky. 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 everything but.

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Transparency

"Anyone who likes legislation or sausage should watch neither one being made."
Otto von Bismarck

Transparency is among the hottest topics discussed at funds of funds conferences and in the minds of institutional investors' involvement in hedge funds. A hedge fund manager - or any other (leveraged) investor - has an incentive not to reveal the fund's positions for two main reasons. First, most managers believe they have an edge relative to the market. They are making money by doing something the market does not know or by doing it better than the market does. This competitive advantage or edge is their value proposition and justification for being in business. It is only rational that they protect what they believe is most valuable. Second, the market can trade against the manager if the position is in an illiquid security or spread and the position is revealed to the market. Inefficiencies are found in illiquid markets: not liquid markets. The period of Q3 1998 was a showcase example of the market trading against LTCM once the company was in distress and positions were revealed to the market.[1]

Regulation adds transparency and normalizes an industry

The first half of 2008 is another case in point. Banks are more transparent than hedge funds as banking is among the most tightly regulated industries. This resulted in banks being in a similar situation as hedge funds in Q3 1998, i.e., being forced to de-lever while the market knew about it. In addition to being transparent, banks acted more or less in a synchronised fashion as regulation has a tendency to normalise, i.e., banking is homogeneous whereas the hedge fund industry is heterogeneous. (An increase in hedge fund regulation would normalise the hedge fund industry, too.) The homogeneity and transparency are partly responsible for bank stocks losing around 50% from peak to (current) trough while hedge funds lost around 5% to June 2008.

Leverage

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

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 fund of funds manager must, therefore, have the ability to monitor accounting-based and risk-based leverage.

Assessing leverage can be tricky

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*[2] (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.

1 - To a disciplined absolute return manager with a healthy capital structure a period of distress is full of opportunities, as a period of distress is characterized by excess volatility and market inefficiencies. Hedge fund managers will want their funding intact and secured in such a period. Mid-2008 is a case in point.
2 - 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.

Hedge fund investing

Fund of hedge funds

Risk of style drift

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

A further ongoing 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, either due to endogenous factors (e.g., expansion) or exogenous factors (e.g., adaptation to changing environment). This is, of course, true for hedge funds, too.

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

There are probably two types of style drift: a short-term opportunistic style 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. Potentially, there are related trading opportunities through exploiting inefficiencies left behind by less informed investors.

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

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.

"In economics, the majority is always wrong."
John Kenneth Galbraith

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 out on the first-mover advantage.

Hedge fund investing

Fund of hedge funds

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

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 selling out-of-the-money put options.

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. In other words, investors captured the 13.1% loss of the S&P 500 Total Return Index in the twelve months to June 2008 without paying a large amount in fees. Funds of hedge funds produced a *net* return of around -0.2% in the same period but charged fees much higher than those of their long-only brethren. To the investors who put $2.5 trillion into hedge funds, the higher fees probably seem well spent.

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 are portrayed occasionally as a separate asset class, the point could be made that they are not. One could view the strategies executed by hedge funds and other proprietary trading accounts 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

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

- *Large parts of mainstream academia repeatedly highlights that hedge fund data is poor, markets are efficient and hedge funds engage in short put strategies, essentially defrauding their investors. What academia never seems to mention is that there are few investors who have invested in diversified hedge fund portfolios for ten years or longer and are unhappy with their investments.*
- *Most investors who moved into alternative investments have done so for conservative financial purposes. These investors - who arguably prefer compounding capital positively over compounding capital negatively - 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 in this decade 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 source of return from various "alternatives" differ fundamentally.*

Classifying hedge funds

Classifying hedge fund strategies is difficult

Different hedge funds are categorised into different strategies. These different strategies allow for differentiated analysis of investment styles. Different strategies have different risk-return relationships as well as differing sources of returns, which allow the investor to capture diversification benefits by investing not in one strategy but in many. However, classifying hedge funds is notoriously difficult. Different providers of data and information use vastly different ways to classify the universe. With this in mind, the following classification is only one of many ways to examine hedge fund strategies.

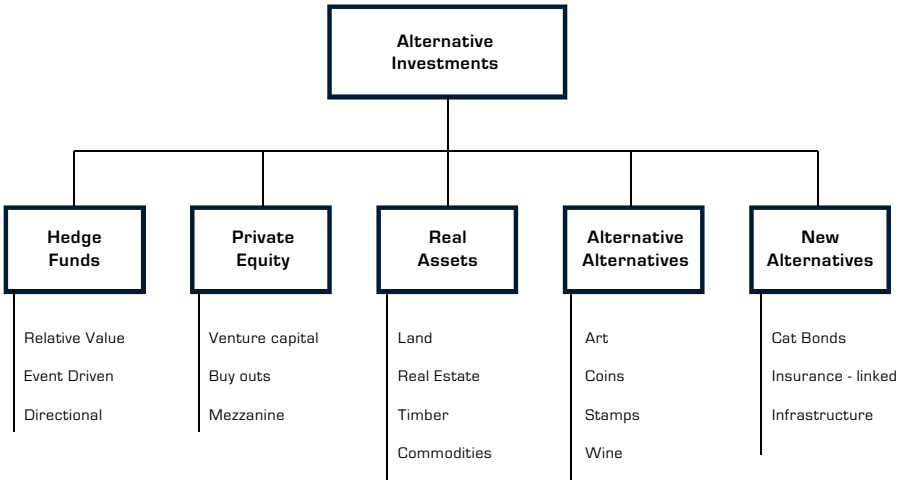
"The universe of alternative investments is just that - the universe."
Richard Bookstaber

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 1 shows one way of classifying the universe of what today is referred to as "alternative investments".

Strategies

Classifying hedge funds

Chart 1: Classifying the universe of alternative investments



Source: compiled from various sources

Hedge funds are not "buy-and-holders"

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 manager that differs in many respects from the traditional investment manager following a long-only, buy-and-hold strategy. They are "everything but" buy-and-holders.

Hedge funds do not easily fit into a box

While the universe of alternative investments is very diverse, the hedge fund universe is very diverse, too. This means 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. 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.

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

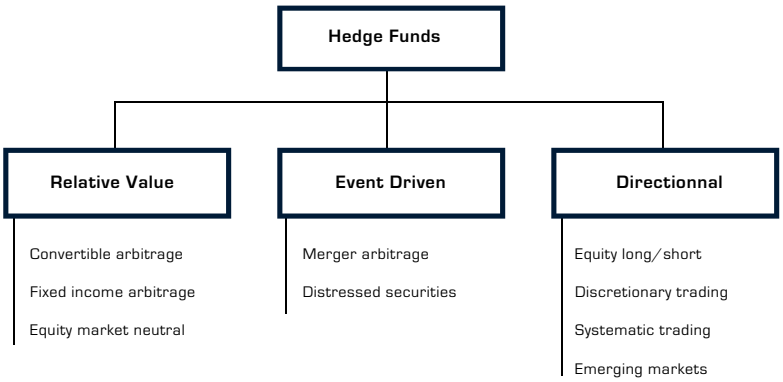
Chart 2 first divides the universe into relative-value, event-driven and directional strategies. We have added market share and some general characteristics to the chart to be discussed in further detail below. The logic behind this classification is that the directional bias increases from left to right. 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

Classifying hedge funds

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, these are all hedge fund styles that have a directional bias and do not fit the narrower definitions of the other two categories.[1]

Chart 2: Classifying hedge funds by strategy and sub-strategy



Market share	28%	20%	52%
Returns	~ 9 - 12%	~ 10 - 14%	~ 13 - 16%
Volatility	~ 2 - 5%	~ 4 - 7%	~ 8 - 14%
Sharpe ratios	~ 0.7 - 2.0	~ 1.3 - 1.7	~ 0.8 - 1.4
Leverage	High	Medium to low	Low
Liquidity	Medium	Medium to low	Medium to high
Fat tails	Yes, of course	Yes, of course	Yes, of course

Source: Adapted and modified from Ineichen (2000)
PAST PERFORMANCE IS NOT INDICATIVE OF FUTURE RESULTS.

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

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 either be offered 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, often weakly, correlated with the original sub-strategy.

There are different ways institutional (and private) investors can access hedge funds. In many jurisdictions there are vast hurdles and restrictions to invest directly. This is interesting because there are no restrictions to invest in banks, who we know today use much more leverage than hedge funds. Some jurisdictions require "wrappers" that are typically offered by investment banks.

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).

Strategies

Classifying hedge funds

Demand for capital guaranteed fund of hedge funds structures has declined

At the beginning of the institutionalisation of hedge funds, say around 2000-2002, some institutional and private investors required capital guarantees in the 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 the extreme 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.

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

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 $131.6 by 30 June 2008. This compares to $172.1 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 the one layer of fees. Estimates of assets under management in these tradable indices are around $3-5 billion, i.e., a small part of the overall $2.5 trillion industry.

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

A further idea that surfaced over the past two years is the idea that hedge fund returns, that are arguably returns from active asset management, can be replicated passively, i.e., more cheaply. This idea resembles to some extent the ancient human desire to turn lead into gold. The historical track record of the hedge fund industry is arguably very attractive as positive returns for diversified portfolios were indeed equity-like on the upside and bond-like on the downside. However, the fees that hedge funds and funds of funds charge are perceived to be very high. So if the gross returns could be replicated and a lower fee subtracted, the net returns would be higher. (Replicating net returns and then charging a fee for doing so does not make sense.) We believe total assets under management in hedge fund replication strategies and related ideas are unlikely to exceed $5 billion. The number of hedge fund conferences on the topic plus the vast media attention it attracts would suggest a much larger slice of the $2.5 trillion industry. The *gross* returns for five hedge fund replication products available through Bloomberg in the first half of 2008 ranged from -1.2% to -9.8% which compares to a *net* return of -2.4% for the HFRI Fund of Funds Composite Index.

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Classifying hedge funds

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

The idea of turning lead into gold, i.e., dis-intermediating hedge fund and fund of funds managers, stems primarily out of the academic literature. The idea of the random walk is one of the pillars in academic finance. The fact that a whole industry could emerge that claims to benefit from market inefficiencies obviously does not sit very well with the doctrines of efficient markets and normal return distributions that is still taught at business schools. One attempt to "explain away" the industry was by claiming that the data is so poor that once all the statistical biases were accounted for, the performance was nothing to write home about. Another "classic" coming from some corners of academia is to argue that hedge fund managers are mostly unskilled and are out to defraud investors. The line of argument is that it is, in theory, easy for managers to start up a fund and make money without having any real investment skill by systematically selling option premium and collecting fees until the fund eventually blows up. This type of research is abstract and ignores the business aspect of investment life in its entirety. One important aspect that is often ignored is that it is still very difficult for investment professionals to part with their current employer, set up an asset management firm and hedge fund and then raise $100 million. The fact that some individuals start a new hedge fund in excess of $1 billion on day one is entirely irrelevant for most ventures. Raising sufficient capital for a going concern is still very difficult. Investors, especially institutional investors, do not part that easily with their cash. Setting up a fund requires pedigree, trust, relationships, energy, business acumen and hundreds of presentations before operations have a chance of succeeding.

Hedge fund industry has become more diverse over the years, allowing investors to construct conservative portfolios

One of the (newer and positive) phenomena of hedge fund history is the heterogeneity among managers and strategies. This increased diversity allows investors to construct portfolios with bond-like risk characteristics. Twenty years ago it was not possible to construct a hedge fund portfolio with a volatility of five. Today it is.

Strategies

Returns, volatility, Sharpe ratios and all that

Returns, volatility, Sharpe ratios and all that

Historical single strategy hedge fund returns could be upwardly biased

The presence of hedge funds as truly active investment managers is very much inconsistent with the 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 15.8% from 1990 to June 2008, as implied in Table 1 below, but might "only" have compounded at around 12.8% per year.

Table 1: Hedge fund strategy performance characteristics (January 1990 - June 2008)

				1M Returns		12M Returns		Drawdowns / losses		
Index	Annual return (%)	Volatility (%)	Sharpe ratio	Best (%)	Worst (%)	Best (%)	Worst (%)	Worst (%)	Recovery (months)	Negative returns (%)
MSCI World	7.2	13.9	0.20	10.5	-13.3	45.1	-27.9	-46.3	40	38.7
JPM Gvt. Bonds	7.4	6.3	0.47	5.7	-4.3	24.9	-6.5	-8.1	11	39.2
ML US 3M T-Bills	4.4	0.5	0.00	0.7	0.0	8.4	1.0	0.0	n/a	0.0
HFRI Fund Weighted Composite	13.3	6.7	1.34	7.7	-8.7	39.0	-6.4	-11.4	7	26.1
HFRI Relative Value	11.4	3.6	1.94	5.7	-5.8	27.3	0.9	-6.6	6	14.4
HFRI Event-Driven	13.5	6.4	1.43	5.1	-8.9	31.9	-4.8	-10.8	7	21.6
HFRI Equity Hedge	15.8	8.6	1.32	10.9	-7.6	55.2	-8.3	-10.3	10	28.4
HFRI Macro	14.9	7.9	1.33	7.9	-6.4	55.1	-7.1	-10.7	15	30.2

Source: Alternative Investment Solutions, Thomson Financial
PAST PERFORMANCE IS NOT INDICATIVE OF FUTURE RESULTS.

