

Ineichen Research and Management ("IR&M") is a research firm focusing on investment themes related to absolute returns and risk management.

June 2012

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"Species, people, firms, governments are all complex entities that must survive in dynamic environments which evolve over time. Their ability to understand such environments is inherently limited."

—Paul Ormerod

Diversification? What diversification?

- The idea of diversification is very old and is essential to survival of wealth, life, and everything.
- The authorities via regulatory bodies and scholarly finance have a tendency to conceptualise the buy-high-and-sell-low mantra. The buy-low-and-sell-high mantra makes more sense though. The idea of "margin of safety" is still unorthodox and perceived as an "alternative".
- Accidents happen and losses are not good for one's financial and mental health. Different absolute return strategies behave differently in different accidents, and thus, diversify.
- An investment with an impeccably smooth history might or might not be safe. It's better to think in terms of the FEI, the Financial Explosivity Index.
- Not all investors are happy with the absolute performance of their allocations to absolute returns strategies. The relative performance is remarkable though; especially in a low-return environment.
- Managed futures delivered a positive return in 18 out of 20 accidents in the equity market. In the field of investment management, there is simply nothing that comes anywhere close to this. Macro too is a shock-absorber.
- Hedge funds always outperformed equities when the real total return of equities was lower than 5.8% over five years. In other words, it is low return environments where absolute return strategies outperform in real terms. This shouldn't come as a surprise. Intuitively one would expect an investment style that has active risk management as its core investment philosophy to do better under difficult market conditions.
- The habitat for some absolute return strategies has changed materially over the past year or so. Proprietary trading desks have been closing and/or winding down their operations due to regulatory pressures and/or accounting standards related balance sheet deleveraging. A big competitor for hedge funds, therefore, has been removed. (This is a big positive assuming hedge funds won't be "removed" too, of course.)

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Diversification

“The primacy of politics over markets must be enforced.”

—Angela Merkel

“Disobedience, in the eyes of anyone who has read history, is man’s original virtue. It is through disobedience and rebellion that progress has been made.”

—Oscar Wilde

- ***The idea of diversification is very old and is essential to survival of wealth, life, and everything.***
- ***The authorities via regulatory bodies and scholarly finance have a tendency to conceptualise the buy-high-and-sell-low mantra. The buy-low-and-sell-high mantra makes more sense though.***
- ***The idea of “margin of safety” is still unorthodox, perceived as an “alternative”.***

Introduction

The idea of diversification is very old. Supposedly, it’s the only free lunch. The idea has entered the English language as “don’t put all your eggs in one basket.” It has entered investment management orthodoxy via Harry Markowitz and modern portfolio theory (MPT). The idea of spreading risk by diversifying risk is much older than MPT though.

The Oxford Dictionary traces the “eggs in the basket” idea to 1710, referencing an Italian source of proverbs from 1662. A Japanese proverb suggests:

A single arrow is easily broken, but not ten in a bundle.²

While this proverb is used by many corporate HR department executives for their tremendously annoying team building exercises, it applies equally well to the idea of spreading risk. (A single hedge fund is easily broken, but a bundle of ten makes much more sense.) The idea of diversifying risk can be traced even further. The Talmud suggests:

Let every man divide his money into three parts, and invest a third in land, a third in business, and a third let him keep in reserve.¹

¹ “Mastering the machine – How Ray Dalio built the world’s richest and strangest hedge fund,” The New Yorker, 25 July 2011.

² Original: “Ichijō no yaw a orubeku, jūjō wa orubekarazu.” In case you were wondering.

“Given that I’m never sure, I don’t want to have any concentrated bets.”

—Ray Dalio¹

This makes it somewhat difficult to date the origin of the idea of diversification by spreading the risks. Suffice to say, the idea of diversifying risk could be thousands of years old, potentially as old as civilisation itself; or if not, at least as old as men going about their business affairs.³ The funny thing about the Talmud quote above is that it suggests both a “margin of safety” as well as equal weighting. Equal weighting is not yet a trend in investment management but it has been discussed in some journals for a while now. (We argued *against* mean-variance optimization and *for* equal weighting in our April 2010 musing.⁴) The main argument for equal weighting is that we just know far too little about future returns, future volatilities, and future correlations for mean-variance optimisation to have any value. Furthermore, the assumptions behind MPT are onerous and silly; onerous because the input variables for many viable investments are not available; silly because most of the assumptions behind MPT have turned out to be false, misleading, or dangerous, or a combination thereof.

Potentially the idea of *risk parity* is a trend. Risk parity is a strategy where the allocations to various asset classes are not equal but the allocations are determined by the risk of the various asset classes. If risk is defined as volatility, an asset allocation of 50:50 between equities and bonds can result in a risk allocation of 90:10. This means moving from traditional asset allocation towards risk allocation (or risk parity), generally speaking, results in a smaller allocation to equities.⁵ (One idea associated with risk parity is to have each 25% of equity risk, interest rate risk, credit risk, and inflation risk, and then fill the first three buckets with hedge-fund-type risks, rather than plain long-only risks.)

Replacing a quantitative optimisation which is based on a silly measure for risk with another quantitative optimisation which is based on the same silly measure for risk is, well, silly. Given that the current regulatory trend is equity-unfriendly, and government bond-friendly, the advent of a new monster equity bull market—potentially—is exactly then, when the equity allocations have been reduced to multi-generational lows. (One can easily counter this last argument by stating that in Japan, equity allocations have been low for a while and the stock market is in anything but a monster bull market.) Lex on financial repression:

Stop financial repression! The unintended consequences of the great re-regulation keep multiplying, distorting markets and stifling economic recovery. Bank regulation is bad enough. Lenders are forced by Basel III to post higher core tier one equity ratios, but because they cannot raise capital from the market, they have to slash risk-weighted assets, starving the real economy of

“We spend so much time, resources and money trying to see the future. Really, we’re spending money to delude ourselves. You have no chance of seeing the future. It’s better to recognize that.”

—Hugh Hendry²

“A good decision is based on knowledge and not on numbers.”

—Plato

“No matter how cynical you get, it is impossible to keep up.”

—Lily Tomlin, American actress and comedian

¹ Swedroe, Larry E., and Jared Kizer (2008) “The only guide to alternative investments you’ll ever need,” New York: Bloomberg Press. See also “Ancient Jewish Proverbs” by Abraham Cohen, 1911

² Interview with Steven Drobney at LSE, 31 Oct 2011, from contraryinvesting.com

³ The concept of diversification is of course much older. The biosphere for example has been diverse for billions of years. Diversity is life’s ultimate survival mechanism. Every now and then there is mass extinction on this planet with the more complex life forms being wiped out. The biosphere regenerates for surviving simple life to evolve into something more complex. And then there is mass extinction again. The parallel to the wealth of nations is clearly recognisable.

⁴ See Ineichen, Alexander (2010) “Absolute returns revisited,” Ineichen Research and Management, April. A section called PPMPT (post-post-modern-portfolio-theory) has been added to the appendix of this report for convenience.

⁵ Regulators must approve then.

credit. Financial repression also affects life assurers: Solvency II will force them to buy government bonds at the expense of equities.¹

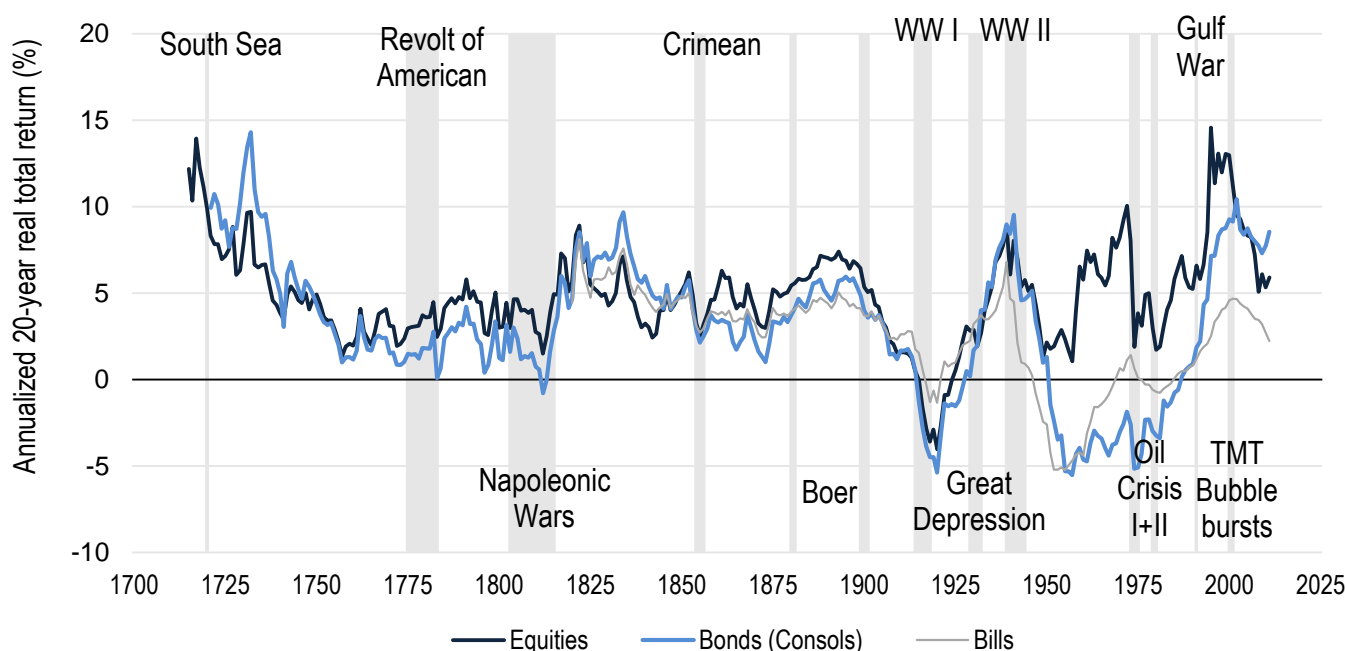
MPT has its uses though; it's a great marketing tool. MPT works very well for selling financial innovations, for example ETFs or baskets of subprime mortgages. As John Bogle put it:

Why look for the needle in the haystack? Buy the haystack!

MPT works very well for selling "alternatives" too. Long-only investments in the equity market were once an alternative investment; an alternative to bonds. Strong performance in equities post 1982 in combination with the diversification argument were the main reasons for institutional investors loading up on equities in the most amazing bull market of the 1980s and 1990s. Figure 1 suggests that the 20-year period to 2000 was quite literally the greatest equity bull market, ever.

"Bull markets make geniuses out of idiots and charlatans."
—Saying

Figure 1: 20-year total real returns of equities, bonds and cash in the UK (~1700-2011)



Source: Ineichen Research and Management, Global Financial Data, Bloomberg

In the fantasy/model-world of MPT, combining equities and bonds makes perfect sense because the correlation coefficient is less than one. (Except when it really matters of course; in a major panic and sell-off, for example.) However, the historic perspective in Figure 1 suggests that in real total return terms, long-only investments in equities and bonds (and bills or cash) move more or less in tandem. More precisely, in times of inflation equities and bonds decline in tandem while in times of disinflation equities and bonds rise in tandem. It is wiser; therefore, to operate in an "asymmetric returns" fashion.³ This means allocations should be a function of the opportunity set, rather than a combination of statistical variables entered into a faulty econometric supposed-optimiser.

(Figure 1 also shows quite nicely that bonds are much more risky than equities if

"Armed with complicated modelling techniques, increasingly powerful computers, and reams of historical market data, a growing number of investors have become entranced with the dream of scientific rectitude. Few recognize, however, that such modelling assumes constancy in market fundamentals."
—Henry Kaufman²

¹ Lex, Financial Times, 13 June 2012

² The Recurring Irresponsible Financial Behavior, Remarks delivered before the Carnegie Council, New York City, 20 June 2011, printed in The Gloom, Boom & Doom Report, Marc Faber, 1 November 2011.

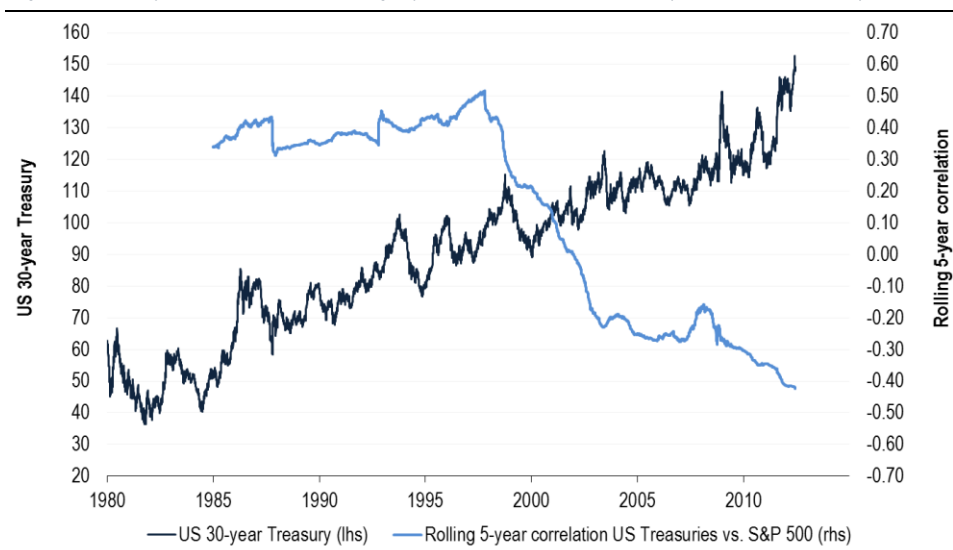
³ See Ineichen (2007) or earlier work.

we assume risk is defined as something along the lines of “years under water in real terms” rather than volatility. As discussed in recent musings, imagine the social unrest if the bold light-blue line in Figure 1, government bonds, falls from here; arguably a vast possibility, given the close-to-all-time-high-ness. It is not entirely unthinkable that the middle classes of the West will need to watch their government-enacted retirement savings partly evaporate over the next ten years. Given that real interest rates are already negative in some places, this trend is already in motion.)

One could argue that in times of reflation equities rise while bonds fall and in times of deflation bonds rise while equities fall. In other words there are indeed times when equities and bonds do not move in a synchronised fashion. Figure 2 shows that correlation between equities and bonds has been falling and is currently quite low. The reason for this is that Western economies have been “ping-ponging” (a very sophisticated monetary policy term) between deflation and reflation causing one to rise and the other to fall or the other way round.

Correlation between equities and bonds is currently very low

Figure 2: US 30-year Treasuries with rolling 5-year correlation with equities (1980 – 12 June 2012)



Source: Ineichen Research and Management, Bloomberg

In the institutionalisation of the equity market, as with Crocs and iPods, there were pioneers, early adaptors, and late-comers. The pioneers are typically a small group. (Geeks, in the case of iPods, weirdoes in the case of Crocs.) For reasons that are beyond the scope of this document, it was the English-speaking economies that developed an equity culture of some sort very early on. In the US the idea of investing 60% of assets into equities while 40% into bonds held for many years, decades even. In inflation-prone UK the equivalent allocations were closer to 70% and 30%.¹ An institutional equity culture in Continental Europe developed in the 1990s whereas equity allocations—generally speaking—never reached the “English-speaking” levels of 60% or 70%. Some (governmental or government-sponsored) entities literally started allocating to equities plus or minus a couple of months from the 2000 peak. (Investment life can be quite brutal; resembling to some extent a game of musical chairs: someone is always left without a chair.)

“Nothing is more obstinate than a fashionable consensus.”

—Margaret Thatcher

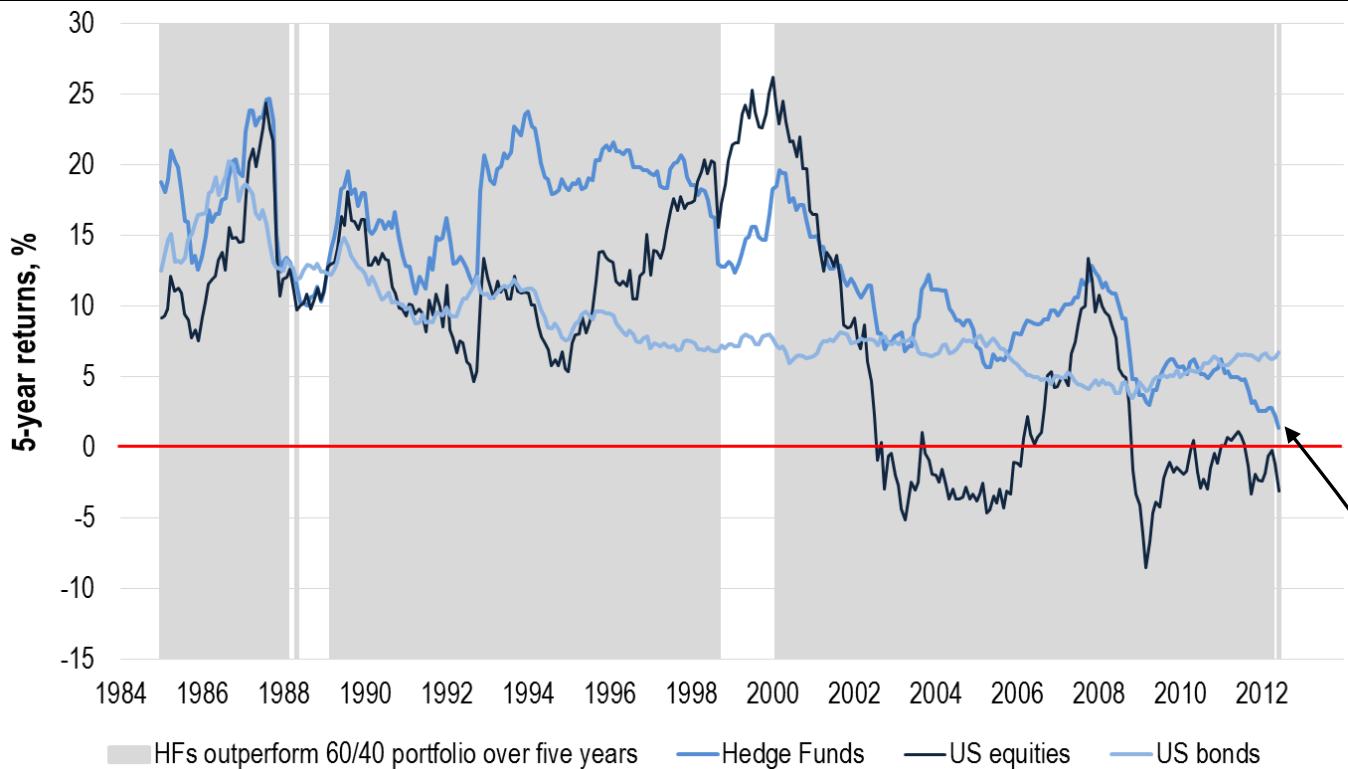
¹ The GBP lost 86% of its value against the CHF since 1971. The USD lost much less, it devalued by only 76% over the 40+ years.

In “hedge funds” something similar happened. The institutional pioneers invested in the 1990s; early adopters around 2000-2002; and then the institutionalisation of the hedge fund industry took off. Figure 3 shows rolling five-year returns for an average hedge fund portfolio, US equities and US bonds. The institutionalisation of hedge funds took place during a time where nearly any diversified portfolio of hedge funds had outperformed equities or a 60/40 equity/bond mix on a rolling five year basis. The main selling points were “absolute returns,” or “alpha,” or the hedge-funds-can-make-money-in-all-market-conditions argument. Diversification was an important additional selling point; it always is. Whether it is emerging market bonds, CDOs, wind parks, etc. the diversification argument is most certainly to enter the sales pitch.