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

Long-term hedge fund returns are attractive even after adjusting for any biases of a couple of hundred basis points per year. 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 June 2008 for example, the Japanese stock market was still around 50% below its peak from 1989 in *real* terms. This means a Japanese long-only equity investor compounded at an annual rate of around -3.6% from 1990 to June 2008 in *real* terms and assuming dividends were not taxed but reinvested.

Strategies

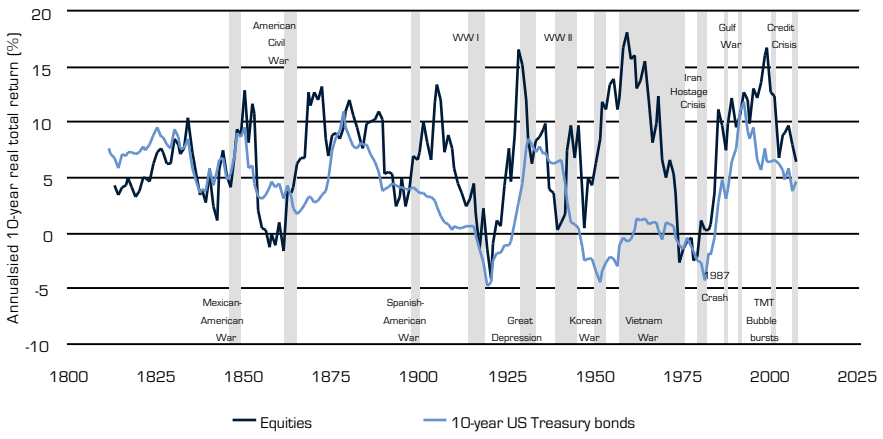
Returns, volatility, Sharpe ratios and all that

The possibility of an extended period of negative compounding is an alternative way of looking at risk

Chart 3 shows that such extended periods of negative compounding of equities and bonds can happen elsewhere, too. Investors who have embraced the absolute return investment philosophy wholeheartedly essentially perceive risk as compounding capital at a very low or negative (real) rate of return for an extended period of time. This is, of course, materially different as defining risk as the standard deviation of monthly returns or the possible deviation away from ones' benchmark.

"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 3: 10-year real total returns in the United States (1813 – 2007)



Source: Alternative Investment Solutions, Global Financial Data, Thomson Financial
PAST PERFORMANCE IS NOT INDICATIVE OF FUTURE RESULTS.

"In the long run, we are all dead."
John Maynard Keynes

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:

> *… 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]

1 - From Bernstein (1991)

Strategies

Returns, volatility, Sharpe ratios and all that

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

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

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

Normally a market crisis has a moderating effect on investors as their pre-crisis beliefs are shattered. For instance, the 2007-2008 credit crises crushed the ideas that home prices never decline or 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 conservative financial purposes. These investors - who arguably prefer compounding capital positively over compounding capital negatively - 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, uncontrolled financial loss or compounding capital negatively over an extended period of time. Two aspects that need to be addressed in this respect are valuation and liquidity.

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Valuation

Valuation

The current credit crises have emphasised the importance and the complexities of valuing less liquid assets

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 over the last three to four years.

While the percentage of hedge funds with difficult to value positions is relatively small, 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 have different prices for the same security, which again can differ from a price from a trade execution. This makes it more difficult to calculate a month-end NAV. Additionally, certain GAAP accounting does 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 size. To add to an investor's anxiety, a large number of hedge funds is 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 in regard to 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 then 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.

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

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

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Leverage

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]

Leverage

Leverage is both risk and opportunity

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 recognised 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]

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

All this might or might not be more apparent today than it was a couple of years ago. Prior to the current credit crunch 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, corporates and home owners use leverage. However, what seems apparent at the time of writing is that it is banks and home owners that misjudged the dangers of using leverage: not hedge funds. 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 is good for you while downing a double magnum is not.

An investment in the S&P 500 Total Return index of a 100 at the beginning of this decade stood at 100.5 by June 2008. An investment of 100 in the HFRI Fund of Funds Composite Index stood at 164.6

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

1 - See www.hedgefundmatrix.com. See also publication by IAFE (International Association of Financial Engineers) for further information on valuation and leverage in relation to hedge funds. (www.iafe.org)
2 - From Ineichen (2006)

Strategies

Leverage

through the current 2007-8 credit crisis, especially relative to banks and some other financial institutions. The responsiveness of hedge funds at inflection points and market mayhem are examples of what we refer to as "active risk management" and the idea of achieving an "asymmetric return profile", to be discussed in more detail in the next chapter.

Use of leverage varies

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 through the use of 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 also 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.

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

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 is 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]

Leverage amplifies both gains and losses

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 is 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.

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

Strategies

Leverage

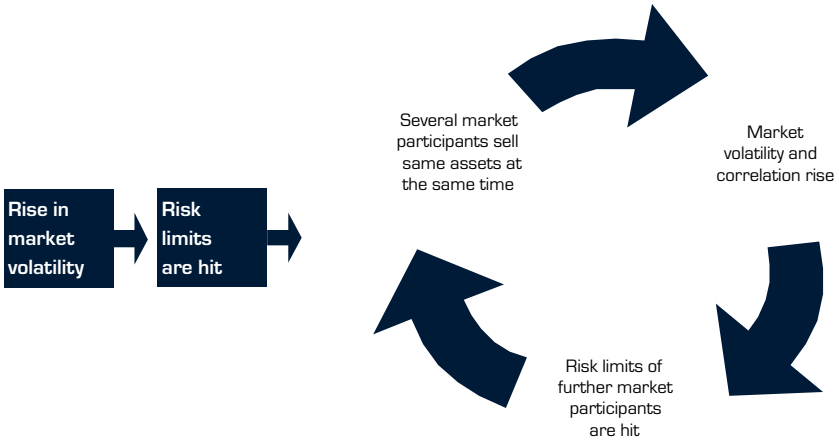
"Reality is always far messier and more complicated than models can capture."
Robert Rubin

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 Buffet puts it, "are left with their trunks off as the tide goes out".[1]

The "VAR vicious circle hypothesis" does not only apply to banks

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 4 is a good illustration of both the trigger as well as the mechanics of forced selling.

Chart 4: VAR vicious circle hypothesis



Source: Adapted and modified from Persaud (2000)

"Nothing is more obstinate than a fashionable consensus."
Margaret Thatcher

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.[2]

1 - We have added a numerical example of how leverage is used in equity long/short in the Appendix on page 147.
2 - Risk management professor Philippe Jorion replaced DEAR with VAR and coined the term "VAR vicious circle hypothesis" in a 2002 paper.

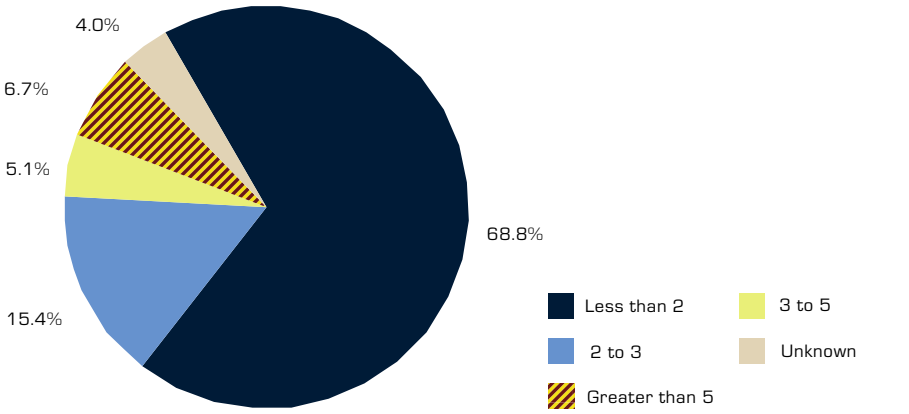
Strategies

Leverage

Quantifying leverage for the whole hedge fund industry is difficult

Chart 5 below 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. Leverage, irrespective of how it is defined, increased prior to LTCM, fell during the Russian debt crisis and then slowly picked up and rose steadily, probably to around August 2007. Whether leverage in hedge funds was higher or lower going into the current credit crisis than it was in summer 1998 is open to debate; we came across both notions. An undisputed fact is that hedge funds today have a larger impact in financial markets as they have become a larger portion over the past ten years.

Chart 5: Breakdown of hedge fund industry by leverage



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

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

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 quantifying leverage is not as straight forward with some strategies as it is with equity long/short. Note further 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. Only a very small percentage of hedge funds use more leverage than banks.

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, as is often the case in securities in distress.

Strategies

Liquidity

Liquidity

"Illiquidity and leverage can be a toxic cocktail"
Larry Summers

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. Given the adherence of various market participants to historical default tables and correlation matrixes in combination with the soothing diversification benefits suggested by Modern Portfolio Theory in the current credit crisis these somewhat unorthodox economic views seem pretty much spot on.

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

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 manager's flexibility to use leverage adds a layer of complexity for the hedge fund investor that is just not relevant when evaluating "normal" managers.

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

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.

Some strategies involve illiquidity and long lock-ups are warranted

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 manager has 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.

Strategies

Liquidity

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

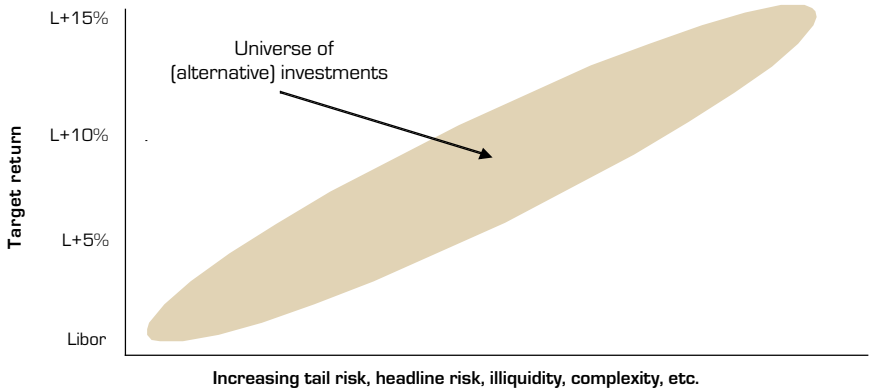
Peter Bernstein - in a recent article stressing the importance of understanding that the investment environment of the past could be profoundly different than the one we face today - argued in favour of picking up a premium for liquidity:

> *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 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 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, headline risk, complexity, etc. In this framework, we do not need to rely on luck to explain the Warren Buffetts and Yale Endowment funds of this world. Chart 6 suggests that there are some investors who are better at controlling tail and headline risk, and gaining transparency and confidence with illiquid, opaque and complex investments. The flipping of coins has nothing to do with it.

Chart 6: Alternative risk-reward trade-off



Source: Adapted and modified from Horizon 21
Schematic illustration

1 - From Bernstein (2008)

Strategies

Liquidity

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.*[1]

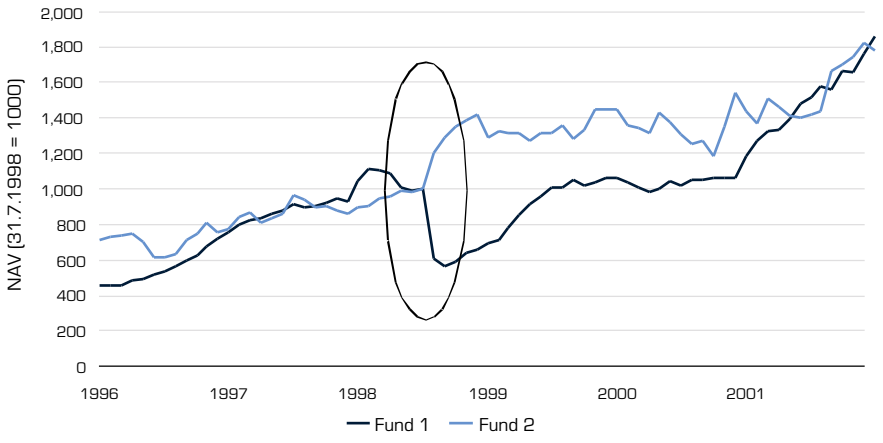
Hedge funds can be long as well as short "liquidity"

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 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 liquidity taker as well as provider.

Hedge funds are often contrarian by nature

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.