“Everybody lives by selling something.”

—Robert Louis Stevenson (1850-94),
Scottish author

Figure 3: Nominal five-year returns of hedge funds, equities and bonds (1980 – May 2012)



Source: Ineichen Research and Management, Banque Privée Edmond de Rothschild, Bloomberg
 Hedge funds: Leveraged Capital Holdings from Banque Privée Edmond de Rothschild until December 1989, then HFRI Fund Weighted Composite Index; Equities: S&P500 Index; Bonds: Barclays US Aggregate TR Index.

- Five-year returns of the average hedge funds portfolio have never been negative.
- Five-year returns of the average hedge funds portfolio are at a multi-generational or all-time low.
- There are not many five-year periods where the average hedge funds portfolio does not outperform a balanced US equity-bond portfolio.

The reason the diversification argument enters the sales vernacular is, well, mainly because it works so well. The reason it works so well is because many financial professionals were educated in MPT. The reason why many financial professionals were educated in MPT is because it is the scientific consensus, derived from applying the scientific method. The reason why contemporaries take science seriously is because it took (some of) us out of the Dark Ages, allowed us to live to 80, and put a man on the moon. As Ludwig von Mises put it:

Education rears disciples, imitators, and routinists, not pioneers of new ideas and creative geniuses. The schools are not nurseries of progress and improvement, but conservatories of tradition and unvarying modes of thought. The mark of the creative mind is that it defies a part of what it has learned or, at least, adds something new to it. One utterly misconstrues the feats of the pioneer in reducing them to the instruction he got from his teachers. No matter how efficient school training may be, it would only produce stagnation, orthodoxy, and rigid pedantry if there were no uncommon men pushing forward beyond the wisdom of their tutors.¹

It is not entirely unthinkable that “creative mind” is more valuable in the current market environment than is “orthodoxy”. Harry Markowitz apparently had chosen a 50/50 allocation between equities and bonds in his retirement account despite knowing, in theory, that he should have estimated the returns and volatilities and the (historical) co-variances of the asset classes, determine the efficient frontier and invest accordingly. It seems Markowitz—with his own money—was following the piece of wisdom from the Talmud mentioned earlier as well as the wisdom in the side text of this paragraph. Why many investors rely on unstable historical returns, unstable volatilities and very unstable correlation coefficients when making investment decisions, we do not know. (Well, actually we do know: it’s the scientific method of doing these things.) Mr. Markowitz apparently knew that his theories are theories and are better left as such. However, the investment world as well as the accounting-rules-and-capital-requirement-determining world has put this theory into practice. Who can safely say that a 50/50 allocation to equities and bonds—essentially a strategy of *least regret*—is less intelligent than a 70/30 or 30/70 allocation for the next ten years? Or phrased slightly differently, who can safely, intelligently, and convincingly argue that an equal 20% investment in listed equities, private equity, bonds, real estate, and hedge funds is inferior to anything else that pops out of an optimiser. Who?

Note that there currently is a debate in the academic journals as to whether an equally weighted portfolio is superior to an optimized portfolio or not. For the purpose of our line of argument, it is sufficient to know that there is a debate. The fact that there is a debate tells us that we cannot really know for sure whether an equal weighting makes sense or not? Our statement, therefore, is naive (and to MPT aficionados potentially vulgar) but not as naive as it initially sounds. The funny thing is, the more we think about it, the more sense it actually makes. If it’s in the Talmud, it certainly is more battle tested than is MPT.

¹ Von Mises, Ludwig (2007) “Theory and History,” Auburn: Ludwig von Mises Institute, p. 263. Originally published 1957 by Yale University Press.

“Education is the process of driving a set of prejudices down your throat.”

—Martin Henry Fischer (1879-1962),
German-born American physician and author

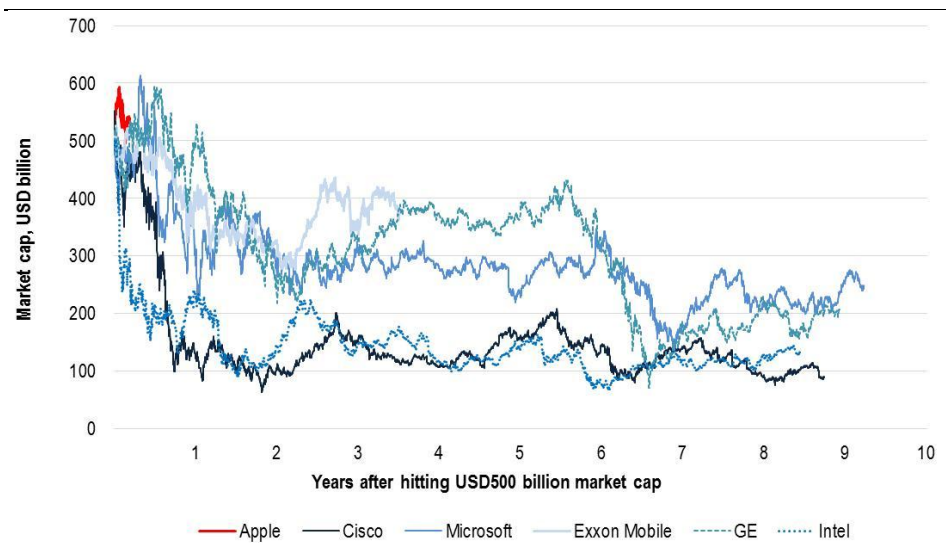
“When sophistication loses content then the only way of keeping in touch with reality is to be crude and superficial.”

—Paul Karl Feyerabend (1924–1994),
Austrian-born philosopher of science

Margin of safety and the case against diversification

The opposite of portfolio diversification is portfolio concentration. One could argue that one diversifies because one doesn't know the future. Diversification is like hedging against one's own ignorance. If one really knew that Apple would continue to rise unabated, diversification would be entirely unnecessary. (Figure 4 suggests that Apple might not rise "unabated" forever; companies that reach USD500 billion market capitalisation have a tendency to become USD300 billion or USD100 billion market cap companies within only two years.) For this to be true, the enlightened investor obviously will need to know what he doesn't know; arguably one of the greatest pieces of wisdom.

Figure 4: Selection of stocks that hit USD500 billion



Source: Update from Ineichen (2012), Bloomberg

Notes: Time series start one trading day prior to reaching USD500 billion market cap. 12 June 2012 inclusive.

One aspect of investment management is conviction, i.e., the confidence one has in one's opinions and ideas. It has been argued that the higher the conviction the less diversification one needs. In the 1950s and 1960s portfolio concentration was the name of the game, not portfolio diversification. The more one knew what was going on, the higher the conviction, the more concentration (and/or leverage) was permissible. Warren Buffett's quote in the side text stems from Philip A. Fisher's two books, *Common Stocks and Uncommon Profits* and *Conservative Investors Sleep Well*, in which Fisher stressed the importance of avoiding excessive diversification and the advantages of owning high quality businesses for the long-term.¹

Before financial orthodoxy got infatuated with randomness (as in the random walk down Wall Street and the resultant advent of benchmarking and indexation), good performance was perceived as a result of research and effort. Jim Rogers response to the question: What is your basic investment strategy?

Buy low and sell high. I try to find something that is very cheap, where a positive change is taking place. Then I do enough homework to make sure I am right. It has got to be cheap so that, if I am wrong, I don't lose much

¹ Bierig, Robert F. (2000) "The evolution of the idea of "value investing": From Benjamin Graham to Warren Buffett," April.

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

—John Kenneth Galbraith

"Wide diversification is only required when investors do not understand what they are doing."

—Warren Buffett

money. Every time I make a mistake, it is usually because I did not do enough homework.¹

The “buy low and sell high” adage is arguably overused and easily ridiculed. (The “buy low and sell high” adage is essentially the colloquial five word summary of value investing.) Under the buy-low-and-sell-high adage an investment is conducted because it offers good value at a reasonable price not because it fits nicely into a mean-variance optimised portfolio. An investment is conducted because it has merit, it makes business sense, has an attractive risk-reward trade-off and—again—not because it fits nicely into a mean-variance optimised portfolio. Diversification matches better with the buy-and-hold doctrine, than it does fit with the buy-low-and-sell-high idea. Under the buy-low-and-sell-high doctrine one buys something when it is cheap, which implies a Benjamin Grahamian “margin of safety.” It implies a certain asymmetry; small potential loss versus large potential gain. There are many books on this asymmetry idea.^{3,4} In Chapter 20 of *The Intelligent Investor*, Graham stated that, confronted with a challenge to

*distill the secret of sound investment into three words, we venture the motto, **margin of safety**. This is the thread that runs through all the proceeding discussion of investment policy.⁵*

A true margin of safety, he explained, is one that can be demonstrated by figures, by correct reasoning, and by reference to actual experience.⁷ It is this margin of safety that “protects” the investor from “the effect of miscalculation or worse than average luck,” not diversification.

The idea of the margin of safety has changed over time. At the most simplistic level, we could argue the idea is about betting when the odds are in your favour or not betting at all. Charlie Munger made this point very well:

It's not given to human beings to have such talent that they can just know everything about everything all the time. But it is given to human beings who work hard at it - who look and sift the world for a mispriced bet - that they can occasionally find one.⁸

“The three most important words in investing are “margin of safety,” which means always building a 15,000 pound bridge if you’re going to be driving 10,000 pound trucks across it.”

—Warren Buffett²

“The buyer of bargain issues places particular emphasis on the ability of the investment to withstand adverse developments.”

—Benjamin Graham⁶

¹ Financial Times, Jim Rogers: My First Million, 20 November 2009.

² Bierig, Robert F. (2000), original in *Intelligent Investor*, 4th edition, 277.

³ See *Security Analysis, Intelligent Investor, Asymmetric Returns*, etc.

⁴ Note that Benjamin Graham was doing equity long/short nearly three decades prior to Alfred Jones. Graham started to relax his hedging towards the end of the 1920s as markets just kept going up. Sounds familiar, no?

⁵ Graham, Benjamin (1973) “*The Intelligent Investor*,” 4th revised ed., New York: Harper & Row, 277.

⁶ *Ibid.*, 281.

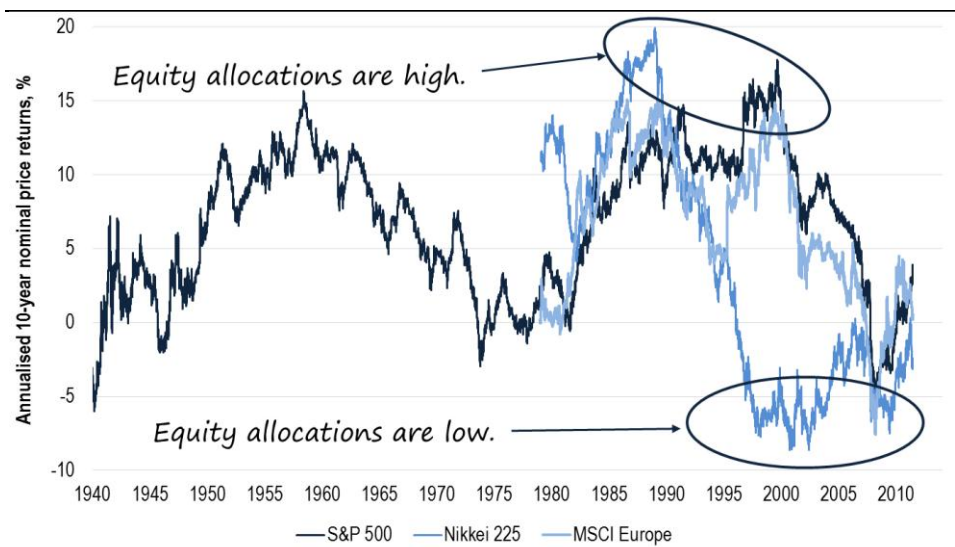
⁷ Graham’s preferred technique was to select stocks that were selling for two-thirds of their net working capital. Value investors obviously have expanded this technique. However, the idea of a margin of safety remains intact to this day.

⁸ *Outstanding Investor Digest*, 5 May 1995.

It is generally accepted that there is a trade-off between risk and reward. We have been at odds with this idea for many years: taking more risk means that the probability of something going wrong increases. For all practical purposes, there is no such thing as an equity risk premium in Japan.² Things went wrong. A risk premium is something that might or might not materialise. Taking more risk means you will get lucky or you won't. However, many investors are Siegelian³, i.e., have bought into the idea that equities outperform bonds in the long-term. This is about as dangerous as taking the idea of a risk-free-rate-of-return literally. (If you are a *Highlander* (as in Christopher Lambert) then there is indeed such a thing as an equity risk premium, even in Japan; at least once the gaps in the time series are ignored.)

In *theory* institutional investors can stomach the long periods of underperformance and negative compounding of capital; in *practice*—it seems—they can't. In Japan the weight of equities was high when the stock market was high and currently it is low as the stock market is low. See Figure 5. The same is true in the US, the UK and Europe. There too, equity allocations were higher twelve years ago than they are today. Whether this is due to not rebalancing the equities allocation after sharp declines, a switch from hugging asset benchmarks to an infatuation with liability benchmarks, or due to regulation is beside the points made here.

Figure 5: 10-year returns of equities (1940 – 12 June 2012)



Source: Ineichen Research and Management, Bloomberg

This actually suggests “buying high and selling low” which is of course quite the opposite of the Graham-Buffett-et-al doctrine of buying low and selling high. A committee-based and regulatory-driven investment management process has a strong tendency to go with what is orthodox. And quite often, it seems, what is orthodox is also what has done well in the past. For the financial scholars to give their stamp of approval, many years of favourable data is required. Currently the performance of government bonds (of sovereigns that are not yet in the process of defaulting) is very high as the whole yield curve, including the long

“I changed the conditions of the test. I got a commendation for original thinking. I don't like to lose.”

—Captain James T. Kirk, commenting on how he was the only person ever to win in the “Kobayashi Maru” no-win scenario¹

“In theory, theory and practice are much the same. In practice, they are not.”

—Albert Einstein

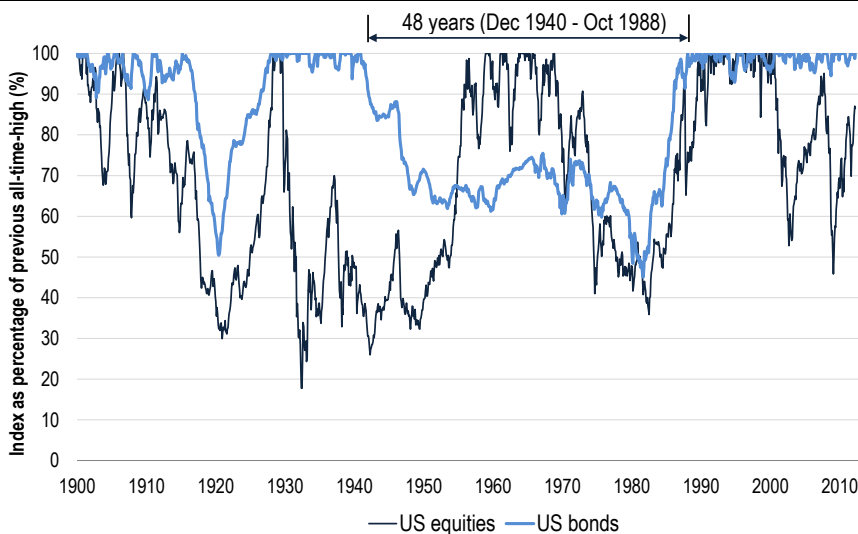
Regulators prefer bonds

¹ Locke, Justin (2010) “Principles of Applied Stupidity,” Waltham, MA: Justin Locke Productions, 76.
² For non-practical purposes, the equity risk premium in Japan from 1900 to 2011 was 5.0 according to *Credit Suisse Global Investment Return Yearbook 2011*.
³ As in Jeremy Siegel's “Stocks for the long run.”

end, has been pushed down aggressively. Long-term interest rates in the US for example are at a multi-generational low. The allocation by many investors to bonds, therefore, is high. Government bonds have done well. (A cynical view would be to argue that it is only the ECB and the Fed who are buying these long-term bonds with “conviction”.) Scholars and accounting board members therefore approve of them. Regulators therefore like them too.¹ Caveat emptor.

We have addressed this issue, including the perceived safety, in *Regulomics* last year. When risk is defined as “time spent underwater”—arguably a definition of the loss-averse pragmatist—then bonds are more risky than equities. One example is shown in Figure 6.

Figure 6: US equities and bonds under water (Jan 1990 – Apr 2012, real total returns terms)



Source: IR&M, Global Financial Data, Bloomberg

Equities: S&P 500 TR Index, estimate prior to 1988; bonds: BarCap US Aggregate TR Index, estimate prior to 1976.

Indices adjusted with CPI.

- Bonds can spend a long time under water.
- The 48 year period to October 1988 in the chart is outside of most investor’s memory and VaR-enthusiasts as well as disciples of the long-only-buy-and-hold doctrine don’t think this is a big deal. Professor Galbraith was certainly on to something in the side text. Extended periods of government bonds trading under water is outside of the markets mental memory. Stock markets falling 50% or private investors being ripped off in a large Nasdaq IPO, on the other hand, are mentally present because it happened in the recent past.
- Long-only equities can spend a long time under water too, of course.

“There can be few fields of human endeavor in which history counts for so little as in the world of finance.”

—John Kenneth Galbraith

¹ The regulator’s affinity for hedge funds is obviously not as strong; at least when judged by the latest draft of the AIFMD.

The case against diversification is weak, especially when non-systematic risk is addressed. Nearly all investors know that non-systematic risk (single stock, single hedge fund, etc.) needs to be controlled via diversification. There are potentially two forces in institutional investment management related to diversification today. First, large institutional pools of money seek diversification far beyond diversifying non-systematic risk by seeking to diversify into different asset classes and/or strategies where the cash flows and/or change in value are unrelated. Nearly all new investments are sold on that diversification premise (and/or promise). The argument for selling investments in wind parks is that the cash flows are determined by the wind and therefore—simplifying a bit—the cash flows are unrelated to the state of the economy or the stock market. This is a powerful argument; until the austerity programs of various European economies cause subsidies, on which many alternative energy investments still rely on, to dry up, of course.

Second, the institutional hedge fund seeks to build wealth. A hedge fund of course diversifies non-systematic risk and hedges certain types of systematic risk but is normally concentrated to a certain area of expertise. The area of expertise could be an asset class or an investment style or a region or a combination thereof. This is different to what institutional investors do. The degree of diversification with all institutional investors and managers is therefore a function of whether the investor is in wealth preservation or wealth building mode, the degree of specialisation and conviction in one's skill, and size. Large institutional investors being very broadly diversified and hedge funds managing money in a highly specialised, margin-of-safety kind of way seem to co-exist reasonably well. (Potentially it would work even better were the authorities via the regulatory bodies not to believe so strongly what is good for everybody and what is the best path regarding the pursuit of happiness.)

In the next section we address accidents. Correlation coefficients tend to move towards unity during market stress. We will examine various hedge fund strategies during market stress. Prior to that empirical analysis, we share some conceptual remarks on accidents, exploding volcanos, and combatant extra-terrestrials. As with nearly all our research, the wisdom of Winston Churchill in the side text applies.

“Diversification should be the cornerstone of any investment program.”

—*Sir John Templeton*

“Diversification may preserve wealth, but concentration builds wealth.”

—*Warren Buffett*

“It is my belief, you cannot deal with the most serious things in the world unless you understand the most amusing.”

—*Winston Churchill*

Accidents

“The major difference between a thing that might go wrong and a thing that cannot possibly go wrong is that when a thing that cannot possibly go wrong goes wrong it usually turns out to be impossible to get at and repair.”

—Douglas Adams

- ***Accidents happen and losses are not good for one’s financial and mental health. Different absolute return strategies behave differently in different accidents, and thus, diversify.***
- ***An investment with an impeccably smooth history and high Sharpe ratio might or might not be safe. It’s better to think in terms of the FEI, the Financial Explosivity Index.***
- ***Not all investors are happy with the absolute performance of their allocations to absolute returns strategies. The relative performance is remarkable though; especially in a low-return environment.***

Skippy and the Volcanic Explosivity Index

We have argued for some time that Sharpe ratios are really marketing gimmicks and that volatility is—and this is putting it very nicely—an incomplete measure for risk. Risk is not perceived as volatility. Institutional investors do not perceive volatility as risk, private investors do not perceive volatility as risk; even relative return managers do not perceive volatility as risk. Losing large chunks of one’s capital, on the other hand, is more like it. Recent financial history has shown that at the end of the day it is losses that matter most. Risk, therefore, becomes the probability of what matters most, i.e., losses and/or non-survival. Another way of putting it is defining risk as “exposure to accidents.” The problem with accidents in finance is that they do not seem to be spread out evenly over time; quite to the contrary, they seem clustered. Take sovereign defaults for example: there is indeed such a thing as a domino-effect. Sovereign defaults do not occur one at a time evenly spread over time. They are contagious and occur in a bundled fashion. As risk managers wishing to survive this episode of finance, we need to become students of history, rather than disciples of MPT. (We need—unfortunately—also become students of back-against-the-wall-welfare-state-politics too.)

Another aspect of accidents is that they are said to be surprising by definition: if they were predictable, they wouldn’t occur. This logic might apply to slipping on a banana skin. However, this logic doesn’t necessarily apply to finance. The introduction of the Euro for example is an accident that is unfolding as we speak. It just took a while until it became apparent to everyone; well, nearly everyone. An

“The important thing in science is not so much to obtain new facts as to discover new ways of thinking about them.”

—Sir William Bragg (1862-1942),
British physicist and winner of the
1915 Nobel Prize in Physics

“There are decades when nothing happens; and there are weeks when decades happen.”

—Vladimir Lenin

investor has the choice to participate in the accident or hedge or invest elsewhere. Japan is not yet an accident but is one in the making due to its current debt levels and unfavourable demographic trends; or is, as author John Mauldin likes to put it, a “bug in search of a windshield.” (We could also argue that the stock market is a leading indicator and has anticipated the demographic/debt accident by declining for 20+ years.)

It goes without saying that losses matter more to owners of capital than it does for the agents managing the capital. (The agents do care about their own capital though.) The idea of marrying the owner’s capital with that of the managing agent is still—we believe—one of the most powerful attributes and differentiating factors of the hedge funds industry. (The notion occasionally found in mission statements of the financial services industry along the lines “we put our client’s interest before our own” or a variant thereof is—in our opinion and for all practical purposes—an outright lie. It is against nature. All species—including those inhabiting the financial services habitat—are programmed to survive. When the going gets tough, the tough get going saving their own bacon first. All individuals and corporates want to survive. Even plants want to survive. At one level the financial crisis is an interesting episode for studying the behaviour of humans, corporates, sovereigns, etc. when non-survival becomes more probable. Guess why air line pilots are not allowed to carry parachutes on board. The only way—again, in our opinion—for the principal to have his interests aligned with the agent is to team up with the agent financially; by being “on board”, so to speak.)

Diversity has some material “side effects”. One of these side effects is us. Life on earth, as we know it, was materially influenced by catastrophes, or what we like to call—somewhat colloquially—“accidents”. Accidents happen, as the marketing slogan of one insurance company repeatedly and fittingly reminds us. An asteroid strike on the Yucatán Peninsula 65 million years ago for example was responsible for the extinction of the dinosaurs. This was a pretty big deal, not just for the dinosaurs. Dinosaurs reined the world and got a large part of the nutrition that photosynthesis had on offer at the time. (100 million years ago we, or, more precisely, the ancestor of all modern mammals (a creature that presumably resembled “Skippy” in “Ice Age”), were keeping themselves going on insects, avoided getting stomped on by T-Rex, and generally kept a low profile.) Once the dinosaurs were gone, our menu options increased and the rest is “history”. So a potential accident is a “risk” but the other side of this coin is change as well as “opportunity”.

Speaking of ice ages: Historian Will Durant opened his treatise on human civilization by stating:

*Civilization is an interlude between ice ages.*³

¹ Berkshire Hathaway, annual report, 2003

² This proverb can be traced back to Cicero.

³ Original from the introduction of *The Story of Civilization – Our Oriental Heritage*, 1935: “Civilization is social order promoting cultural creation. Four elements constitute it: economic provision, political organization, moral traditions, and the pursuit of knowledge and the arts. It begins where chaos and insecurity end. For when fear is overcome, curiosity and constructiveness are free, and man passes by natural impulse towards the understanding and embellishment of life. Certain factors condition civilization, and may encourage or impede it. First, geological conditions. Civilization is an interlude between ice ages: at any time the current of glaciation may rise again, cover with ice and stone the works of

“After all, who ever washes a rental car?”

—Warren Buffett¹

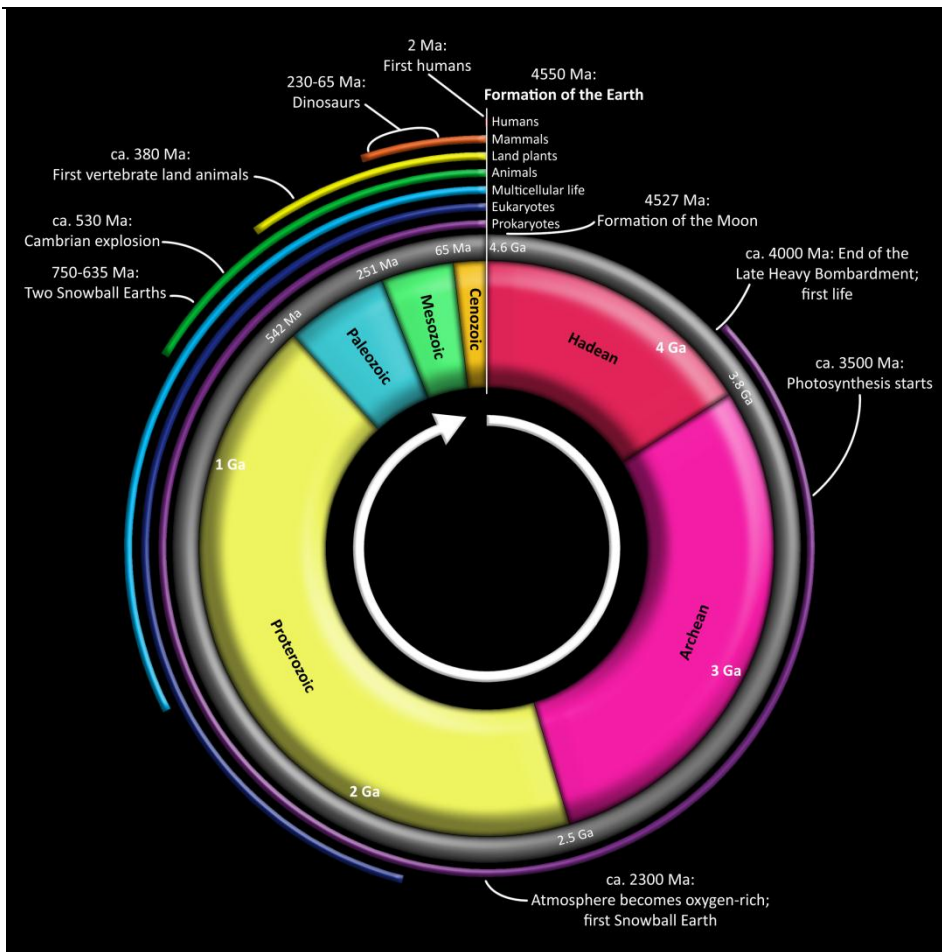
“Self-preservation is the first law of nature.”

—Proverb²



We could take this further and argue that most life on earth is an interlude between ice ages. From the perspective of life and survival, an ice age is an "accident". In the past it has been quite a killer as most complex life forms do not survive 300 meters of ice over New York. In the past, such accidents have caused a reshuffling of the cards of life, hence the terms change and opportunity. An accident is only a bad outcome if you don't survive or are mortally wounded (same thing, really); but there's always a beneficiary on the other side of the proverbial coin. According to the geological clock in Figure 7 there have been two occurrences where our planet was frozen with the obvious consequences for most life forms.

Figure 7: Geological clock



Source: Wikipedia.com

Note: Ma stands for megaannum and is a unit of time equal to one million years.¹

Thankfully, nowadays we have global warming, arguably a pre-condition for civilization and most life forms. However, too warm is not good either. The Permian–Triassic extinction event, informally known as the Great Dying or "mother of all mass extinctions," was an extinction event that occurred 252 million years ago. It was the earth's most severe known extinction event, with up to 96% of all marine species and 70% of terrestrial species becoming extinct. It is assumed that it was caused by global warming, most likely triggered by an asteroid impact. (The

man, and reduce life to some narrow segment of the earth. Or the demon of earthquake, by whose leave we build our cities, may shrug his shoulders and consume us indifferently." (Other factors are geographic and economic conditions.)

¹ If the age of the earth was a 24 hours day, we started walking and talking roughly 38 seconds prior to midnight. So most of what we do is, sort of, "unexplored territory."

"It is not clear that intelligence has any long-term survival value."

—Stephen Hawking

"After ages during which the earth produced harmless trilobites and butterflies, evolution progressed to the point at which it has generated Neros, Genghis Khans, and Hitlers. This, however, I believe, is a passing nightmare; in time the earth will become again incapable of supporting life, and peace will return."

—Bertrand Russell

"The facts are there that we have created, man has, a self-inflicted wound that man has created through global warming... I think that the federal government is doing things. But I think that they are not

classic pattern that during the Cold War was also feared could be man-made is: impact clouds planet, clouds block sunlight, missing sunlight disrupts photosynthesis, food chains collapse. If everyone on the planet were to drive the same car as Arnold Schwarzenegger, potentially no nuclear war would be required.)

We could argue that these “life changing” geological events are not that relevant as they happened a long time ago. (Like the Decline of the Roman Empire, the Battle of Salamis, the Great Depression, etc.). Furthermore, many of these events were not events but episodes that unfolded gradually, rather than by sudden impact. Given that most of current, Westernised civilization is more about taking and borrowing from future generations; rather than caring about, lending to and providing for future generations, these excursions becomes even less relevant.

The reason for mentioning these accidents is our belief that risk management is a thought process rather than a quantitative exercise. Risk *measurement*, one could argue, is a quantitative exercise. If risk management is indeed a qualitative exercise where thoughtfulness matters, it is healthy to think about what could wrong, even if that leads us away from MPT, VaR, and alphas and betas for a moment. (The Tunguska explosion in Russia in 1908, a cosmic event that released, according to one estimate, the equivalent of roughly 1,000 WWII atomic bombs, is a case in point in that regard. In the event of such an event hitting, say, London, alphas and betas do not matter that much. Cosmic impacts of the Tunguska variety are expected roughly every 100 years. In football parlance, we’re in “overtime”.) Another reason to think a bit out-of-the-box when contemplating risk is that sometimes Murphy’s Law applies. Sometimes it happens that you have a week economy *and* are hit by an earth quake *and* by a tsunami *and* have a nuclear disaster all at the same time. Accidents happen and sometimes Murphy’s Law does indeed apply.

This report is not about geological accidents but it *is* about accidents in relation to diversification. With “accident” we mean both tail risk (or tail event) as well as periods of negative compounding of capital in real terms over longer periods of time. (The differentiation between exogenous and endogenous shocks is an important one but not that relevant for the line of argument in this document.) Thinking about geological accidents is healthy because the relationship between accidents are classified using an exponential distribution rather than a normal distribution which financial scholars find so useful in explaining financial and economic events. (It is also healthy in a sense that when talking about risk management in finance, we should all really avoid the term “worst-case scenario”.) The Volcanic Explosivity Index (VEI) that measures volcanic eruptions is one such logarithmic scale. (The Richter scale for earth quakes is another.) Like volcanic eruptions (or earth quakes or financial crises) severe accidents are less frequent than milder accidents. Volume of products, eruption cloud height, and qualitative observations (using terms ranging from “gentle” to “mega-colossal”) are used to determine the explosivity value of the VEI.

We have long argued that the financial industry also should come up with an equivalent to the VEI (or any other such measure) to measure and classify financial

aggressive enough. And I think that the whole world is not aggressive enough.”

—Arnold Schwarzenegger¹

“What have future generations ever done for us?”

—Groucho Marx

“Reason’s biological function is to preserve and promote life and to postpone its extinction as long as possible. Thinking and acting are not contrary to nature; they are, rather, the foremost features of man’s nature. The most appropriate description of man differentiated from nonhuman beings is: a being purposively struggling against the forces adverse to his life.”

—Ludwig Von Mises²

“The reason lightning doesn’t strike twice in the same place is that the same place isn’t there the second time.”

—Willie Tyler, American ventriloquist, comedian and actor

¹ ABC News, 23 April 2006

² Human Action, Von Mises (1996), p. 882. Emphasis in the original.

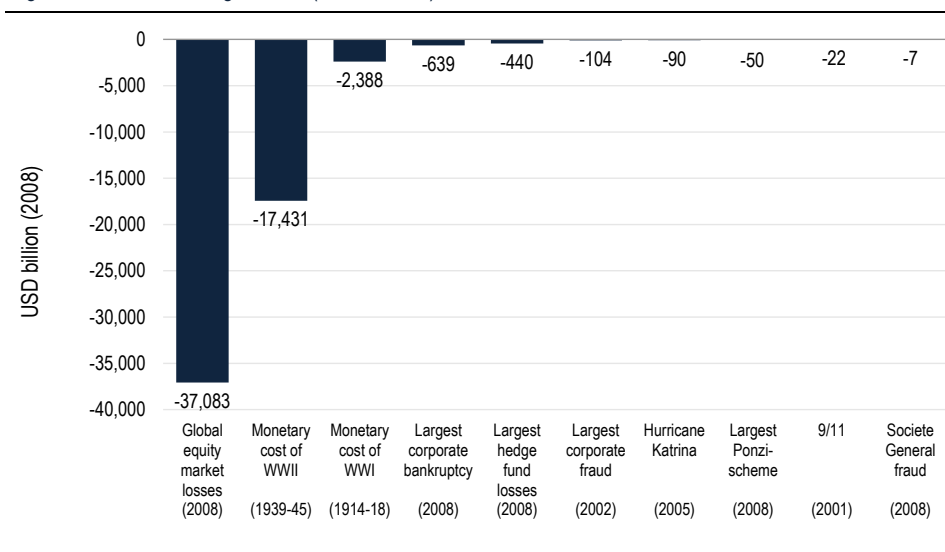
accidents. It would help the thought process that is risk management as well as the communication thereof. The VEI is open-ended with the largest volcanoes in history given magnitude 8. A value of 0 is given for non-explosive eruptions, defined as less than 10,000 m³ of stuff ejected; and 8 representing a mega-colossal explosive eruption that can eject more than 1,000 km³ of "sun-blocking stuff". *Eyjafjallajökull* in Iceland which caused disruptions in air travel in 2010 was a VEI of 4 and should occur less than once a year somewhere on the planet. *Mount St. Helens* in 1980 was a VEI of 5 and should occur less than every ten years. *Mount Pinatubo* in 1991 was a VEI of 6 and should occur less than every one hundred years, etc. *Lake Toba* (Indonesia) around 74,000 years ago was a VEI of 8, should occur less frequent than every 10,000 years, and, according to one theory, did some real damage to *homo sapiens*; i.e., essentially those of us who left Africa too early.¹

Below we attempt to apply the VEI to finance.

Introducing the Financial Explosivity Index

We could replace "sun-blocking stuff" in the VEI with billion USD losses. We then could go on and create the FEI, i.e., the Financial Explosivity Index, the financial equivalent to the VEI. We assume the same logarithmic scale whereby a USD1 billion loss is equal to a FEI of 1. This means a USD100 billion loss is a 3 on the FEI, a USD100 trillion loss is a 6, a USD100 quadrillion loss is a 9, etc.

Figure 8: Selection of large losses (in 2008 USD)



Source: IR&M, data from Bloomberg, Swiss Re Sigma, Wikipedia, Spartacus Educational
 Note: The USD37.083tr loss in market capitalisation for global equities is from peak at USD62.572tr in October 2007 to USD25.489tr in March 2009.

Figure 8 shows estimated losses of some past events in 2008 USD; ignoring human and mental losses for the sake of this argument. Equity losses from the 2008 financial crises are a 5.6 on the FEI whereas the losses from Enron and Katrina would be a 3.0. Similar to the VEI, large accidents on the FEI are more global and

¹ Note that palaeoanthropologists as well as geneticists still debate the impact of the *Toba eruption* on humanoid life. According to the supporters of the *genetic bottleneck theory*, human population suffered a severe population decrease possibly caused (or accentuated) by the volcanic winter that followed the eruption. Genetic evidence suggests that all humans alive today, despite apparent variety, are descended from a very small population, perhaps between 1,000 to 10,000 breeding pairs about 70,000 years ago.

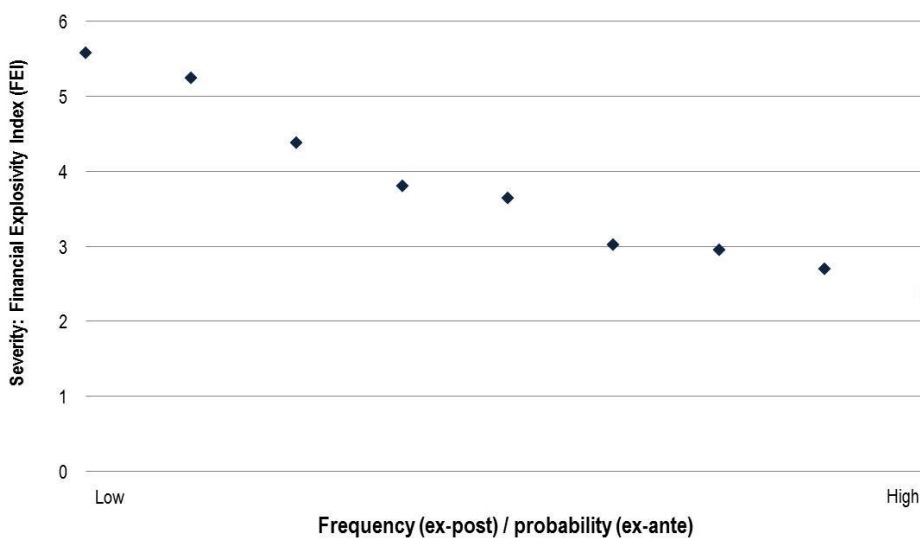
far reaching, whereas accidents with a lower FEI are more local, more contained, and less contagious. The scale of the FEI is open ended of course, as are the scales of the VEI and the Richter scale. (Although the “open ended of course” has its practical limitations. There is only so much wealth that can be destroyed.)