Chart 7: Winners and losers in liquidity shock



Source: Ineichen (2007a), p. 234, data from Alternative Investment Solutions
PAST PERFORMANCE IS NOT INDICATIVE OF FUTURE RESULTS.

1 - From Swensen (2000), p. 56

Strategies

Fat tails

Understanding liquidity characteristics is crucial when constructing absolute return portfolios

Chart 7 shows an extreme example of two funds in the liquidity crisis of Q3 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 7 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 goes to show that it is not correlation that matters in portfolio construction but "correlation of the tails" that matter, 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 in stress where we want the other parts to have a low or even negative correlation.

Fat tails

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

The term "fat tails" is associated with a distribution of returns. In financial economics most often it is assumed that prices of securities are statistically independent and 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 pretty happy with fat tails on the *right* hand side and rarely complain.

"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 Hume[1]

Picking up Nickels in front of a steamroller

When we classified hedge fund strategies and sub-strategies in Chart 2 on page 65, 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

1 - From Taleb (2004), p.100

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Fat tails

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 nonsense 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 are likely to repeat again:

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

Accidents happen

This means that even if the historic time series of an investment does not have measurable excess kurtosis - the proper 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.

Things that can go wrong actually sometimes do just that

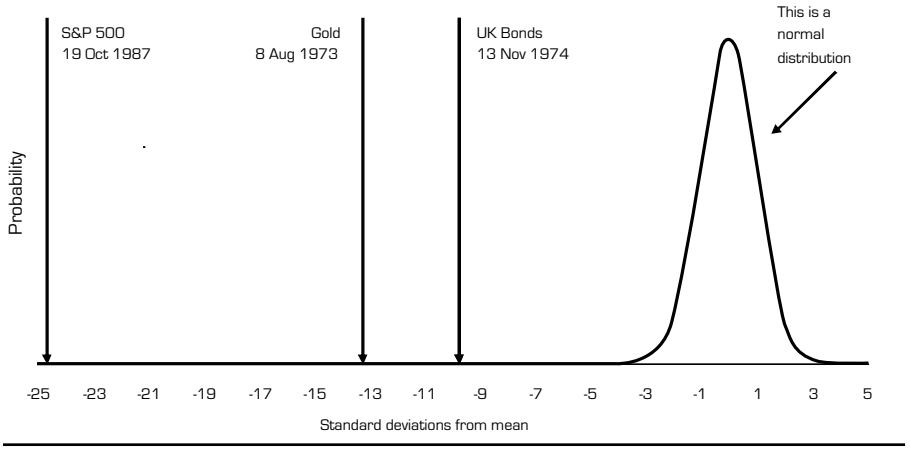
We can even go further and argue that Murphy's Law applies to all investments: if something can go wrong, it will - eventually.[1] Applying Murphy's Law is rephrasing the idea of stability causing instability mentioned earlier. Is this true for investing in hedge funds? Of course it is. The measured history of hedge fund returns is favourable for many reasons. One of the reasons is that hedge funds have been generating these returns in an environment where most large investors steered away from hedge funds and European politicians went as far as putting hedge fund on the agenda of a G8 meeting as potentially the largest risk to the global financial stability. This could all reverse. It is not entirely unthinkable that the absolute return investment philosophy becomes the dominant mantra in investment management (essentially what we suggest) and everyone buys in. If this happens, the system indeed might become unstable.

1 - See also economist Paul Omerods' "Iron Law of Failure", highlighted in the Appendix on page 142.

Strategies

Fat tails

Chart 8: Normal distribution and its real world explanatory power



Source: Alternative Investment Solutions, Thomason Financial
PAST PERFORMANCE IS NOT INDICATIVE OF FUTURE RESULTS.

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

Chart 8 shows a normal distribution that suggests 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 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 MSCI World experienced a negative daily return of more than -4 standard deviations both in January and February. If a normal distribution had any meaning, we should expect these -4 standard deviation days to occur once every 121 years.

Returns are not independent and drawdowns are not healthy

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 nonsense, 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, as happened in the last bear market from 2000 to 2002, 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. (We were surprised to find out how many investors were puzzled by this little bit of arithmetic during the bear market of 2000-2002.)

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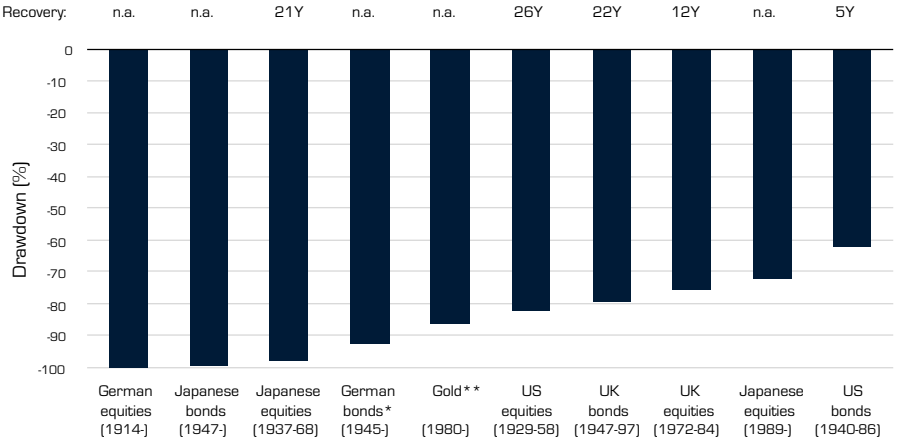
Fat tails

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

Chart 9 shows a selection of historical drawdowns in *real* terms. 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 twentieth century but did not. Their drawdowns were pretty much on the left hand side in Chart 9. Second, we show total returns, which means the graph implicitly assumes any proceeds are not taxed but are fully re-invested.

Chart 9: Historical drawdowns in the Twentieth Century



Source: Alternative Investment Solutions, Global Financial Data, Thomson Financial
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 $2,270 in today's money.
PAST PERFORMANCE IS NOT INDICATIVE OF FUTURE RESULTS.

The risk management profession has indeed been focussing on tail risk, despite popular suggestions to the contrary

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.

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Fat tails

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

We suggest here - as a thought experiment - to work the other way. Let's 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 is a calamity that 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". This is arguably the worst-case scenario. It is the one scenario that 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 without saying that if the worst-case scenario occurs, the size of the allocation to hedge funds does not really matter that much.

"It is a socialist idea that making profits is a vice; I consider the real vice is making losses."
Sir Winston Churchill

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, 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 is 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.

Accidents are impossible to predict

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 credit crunch. 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 10, for example, shows the past ten years of the S&P 500 Index and the next ten. (Index at 1,300 as of March 19th, 2008). The index could well compound at 6.6% over the next ten years and reach 2,455 (the median estimate from the simulation in Chart 10). However, the range of scenarios is from 460 to 9,500 index points. This means that the long-only US equity investor could compound at -9.9% over the next ten years

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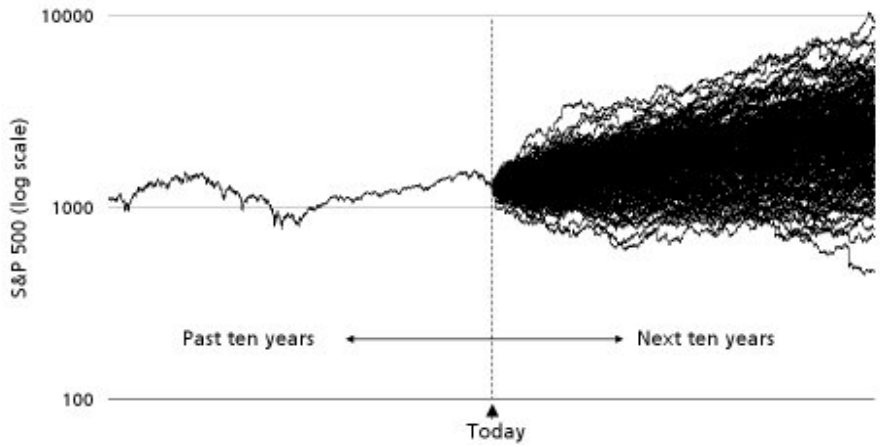
if unlucky or at 22.0% if lucky. Both scenarios are in the realm of possibilities and are not unprecedented scenarios in financial history. There is a potential "lost decade" or two in there for anyone. This is the reason why the "we are not a casino" quote from an institutional investor in 2000 mentioned earlier 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.

Chart 10: Past versus future



Source: Alternative Investment Solutions, Thomson Financial
Past: S&P 500 Index from April 1998 to March 19th, 2008. Future: simulation (bootstrapping with replacement) using daily returns from inception (January 1964) to March 19th, 2008.
PAST PERFORMANCE IS NOT INDICATIVE OF FUTURE RESULTS.

Portfolio construction is a forward-looking exercise

The discipline, as mentioned in previous chapters, which deals with these bizarre, wealth-destructing scenarios is active risk management which starts with portfolio construction. 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 were 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.

Strategies

Fat tails

Q: What is the definition of a long-term investment?
A: a short-term investment that went wrong
Saying

The historical drawdown graph (Chart 9 on page 82) 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. Also, 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 of time. Chart 9, therefore, is a reminder that it is indeed negative compounding that is the issue for the long-term investor. Also, the graph demonstrates that extended periods of negative compounding do happen.
This begs the question:

Who should be managing risk?

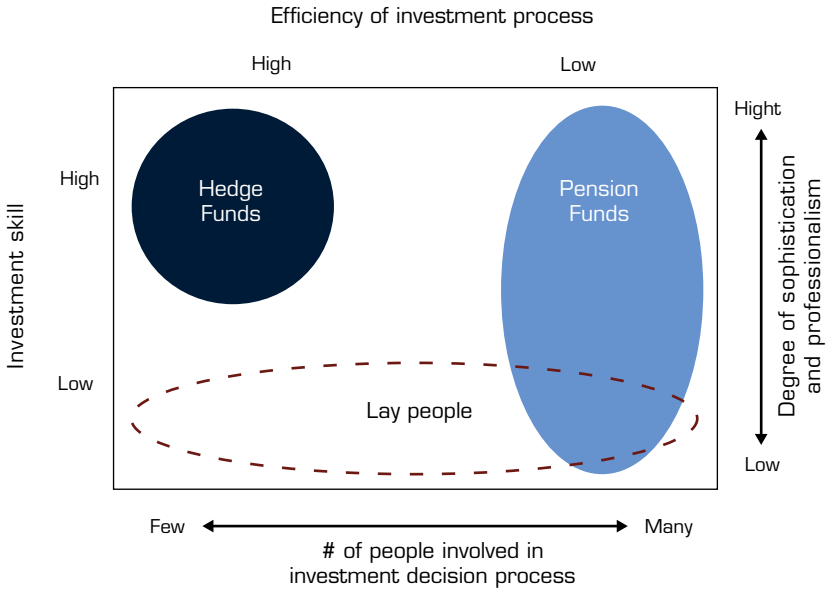
Outsourcing risk management is an option

One alternative to manage risk is to outsource 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. The underlying hedge fund manager has the task to manage risk at the securities and market level, whereas the fund of funds manager 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?

"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 Swensen[1]

Chart 11: Efficiency versus investment skill



Source: Alternative Investment Solutions

1 - From Swensen (2000), p. 325

Strategies

Fat tails

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

Chart 11 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 is supposed to show 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 11. 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 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]

"Worldly wisdom teaches us that it is better for reputation to fail conventionally than to succeed unconventionally."
John Maynard Keynes

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 that "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 institutional investment management, put it most aptly:

1 - From Swensen (2000), p. 344

Strategies

Fat tails

> *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.*[1]

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 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. Some pension funds have delegated more authority to its staff in an effort to address the issues arising from committee-based decision making. In essence, both outsourcing as well as "insourcing" certain risk management functionality can increase decision-making efficiency.

Concluding remarks: *strategies*

One of the central drivers of alternative investments in this decade is the realisation by an increasing number of investors that the source 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 source of return from various "alternatives" differ fundamentally. The sources of return from a railroad project in India, a distressed loan from the Brazilian government and a market neutral strategy in European equities are fundamentally different. Under normal circumstances, the return streams themselves might be correlated on the upside. This is fine with us as investors, because had we not expected positive returns we would not have invested. However, potential accidents are unlikely to be synchronised. Assuming we are not vaporised by Vogons, of course.[2]

1 - From Swensen (2000), p. 320
2 - Stop press: in September 2008, Cern, The European centre for particle physics, opened for business to allow two beams of protons in opposite direction through their $8 billion Large Hadron Collider (LHC) for them to smash together, creating in miniature the intense energies of a new born universe. The LHC will also create microscopic black holes, i.e., tiny concentrations of matter so dense that their gravity prevents light escaping. The project's opponents argue that the collisions could generate black holes capable of swallowing up the whole earth. So assuming the scientist's model assumptions are as robust as those in finance, potentially, no extraterrestrials are required.

Why invest in 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 Adams[1]

- ***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 management

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

The distinction between the way risk is defined and managed in the relative return world and absolute return world is essential when understanding what hedge funds have on offer. Despite their name, hedge funds do 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 asset 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.

"It's only when the tide goes out that you see who has been swimming with their trunks off."[2]
Warren Buffett

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

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".
2 - In August 2008, Mr Buffet added: "Wall Street has been kind of a nudist beach".

Value proposition of hedge funds

Active versus passive management

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.

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

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:

> *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.*[1]

"I have noticed that everyone who has ever tried to tell me that markets are efficient is poor."
Larry Hite

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. 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.

1 - "The psychology of human misjudgement", speech at Harvard Law School, 1995.

Value proposition of hedge funds

Active versus passive management

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

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.

"Adapt or perish, now as ever, is nature's inexorable imperative."
H.G. Wells

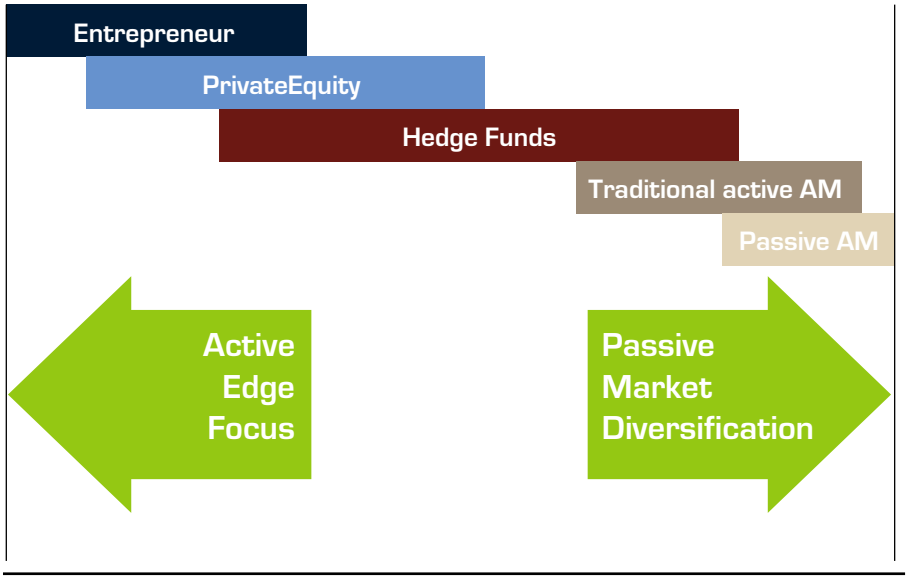
The leap from the "random walk" theory to the conclusion that successful investing is simply a matter of luck is, we believe, wrong. (Vendors of index funds will most certainly disagree.) To the contrary, we believe that the common denominator of successful investing is not luck (though of course it 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.

1 - From Lighthouse Partners' Funds, March 2006 estimates

Value proposition of hedge funds

Active versus passive management

Chart 1: Active versus passive asset management (AM)



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

Alpha and entrepreneurialism is active; beta and benchmarking is passive

Chart 1 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 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.

"All generalizations are false, including this one."
Mark Twain

The other extreme on the left hand side of Chart 1 is the entrepreneur. Setting up one's own business is still the best way to leverage (and then later monetise) ones' 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. As the hedge fund survives the early years

Value proposition of hedge funds

Active versus passive management

and succeeds, it moves to the right in Chart 1. 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 1. The graph therefore also shows that most generalisations regarding hedge funds are misleading as their spectrum of operandi is so large.

"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

Nearly all successful absolute return managers (Bernard Baruch, JP Morgan, Benjamin Graham, Warren Buffett, George Soros, Julian Robertson, Michael Steinhardt, Ed Thorpe, Jack Nash, etc. – just to name a few) 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 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. 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, street smarts, 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.

Value proposition of hedge funds

The Fundamental Law of Active Management

The Fundamental Law of Active Management

"Mc2 is the Law, here as well as elsewhere."
Richard C. Grinold[1]

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]

Performance attribution analysis without an unambiguous benchmark is rather difficult

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, as mentioned before, argued:

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

There are no benchmarks in absolute return space

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 IR, therefore, do not apply. Nevertheless, the logic behind the law of active management does 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 noticed that the "absolute return" moniker works pretty well too when marketing their long-only funds.)

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)

Value proposition of hedge funds

The Fundamental Law of Active Management

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

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 current hedge fund phenomenon is not a short-term phenomenon. 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.

Hedge funds are not entirely unconstrained

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). This leads to a form of self-constraint.

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

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.

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.

Value proposition of hedge funds

The idea of asymmetric returns

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

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, say, 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 work[1], 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]

Positive compounding requires asymmetries

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.

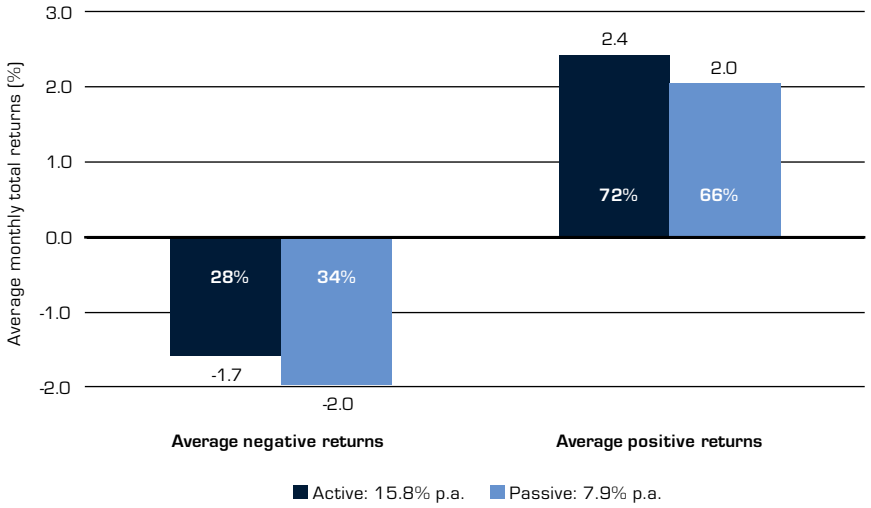
1 - From Asymmetric Returns – The Future of Active Asset Management, Ineichen (2007a)
2 - From Ineichen (2007a), p. 10

Value proposition of hedge funds

The idea of asymmetric returns

These asymmetries are best explained with an example. Chart 2 compares two portfolios: one where risk is actively managed and one where it is not. For the active portfolio, we use an index of equity long/short hedge funds and, for the passive portfolio, we have chosen a balanced portfolio comprised of 56% long-only equity and 44% long-only bonds. We have chosen this equity bond mix for the balanced portfolio to have the same volatility as the equity long/short hedge fund index of 8.6% between January 1990 and June 2008. 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 2: Example of an asymmetric return profile (January 1990 – June 2008)



Source: Alternative Investment Solutions, Thomson Financial
Active: HFRI Equity Hedge Index; Passive: 56% MSCI World Index and 44% JPM Global Government Bond Index, monthly rebalanced, based on USD total returns.
PAST PERFORMANCE IS NOT INDICATIVE OF FUTURE RESULTS.

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

The passive, balanced long-only portfolio compounded at an annual rate of 7.9%, while the portfolio where we believe risk is actively managed compounded at a rate of 15.8%. 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.)

Value proposition of hedge funds

The idea of asymmetric returns

Hedge fund returns are not symmetrically distributed

Chart 2 shows the two aforementioned asymmetries with respect to magnitude and frequency very well. First, the average positive returns of the active portfolio are substantially larger than the average negative returns. The average positive monthly return was 2.4% that compares with -1.7% 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 2.0% that compares to -2.0% on average in negative months. (The positive return was actually lower by one basis point.) 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, 72% of all returns were positive while only 28% were negative. This compares to 66% positive returns with the passive portfolio versus 34% negative. These differences are material when compounding capital is concerned.

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

If both the ratio of magnitude and the ratio of frequency were symmetrical compounding would be around zero. The passive portfolio in Chart 2 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 in the preface saying that the opposite of hedging is speculation. The global long-only, buy-and-hold investor has been lucky that between 1990 and mid-2008 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 43% Japanese equities and 57% government bonds (to get a volatility of 8.6%) the compounding rate is only 1.9%. The Topix Total Return Index compounded at -3.2% over the $18^{1}/_{2}$ -year period examined in Chart 2. 52% of returns were negative averaging -4.4% per month compared to 48% positive returns averaging 4.4%. The balanced portfolio had average returns of -1.9% and 1.9%, i.e., a near-perfect symmetry and nearly identical to the US portfolio discussed earlier.

Different strategies have different patterns of asymmetry

Different hedge fund strategies have different combinations of asymmetries. Table 1 compares a selection of hedge fund strategies with four long-only 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 the new active asset management, have more attractive asymmetries and hence higher long-term compounding rates for the same unit of risk, irrespective of whether risk is defined as volatility or drawdowns.

Value proposition of hedge funds

The idea of asymmetric returns

Table 1: Symmetric and asymmetric portfolios (January 1990 – June 2008)

				Magnitude		Frequency	
		CARR	Volatility	Positive	Negative	Positive	Negative
Market-based	S&P 500	9.49	13.88	3.2	-3.3	64%	36%
	MSCI World	7.24	13.91	3.2	-3.3	61%	39%
	JPM Global Gvt Bonds	7.37	6.27	1.7	-1.1	61%	39%
	Balanced portfolio	7.20	8.86	2.1	-2.0	64%	36%
Skill-based	Equity long/short	15.75	8.61	2.4	-1.7	72%	28%
	Equity market neutral	8.71	3.03	1.0	-0.5	82%	18%
	Event-driven	13.55	6.39	1.8	-1.5	78%	22%
	Macro	14.95	7.91	2.2	-1.2	70%	30%
	Fund of hedge funds	9.52	5.53	1.5	-1.1	73%	27%

Source: Alternative Investment Solutions, Thomson Financial
Notes: CARR: Compound annual rate of return. Based on USD total returns. Balanced portfolio is 60% MSCI World TR Index and 40% JPM Global Government Bond TR Index, monthly rebalanced.
PAST PERFORMANCE IS NOT INDICATIVE OF FUTURE RESULTS.

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

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 1 are nearly perfectly symmetrical in terms of the magnitude of monthly positive and negative returns. The bond portfolio has a slight asymmetry. The percentages of positive returns for the four long-only portfolios range between 61% and 64%.

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

The hedge fund portfolios have different combinations of asymmetries. Directional hedge fund portfolios as, for example, equity long/short and macro have wide differences in terms of positive and negative returns. In equity long-short the positive returns are higher than the negative returns by 76 basis points (2.41% minus 1.65%). In macro this difference is even higher than 100 basis points per month on average. However, directional strategies have a lower asymmetry with respect of return frequency. In equity long/short 72% of returns were positive and 28% negative. Hedge fund strategies that aim to be more market neutral have different asymmetries. The asymmetry with respect to magnitude in equity market neutral for example is "only" 47 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 equity market neutral 82% of all returns over the past 18 years were positive versus only 18% that were negative. (Note that the worst monthly return in equity market neutral was -1.67% in August 1998. The danger of displaying average negative returns, such as in Table 1, 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 130 and in the Appendix starting on page 125.)

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.

Value proposition of hedge funds

Active risk management

Active risk management

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

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. 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 carry an award in the market place and the skill needs to change as market environments and opportunity sets change.

Applicability and adaptability of skill

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

Performance in 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 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.

Skill can be assessed

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 become commoditised

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

1 - Please see page 132 in the Appendix for a brief synopsis of hedge fund history.

Value proposition of hedge funds

Active risk management

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.

Adaptability versus style drift

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

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.

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

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:

> *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.

1 - See Lo (2004)

Value proposition of hedge funds

Active risk management

One needs to evolve to survive

Markets learn

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.

Active means to adapt to survive

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 cyclicality in the degree 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.

Intellectual property versus adaptability of skill

"Wealth is the product of Man's capacity to think."
Arthur Schopenhauer

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".[1] 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.

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

Chart 3 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

1 - From Sherden (1998), p. 121.