Because of the scale of the VEI, Richter scale, FEI, etc. being open, one shouldn't speak of a worst-case scenario. Our worst-case scenario, when discussing “unknown unknowns” in our 2010 report, was Douglas Adam's scenario of Vogons from Vogsphere¹ vaporizing earth. The severity of such an event is obviously very high (total loss) whereas the probability of occurrence is very low. If we assume global wealth in tangible and intangible assets is USD125 trillion² (an estimate we picked up a couple of years ago), a total loss would be a 6.1 on the FEI.

“Part of probability is that the improbable can occur.”

—Aristotle

Figure 9: Severity vs. frequency/probability



Source: Ineichen Research and Management

Figure 9 shows the FEI of the ten losses from Figure 8. The next step would be to come up with a frequency/probability scale. How often can we expect a 5.0 or a 6.0 on the FEI? A 5.0 in the VEI should happen less frequent than once every ten years whereas a VEI of 6.0 should happen less frequent than roughly once every 100 years. So the time/frequency scale is also logarithmic. (The failure of the Euro experiment/accident is not yet quantifiable. Our best guess, when all is said and done, it will be in the upper left hand corner of Figure 9.)

This is probably where the comparison between VEI and FEI breaks down. Applying the tool kit of the natural sciences to the social sciences—as mentioned in this report and many recent reports—has its limitations. Given the recent frequency of so called “100-year floods,” we will pass on determining the frequency of these large losses and therefore pass on a probability scale; other than to say that a 5.0 in the FEI is much less likely than a 4.0. What is important is that just because a FEI of 5.6 was the worst accident in the past doesn't automatically mean that there is not something even uglier lurking in the future.

“Europe is the result of plans. It is, in fact, a classic utopian project, a monument to the vanity of intellectuals, a programme whose inevitable destiny is failure: only the scale of the final damage done is in doubt.”

—Margaret Thatcher

¹ The Vogons are described as an “alien race of bureaucrats”. Bureaucrats causing *real* damage is arguably not as *fictional* as it initially sounds.

² As a comparison: Global pension assets were roughly USD30 trillion as of 2010 according to TheCityUK. The financial wealth of High Net Worth Individuals was USD42.7 trillion as of 2010 according to Capgemini. World GDP (an income statement figure, not balance sheet) was around USD79 trillion in 2011 according to the CIA's World Factbook.

We do not know whether the 2008 financial crisis was just some sort of harbinger, a foreshock prior to the big whammy. (The 1929 crash, one could argue, was a harbinger to the destruction of the 1930s and early 1940s. The 1929 crash was unpleasant for those using leverage but it was minor when compared to the main catastrophe that followed. It was a harbinger, a precursor; even if it didn't feel as such for those involved.) The debt crisis is arguably not over yet and the confidence the investor can have in the current authorities handling the situation is—how shall we put this—sub-stellar, to say the least.

* * *

In this report we examine aspects of diversification, or, more precisely, the sensitivity of absolute return strategies to accidents. We avoid tables with correlation coefficients and examine different aspects of diversification. We look at how some of the hedge fund strategies perform and respond to financial accidents. The two tools we use in the following (more empirical) section are mainly our equity-accident graphs and strategy underwater charts. The former informs us how a strategy responds to financial stress in equity markets. We focus herein on equities, as it is equities that have been the largest contributing factor to the risk of institutional portfolios by a wide margin in the past. The underwater charts show the absolute loss of the strategy and how long it takes to recover. These two tools allow us to examine correlation, magnitude of loss (the "FEI", so to speak), as well as the length of the recovery. Equity long-short for example has a very high correlation to accidents but the magnitude of loss is typically a fraction of their long-only brethren. This allows for a swifter recovery. (All this builds on our research effort over the past 20+ years which—in the tinniest of nutshells—states that large losses kill the rate at which capital compounds and compounding capital negatively is not good for one's financial and mental health.)

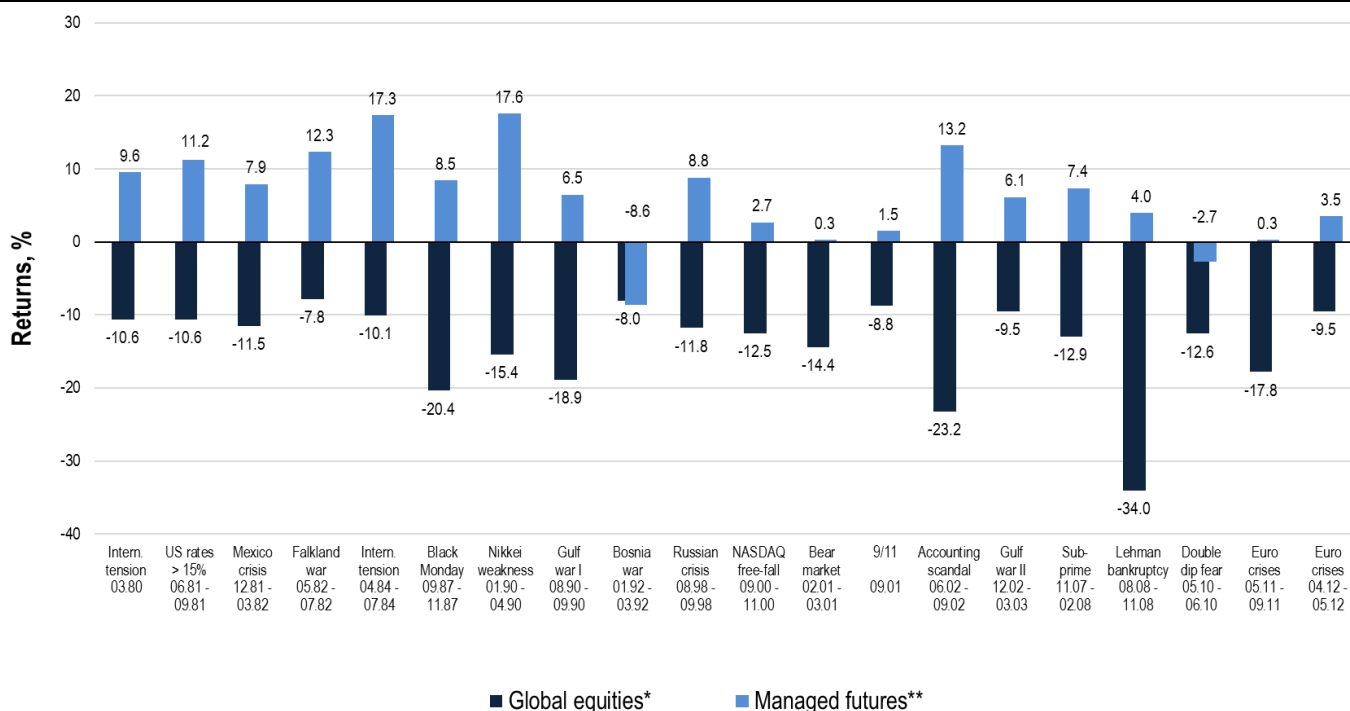
"It requires a great deal of boldness and a great deal of caution to make a great fortune, and when you have it, it requires ten times as much skill to keep it."

—Ralph Waldo Emerson (1803-82),
American essayist

Managed futures

Figure 10 is our first “accident graph.” The graph shows all 20 occurrences where the MSCI World lost more than 7% of its value within one, two, three, or four months from 1980 to May 2012 on a month-end basis. The worst return from the four returns was chosen. The negative equities event can then be compared to another asset or strategy. We start with the most extreme case we can think of: managed futures.

Figure 10: Managed futures in difficult market environments (1980 – May 2012)



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

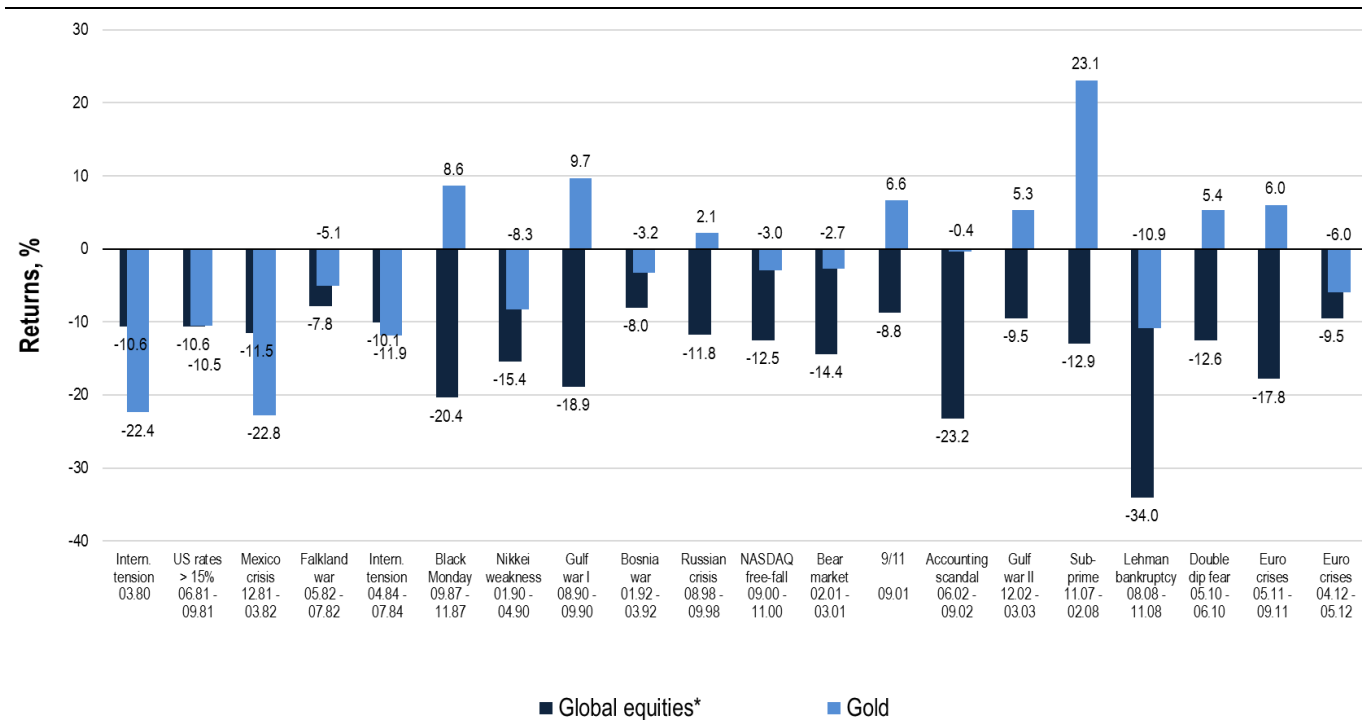
- The graph speaks for itself. Managed futures delivered a positive return in 18 out of 20 accidents in the equity market. In the field of investment management, there is simply nothing that comes anywhere close to this.
- The nominal annualised compounding rate of the time series used in the graph from January 1980 to May 2012 was 11.6% for managed futures which compares to 9.9% for global equities.

Note that there is a difference between hedging and diversifying. A short position in an equity index futures contract would yield a positive return when equities fall. However, the expected return of such a hedging position would be the mirror image of the expected return of the hedged underlying. In other words, when hedging with linear risk management tools both the loss potential as well as the return potential are neutralised or “hedged”. A short position in equity futures is not a standalone investment. Contrast this with managed futures. Managed futures is a standalone investment as it has an expected return that is positive and is not a derivative from something else. The strategy lends itself particularly well for diversification as the drawdowns are not synchronised with equities.

Managed futures is a standalone investment. Shorting an equity futures contract is not.

Investments in gold are occasionally referred to as a portfolio diversifier too. Figure 11 shows the same accident graph for gold.

Figure 11: Gold in difficult market environments (1980 – May 2012)



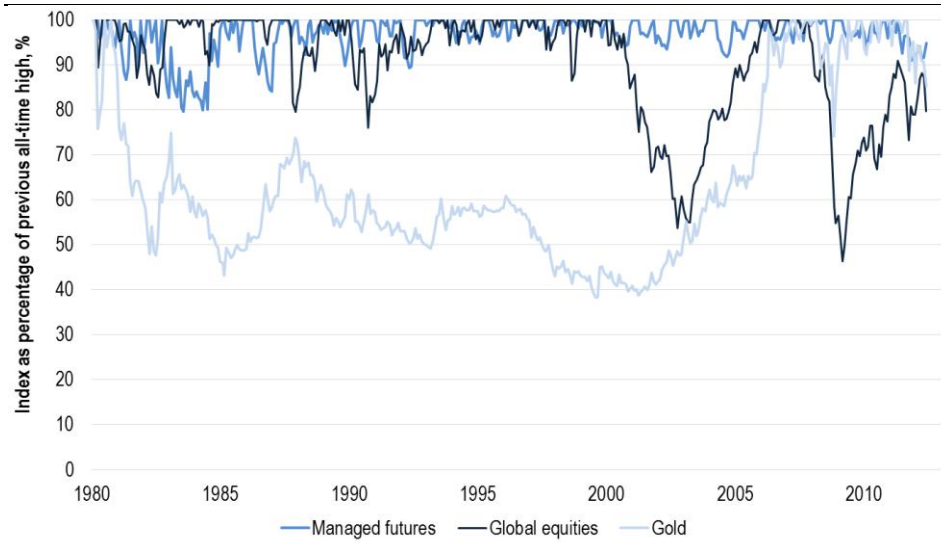
Source: IR&M, Bloomberg
 * MSCI Daily TR Gross World USD Index.

- Gold only delivered a positive return in eight out of the 20 identified accidents. The annual return for gold from January 1980 to May 2012 was 3.5% which compares to 3.4% for official US inflation.¹

Figure 12 shows the underwater perspective of managed futures and equities. We have added gold as a “fyi” rather than anything else. (We discussed gold in more detail in “Europe doubling down” from last year.)

¹ Note that there is a lot of econometric gimmickry conducted when calculating official US inflation. According to some estimates, the past and current inflation in the US is not higher but much higher than the Bureau of Labor Statistics wants us make believe.

Figure 12: Underwater perspective managed futures vs. global equities and gold (1980 – May 2012)



Source: IR&M, Bloomberg

See previous charts for index descriptions.

- Managed futures have had drawdowns in the past. However, once single manager risk is diversified, the drawdowns are miniscule when compared to equities. The reasons for this is that the managed futures space allows to create better portfolios than the equity market where single stock correlation has a tendency to jump to one and stay high for a while; as equity long-short managers and their investors are painfully aware. Correlation between managed futures funds and/or sub-strategies is lower and more stable by comparison; hence the possibility to create better, more accident-resistant portfolios.
- The nominal annualised compounding rate from January 2000 to May 2012 for managed futures was 6.7% and 0.8% for global equities. The main reason for this big difference is that downside risk with managed futures is actively controlled whereas with long-only equities, by definition¹, it is not.
- As of May 2012, managed futures was down to 95% (-5%) of its previous high and has been under water since April 2011. Global equities were down to 80% (-20%) from their previous high as of May 2012 and have been under water since October 2007. Note that what matters to loss-averse investors is not only the magnitude of loss but also the time the losses take to recover. Gold, for what it's worth, was under water from September 1980 to February 2007; in nominal terms that is. In real terms, gold has never reached its high water mark. It would need to move above 2,500 \$/oz to do so (Figure 13).

In February 2012 Warren Buffett made the case that if the gold stock of 170,000 metric tons were melted together to a cube it would measure 68 feet per side and fit on a baseball field. The value of this cube would be equal to all the US cropland, 16 Exxon Mobils, and USD1 trillion in cash. His argument was that the latter was superior to the former for cash flow reasons. This is of course true. However, if you own cropland, blue chip shares, and cash and private property is

“Disobedience, in the eyes of anyone who has read history, is man's original virtue. It is through disobedience and rebellion that progress has been made.”
—Oscar Wilde (1854-1900)²

¹ The term 'long-only' implies the absence of risk management. Risk management, when explained to the author's mother-in-law, is about 'sometimes being long and sometimes not.'

² From *The Soul of Man Under Socialism*, *Fortnightly Review* (London, February 1891, repr. 1895).

nationalised and the currency devalued, you have nothing. Whereas in the case of hiding some physical gold from the authorities, you still own some gold. The cash flow argument, therefore, is true and very well-articulated. However, it applies to normal circumstances; to an environment in which the authorities have *no incentive* to look for money where it can be found. We might not be living in such an environment. (Given the ranking of some of the European countries on the *Perceived Corruption Index*, we're actually quite certain that we're not living in such an environment.)¹ The cash flow argument is valid only when we assume the current financial repression is not turning into something worse, say, something more totalitarian. Students of history won't find this last line of argument too farfetched.

Figure 13: Gold in real terms (January 1970 – 1 June 2012)



Source: IR&M, Bloomberg

There is no happiness index in finance. However, we could use five-year real absolute performance as a proxy as to how happy an investor is with an asset class or strategy. (We could have taken four or even three years of course.) It is fair to say, we believe, that currently most investors are not that happy with their absolute performance over the past five years. Table 1 shows (overlapping) annualised total returns over five years adjusted for official US inflation. So we're examining annual five-year real total returns. We then applied our Bob Marley colour coding to highlight periods of happiness as well as misery.

It goes without saying that it is the long-term that matters most. However, the absolute perception of an investment style or class as well as the perception relative to expectations is determined—rightly or wrongly—by the most recent, much shorter time periods.

“The third-rate mind is only happy when it is thinking with the majority. The second-rate mind is only happy when it is thinking with the minority. The first-rate mind is only happy when it is thinking.”

—A. A. Milne (1882-1956)

¹ We addressed this in Ineichen (2011).

Table 1: Five-year real total returns

5-years to:	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00	01	02	03	04	05	06	07	08	09	10	11
Global equities	5.8	9.9	20.7	21.8	21.8	24.3	11.0	6.5	2.3	2.5	0.7	9.6	8.5	13.3	13.8	17.9	10.0	3.5	-4.1	-2.8	-4.6	0.1	7.7	14.5	-2.6	0.0	0.8	-4.1
Global bonds																4.2	0.5	-0.2	3.4	3.1	5.3	3.8	5.1	3.0	3.4	1.8	4.9	5.1
Balanced: 50:50*																11.1	5.4	1.9	-0.1	0.5	0.5	2.3	6.8	8.8	1.1	1.8	3.8	1.3
Managed futures	14.0	9.8	10.3	19.6	22.8	20.5	20.5	23.6	15.0	16.0	10.7	9.2	8.7	9.0	7.2	8.1	6.2	4.5	4.7	5.3	5.3	5.1	5.3	4.4	5.7	4.4	5.9	3.6

Source: IR&M, Bloomberg

Notes: * Balanced portfolio of 50% global equities and 50% global bonds, rebalanced every six months (end of June and December). Global equities: MSCI Daily TR Gross World USD Index; Global bonds: Bloomberg/EFFAS Government Bond Index (USD), available since Dec 1994; Managed futures: CISDM CTA Asset Weighted Index to October 2010, DJ CS Managed Futures Hedge Fund Index thereafter; inflation: US CPI.