Value proposition of hedge funds

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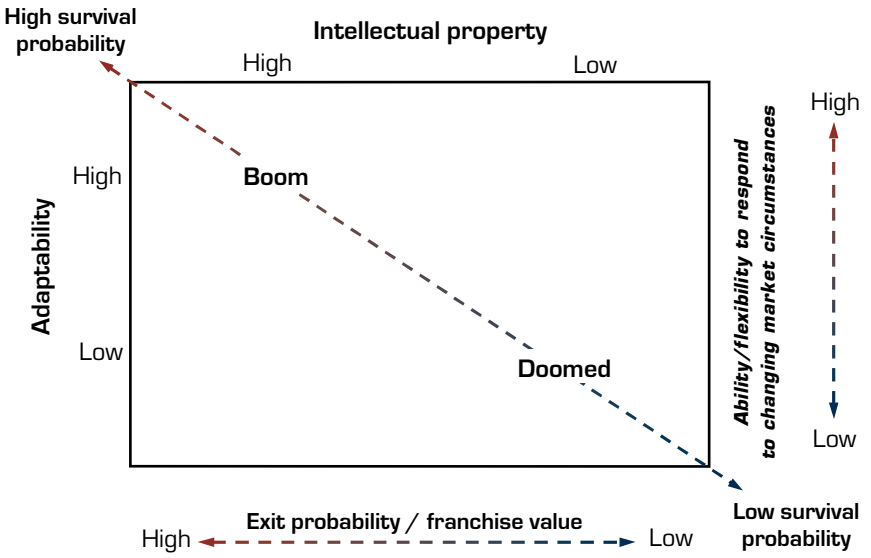
food is a prerequisite for survival, it dies and become extinct. In other words, the beak was an advantage in one regime but is a disadvantage in another. Variation in the gene pool, which allows rapid innovation and mutation of disciplines forms the building blocks of survival. The parallel to the asset management industry is that, potentially, many investment companies have over-adapted themselves to rising stock markets and the doctrine of relative returns.

Chart 3: Intellectual property versus adaptability



Source: Ineichen (2005)

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

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 as well as short-term investors needing 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 could be 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

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Active risk management

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.

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.

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

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

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.[1] In the absolute-return world, risk is defined, perceived and managed as total risk.[2] 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.

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

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.

1 - Tracking risk is generally understood as the probability of underperforming the benchmark. Tracking risk is reduced by adjusting ones' portfolio closer to ones' 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 80-90% of their value and therefore became a much smaller part of the benchmark.
2 - From Ineichen (2003b, 2007)

From relative to absolute returns

Managing tracking risk versus total risk

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

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 the 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.

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

The introduction of an index was an improvement over the first stage as it somewhat resolved the agency problem through using a rigid benchmark. 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 consensus view.

"The efficient market hypothesis is the most remarkable error in the history of economic theory."
Lawrence Summers after 1987 crash

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.[1] Warren Buffett once jested that he would like to fund university chairs in the EMH, so that the professors would train even more misguided financiers 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."[2]

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

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:

> *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 focused peoples' attention away from the conventional benchmarks. This is a very, very important development.*[3]

1 - 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.
2 - Found in Mandelbrot and Hudson (2004), p. 14.
3 - 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.

From relative to absolute returns

Managing tracking risk versus total risk

Caveat emptor

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 first chapter. Buyers beware.

Table 1: Difference between relative return and absolute return model

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

Source: Ineichen (2001)

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

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.

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

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

From relative to absolute returns

Managing tracking risk versus total risk

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

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 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. An absolute return strategy, as executed by hedge funds, can be viewed as the opposite of a long-only buy-and-hold strategy.

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

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 uphill 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.

From relative to absolute returns

What exactly is risk?

What exactly is risk?

Risk = exposure to change

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".

The boiling frog syndrome

"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

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 components. Once risk is divided into components, these risk components can be aggregated and the risk managed separately.

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

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.[2] 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".

1 - From Ineichen (2003b)
2 - 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.

From relative to absolute returns

What exactly is risk?

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

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.*[1,2]

"Since the mathematicians have invaded the theory of relativity, I do not understand it myself anymore."
Albert Einstein

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 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.*[3]

1- From Parker (2005), p. 291.
2 - A somewhat cynical market observer might add that the current credit crisis is a manifest that risk management indeed follows the maxim of "learning by doing". Perhaps those who lost most are now the most experienced.
3 - From Taleb (2001), p. 146-147.

From relative to absolute returns

What exactly is risk?

Risk versus uncertainty

"The only certainty is that nothing is certain."
Pliny the Elder (I think)

In finance we tend to distinguish between "risk" and "uncertainty" also known as *Knightian Uncertainty*, named after US economist Frank Knight (1885-1972).[1] Risk describes situations in which an explicit probability distribution of outcomes can be calculated, perhaps on the basis of 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 exactly calculated. 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 goes without saying 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.

"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

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?

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

As mentioned earlier, one way to define risk is as "exposure to change". This definition is very simple and somewhat 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.*[2]

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

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. However, any assessment of risk is based on knowledge that is available today.

1 - See Knight (1921)
2 - From Holton (2004)

From relative to absolute returns

What exactly is risk?

"Once again the important fact is knowing the existence of these nonlinearities, not trying to model them."
Nassim Taleb[1]

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.*[2]

What exactly is risk management?

Risk management touches on many aspects

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.

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

As we have elaborated before, one of the central aspects of any risk management process is how risk is defined. It is this definition 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.

Risk measurement is a science. Risk management is not.

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 late Leon Levy, cofounder of the Oppenheimer Funds and Odyssey Partners, puts the limitation of pure science more boldly while discussing the failure of LTCM:

1 - From Taleb (2004), p. 165.
2 - From Bernstein (1996), p. 336.

From relative to absolute returns

What exactly is risk management?

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]

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

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.

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

The debate between risk management and measurement is somewhat a contrast between science and street-smartness, 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.

The musical chairs effect

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

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. As the decade progresses, it is becoming increasingly apparent that some of the beliefs and assumptions that were formed during the 20-year bull market from the 1980s and 1990s are, potentially, false.

1 - From Levy (2002), p. 146

From relative to absolute returns

What exactly is risk management?

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

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?

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

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).

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

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.[1] As Lord Bauer, economic adviser to Margaret Thatcher, put it: "A safe investment is an investment whose dangers are not at that moment apparent".

1 - See, for exemple, Bookstaber (1997)

From relative to absolute returns

What exactly is risk management?

"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 Samuelson[1]

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]

"Chance favours only the prepared mind."
Louis Pasteur

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. Exogenous shocks happen also to prudent and foresighted managers (while endogenous accidents and disasters do not - or do to a lesser extent.) Given that exogenous shocks 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

"Experience is a dear teacher."
Benjamin Franklin

We argue that experience matters for fairly obvious reasons. Arbitrageurs who lived through and survived Q3 1998 have more experience than those who have not. As poet Heinrich Heine put it: "Experience is a good school. But the fees are high".

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]

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, was asked for his thoughts on managed futures. His response included this comment.
2 - From Jaeger (2005), p. 272
3 - From Warwick (2000). We also have seen this quote attributed to Professor Daniel Kahneman.

From relative to absolute returns

What exactly is risk management?

"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 Webster,
Greenwich Associates

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

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 over and over again. If this is true, we then could argue that experience is existent in the financial world though 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. (One can of course turn this notion around and argue that some investors can charge 2 + 20 because those who pay 2 + 20 have no experience.)

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 current credit 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".

Note here that we do not suggest that hedge funds are better investment managers than are 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. There must be a reason for this.

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

Data	Facts that can be used for reasoning, discussion or calculation.
Information	Data with context, obtained from investigation, study or instruction.
Knowledge	Information with meaning and understanding.
Wisdom	This term can be ridiculed, but let's say it is knowledge with insight.[3]

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 - From Ashley (2003), p. 98.

From relative to absolute returns

What exactly is risk management?

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

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 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

"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

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.

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

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 broker[2]. 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 (and some broker/dealers - not to be mentioned here - had not traded against them). Since LTCM in 1998 there have been both hedge funds as well as banks that found themselves in dire straits as funding was impaired.

1 - From Gonzales (2003) referencing Perrow (1999)
2 - See Appendix 3 for definitions of industry stakeholders

From relative to absolute returns

What exactly is risk management?

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.*[1]

"Buy when the canons are thundering and sell when the violins are playing."
N.M. Rothschild

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 Salomon Brothers after the Treasury Bond Scandal in 1990/91 and offered to bail out LTCM when in distress during the Russian Default in 1998. 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 - Institutional Investor, September 2001

From relative to absolute returns

Compounding matters

Compounding matters

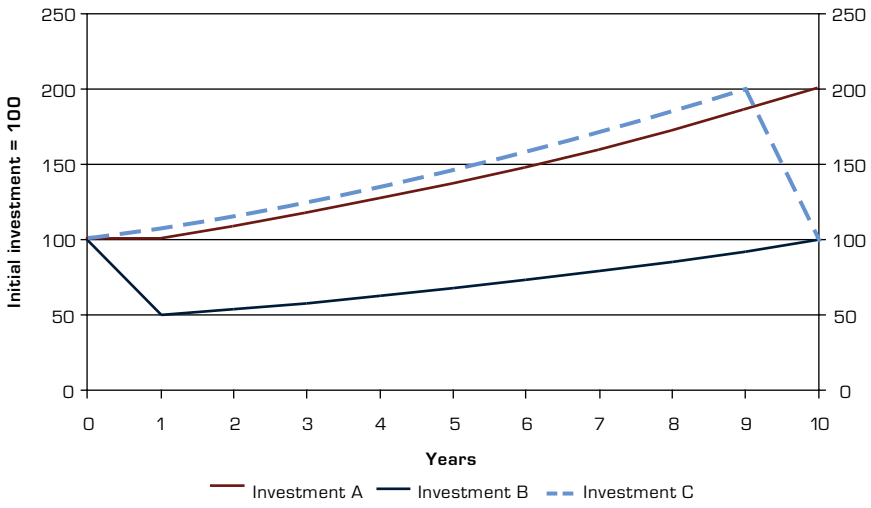
"Compound interest is the eighth natural wonder of the world and the most powerful thing I have ever encountered."
Albert Einstein

As mentioned earlier (Table 1 on page 108) 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 can 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 4 shows these three investments graphically. We assume that the three portfolios are diversified portfolios, i.e., idiosyncratic risk is diversified.

Chart 1: Effect of compounding



Source: author's own calculations.

From relative to absolute returns

Compounding matters

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

Investment C has outperformed investment A for a long time. Investment A and investment C very much resemble hedge funds and long-only equities from 1990 to 2002. 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 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, put 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.*[1]

Boring is good

In essence, boring is good. Table 2 shows the quarterly performance of the average hedge fund as well as the average US mutual fund in quarters where the S&P 500 index was negative. The sum of all negative quarterly returns for the S&P 500 index from 1990 to 2007 was -120.1%. This compares to -128.0% for the average mutual fund. This slight underperformance of active, long-only asset management is fairly consistent with most of the empirical research suggesting that active long-only underperforms. (Note that index funds underperform, too.) The average hedge fund lost "only" 9.1% in these negative quarters. We believe this a big difference to -128.0% of the average mutual fund assuming - as always, of course - compounding capital positively rather than negatively and survival are major objectives.

1 - From Rogers (2000)

From relative to absolute returns

Compounding matters

Table 2: Hedge Funds versus long-only funds in down quarters

	S&P 500 TR Index	HFRI Composite Index	Morningstar Average Equity Mutual Fund
Q1 1990	-3.0%	2.6%	-2.8%
Q3 1990	-13.7%	-3.9%	-15.4%
Q2 1991	-0.2%	3.8%	-0.9%
Q1 1992	-2.5%	6.7%	-0.7%
Q1 1994	-3.8%	0.4%	-3.2%
Q4 1994	-0.0%	-1.4%	-2.6%
Q3 1998	-9.9%	-8.8%	-14.9%
Q3 1999	-6.2%	0.7%	-3.4%
Q2 2000	-2.7%	-1.2%	-3.2%
Q3 2000	-1.0%	1.9%	0.6%
Q4 2000	-7.8%	-3.3%	-8.1%
Q1 2001	-11.9%	-0.5%	-12.7%
Q3 2001	-14.7%	-4.0%	-17.2%
Q2 2002	-13.4%	-1.6%	-12.1%
Q3 2002	-17.3%	-3.9%	-16.2%
Q1 2003	-3.1%	0.8%	-2.8%
Q3 2004	-1.9%	0.8%	-2.1%
Q1 2005	-2.1%	0.7%	-2.0%
Q2 2006	-1.4%	0.0%	-2.4%
Q4 2007	-3.3%	1.1%	-5.9%
Q1 2008	-9.4%	-3.4%	n.a.
Q2 2008	-2.7%	2.2%	n.a.
Sum of returns*	**-120.1%**	**-9.1%**	**-128.0%**
Cumulative return*	**-72.0%**	**-9.7%**	**-74.4%**

Source: Alternative Investment Solutions, Morningstar, adapted and modified from VAN Hedge Fund Advisors
* excluding 2008

One of the key claims of our research efforts in this space is that compounding of capital, i.e., long term absolute returns, matters to all investors. If true then the management and control of downside volatility is a key ingredient for 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.

From relative to absolute returns

Compounding matters

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

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 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 108.) 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*

"Diversification should be the cornerstone of any investment program."
Sir John Templeton

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. To the absolute return manager these objectives are considered conservative.

"Banks are dinosaurs. Give me a piece of the transaction business - and they are history."
Bill Gates

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.[1] A bank, essentially an intermediary of capital and facilitator of credit, is a highly leveraged institution, which holds assets which 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.

1 - Stop press: the number of people agreeing with this notion probably reached a peak during September 2008.

From relative to absolute returns

Compounding matters

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.

Closing remarks

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 general 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 can't 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. So, 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.

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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 over uncertainty. Nevertheless, the literature on investing up to 1952 had either 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 an awfully long time for some institutional investors to embrace their products. The reason for this is probably twofold: 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. The second reason is that 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.

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

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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 might 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.

As this decade progresses and the current credit crisis continues to unfold it is becoming 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 that "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

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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.

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 resemble 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 is 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 recent regime of disinflation as interest rates were falling and, hence, equities and bonds had risen. Today it is.

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. Some of the victims of the credit crisis had thousands of rocket scientists managing risk. There is evidence showing that it is often valid to be reckless with the details, and that the workings of outrageously oversimplified games really can offer legitimate explanations of very complicated things. 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.

Appendix 1

The origins of hedge funds

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The origins of hedge funds

The hedge fund idea predates the concept of trying to beat a benchmark

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 organized 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 used leverage to further enhance the performance. Today the term "hedge fund" takes on a much broader context, as different funds are exposed to different kinds of risks. 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.

A hedge fund is an enterprise and therefore most often starts with an idea and the entrepreneurs themselves risking their own money

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%.

Imitation is the sincerest form of flattery

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 manger 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. The advent of the 130/30 structure (130% long and 30% short) emanating in traditional investment management only a couple of years ago could be testimony that this is indeed a good idea. We could also argue that—by adapting the 130/30 structure-the investment management industry went full circle, or that, tongue firmly in cheek, the whole industry went back to its origin.

The term "hedge fund" was coined in 1966

While a few investors, including Warren Buffett and 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 the aforementioned article called "The Jones Nobody Keeps Up With".

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.

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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.

Speculative techniques for conservative ends

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]

Many hedge funds perished in the two bear markets in the early 1970s as they departed from the discipline of controlling risk

The second hedge fund after A. W. Jones was City Associates founded by Carl Jones (not related to A. W. Jones) in 1964 after working for A. W. Jones. Unlike in the 2000-2002 downturn, many funds perished during the market downturns of 1969–1970 and 1973–1974, having been unable to resist the temptation to be net long and leveraged during the prior bull run. Hedge funds lost their prior popularity and did not recover it again until the mid-1980s.

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.

1 - From Caldwell and Kirkpatrick (1995)

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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.

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".

No more than 30 hedge funds by 1971

By 1971 there were no more than 30 hedge funds in existence, the largest having $50 million under management.[1] The aggregate capital of all hedge funds combined was probably less than $300 million.

Hedge funds went more or less unnoticed during the 1970s

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. 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.

In the 1980s, hedge funds awe-inspired the investment public mainly through stellar performance

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.

"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 funds)

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.

1 - From Elden (2001)

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Hedge funds resurfaced in 1986

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.

Migration from Manhattan to Connecticut or City to Mayfair not only financially motivated

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.

Wide dispersion between sources of return is required for constructing conservative portfolios with risky constituents

One of the characteristics of the 1990s was that the hedge fund industry became extremely heterogeneous. In 1990, nearly 90% hedge fund managers were either macro or equity long/short 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.

The paradigm of relative returns might one day be perceived as an ideological error

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 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. As Warrant Buffett put it aptly: "After all, who ever washes a rental car?"

Appendix 1

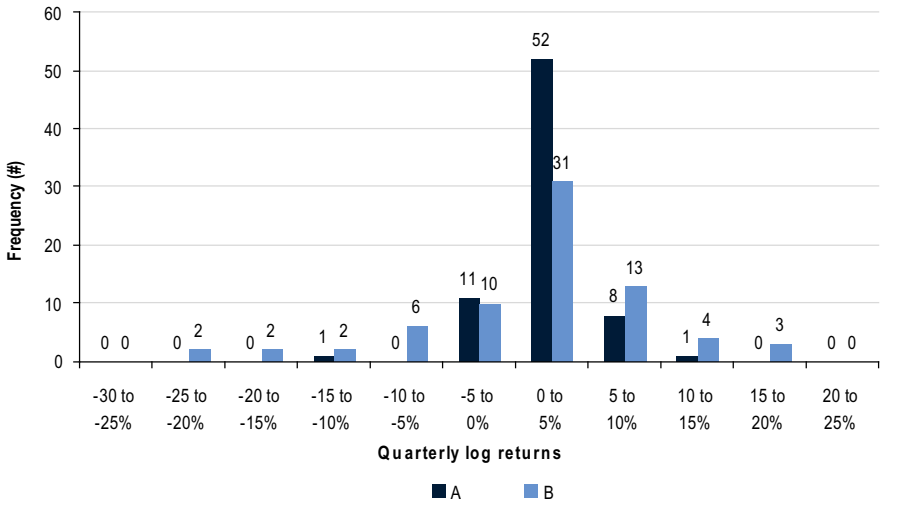
Some technical aspects about tail risk

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 but seems to be an empirical fact. 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. Professor Andrew Lo from MIT, for example, argues among other things that "risk management is not central to the success of a hedge fund" when characterising "a typical hedge fund manager's perspective". [1,2] We have argued here that it is actually indeed risk management that is the main differentiator between traditional asset management, i.e., the relative return mantra, and the absolute return investment philosophy adopted by hedge funds, funds of hedge funds, Warren Buffett, all private investors, etc.

Chart 1 shows the distribution of quarterly returns from two different investments: Investment A, as in alpha and investment B, as in beta. There were a total of 73 quarterly returns spanning the 18¼-year observation period from January 1990 to March 2008. The ratio between positive and negative returns in the case of A was 61:12. The relationship with investment B was 51:22. In other words, investment A is "skewed" towards positive returns as there are many more positive returns than negative returns.

Chart 1: Distribution of quarterly returns (Q1 1990 to Q1 2008)



Source: Alternative Investment Solutions, Thomson Financial
A: HFRI Fund of Funds Composite Index; B: MSCI World Total Return Index
PAST PERFORMANCE IS NOT INDICATIVE OF FUTURE RESULTS.

1 - See Lo (2008), p. 2
2 - Generally speaking, we commend Andrew Lo's insight as he is both an academic as well as a hedge fund manager. We especially recommend his work on hedge funds in relation to systemic risk to those readers who seek further reading.

Appendix 1

Some technical aspects about tail risk

Viewing Chart 1 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 actually 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 actually 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 bullet proof. Accidents still happen. However, as the chart reveals, accidents happen less often and their impact is smaller [1].

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 annualised 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.

1 - Stop press: the negative returns in Q2 and Q3 2008 have not changed this empirical fact (yet).

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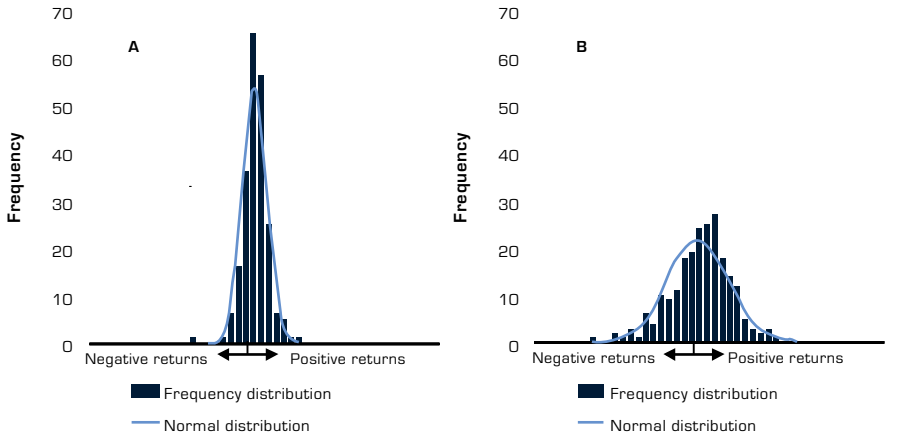
Some technical aspects about tail risk

Chart 2: Tale of two return distributions

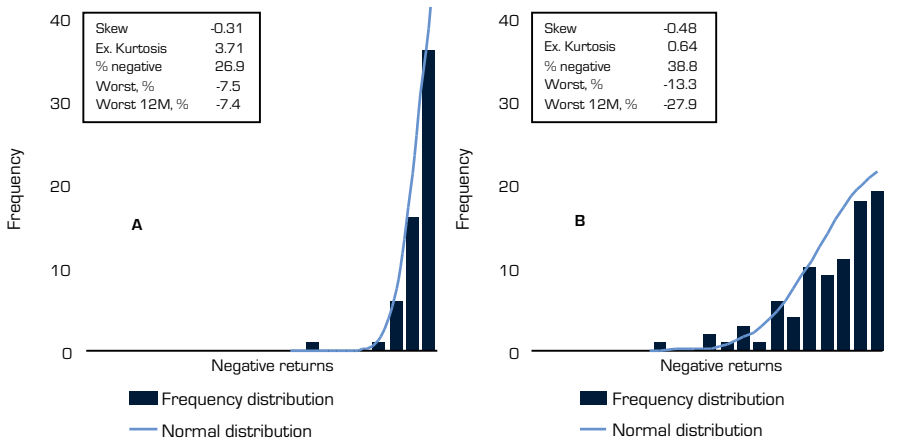


Source: Alternative Investment Solutions, Thomson Financial
A: HFRI Fund of Funds Composite Index; B: MSCI World Total Return Index
PAST PERFORMANCE IS NOT INDICATIVE OF FUTURE RESULTS.

Chart 2 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 simple: we think achieving return distribution A is difficult whereas capturing B is not.

The frequency distributions (bars in Chart 2) are based on 219 monthly USD total returns from January 1990 to March 2008. The compound annual rate of return (CARR) of investment A was 9.5% over the 18 1/4 -year period. The normal distribution serves as a comparison and was calculated using the mean monthly return from the index of 0.78% and the standard deviation of monthly returns of 1.60%. The CARR of investment B was 7.4% with a mean and standard deviation of 0.68% and 3.99% respectively. Chart 3 shows the tails of investment A and B in more detail with some added statistical information.

Chart 3: Tale of two tails



Source: Alternative Investment Solutions, Thomson Financial
A: HFRI Fund of Funds Composite Index; B: MSCI World Total Return Index
PAST PERFORMANCE IS NOT INDICATIVE OF FUTURE RESULTS.

Appendix 1

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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 an outlier on the left hand side of the distribution. This one observation inflates the excess kurtosis statistic to a whopping 3.71. 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 0.64.

Investors who are not indifferent to losses and who prefer compounding wealth positively rather then negatively should actually have a stark preference for investment A over B. The percentage of losing months is much lower, 26.9% versus 38.8% in investment B. The worst losses over one and twelve months of investment A were 7.5% and 7.4% respectively. This compares to losses of 13.3% and 27.9% in the case of investment B[1].

One paper by Brulhart and Klein (2005) on higher moments actually stands in refreshing contrast to most articles on the subject. As a 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 stress 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 be 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).

An interesting aspect of all this is that retail investors and, in some juristictions, also 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

1 - Stop press: by Q3 2008 these numbers are worse. Overwhere, the underlying logic has not changed.

Appendix 1

Some technical aspects about tail risk

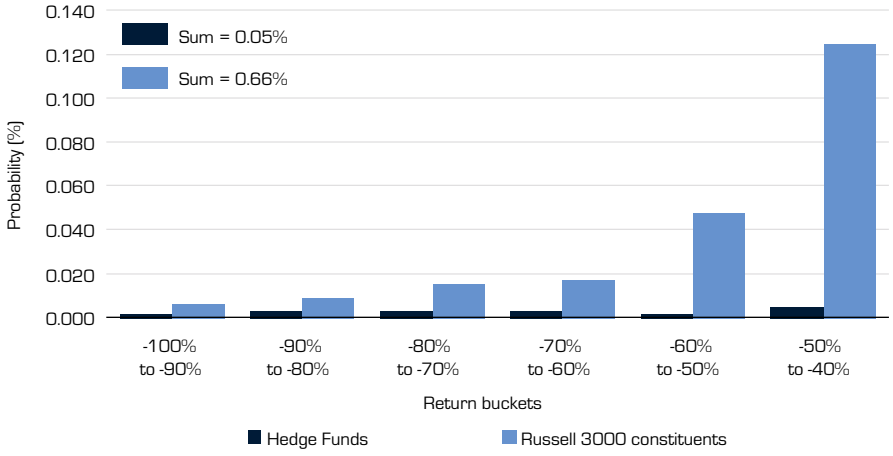
inferior products. One of the two main objectives of a regulator is to "protect" investors. (The other main objective being maintaining market integrity, i.e., managing systemic risk.) The irony is that investment B is the one with the big and frequent losses whereas investment A has fewer and smaller losses.