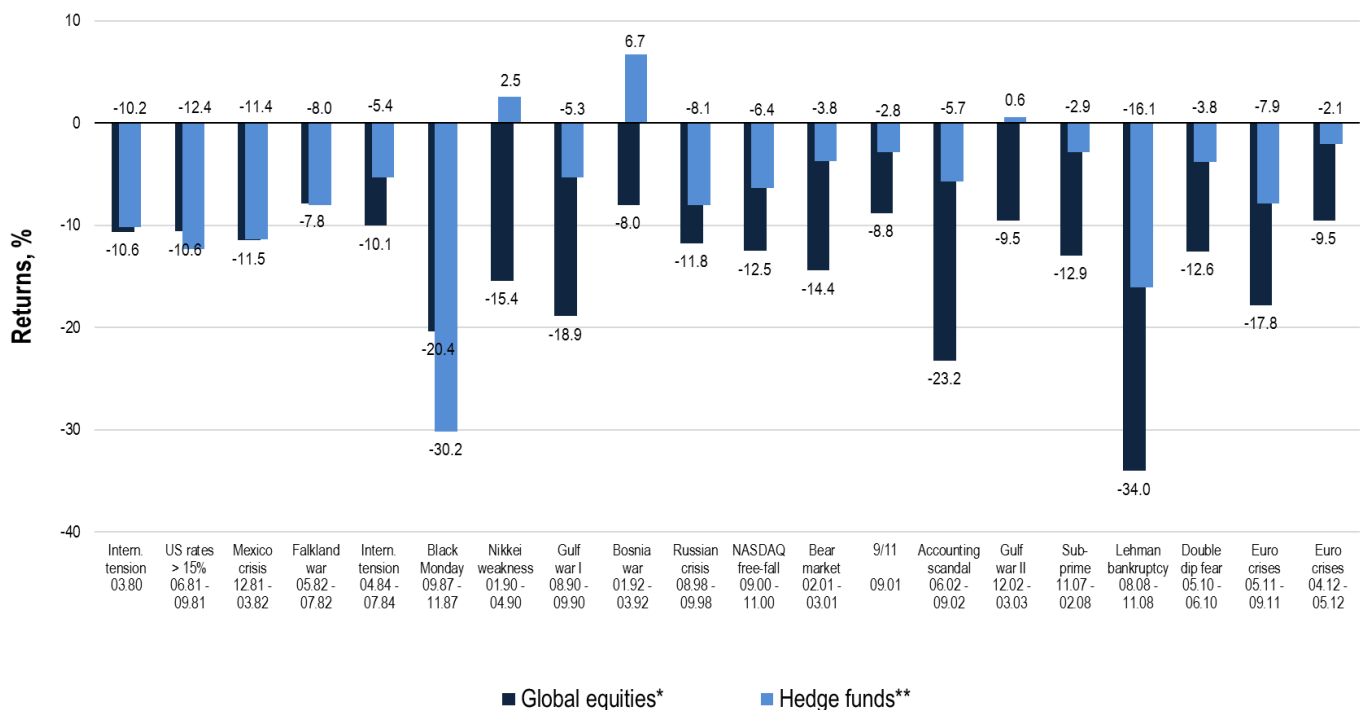
- We miss the eighties.
- If we were to define an absolute return strategy as a way of investing capital whereby the five-year real total return should always be positive, then managed futures is an absolute return strategy whereas risk-uncontrolled, i.e., long-only equity and bond portfolios are not. (Global bonds and our proxy for a 50:50 regularly rebalanced portfolio came close though.)
- In absolute return terms, managed futures are, as are hedge funds in general, at a low point. (See also Figure 3 on page 7 and the following section below.)
- In relative return terms, managed futures outperformed the balanced portfolio in ten out of 13 (overlapping) five-year periods. It outperformed global bonds in all occurrences except the five-year period to 2011.¹ Managed futures outperformed global equities in 17 (61%) out of 28 five-year periods. It has always outperformed equities when the latter's return was smaller than 7.7%. Given that actuarial rates in the US are still at astronomical levels, this last factoid might be something to think about.
- When we adjust for inflation (as in Table 1), the five-year real total returns of managed futures since 2000 are in a very tight range of between 6.2% and 3.6%. This is how it should be if the marketing one-liner "hedge funds can make money in all market conditions" has any merit. The consistency is certainly worth pointing out. (The funny thing is, of course, that the current regulatory zeal favours investments that have far less consistency. If it weren't so sad, it would be comical, wouldn't it.)

¹ For all practical purposes, the five-year performance to 2004 was the same. However, at the fourth decimal, managed futures did better.

Hedge funds in general

Figure 14 shows the accident graph for the average, well-diversified hedge fund portfolio.

Figure 14: Hedge funds in difficult market environments (1980 – May 2012)



Source: IR&M, Bloomberg

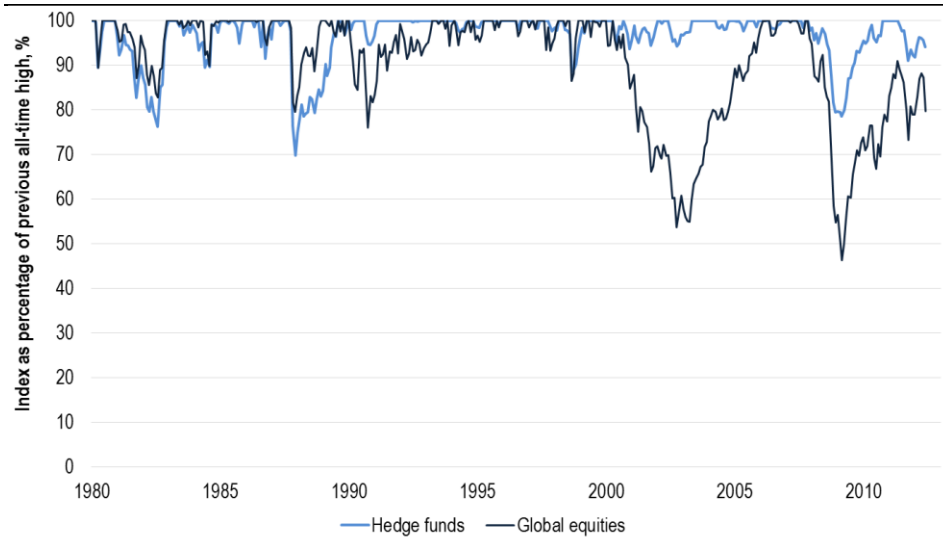
* MSCI Daily TR Gross World USD Index; ** 1980-1989 Leveraged Capital Holdings from Banque Privée Edmond de Rothschild, 1990-2012 HFRI Fund Weighted Composite Index.

- The hedge fund story is arguably not about low or negative correlation. In only three out of 20 accidents did the average hedge fund or the average hedge fund portfolio generate a positive return.
- In the first couple of decades of hedge fund history, the story was about superior performance while institutional involvement was low. The hedge fund story today is about *active risk management*.¹ In all 14 occurrences since 1990 did hedge funds lose less than global equities.
- The compounding rate over the full 32+ year period to May 2012 was 11.6% for hedge funds and 9.9% for global equities. (The observation that the annual compounding rate for managed futures and hedge funds from 1980 to May 2012 is both 11.6% is a coincidence.) The compounding rate from 1990 to May 2012 was 11.1% for hedge funds and 5.6% for global equities. This is a big difference. The reason is that large drawdowns are not very healthy for the consistency of compounding capital; large losses kill the rate at which capital compounds. The smaller drawdowns of hedge funds manifest itself in superior long-term compounding of capital.

Figure 15 shows the underwater perspective for hedge funds and global equities.

¹ See previous work.

Figure 15: Underwater perspective hedge funds vs. global equities (1980 – May 2012)



Source: IR&M, Bloomberg
See previous chart for index descriptions.

- One aspect that put hedge funds on the agenda of many institutional investors was the non-participation in the internet-bubble-bursting-drawdown in the early part of the 2000s. Global equities went from a new all-time high in March 2000 to 55% of that level in February 2003 to recover back to 100% in January 2006; essentially a six-year round-trip that yielded 0%. The average hedge fund portfolio produced a return of around 43% in that period; arguably a big difference, as mentioned before.
- Hedge funds didn't do as well in the second large drawdown of the decade, the financial crisis of 2008. The 20% loss of the average hedge fund portfolio came as a surprise. The episode of the 2008 financial crisis revealed many enlightening aspects related to investment management, one of which is that relying on econometric models fed by historical correlation coefficients and volatilities can be rather misleading. It turns out that designing and running diverse, well-balanced portfolios intelligently is more difficult and demanding than is operating a computer.

An investment of USD100 in global equities at the beginning of 2000 stood at around³ USD110 by the end of May 2012. An investment of USD100 in hedge funds at the beginning of 2000 stood at around USD199 by the end of May 2012. The problem is, of course, that many investors took their time and started allocating in, say, the 2004-2007 period. The practical experience of the pioneers and early adopters is different from the practical experience of the late-comers. With the benefit of hindsight, the witty remark in the side text from 2003 was early but very thoughtful nevertheless. Table 2 shows our happiness gauge applied to hedge funds in general.

¹ *The Theory of Money and Credit*, p. 460

² "The Alternative Balancing Act," Greenwich Associates, 2003

³ It's always "around" and approximate because different investors have different tax treatments. We always use total return indices when available and our perspective is always the tax-exempt investor, i.e., coupon and dividends are not taxed but assumed reinvested untaxed. Furthermore, using different indices results in different performance figures; some government bond markets have risen sharply due to government intervention, others have fallen sharply due to government failure. The choice of index matters greatly, mainly with bond indices.

"As there are in the field of social affairs no constant relations between magnitudes, no measurement is possible and economics can never become quantitative."

—Ludwig von Mises (1881-1973),
Austrian School economist¹

"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 Webster²

Table 2: Five-year real total returns

5-years to:	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00	01	02	03	04	05	06	07	08	09	10	11
Global equities	5.8	9.9	20.7	21.8	21.8	24.3	11.0	6.5	2.3	2.5	0.7	9.6	8.5	13.3	13.8	17.9	10.0	3.5	-4.1	-2.8	-4.6	0.1	7.7	14.5	-2.6	0.0	0.8	-4.1
Global bonds																4.2	0.5	-0.2	3.4	3.1	5.3	3.8	5.1	3.0	3.4	1.8	4.9	5.1
Balanced: 50:50*																11.1	5.4	1.9	-0.1	0.5	0.5	2.3	6.8	8.8	1.1	1.8	3.8	1.3
Hedge funds	2.6	4.4	11.3	8.5	7.4	12.5	7.9	10.8	15.1	19.2	14.7	18.8	16.6	15.9	10.6	15.9	12.3	9.4	5.5	8.7	4.6	5.4	6.9	9.0	1.0	3.1	3.7	0.0

Source: IR&M, Bloomberg

Notes: * Balanced portfolio of 50% global equities and 50% global bonds, rebalanced every six months (end of June and December). Global equities: MSCI Daily TR Gross World USD Index; Global bonds: Bloomberg/EFFAS Government Bond Index (USD), available since 1995; Hedge funds: 1980-1989 Leveraged Capital Holdings from Banque Privée Edmond de Rothschild, 1990-2012 HFRI Fund Weighted Composite Index; inflation: US CPI.

- The real annualised five-year return for the average hedge funds portfolio has never been negative. However, the most recent real annualised five-year return from January 2007 to December 2011 was only around 0.0%. This is a generational low. Given that bonds and combinations of equities and bonds have performed better than hedge funds over the last five full calendar years, there is an element of disappointment with some investors. (After-the-fact disappointment is of course individual and very dependent on pre-fact expectations.) One of the ironies in this regard is that to a certain extent, *relative returns* matter to the *absolute returns* industry as well. That said, from 13 (overlapping) observations in Table 2, hedge funds have “beaten” the balanced portfolio ten times. However, in the most recent past they have not.¹
- Hedge funds outperformed global equities in 17 (61%) out of 28 overlapping five-year periods. Hedge funds always outperformed equities when the real total return of equities was lower than 5.8% over five years. In other words, it is low return environments where absolute return strategies outperform equities in real terms. This shouldn’t come as a surprise. Intuitively one would expect an investment style that has active risk management as its core investment philosophy to do better under difficult market conditions.
- Note that regular rebalancing can result in the balanced portfolio return being closer to the return of the better performing of the two asset classes. The reason is that rebalancing causes (or systematically disciplines) the investor to “buy low and sell high”. Note further that regular rebalancing is part of PPMPT (post-post-modern-portfolio-theory) discussed in our 2010 report. We have reprinted the PPMPT section of the 2010 report in the appendix of this document.
- Up to the financial crisis of 2008 we argued in meetings and speeches that there are no investors who had invested in hedge funds in a diversified fashion for ten years or longer and were unhappy with their investments in hedge funds. We believed that to be the truth. There were no unhappy, diversified, long-term hedge fund investors. The only regret many of these happy investors had, again, according to our own experience, was not to have a higher allocation. However, this has now changed. Some investors who initiated their first allocation when the enthusiasm was highest, i.e., the collective-consensus comfort-zone was most pillowy, might have some regrets.

¹ Again, these figures and remarks need to be taken with a generous pinch of investment salt. The choice of bond index has a large influence on these comparisons. Central banks have started not only manipulating the short end of the yield curve but are flattening the long end as well. They are buying bonds as if there’s no tomorrow. However, the bonds of the PIIGS have fallen sharply as, potentially, there is indeed no tomorrow. So the bond index composition matters greatly; hence the salt.

Many private investors have left the industry for good, it seems, with very little anecdotal evidence indicating that the private investor exodus is in the process of reversing.

Imagine for a moment how Table 2 will look like in ten or twenty years from now. History does indeed suggest that when all is said and done, inflation is the most elegant, politically appealing path to pursue out of such a debt trap/mess. This is worth considering, despite inflation not being a big issue at the moment at all. It has been our claim for many years that the returns of the lowest line in Table 2 depend to a large extent on skill in the field of active risk management. The returns of the first two lines, essentially proxies for passive long-only strategies, depend largely on luck, and, most recently, quantitative easing.¹

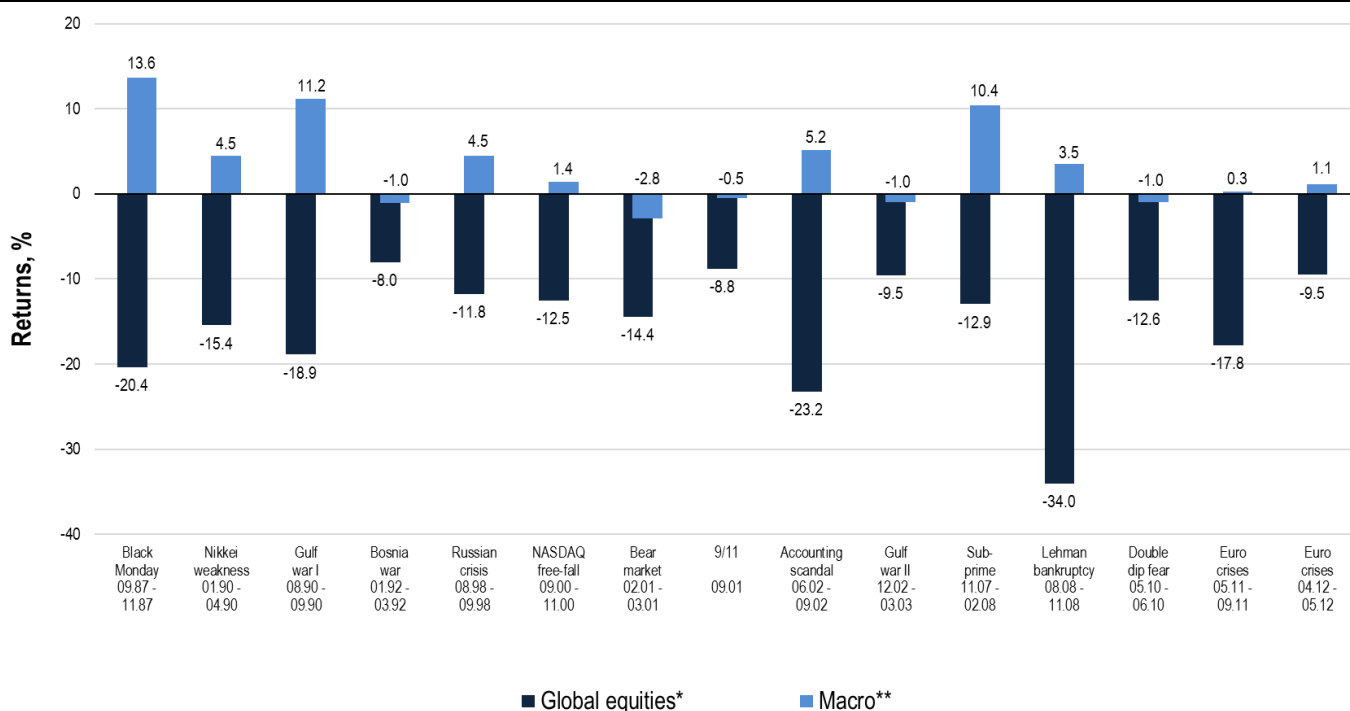
“The only sure thing about luck is that it will change.”

—Bret Harte (1836-1902), American author

Macro

Figure 16 shows an index of macro funds in difficult market environments.

Figure 16: Macro funds in difficult market environments (1987 – May 2012)



Source: IR&M, Bloomberg

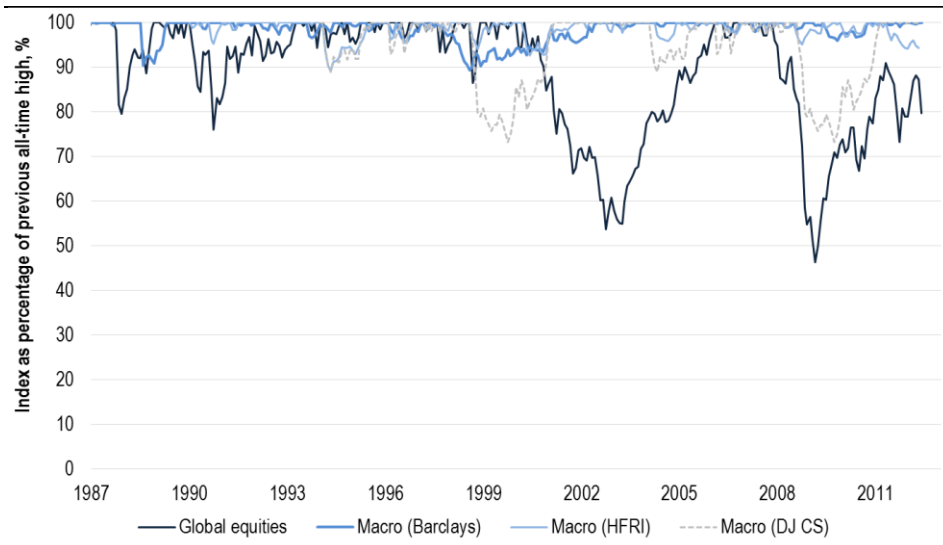
* MSCI Daily TR Gross World USD Index; ** Barclay Trader Indexes Discretionary. The 1.1% return for the April to May 2012 period is from the HFRI Macro Index as the May return from the Barclay Trader Index was not available at the time of finishing this document.

- The average macro manager delivered a positive return in ten out of the 15 identified difficult market environments since 1987. In the cases where the sign is also negative, the losses are very moderate. In other words, global macro (discretionary trading) also (as does systematic trading) works very well as a diversifier and portfolio stabiliser when equity markets fall; like a shock-absorber of some sort.

Figure 17 shows the underwater perspective for Macro and global equities.

¹ Jim Grant on QE: “Quantitative Easing is one of these PhD approved euphemisms that doesn’t really convey the essential point...” “money printing” would be so much a better step in the direction of intellectual hygiene. These people talk about quantitative easing as if they didn’t mean to debase the currency over which they have temporary control.”

Figure 17: Underwater perspective Macro vs. global equities (1987 – May 2012)



Source: IR&M, Bloomberg

Indices: MSCI Daily TR Gross World USD Index, Barclay Trader Indexes Discretionary, available since 1987; HFRI (Total) Macro, available since 1990; Dow Jones Credit Suisse Global Macro Hedge Fund Index, available since 1994. The first two macro indices are equal weighted while the third is asset weighted.