***

Another way of looking at tail risk in the hedge fund space is by examining single manager returns, as opposed to tail risk of well balanced hedge fund portfolios that we conducted above.

As we have repeatedly argued throughout this document, a hedge fund is a business and businesses can fail. Accidents happen. This is true for hedge funds as well as listed companies and regulated banks. Single hedge fund failure therefore can be compared to a failure of another business entity such as the stock of a listed company. Both are considered as idiosyncratic risk, i.e., non-systematic risk. Chart 4 shows the far left-hand side of two return frequency distributions, i.e., single hedge fund and stock returns between -40% and -100%. The first distribution is based on 64,873 monthly returns from 5,730 different hedge funds in the AIS database between January 2007 and March 2008. The period was chosen to show the phase of the credit crisis in which the media picking on hedge funds intensified and the regulatory pressure increased. These hedge fund returns are contrasted with 45,771 monthly returns from all constituents of the Russell 3000 index in the same time period.

Chart 4: Large hedge fund losses compared to losses in the stock market



Source: Alternative Investment Solutions, Thomson Financial
PAST PERFORMANCE IS NOT INDICATIVE OF FUTURE RESULTS.

Appendix 1

Some technical aspects about tail risk

Again it is worth stressing that retail investors are allowed to buy stocks but not hedge funds. Chart 4 makes it bluntly obvious that the stock market is a much riskier place than is the market for hedge funds. In both cases the investor can lose large amounts of money. However, the probability of losing more than 40% in one month is larger by picking stocks by the factor of 13. In the stock market 0.66% of all returns were below -40%. With hedge funds only 0.05% of all returns were below -40%. Perhaps there is indeed an interest group wanting the investment public not knowing this.

Appendix 1

Failure, survival and the Adaptive Market Hypothesis

Failure, survival and the Adaptive Market Hypothesis[1]

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 organizations. 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 behavior 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.

1 - This section draws on material from Ineichen (2007b)
2 - From Ormerod (2006)

Appendix 1

Failure, survival and the Adaptive Market Hypothesis

In a book called Normal Accidents, Charles Perrow examines failures of man-made systems (power plants, airplanes, etc.).[1] 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.

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.

In biology, we know extinction will occur in the future. We also can elaborate on its distributions and probabilities. However, we do not know which of the species is going to become extinct.[2] 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.

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 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, "chance favors 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.

1 - See Perrow (1999)
2 - 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.

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Failure, survival and the Adaptive Market Hypothesis

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.[1] Somehow his father survived the crash from 27,000 feet, while all other crew members 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 pilot's 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 to 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 wind instead 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.

Stress releases cortisol[2] 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.

1 - See Gonzales (2003)
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.

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Failure, survival and the Adaptive Market Hypothesis

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 actively inhibit 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. But the amygdale stands as sort of a watchdog for the organism.[1] It is not a lack of fear that separates elite performers from the rest of us. They are afraid too, but they 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.

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.

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 dishonor"). 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]

1 - From Gonzales (2003), p 64.
2 - From Gonzales (2003), p. 60.

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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.[1]

Professor Lo referred to the hedge fund industry as the "Galapagos Islands of Finance".[2] 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, at most, 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.

The reason why Andrew Lo referred to hedge funds as the Galapagos Islands is because 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.

1 - Lo (2004)
2 - "The Adaptive Markets Hypothesis: Market Efficiency from an Evolutionary Perspective", Said Business School Finance Symposium, Oxford, UK, November 8, 2006.

Appendix 1

Working example of how leverage can be used

Working example of how leverage can be used[1]

When exploiting market inefficiencies, leverage is often used because the inefficiencies are too small to be economically meaningful without the use of 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. A very intuitive way to show the use of leverage we found in Ainslie III (1999).

In equity long/short strategies, it is the net exposure that 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 1: 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 1 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%:

Portfolio A ***(150% x -15) + (-100% x -15%) = -7.5%***
Portfolio B ***(75% x -15) + (-25% x -15%) = -7.5%***

1 - From Ineichen (2006)

Appendix 1

Working example of how leverage can be used

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:

Portfolio A ***(150% x -10) + (-100% x -20%) = +5.0%***
Portfolio B ***(75% x -10) + (-25% x -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 to all of this, it becomes unreasonable why a manager with stock picking skill should not be using leverage.

Appendix 2

Practical next steps

Appendix 2

Practical next steps

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 the US President's Working Group's 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 consultant or of a 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 ten years to provide you with access to an extensive range of information on 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; they will provide you with a wealth of information. Most items are also available either directly from the owners' websites, reference below, or through a new, online resource – www.hedgefundmatrix.com – 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
AIMA's Series of Illustrative Due Diligence Questionnaires (2007) for selection of fund of funds manager, hedge fund manager, fund administrator and prime broker	AIMA	To institutional (qualified) investors only, on application info@aima.org
Best Practices for the Hedge Fund Industry (2008)	PWG	www.treas.gov (amcreportapril152008.pdf) at no charge
Guide to Sound Practices for Business Continuity for Hedge Fund Managers (2006)	AIMA	www.aima.org at no charge
Guide to Sound Practices for European Hedge Fund Managers (2007)	AIMA	www.aima.org at no charge
Guide to Sound Practices for Hedge Fund Administrators (2004)	AIMA	www.aima.org at no charge
Guide to Sound Practices for Hedge Fund Valuation (2007)	AIMA	www.aima.org

Appendix 2

Practical next steps

Item	Producer	Availability
Hedge Fund Standards: Final Report (2008) including the Hedge Fund Standards	HFSB	www.hfsb.org at no charge
Model Due Diligence Questionnaire for Hedge Fund Investors (2007)	MFA	www.managedfunds.org at no charge
Offshore Alternative Fund Directors' Guide (2008)	AIMA	Hard copy available, www.aima.org
Principles for the Valuation of Hedge Fund Portfolios (2007)	IOSCO	www.iosco.org (IOSCOPD240.pdf) at no charge
Sound Practices for Hedge Fund Managers (2007)	MFA	www.managedfunds.org at no charge

AIMA – Alternative Investment Management Association
HFSB – Hedge Fund Standards Board
IOSCO – International Organization of Securities Commission
MFA – Managed Funds Association
PWG – US President's Working Group

Appendix 3

Glossary and references

Appendix 3: Glossary and references

Definitions of hedge fund industry stakeholders[1]

A more detailed glossary of industry terms is available at www.aima.org.

Stakeholder	Definition
Administrator	An entity, usually independent of the Investment Manager, who provides a range of services to the Fund under the terms of an agreement with it (often in the form of a Service Level Agreement), including shareholder services, registrar and anti-money laundering services, reconciliation services and record-keeping functions. Some Administrators offer "integrated" solutions, which allow Investment Managers to outsource some of their own back-office functions.
Auditor	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.
Custodian	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, distributing redemption proceeds, maintaining margin accounts, registering investments and exercising options. Usually a Fund's Prime Broker(s) will perform the role of Custodian.
Fund	The Fund is a collective investment scheme, typically established in the following ways: 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. The Fund has a legal identity but in practice decisions on its behalf will be made by its Governing Body.

1 - Definitions are taken from AIMA's Guide to Sound Practices for Hedge Fund Valuation (© AIMA, 2007)

Appendix 3: Glossary and references

Definitions of hedge fund industry stakeholders

Stakeholder	Definition
Governing Body	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. The composition of the Governing Body will depend upon the Fund's structure and jurisdiction: 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.
Investment Manager	Often referred to as the Investment Advisor in the United States. The Investment Manager enters into an agreement with the Fund to make investment decisions 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.
Investor	Investors in hedge funds can be categorised in many ways but the most clear distinction is between fund of hedge funds managers and direct investors: 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.

Appendix 3: Glossary and references

Definitions of hedge fund industry stakeholders

Stakeholder	Definition
Prime Broker	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, seurities 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.
Registrar	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.
Regulator	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.

Bibliography

Ainslie III, Lee S. (1999) "Hedged equity investing", In Ronald A. Lake, ed., Evaluating and Implementing Hedge Fund Strategies-The experience of managers and investors, Second Edition, London: Euromoney Books.

———

Anson, Mark J.P. (2001) "Hedge Fund Incentive Fees and the 'Free Option'", Journal of Alternative Investments, Vol. 4, No. 2 (Fall), pp. 43–48.

———

Ashley, Gerald (2003) "Uncertainty and Expectation – Strategies for the Trading of Risk", Chichester: John Wiley & Sons.

———

Basso, Tom (2000) "Some Leverage is Good, Too Much is Dangerous", Trendstat Capital Management, May.

———

Beder, Tanya (1995) "VAR: Seductive but Dangerous", Financial Analyst Journal, Vol. 51, No. 5 (September/October), pp. 12-24.

———

Bernstein, Peter (1991) "Is Investing for the Long Term Theory or Just Mumbo-jumbo?" Luncheon address to the AIMR conference, "Investing for the Long Term", Washington, DC, October 16. www.peterbernstein.com

———

Bernstein, Peter L. (1996) "Against the Gods – The Remarkable Story of Risk", New York: Wiley & Sons.

———

Bernstein, Peter L. (2008) "The Shape of The Future", from John Mauldin's Outside the Box, Volume 4, Issue 22, March 24.

———

Biggs, Barton (2006) "Hedgehogging", Hoboken: John Wiley & Sons.

———

Bookstaber, Richard (1997) "Global Risk Management: Are We Missing the Point?" Journal of Portfolio Management, Vol. 23, No. 3 (Spring), pp. 102-107.

———

Bookstaber, Richard (2003) "Hedge Fund Existential", Financial Analyst Journal, Vol. 59, No. 5 (September/October), pp. 19-23.

———

Brulhart, Todd, and Peter Klein (2005) "Problems with Extreme Hedge Fund Returns", AIMA Journal, Winter 2005.

———

Caldwell, Ted, and Tom Kirkpatrick. (1995) "A Primer on Hedge Funds", Courtesy of Lookout Mountain Capital, Inc.

———

Campbell, John Y., Andrew W. Lo and A. Craig MacKinlay (1997) "The Econometrics of Financial Markets", Princeton: Princeton University Press.

———

Chan, Nicholas, Mila Getmansky, Shane M. Haas, and Andrew W. Lo (2005) "Systemic Risk and Hedge Funds", NBER Working Paper Series, March.

———

Chandler, Beverly (1998) "Investing with the Hedge Fund Giants – Profit Whether Markets

Bibliography

Rise or Fall", London: Financial Times Pitman Publishing.

———

Crerend, William J. (1998) "Fundamentals of Hedge Fund Investing – A Professional Investor's Guide", New York: McGraw-Hill.

———

Elden, Richard. (2001) "The Evolution of the Hedge Fund Industry", Journal of Global Financial Markets, Vol. 2, No. 4 (Winter), pp. 47-54.

———

Ellis, Charles D. (1993) "Investment Policy-How to Win the Loser's Game", 2nd Edition. Homewood, IL: Business One Irwin.

———

Gonzales, Laurence (2003) "Deep Survival – Who Lives, Who Dies, and Why", New York: Norton & Company.

———

Gonzales, Laurence (2003) "Deep Survival – Who Lives, Who Dies, and Why", New York: Norton & Company.

———

Grinold, Richard C. (1989) "The Fundamental Law of Active Management", Journal of Portfolio Management, Vol. 15, No. 3 (Spring), pp. 30–37.

———

Grinold, Richard C., and Ronald N. Kahn (2000) "Active Portfolio Management-A Quantitative Approach for Producing Superior Returns and Controlling Risk", Second Edition. New York: McGraw-Hill. Originally published in 1995 under the title "Active Portfolio Management: Quantitative Theory and Applications", by Probus, a Chicago publisher that no longer exists.

———

Grossman (1976) "On the Efficiency of Competitive Stock Markets where Trades have Diverse Information", Journal of Finance, Vol. 31, pp. 573-585.

———

Grossman and Stiglitz (1980) "On the Impossibility of Informationally Efficient Markets", American Economic Review, Vol. 70, pp. 393-408.

———

Hagstrom, Robert G. Jr. (1994) "The Warren Buffett Way – Investment Strategy of the World's Greatest Investor", John Wiley: New York.

———

Holton, Glyn A. (2004) "Defining Risk", Financial Analyst Journal, Vol. 60, No. 6 (November/December), pp. 19-25.