- Drawdowns were generally much lower than equities and these drawdowns are not perfectly synchronised with difficult market conditions. However, different indices reveal different drawdown patterns.
- Drawdowns have been moderate, once single manager risk is diversified. The reason for this moderate downside is mainly due to the fact that macro (also referred to as discretionary trading) is a very heterogeneous sub-group of the hedge fund industry. They do not rely on a common pricing anomaly, cheap issuance in the case of convertible arbitrage for example, or pricy mergers as in the case with merger arbitrage. Furthermore, there is no common risk premium the managers are all chasing after. Different managers can have vastly different trading styles and investment ideas they pursue. The result is that cross-sectional correlation is low, permitting to construct a conservative portfolio with portfolio constituents that might or might not pursue a conservative investment style.
- The reason why an asset weighted index has larger drawdowns is because some of behemoths macro funds can occasionally cluster in the same trades. The internet bubble episode is a case in point where some big names went short too early, hence the drawdown in 1999. The financial crisis has taught us that there is always a common factor.¹ Murphy's Law applies and what *can* go wrong sometimes does.

Figure 18 shows five-year returns for four different proxies for global macro.

¹ Central bank action is one important common factor. If capital is too cheap, otherwise unworthy projects are financed and a misallocation of capital is the result. One could argue that the financial (or banking) industry got too large because capital was too cheap for too long; hence the misallocation of capital and the current correction thereof. The introduction of the Euro was also a common factor as it harmonised interest rates for everyone irrespective the idiosyncratic circumstances of the constituent economies. The resultant correction of this mother of all misallocations of capital is now correcting "as we speak," so to speak. The funny thing is that those originally responsible for the misallocation of capital are not held responsible. Imagine politicians had their own financial wealth tied to the intelligence and practicability of their decisions, rather than success being a function of media and oratory skill; media and oratory skill being key assets in accumulating political capital. False ideologies, bad ideas and dogma would clear much faster.

Figure 18: Five-year real total returns

5-years to:	91	92	93	94	95	96	97	98	99	00	01	02	03	04	05	06	07	08	09	10	11
Global equities	6.5	2.3	2.5	0.7	9.6	8.5	13.3	13.8	17.9	10.0	3.5	-4.1	-2.8	-4.6	0.1	7.7	14.5	-2.6	0.0	0.8	-4.1
Global bonds									4.2	0.5	-0.2	3.4	3.1	5.3	3.8	5.1	3.0	3.4	1.8	4.9	5.1
Balanced: 50:50*									11.1	5.4	1.9	-0.1	0.5	0.5	2.3	6.8	8.8	1.1	1.8	3.8	1.3
Macro (Barclays)	25.4	14.5	9.1	3.6	1.1	0.4	1.3	-1.6	-1.4	-2.0	-1.9	-0.5	1.8	2.7	3.8	5.3	4.0	5.8	4.5	4.5	3.4
Macro (HFRI)			21.7	26.0	18.6	17.2		8.9	13.6	8.0	7.9	5.5	8.4	5.7	6.7	6.8	7.2	4.4	4.5	5.1	2.5
Macro (DJ CS)								13.0	15.7	11.9	10.9	6.7	11.2	11.6	11.1	10.0	10.2	5.9	6.6	7.8	6.3
Macro (Eurekah.)														9.9	8.9	8.5	8.9	5.8	7.5	7.4	5.0

Source: IR&M, Bloomberg

Notes: * Balanced portfolio of 50% global equities and 50% global bonds, rebalanced every six months (end of June and December). Global equities: MSCI Daily TR Gross World USD Index; Global bonds: Bloomberg/EFFAS Government Bond Index (USD), available since 1995; Inflation: US CPI. Hedge fund indices as with the previous figure plus EurekaHedge Macro Hedge Fund Index, available since 2000, equal weighted.

- We miss the nineties too.
- Different indices give vastly different results. Index construction is certainly one main reason. Another is that the sub-strategy is heterogeneous, as mentioned earlier. This allows constructing vastly different portfolios; and vastly different indices, of course.
- The five-year performance to 2011 is close to a low point. It is fair to say that macro funds have not shot the lights out recently. There is most likely an element of disappointment, especially if expectations were calibrated towards macro shooting the lights out. Note that all macro indices did *better* than our proxy for a balanced portfolio for the five-year periods ending 2010 and 2011, and did *remarkably better* for the five-year periods ending 2008 and 2009. This means the decision of moving away from long-only towards active risk-controlled investment management—with the benefit of hindsight—was an intelligent one, despite the low inflation-adjusted absolute performance.

People who want to fight this last argument could argue that the operational costs for the institutional investor with regard to manager search and due diligence is too high. While the returns shown in the table are net returns, they do not include the cost to the business of searching, finding, and hiring managers in the alternatives space and managing alternatives portfolios. Neither do they capture the cost (and nerves) of the alternatives professionals making and repeating the investment case for hedge funds to the internal bureaucracy and board. These costs are higher than selecting managers who manage money relative to a passive benchmark.

We don't think this cost argument to be a powerful one. There are institutional investors with large teams of high-calibre investment professionals, and therefore high costs, who have compounded capital at 10-15% over the past years. This compares to other institutional investors that can be staffed with small teams of low-calibre investment professionals (who, for one reason or another, can have high egos too) and a low cost base who have compounded capital at 0% over the past couple of years. But perhaps it's worth a shot nevertheless.

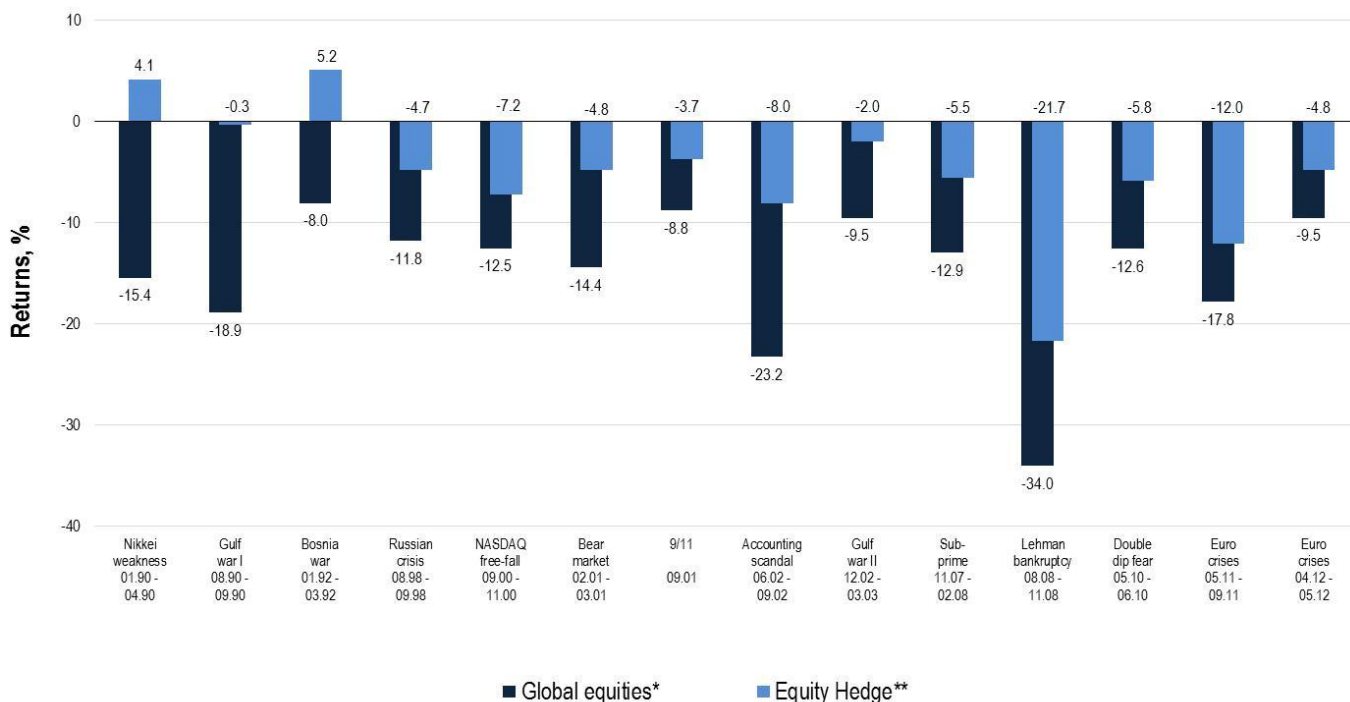
“Confidence is what you have before you understand the problem.”

—Woody Allen

Equity Hedge

Figure 19 shows an index of Equity Hedge funds under difficult market conditions.

Figure 19: Equity Hedge funds in difficult market environments (1990 – May 2012)



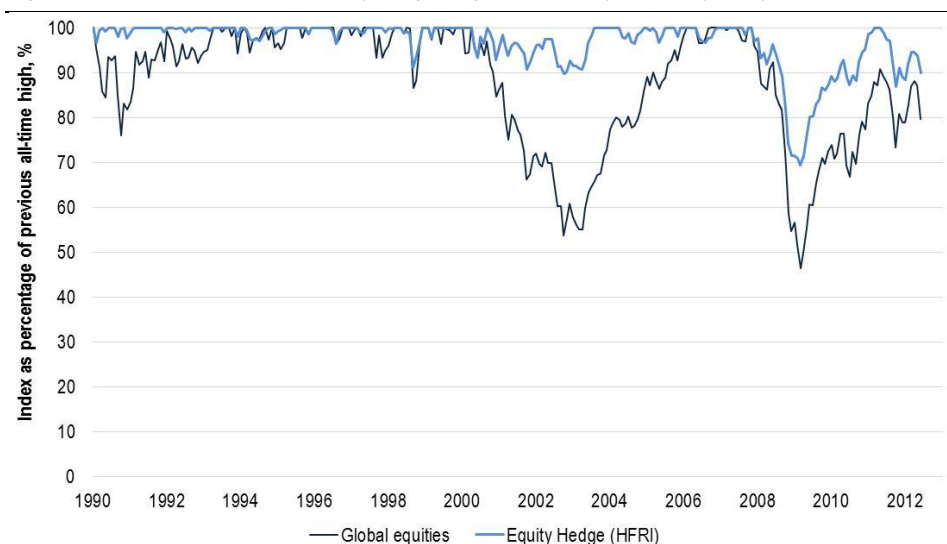
Source: IR&M, Bloomberg

* MSCI Daily TR Gross World USD Index; ** HFRI Equity Hedge (Total) Index

- The accident graph makes it obvious that Equity Hedge (aka equity long-short) is not about low correlation to the equity market. From the 14 accidents identified, Equity Hedge had a negative sign in twelve cases. The sign was always negative during drawdowns over the past 20 years.
- The accident graph also makes it clear what Equity Hedge is about: controlling the downside. The term “Equity Hedge” gives it, sort of, away: it’s about *equity risk and hedging*. Again, it is active risk management that is the big differentiation versus long-only asset management. In all 14 occurrences have Equity Hedge smoothed the downside. It is this smoothed downside, the avoidance of large losses, that results in superior long-term compounding of capital.

Figure 20 shows the underwater perspective.

Figure 20: Underwater perspective Equity Hedge vs. global equities (1990 – May 2012)



Source: IR&M, Bloomberg
 Indices: MSCI Daily TR Gross World USD Index; HFRI Equity Hedge (Total) Index, available since 1990; equal weighted.

- Drawdowns are more or less synchronised with those of the equity markets. However, the magnitude of drawdowns is smaller, as mentioned, while the recovery from drawdowns is faster.
- It is worth pointing out—despite being a long time ago—that during the bursting of the internet bubble, the drawdowns for Equity Hedge were only in the 10% area.
- As of May 2012, global equities were at 80% of their peak from October 2007. Equities, therefore, have been under water for four-and-a-half years and counting. Equity Hedge stood at 90% of their peak from April 2011. In other words, the time under water was short by comparison.

Table 3 shows real five-year total returns for Equity Hedge and some long-only proxies.

Table 3: Five-year real total returns

5-years to:	94	95	96	97	98	99	00	01	02	03	04	05	06	07	08	09	10	11
Global equities	0.7	9.6	8.5	13.3	13.8	17.9	10.0	3.5	-4.1	-2.8	-4.6	0.1	7.7	14.5	-2.6	0.0	0.8	-4.1
Global bonds						4.2	0.5	-0.2	3.4	3.1	5.3	3.8	5.1	3.0	3.4	1.8	4.9	5.1
Balanced: 50:50*						11.1	5.4	1.9	-0.1	0.5	0.5	2.3	6.8	8.8	1.1	1.8	3.8	1.3
Equity Hedge	17.1	21.2	17.6	18.3	16.2	24.5	19.8	15.5	9.4	10.2	3.7	4.0	6.1	9.0	-1.1	2.0	2.3	-1.8

Source: IR&M, Bloomberg
 Notes: * Balanced portfolio of 50% global equities and 50% global bonds, rebalanced every six months (end of June and December). Global equities: MSCI Daily TR Gross World USD Index; Global bonds: Bloomberg/EFFAS Government Bond Index (USD), available since 1995; Inflation: US CPI; Equity Hedge: HFRI Equity Hedge (Total) Index.

- Equity Hedge can compound capital negatively over an extended period of time. The five-year real total return to December 2011 has been around -1.8% which is most likely an all-time-low. This result is better than the long-only alternative. However, for investors who bought into the absolute returns idea around 2006, the first five-year experience is a negative one. They didn't get what they had signed up for. They got superior *relative* returns, but that was not what they had signed up for. However, it is this superior relative performance that is causing more and more institutional investors (in the US)

to switch their long-only mandates for long-short mandates. Ignoring cost of regulatory capital, operational costs, and liquidity for a moment; this seems like a logic decision for which no rocket science is required.

- Equity Hedge outperformed global equities in 14 (88%) out of 16 overlapping five-year periods. Only in the five years to 2006 and 2007 was that not the case.
- Table 3 shows the asymmetry that we have been talking about over the past 10+ years¹ very nicely. The highest compounding rate of 24.5% is with the risk-controlled strategy whereas the lowest compounding rate of -4.6% is with the proxy for the long-only investment style. The end result of this asymmetry is higher compounding with the risk-controlled investment style. The risk-controlled proxy in Table 3 compounded at a nominal rate of 12.7% between January 1990 and May 2012 while the equity index compounded at 5.6% during the same period. From January 2000 to May 2012 the two nominal compounding rates were 4.6% and 0.8%.

“It’s not whether you are right or wrong that’s important, but how much money you make when you’re right and how much you lose when you’re wrong.”

—George Soros on asymmetric returns

Below we compare the equity hedge indices from Eurekahedge for North America, Europe, Japan, Asia ex-Japan, and Emerging Markets with a regional equity total return index as a proxy for a long-only strategy. Double digit outperformance of Equity Hedge relative to the long-only proxy was highlighted in green, double digit underperformance in red.

Table 4: Regional performance comparison of equity long/short (January 2005 to May 2012)

(%)	2005	2006	2007	2008	2009	2010	2011	YTD*	05 - 12**
S&P 500 TR	4.9	15.8	5.5	-37.0	26.5	15.1	2.1	5.2	26.2
Eurekahedge North America Long Short	8.3	12.3	12.8	-16.7	25.6	13.4	-3.5	2.3	60.8
<i>relative performance</i>	3.4	-3.5	7.3	20.3	-0.9	-1.7	-5.6	-2.8	34.7
FTSE World Series Europe TR	10.0	34.9	14.9	-46.0	37.4	4.4	-11.5	-4.5	11.7
Eurekahedge Europe Long Short	19.2	17.3	8.1	-18.9	21.8	8.2	-7.7	2.2	52.3
<i>relative performance</i>	9.1	-17.6	-6.8	27.1	-15.7	3.7	3.8	6.7	40.5
Topix TR	45.2	3.0	-11.1	-40.6	7.6	1.0	-17.0	-0.2	-28.9
Eurekahedge Japan Long Short	21.8	-2.6	-0.6	-8.4	3.8	6.8	-1.7	-0.9	16.7
<i>relative performance</i>	-23.4	-5.7	10.5	32.2	-3.8	5.9	15.3	-0.7	45.6
MSCI Asia ex-Japan TR	23.2	33.7	40.5	-52.2	72.5	19.9	-17.1	2.9	95.3
Eurekahedge Asia ex-Japan Long Short	12.9	28.7	31.7	-27.0	37.6	10.0	-12.3	2.3	89.6
<i>relative performance</i>	-10.2	-5.0	-8.9	25.2	-34.9	-9.9	4.7	-0.7	-5.8
MSCI Emerging Markets TR	35.8	28.8	33.6	-45.7	62.8	14.4	-12.5	2.8	112.5
Eurekahedge Emerging Markets Long Short	22.7	32.8	30.5	-32.7	44.3	10.4	-13.3	1.7	101.1
<i>relative performance</i>	-13.1	3.9	-3.1	13.0	-18.5	-4.0	-0.8	-1.1	-11.4

Source: IR&M, Bloomberg, updated from Ineichen (2010b)

TR: total return gross index; * Year-to-date, May 2012; ** January 2005 to May 2012

- There are regional differences. Over the period shown in Table 4, Equity Hedge was very much superior to long-only equities in the US, Europe, and Japan. However, this was not the case in Asia ex-Japan and Emerging Markets.
- Our thesis of active risk management to protect capital in difficult market circumstances holds reasonably well. Note that a loss of 52.2% in one year (Asia ex-Japan) and a gain of 72.5% in the next takes a USD100 investment to USD82.5 over the two-year period. Whereas a fall of “only” 27.0% followed by a gain of “only” 37.6% brings the USD100 to 100.4 over the two-year

“Money is better than poverty, if only for financial reasons.”

—Woody Allan

¹ See Ineichen (2002, 2007) or related musings in this regard.

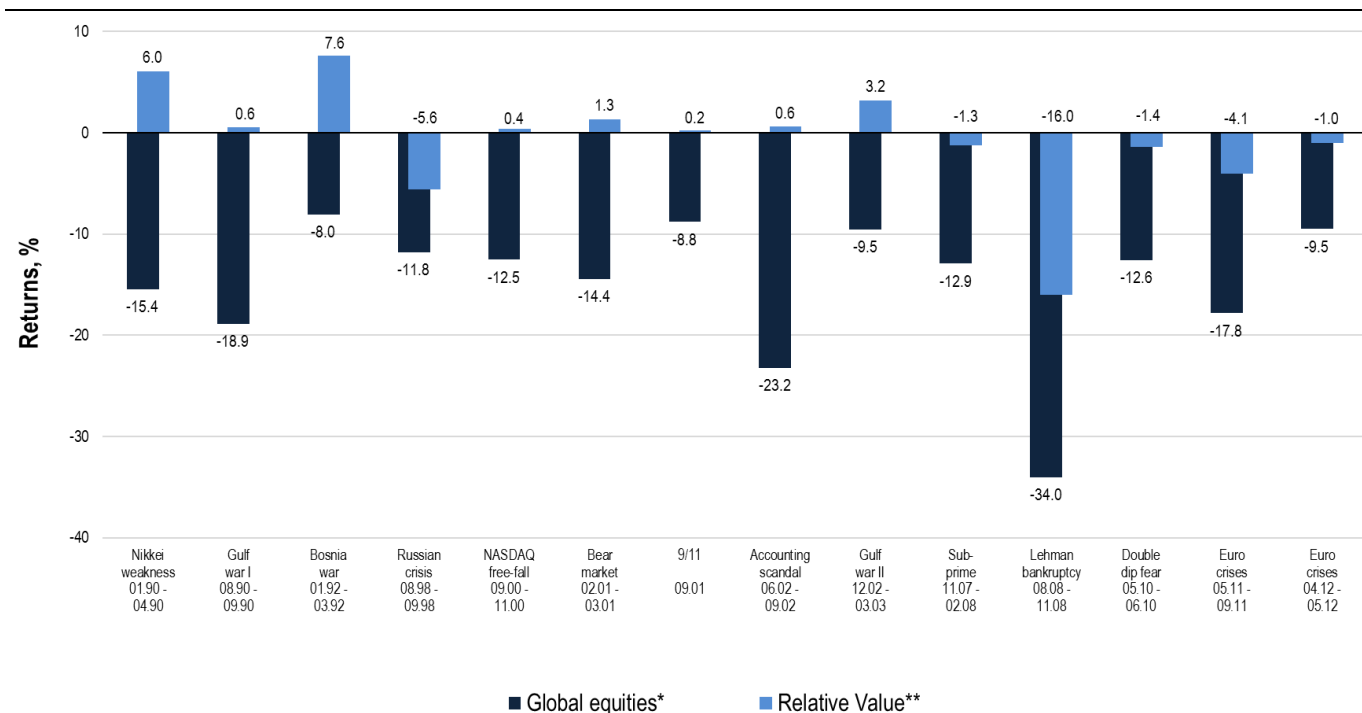
period. This is actually quite funny because many people took Equity Hedge managers to task for not fully participating in the 2009 rebound. If Equity Hedge loses half of the stock markets' performance on the way down and then makes half of the rebound on the way up, the strategy is still ahead over the full cycle. As we like to say at every occasion: A fall of 50% and a subsequent gain of 50% only takes you to 75% of your initial investment. You need a 100% return to recover from a 50% loss. Compare this to: A fall of 25% (half of the -50%) brings you to 75% of your initial investment. A recovery of 50% (half of the +100%), brings you to 112.5%. In other words, the -50%/+100% combo is inferior to the -25%/+50% combo; if only for, paraphrasing Woody Allan, financial reasons.

- In 2012, Equity Hedge has underperformed the long-only proxy in four out of the five regions shown. Only in Europe, of all places, have Equity Hedge funds outperformed the long-only proxy. The year is not over yet.
- One last factoid from Table 4: when the equity long-only proxy has a negative sign for the year, Equity Hedge nearly always does better.

Relative Value

Figure 21 shows an index of Relative Value funds under difficult market conditions.

Figure 21: Relative Value funds in difficult market environments (1990 – May 2012)



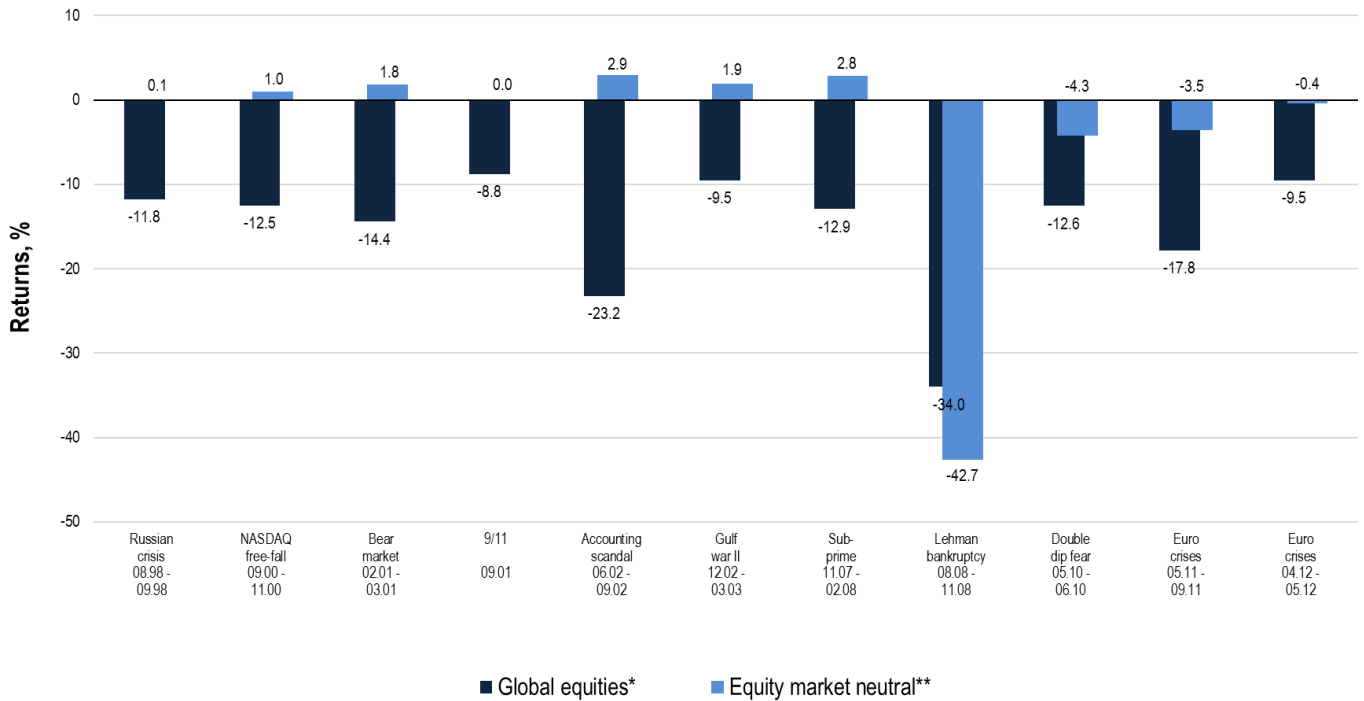
Source: IR&M, Bloomberg

* MSCI Daily TR Gross World USD Index; ** HFRI Relative Value (Total) Index

- As one would expect, Relative Value is not materially affected by equity markets falling. From the 14 observations in Figure 21, Relative Value produced a positive return on eight occasions. Interestingly, and perhaps somewhat disturbingly, the last time when Relative Value produced a positive return when equities fell sharply was roughly ten years ago.

In finance, all analysis using historical return data needs to be taken with a pinch of research salt. Figure 22 shows why. Figure 22 shows the accident graph with an equity market neutral index, essentially a sub-strategy of Relative Value shown in Figure 21.

Figure 22: Equity market neutral funds in difficult market environments (1994 – May 2012)



Source: IR&M, Bloomberg

* MSCI Daily TR Gross World USD Index; ** Dow Jones Credit Suisse Equity Market Neutral Hedge Fund Index

- Prior to the financial crisis, disciples of mean-variance optimisation argued that one needs only 10-12 hedge funds to reach a good diversification; or, more precisely, “a mean-variance-optimised and efficient portfolio.” This was of course only true in the model world. We advocated at the time a higher number of funds because some risk was not captured by volatility. The Madoff fraud now serves as a case in point.
- While the Madoff incidence was “only” a 2.7 on the FEI, it was a catastrophe for those at the epicentre. Figure 22 shows an equity market neutral index that was particularly hard hit by the incident. This asset-weighted index is a proxy for a diversified portfolio consisting of equity market neutral funds whereby larger funds have a larger weight. Given that some of the big names were hit, the impact on an asset-weighted index was particularly large. We prefer equal weighting when it comes to choosing an index for an institutional investor’s proxy. However, recent new, post-2008 flows into hedge funds went primarily to blue chip—and therefore larger—hedge funds. This means there could be a bias towards larger and therefore—potentially—less nimble funds. Potentially, there is a certain danger emanating from this institutional preference from a common risk factor or systemic accident perspective.

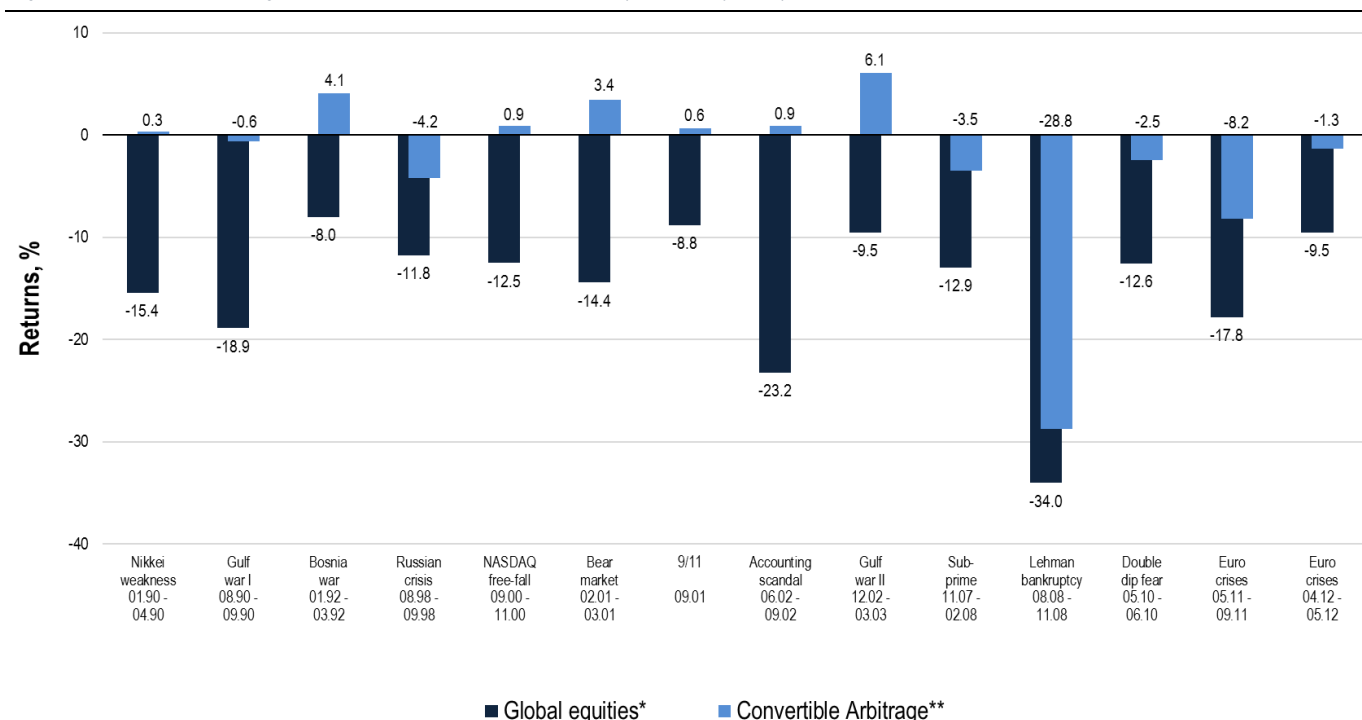
The Madoff fraud was the common factor that tied large amounts of capital at risk together. A risk measurer can spend his time analysing past returns, volatilities, and correlations in an ever increasing sophisticated manner. However, the risk manager needs to either ignore the work of the risk measurer in its entirety or—softening the argument a bit—view his analysis with great scepticism.² This is why we occasionally like to argue with the appearance of extra-terrestrials. Risk management, unlike risk measurement, is a thought process. Sometimes it does help to think outside of the proverbial box a bit. Sometimes really bizarre and inexplicable things do indeed happen.

“There is a theory which states that if ever anybody discovers exactly what the Universe is for and why it is here, it will instantly disappear and be replaced by something even more bizarre and inexplicable. There is another theory which states that this has already happened.”

—Douglas Adams¹

Figure 23 shows the accident graph for convertible arbitrage managers, another Relative Value sub-strategy.

Figure 23: Convertible arbitrage funds in difficult market environments (1990 – May 2012)



Source: IR&M, Bloomberg

* MSCI Daily TR Gross World USD Index; ** HFRI RV: Fixed Income-Convertible Arbitrage Index

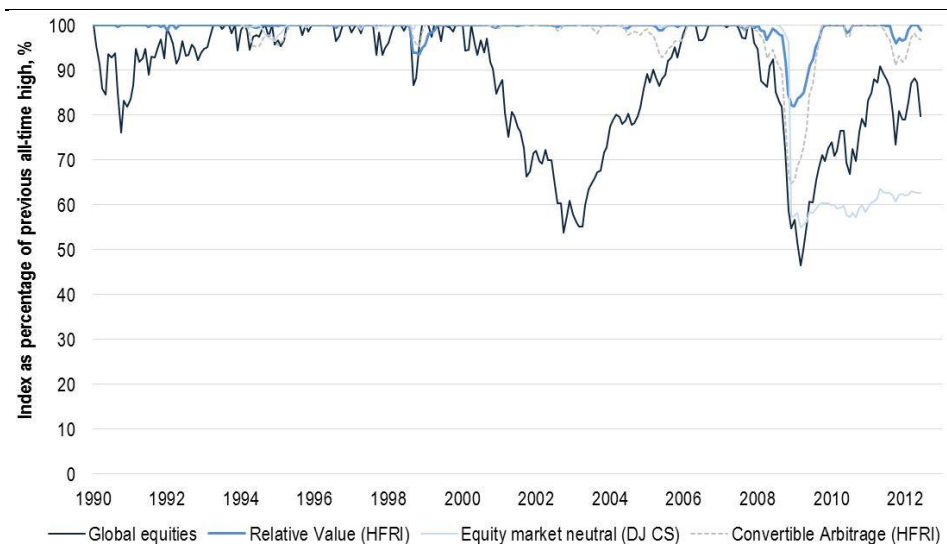
- The average convertible arbitrage fund reported a positive return in seven of the 14 selected difficult market conditions.
- Convertible arbitrage always did better than equities in difficult market environs.

Figure 24 shows the underwater perspective of the three indices used earlier.

¹ *The Original Hitchhiker Radio Scripts*. Douglas Adams, edited by Geoffrey Perkins. London: Pan Books, 1985.

² The work of the risk measurer needs to be done. If a regulator walks into the door unexpectedly, these mean variance optimisations and VaR calculations will certainly impress the regulator. It works with some investors and consultants too. Science sells. This means that many of our remarks in this document are too cynical; MPT and VaR can be advantageously valuable despite our overemphasised ridicule.

Figure 24: Underwater perspective Relative Value vs. global equities (1990 – May 2012)



Source: IR&M, Bloomberg

Indices: MSCI Daily TR Gross World USD Index; HFRI Relative Value (Total) Index, available since 1990, equal weighted; Dow Jones Credit Suisse Equity Market Neutral Hedge Fund Index, available since 1994, asset weighted; HFRI RV: Fixed Income-Convertible Arbitrage Index, available since 1990, equal weighted.

- What can one really say other than accidents happen? It is graphs such as the one above that continue to convince us that we know so little about the future that equal weighting and regular portfolio rebalancing have merit. The graph also highlights the dangers of the increasingly popular *risk parity* approach. Any risk parity approach would have given equity market neutral a weight that was unreasonably high. The historical data didn't reveal a potential accident in the future; only a rigid thought process—potentially only in combination with down-to-earth financial gamesmanship—can do that. The Sharpe ratios of market neutral strategies were astronomical prior to a series of accidents in the second half of the last decade. (The excess kurtosis of these relative value indices did indeed point towards a distribution that departed from a normal distribution. However, the excess kurtosis (a measure for fat tails) was a function of the standard deviation of returns being abnormally low; rather than anything else.)
- Equity market neutral, as measured by Dow Jones, has not yet recovered from its drawdown. The strategy has been compounding at a nominal rate of 2.5% per year since the 2008 loss. At a rate of 2.5% the strategy will have recovered from its current drawdown of 37.4% and reach its high-water-mark by May 2031. Note that equity market neutral, when measured by HFRI, was only five per cent below its high-water-mark from June 2008.
- One increasingly important aspect of risk management is the differentiation between exogenous and endogenous shocks or accidents. When talking about volcanoes, combatant extra-terrestrials, falling equity markets and the like, we are addressing exogenous accidents that happen independently from a hedge fund strategy.
This report is primarily about diversification. This means we assess exogenous accidents and then analyse the impact on the strategy. Hedge fund strategies,

“If scientific reasoning were limited to the logical processes of arithmetic, we should not get very far in our understanding of the physical world. One might as well attempt to grasp the game of poker entirely by the use of the mathematics of probability.”
—Vannevar Bush (1890-1974), American engineer, inventor, and initiator and administrator of the Manhattan Project

“What doesn't kill us makes us stronger.”
—Friedrich Wilhelm Nietzsche (1844-1900)¹

¹ Johann Wolfgang Von Goethe (1749-1832) was quoted saying something along the lines of “What doesn't kill me makes me stronger,” which of course precedes Nietzsche's wisdom.

however, can also experience endogenous accidents which are more or less independent from falling equity markets or any other exogenous phenomena in or outside of financial markets. One example is visible in Figure 24: Convertible arbitrage in 2005. Losses resulted in redemptions. Convertible arbitrageurs, generally providers of liquidity, became liquidity seekers. In addition, convertible arbitrage weren't benefiting *from* the market, they became *the* market (in convertibles). To meet client redemption demands, positions needed to be unwound, causing more losses, causing more redemptions, etc. A feedback loop emanated. These feedback loops go on for a while, causing great damage in their wake, but eventually stop. Then all surviving investors are wiser for the experience and can move on.

Table 5 shows five-year real total returns for six hedge fund indices as well as equity and bond comparisons. We show two indices for equity market neutral to demonstrate how dissimilar different measures for the same thing can be.

Table 5: Five-year real total returns

5-years to:	94	95	96	97	98	99	00	01	02	03	04	05	06	07	08	09	10	11
Global equities	0.7	9.6	8.5	13.3	13.8	17.9	10.0	3.5	-4.1	-2.8	-4.6	0.1	7.7	14.5	-2.6	0.0	0.8	-4.1
Global bonds						4.2	0.5	-0.2	3.4	3.1	5.3	3.8	5.1	3.0	3.4	1.8	4.9	5.1
Balanced: 50:50*						11.1	5.4	1.9	-0.1	0.5	0.5	2.3	6.8	8.8	1.1	1.8	3.8	1.3
Relative Value	12.4	13.6	13.6	12.6	8.1	10.2	9.6	8.9	6.6	7.9	6.0	4.6	5.0	5.4	-0.3	3.5	4.9	2.4
Market neutral 1	7.1	8.0	7.6	8.9	8.5	9.5	8.9	7.8	5.1	3.8	3.1	1.5	1.5	2.0	0.7	0.2	-0.1	-2.0
Market neutral 2					8.2	11.8	12.4	11.3	9.7	8.3	6.4	4.7	4.9	4.9	-6.6	-6.9	-7.8	-9.1
CB arbitrage	5.7	9.9	9.3	8.8	7.6	11.4	10.2	10.3	9.4	9.8	6.9	3.6	3.2	2.2	-7.6	1.7	5.1	1.5
Multi-strategy	11.6	13.6	11.1	10.0	6.4	7.1	5.1	4.6	3.4	6.1	5.4	5.9	5.4	4.1	-2.4	0.6	2.4	0.0
Fixed Income Arb	9.4	16.5	11.7	10.8	5.3	6.5	2.7	1.0	-0.4	4.6	5.1	6.9	7.8	6.1	-3.3	0.2	1.9	-0.2

Source: IR&M, Bloomberg

Notes: * Balanced portfolio of 50% global equities and 50% global bonds, rebalanced every six months (end of June and December). Global equities: MSCI Daily TR Gross World USD Index; Global bonds: Bloomberg/EFFAS Government Bond Index (USD), available since 1995; Inflation: US CPI; Relative Value: HFRI Relative Value (Total) Index; Market neutral: 1. HFRI EH: Equity Market Neutral Index, 2. Dow Jones Credit Suisse Equity Market Neutral Hedge Fund Index; CB arbitrage: HFRI RV: Fixed Income-Convertible Arbitrage Index; Multi-strategy: HFRI RV: Multi-Strategy Index; Fixed Income Arbitrage: HFRI RV: Fixed Income-Corporate Index. HFRI indices are equal weighted and available since 1990. Dow Jones Credit Suisse indices are asset weighted and available since 1994.