———

Ineichen, Alexander M. (2000) "In Search of Alpha – Investing in Hedge Funds", Global Equity Research, UBS Warburg, October.

———

Ineichen, Alexander M. (2001) "The Search for Alpha Continues – Do Fund of Hedge Funds Managers Add Value?" Global Equity Research, UBS Warburg, September.

———

Ineichen, Alexander M. (2003a) "Absolute Returns – Risk and Opportunities of Hedge Fund Investing", New York: John Wiley & Sons.

———

Bibliography

Ineichen, Alexander M. (2003b) "Fireflies before the storm", Global Equity Research, UBS Warburg, 8 June.

———

Ineichen, Alexander M. (2004) "European rainmakers", Global Equity Research, UBS Investment Bank, April.

———

Ineichen, Alexander M. (2005) "The Critique of Pure Alpha", Global Equity Research, UBS Investment Research, March.

———

Ineichen, Alexander M. (2006) "Q&A on Leverage", Alternative Investment Solutions, UBS Global Asset Management, August.

———

Ineichen, Alexander M. (2007a) "Asymmetric Returns – The Future of Active Asset Management", New York: John Wiley & Sons.

———

Ineichen, Alexander M. (2007b) "Volatility and correlation," Conference Proceedings, Alternative Investment Solutions, UBS Global Asset Management, December.

———

Jaeger, Lars (2002) "Managing Risk in Alternative Investment Strategies - Successful Investing in Hedge Funds and Managed Futures", London: Financial Times.

———

Jaeger, Lars (2005) "Through the Alpha Smoke Screens – A Guide to Hedge Fund Return Sources", New York: Institutional Investor Books.

———

Jaeger, Robert A. (2000) "Fund of Funds Risk: Defining It, Measuring It and Managing it", In Virginia Reynolds Parker. ed., Managing Hedge Fund Risk-From the Seat of the Practitioner. London: Risk Books.

———

Jaeger, Robert A. (2003) "All about Hedge Funds - The Easy Way to Get Started", New York: McGraw-Hill.

———

Kahneman, Daniel, and Amos Tversky (1979) "Prospect Theory: An Analysis of Decision under Risk", Econometrica, Vol. 47 (2), pp. 263–291.

———

Kahneman, Daniel, and Mark W. Riepe (1998) "Aspects of Investor Psychology-Beliefs, Preferences, and Biases Investment Advisors Should Know About", Journal of Portfolio Management, Vol. 24, No. 4 (Summer), pp. 52–65.

———

Knight, Frank H. (1921) "Risk, Uncertainty, and Profit", Boston: Houghton Mifflin.

———

Lake, Ronald A. (1999) "Evaluating and Implementing Hedge Fund Strategies – The experience of managers and investors", Second Edition, London: Euromoney Publications.

———

Levy, Leon with Eugene Linden (2002) "The Mind of Wall Street – A Legendary Financier on the Perils of Greed and the Mysteries of the Market", New York: Public Affairs.

———

Bibliography

Lhabitant, Francois-Serge (2002) "Hedge Funds – Myths and Limits", Chichester: John Wiley & Sons.

———

Lhabitant, Francois-Serge (2006) "Handbook of hedge funds", Chichester: John Wiley & Sons.

———

Lo, Andrew (2004) "The Adaptive Market Hypothesis – Market efficiency from an evolutionary perspective", Journal of Portfolio Management, 30th Anniversary Issue, pp. 15-29.

———

Lo, Andrew (2008) "Hedge Funds – An Analytic Perspective", Princeton: University Press.

———

Lo, Andrew and Craig MacKinlay (1999) "The Non-Random Walk Down Wall Street", Princeton: Princeton University Press.

———

Lowenstein, R. (2000) "When Genius Failed-The Rise and Fall of Long-Term Capital Management", New York: Random House.

———

Mandelbrot, Benoit, and Richard L. Hudson (2004) "The (Mis)behavior of Markets – A Fractal View of Risk, Ruin, and Reward", New York: Basic Books.

———

Markowitz, Harry M. (1952) "Portfolio Selection", Journal of Finance, Vol. 7, No. 1 (March), pp. 77-91.

———

Markowitz, Harry M. (1959) "Portfolio Selection: Efficient Diversification of Investments", New York: John Wiley & Sons.

———

Martino, Roxanne M. (1999) "The due diligence process", in Ronald A. Lake, ed., Evaluating and Implementing Hedge Fund Strategies, 2nd edition, Euromoney Books: London.

———

Nicholas, Joseph G. (1999) "Investing in Hedge Funds – Strategies for the New Marketplace", Princeton: Bloomberg Press.

———

Ormerod, Paul (2006) "Why Most Things Fail – Evolution, Extinction and Economics", London: Faber and Faber Limited.

———

Parker, Virginia Reynolds (2000) "Managing Hedge Fund Risk – Strategies and Insights from Investors, Counterparties, Hedge Funds and Consultants", London: Risk Books.

———

Parker, Virginia Reynolds (2005) "Integrating Risk Management into the Portfolio Management Process for Effective Fund-of-Hedge-Funds Risk Management and Performance Measurement", in Virginia Reynolds Parker, ed., Managing Hedge Fund Risk-Strategies and Insights from Investors, Counterparties, Hedge Funds and Regulators, Second Edition, London: Risk Books.

———

Perrow, Charles (1999) "Normal Accidents: Living with High-Risk Technologies", Princeton: Princeton University Press. First published by Basic Books 1984.

———

Bibliography

Persaud, Avinash (2000) "Sending the herd off the cliff edge: The disturbing interaction between herding and market-sensitive risk management practices", Journal of Risk Finance, Vol. 2, pp. 59-65.

———

Rahl, Leslie (2003) "Hedge Fund Risk Transparancy – Unravelling the Complex and Controversial Debate", London: Risk Books.

———

Rogers, Jim (2000) "Investment Biker – around the world with Jim Rogers", Chichester: John Wiley & Sons. First published 1994 by Beeland Interest, Inc.

———

Schneeweis, Thomas, and Richard Spurgin (1998) "Multifactor Analysis of Hedge Fund, Managed Futures, and Mutual Funds Return and Risk Characteristics", Journal of Alternative Investments, Vol. 1, No. 2 (Fall), pp. 1–24.

———

Schneeweis, Thomas. (1998) "Dealing with Myths of Hedge Fund Investment", Journal of Alternative Investments, Vol. 1, No. 3 (Winter), pp. 11–15.

———

Sherden, William A. (1998) "The Fortune Sellers - The Big Business of Buying and Selling Predictions". New York: John Wiley & Sons.

———

Swensen, David F. (2000) "Pioneering Portfolio Management-An Unconventional Approach to Institutional Investment", New York: Free Press.

———

Taleb, Nassim Nicholas (2001) "Fooled by Randomness – The Hidden Role of Chance in Life and in the Markets", New York: Texere.

———

Taleb, Nassim Nicholas (2004) "Fooled by Randomness – The Hidden Role of Chance in Life and in the Markets", Second Edition, New York: Texere.

———

Waring, M. Barton and Laurence B. Siegel (2006) "The Myth of the Absolute-Return Investor", Financial Analyst Journal, Vol. 62, No. 2, pp. 14-21.

———

Warwick, Ben (2000) "Search for Alpha: The Quest for Exceptional Investment Performance", New York: John Wiley & Sons.

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Appendix 4

About AIMA, the sponsors and authors

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Alternative Investment Management Association

As the only representative global hedge fund association, AIMA, the Alternative Investment Management Association, has over 1,200 corporate members worldwide, based in 47 countries.

Members include leading 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 for the industry's future development;
- To be the pre-eminent voice of the industry to the wider financial community, institutional investors, the media, regulators, governments and other policy makers; and
- To offer a centralised source of information on the industry's activities and influence, and to secure its place in the investment management community.

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 und 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 the Committee include representatives from ABP Investments Inc., CalPERS, Fonds de Compensation AVS, General Motors Asset Management, Harvard Management Company, Kedge Capital, Pensionskasse Stadt Zürich, UBS Global Asset Management and The World Bank Pension Plan.

www.aima.org

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About AIMA, the sponsors and authors

The Chartered Alternative Investment Analyst (CAIA) Association is an independent, not-for-profit global organization committed to education and professionalism in the field of alternative investments. Founded in 2002 by the Alternative Investment Management Association (AIMA) and the Center for International Securities and Derivatives Markets (CISDM), the CAIA Association is the sponsoring body for the CAIA designation.

Recognized globally, the CAIA designation is earned through the successful completion of a rigorous, two level examination program that covers the spectrum of alternative investments, including hedge funds, private equity, real estate, commodities and managed futures. Earning the CAIA designation certifies one's mastery of the concepts, tools and practices essential for understanding alternative investments and commitment to high standards of professional conduct.

Since February 2003, when the first CAIA exam was offered, thousands of candidates from around the world have enrolled in the CAIA program. Thousands of organizations have sent participants through the program, representing prime brokers, banks, advisory, consulting, asset management and accounting firms, as well as public and private pensions, foundations, family offices, insurance companies and industry regulators.

UBS Global Asset Management is one of the largest asset managers in the world, with over 3,900 employees located in 25 countries with main offices in Basel, Chicago, Frankfurt, Grand Cayman, Hartford, Hong Kong, London, Luxembourg, New York, Paris, Rio de Janeiro, Sydney, Tokyo, Toronto and Zurich. UBS Global Asset Management is one of the three Business Groups of UBS, the other two being Global Wealth Management & Business Banking and the Investment Bank. Alternative Investment Solutions is a business within the Alternative and Quantitative Investments platform, itself a part of UBS Global Asset Management with local presence in Hong Kong, London, Rio de Janeiro, Stamford-Connecticut, Tokyo, and Zurich.

The California Public Employees' Retirement System is the US's largest public pension fund, with more than $230 billion in market assets. CalPERS provides retirement and health benefits to approximately 1.5 million active and retired state and local public agency employees and their families. Beginning in 1932, CalPERS invested only in municipal and government bonds. Since that time, it has evolved along with the markets and now invests in real estate, public equity, private equity, activist corporate governance funds, hedge funds, inflation-linked assets (commodities, infrastructure, forestland, inflation-linked bonds). Investment income pays 75 cents of every CalPERS pension dollar. The contributions of employees and taxpayer-supported employers account for the other 25 cents. The average annual investment return target is 7.75% to meet retirement benefit obligations.

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Alexander Ineichen is Managing Director and Senior Investment Officer for Alternative Investment Solutions, a business within the Alternative and Quantitative Investments platform, itself a part of UBS Global Asset Management. Alexander's main responsibilities include asset allocation, risk management and other research initiatives. Alexander started his financial career in origination of risk management products at Swiss Bank Corporation in 1988. From 1991 to 2005, Alexander had various research functions within UBS Investment Bank related to equity derivatives, indices, capital flows and alternative investments.

Alexander is the author of the two UBS research 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). As of 2006 these two documents were the most often printed research papers 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 published research on equity derivatives and hedge funds in various peer-refereed financial journals, has contributed several chapters to financial books and has written numerous articles for the financial press.

Alexander holds a Federal Diploma of Economics and Business Administration (SEBA) from the Universities of Applied Sciences SIB in Zurich, 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 Investor Steering Committee.

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Kurt Silberstein is the Senior Portfolio Manager for Absolute Return Strategies and Externally Managed Equities in the Global Equity unit of the California Public Employees' Retirement System (CalPERS).

Mr. Silberstein is responsible for managing CalPERS' Risk Managed Absolute Return Strategies (RMARS) Program & the Global External Managed Equities (GEME) Program where he directs internal staff and external advisors in managing $30 billion in assets. Mr. Silberstein has been involved in the RMARS Program since its inception and has managed the program since January 1, 2003. Since that time he has established policies and processes for portfolio construction, risk analysis, manager selection and is actively involved in all investment decisions regarding direct hedge fund investments. The RMARS Program invests in most all absolute return strategies on a global basis. The GEME Program is global in scope but focused on equity markets. The GEME portfolio is comprised of both traditional long-only strategies and 130/30 type strategies.

Mr. Silberstein's experience spans more than 16 years in the institutional investment industry. He joined CalPERS in October 1999 from San Francisco-based Strategic Investment Solutions where he served as a Vice President consulting to public and corporate plan sponsors, foundations, endowments and family offices. Mr. Silberstein served on the Asset Allocation Committee and Manager Selection Committee.

Prior to Strategic Investment Solutions, Mr. Silberstein worked at the Los Angeles County Employees' Retirement Association as an Investment Equity Analyst responsible for externally managed domestic and international equity portfolios.

Mr. Silberstein holds a BS in Finance from California State University, Northridge, and is a Chartered Financial Analyst and CAIA charterholder. He also serves on the Investor Steering Committee for the Alternative Investment Management Association.

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