- Relative value strategies can compound capital negatively in real terms. Convertible arbitrage for example compounded at -7.6% for the five year period to December 2008. Some strategies shown in this document had an accident in the past while other had not. This doesn't mean that the latter are safer than the former. We don't really know the sensitivities of these strategies to future accidents. What we do know though, is that strategies using higher degrees of leverage are more sensitive to accidents in which liquidity dries up. (Ask the banks.) The probability of a liquidity-induced feedback loop kicking in is higher for strategies that rely on debt and leverage in one form or another.
- Relative Value outperformed global equities two thirds of the time, 12 times out of 18. Similarly to Equity Hedge, whenever equities compound at a lower rate than 7.7%, Relative Value outperforms. Relative Value outperformed our proxy for a balanced equity bond portfolio nine times (56%) out of 16. Again, whenever the long-only proxy compounded at a low rate, 6.8% in this case,

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

—Michael Hintze, CQS¹

¹ “Hedge funds hope ‘Volcker rule’ will clip banks’ wings,” Financial Times, 30 June 2010

Relative Value outperformed. This means, if history indeed repeats or rhymes, Relative Value is well suited in a low-return environment.

- The higher degree of leverage and Table 5 are indications that diversification is particularly important in the field of Relative Value; diversification among funds as well as sub-strategies.
- The 2008 financial crisis has done some serious damage to the perception of relative value strategies. The idea of *portable alpha* has been buried. It seemed like a good idea at the time though.
- The annual nominal compounding rates for the six indices shown in the table from January 2000 to May 2012 were, in order of appearance, 7.0%, 3.5%, 2.1%, 6.5%, 5.4%, and 4.7%. This compares to roughly 0.8% global equities, 6.0% global bonds, and 2.5% official US inflation.

The habitat for Relative Value has changed materially over the past year or so. Proprietary trading desks have been closing and/or winding down their operations due to regulatory pressures (e.g., Volcker rule) and/or accounting standards related balance sheet deleveraging. Banking business models are changing rather rapidly. A big competitor for relative value hedge funds, therefore, has been removed. (This is a big positive assuming hedge funds won't be "removed" too, of course. Some of the most bearish prognosticators argue that when the going gets tougher, the authorities will ban risk management tools, i.e., short selling, put options, short futures, credit default swaps, etc. It wouldn't be the first time that democracies turn a bit totalitarian, would it?)

This opportunity argument also applies to Event Driven, the next and last absolute returns strategy we look at.

“Make no mistake: We have instruments of torture in the cellar, and we're going to show them, if necessary.”

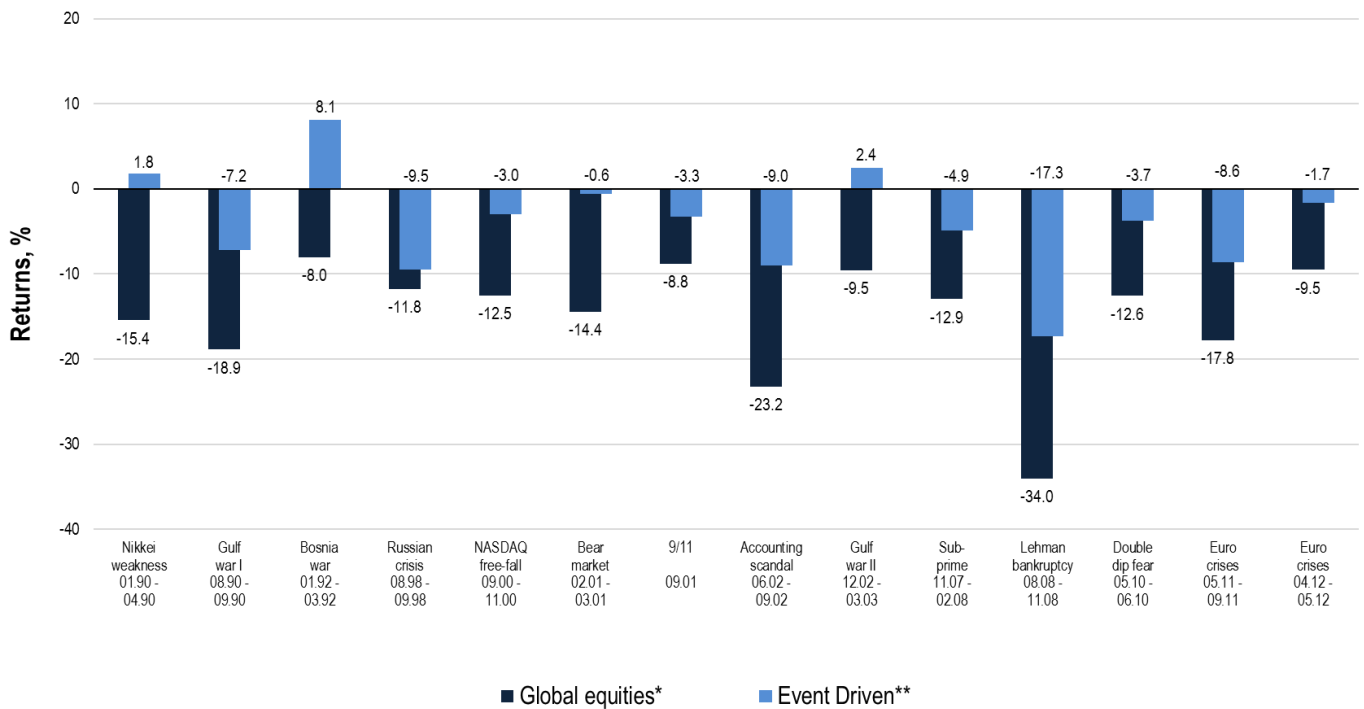
—Jean-Claude Juncker¹

¹ Interview in Handelsblatt, 1 March 2010.

Event Driven

Figure 25 shows an index of Event Driven funds under difficult market conditions.

Figure 25: Event driven funds in difficult market environments (1990 – May 2012)



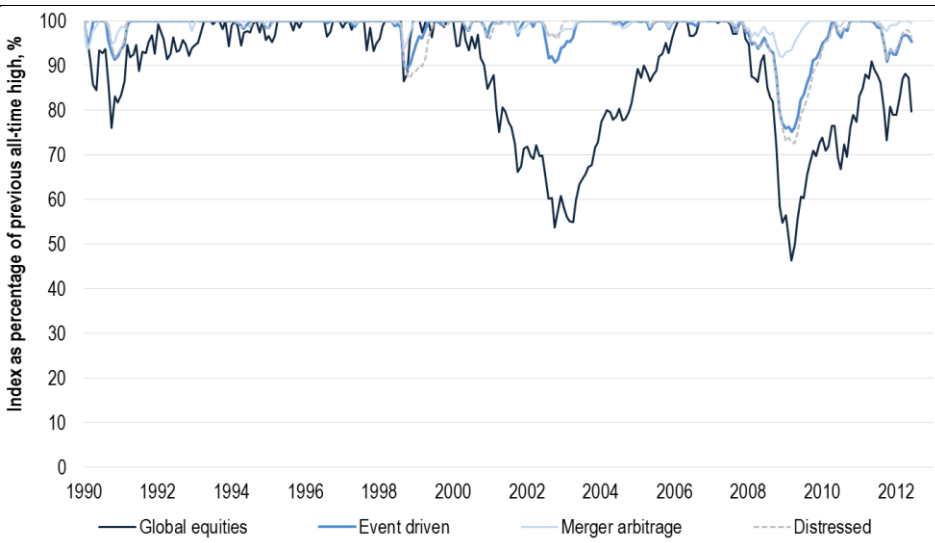
Source: IR&M, Bloomberg

* MSCI Daily TR Gross World USD Index; ** HFRI Event-Driven (Total) Index

- Event Driven as a whole has some of the directionality of Equity Hedge and some of the non-directionality of Relative Value. Event Driven only produced a positive return in three out of the 14 selected accidents. However, in all instances has the strategy performed better than long-only equities.

Figure 26 shows the underwater perspective of three event driven indices.

Figure 26: Underwater perspective Event Driven vs. global equities (1990 – May 2012)



Source: IR&M, Bloomberg

Indices: MSCI Daily TR Gross World USD Index; HFRI Event-Driven (Total) Index; HFRI ED: Merger Arbitrage Index; HFRI ED: Distressed/Restructuring Index. Indices have been available since 1990 and are equally weighted.

- Merger arbitrage is similar to relative value discussed earlier; just without the massive drawdown in 2008.
- The three indices compounded at 11.6%, 8.7%, and 12.0% from January 1990 to May 2012. This compares to 5.6% for global equities. The nominal compounding rates since January 2000 have been 7.2%, 5.6%, and 8.3% respectively. This compares with 0.8% and 6.0% for global equities and bonds. Table 6 looks at real five-year returns.

Table 6: Five-year real total returns

5-years to:	94	95	96	97	98	99	00	01	02	03	04	05	06	07	08	09	10	11
Global equities	0.7	9.6	8.5	13.3	13.8	17.9	10.0	3.5	-4.1	-2.8	-4.6	0.1	7.7	14.5	-2.6	0.0	0.8	-4.1
Global bonds						4.2	0.5	-0.2	3.4	3.1	5.3	3.8	5.1	3.0	3.4	1.8	4.9	5.1
Balanced: 50:50*						11.1	5.4	1.9	-0.1	0.5	0.5	2.3	6.8	8.8	1.1	1.8	3.8	1.3
Event Driven	12.0	18.2	17.6	18.2	13.0	16.7	12.8	10.7	5.3	9.8	8.0	8.1	8.5	10.6	0.8	2.7	3.9	0.2
Merger Arbitrage	7.3	11.7	11.3	13.3	11.0	12.1	11.9	9.4	5.7	5.7	3.5	1.3	3.4	4.7	2.4	4.0	4.1	1.5
Distressed	16.5	20.1	17.2	15.5	8.3	10.9	7.4	6.3	4.2	10.7	11.0	12.2	12.5	12.2	0.6	2.3	3.4	-0.2

Source: IR&M, Bloomberg

Notes: * Balanced portfolio of 50% global equities and 50% global bonds, rebalanced every six months (end of June and December). Global equities: MSCI Daily TR Gross World USD Index; Global bonds: Bloomberg/EFFAS Government Bond Index (USD), available since 1995; Inflation: US CPI; HFRI Event-Driven (Total) Index; HFRI ED: Merger Arbitrage Index; HFRI ED: Distressed/Restructuring Index. HFRI indices have been available since 1990 and are equally weighted.

- Both the composite proxy for Event Driven as well as merger arbitrage never compounded negatively in real terms over a five year period while the worst five-year episode for distressed was only -0.2% per year.
- As will all other strategies, the five-year absolute performance in the distant past was better than the five-year performance in the immediate past. Unfortunately, it is the immediate past that is the most memorable and the most influential in current future allocation decisions.
- The relative performance is worth pointing out. Event Driven outperformed global equities in 15 (83%) out of 18 overlapping five-year periods in annual real total return terms, while both merger arbitrage and distressed outperformed 14 times (78%). Whenever the five-year real total returns for global equities were below 7.7%, Event Driven outperformed. In other words, the relative performance for Event Driven is particularly good when the absolute performance of equities is not.

Let the appendix be our closing remarks:

Appendix¹

Below we introduce—tongue-partially-in-cheek—PPMPT (post-post-modern portfolio theory). Note that PMPT (post-modern portfolio theory) already exists. Both PMPT and MPT propose how rational investors should use an optimizer to construct their portfolios. PPMPT doesn't require an "optimizer" and assumes investors are not rational but human and implicitly recommends binning all science that assumes investors are rational and not human. The funny thing is, of course, assuming humans are human, and not rational, is actually more rational.

"Seriousness is the only refuge of the shallow."

—Oscar Wilde

Box 1: Extraterrestrials to run pension money

Imagine extraterrestrials have been observing us throughout the past 6,000 years of civilisations and decided to come down and run our pension funds. Would they come down, put MPT (modern portfolio theory) to work and run mean-variance optimizations with data that have no gaps to assist them in their investment decisions? We think not. After a short examination of the first principles of financial economics (efficient markets, rational man and rational expectations, frictionless markets, etc.) they probably would dispatch MPT in its entirety. What would they do instead?

The most logical thing to do is to study the first principles of human behaviour and the place where humans commercially interact, i.e. the markets. Markets are the aggregate of all investment decisions. Every investor makes investment decisions as well as he can. Those decisions are essentially based on the investor's beliefs, which might or might not be true or rational. Speaking of *rational beliefs*: Which of the two statements makes more sense: (1) "I believe dinosaurs walked with man around 6,000 years ago." (2) "I believe creatures from Alpha Centauri are beaming us messages of world peace through our hair dryers."

From all we know both statements are infinitely improbable that for all practical purposes we can safely say that they're untrue. However, someone believing in (1) will not be perceived as insane whereas someone believing in (2) will most likely be kindly advised so seek professional help. Why? The reason is that (1) is a different form of ignorance than (2). In some parts of the world it might even be politically insensitive to suggest (1) is nonsense. There are people who actually believe (1) to be true. And because it's a somewhat *common false belief* (as far as we can tell), it's not perceived as insane. This means some false beliefs have an influence on markets and decision making and some don't, depending on how many decision makers hold the false belief.

An example of a common false belief held by many not so long ago was the idea one can turn sub-prime junk into AAA, somewhat akin to the idea of turning lead into gold. This common false belief was held until it wasn't. The pattern is that the common false belief builds over a long time as contagion reinvigorates the trend. However, the "reality kick" typically sets in fast and the trend reverses quickly. It's like jumping from the 81st floor: The false belief held during the first 80 floors is that one is flying.

So how would extraterrestrials run pension money after dispatching MPT? We believe they would seek a balanced strategic asset allocation with regular rebalancing, generally trying to understand what they do, subscribe to continuous learning as all things keep changing, constantly seek potential new sources of returns, care about avoiding absolute losses and thereby aim to compound capital positively in the long-term, and, recognising that their somewhat inertial decision making process due to heavy governance structures is suboptimal in fast moving markets, seek for business partners who are closer to the market, whose interests are more or less aligned with theirs, and, perhaps most importantly, who they trust. But then, who knows? They might just continue to beaming us messages of world peace through our hair dryers.

Post-post-modern portfolio theory (PPMPT)

An alternative to mean-variance optimization could be the following circular three-step process for asset allocation:

1. Invest only in investment choices you understand.
2. Determine allocation based on idiosyncratic preferences and constraints², and rebalance portfolio regularly.
3. Adapt to change, learn continuously, seek new sources of returns, and re-evaluate allocation regularly. Go to 1.

"The business schools reward difficult complex behaviour more than simple behaviour, but simple behaviour is more effective."

—Warren Buffett

¹ Reprinted from Ineichen (2010a); with kind permission from the author.

² Once the "rational mean-variance optimizing" investor puts all his constraints into the optimizer, the optimizer often suggests a portfolio that pretty much resembles the investor's pre-optimization intuition and preferences anyway.

This simple approach would be consistent with four pieces of wisdom we value above all else:

1. "Risk comes from not knowing what you're doing." (Warren Buffett)
2. "Investment is by nature not an exact science." (Benjamin Graham)
3. "A safe investment is an investment whose dangers are not at that moment apparent." (Lord Bauer, economic advisor to Margret Thatcher)
4. "The essence of investment management is the management of risks, not the management of returns." (Benjamin Graham)

We could argue that to some extent this three-stage process is already partially in place in practice and that these four nuggets of wisdom were actually accounted for when investing in hedge funds. Many institutional investors—sort of—ignored the result from a mean-variance optimizer when starting to invest in hedge funds: The first allocation was small despite any optimizer suggesting an allocation that was huge. This first investment was the institutional investor's proverbial toe dipped in the water after moving up the learning curve and getting comfortable with the "new" source of return.

Below we add some colour to these four nuggets of wisdom.

Understanding: Corporate governance structures require the agent to have a certain level of understanding; the "prudent expert" rule is one example of this idea. This is a good thing. However, it also implies that "alternative investments" is not for everyone. Note that there is anecdotal evidence of both sophisticated as well as unsophisticated investors liquidating illiquid alternative investments in an unorderly fashion with the most inopportune timing. With "unsophisticated" we mean an investor whereby laypeople are part of the strategic asset allocation decision making process. A pension fund for example can have highly sophisticated investment professionals running the fund but if the board with its trustees doesn't *understand* what they're doing, it is the board that is the weakest link. We remember one UK pension fund manager explaining to us about ten years ago (about five minutes before we were to address the board and trustees on "hedge funds") that on his board there were trustees who needed the terms "equities" and "bonds" explained to them ahead of every triennial board meeting. Surely things have improved since then.

Science: Harry Markowitz apparently had chosen a 50/50 allocation between equities and bonds in his retirement account despite knowing, in theory, that he should have estimated the returns and volatilities and the (historical) co-variances of the asset classes, determine the efficient frontier and invest accordingly.¹ Why many investors rely on unstable historical returns, unstable volatilities and very unstable correlation coefficients when making investment decisions, we do not know. (Well we do know: it's the scientific method of doing these things.) Mr. Markowitz apparently knew that his theories are theories and are better left as such. However, the investment world as well as the accounting-rules-and-capital-requirement-determining world has put this theory into practice. Who can safely

¹ We weren't able to source this story as we have forgotten where we read it first. However, the story can easily be verified via google.

"If you can't explain it simply, you don't understand it well enough."

—Albert Einstein

"Species, people, firms, governments are all complex entities that must survive in dynamic environments which evolve over time. Their ability to understand such environments is inherently limited."

—Paul Ormerod, British economist

"Common sense is the very antipodes of science."

—Edward B. Titchener (1867-1927), English psychologist

say that a 50/50 allocation to equities and bonds—essentially a strategy of *least regret*—is less intelligent than a 70/30 or 30/70 allocation for the next ten years?¹

Uncertainty: It is uncertainty that matters, not risk. See Box 2. Long-term investors should get compensated for bearing uncertainty, not from bearing some arbitrary measure of “risk” such as volatility. Kenneth Griffin on managing risk and some of the softer factors:

“Nothing is constant. Nothing is the way it’s always been. So what I find is that people who are really good at this [managing risk], have great intuition. They have great instinct. Their gut actually tells them something. The mathematics are important because they demonstrate you understand the problem, but ultimately the decision about whether or not to take a given risk, I think is really a human judgment call in every sense of the word.”²

Box 2: Difference between risk and uncertainty

In finance we tend to distinguish between “risk” and “uncertainty” also known as Knightian Uncertainty, named after US economist Frank Knight (1885-1972). 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 (most often a normal distribution is assumed). 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 spotting an alien walking down 5th Avenue cannot (despite Sting’s efforts). It goes without saying that for all 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. As John Kenneth Galbraith put it: “One of the greatest pieces of economic wisdom is to know what you do not know.”

Knight argued that profits should be defined as the reward for bearing uncertainty.

Risk management: Hubbard’s (2009) short definition of risk management is: “Being smart about taking chances.” We believe that a lot that has been written in the field of risk *management* is focused on risk *measurement*. The typical method (factor and style analysis) is to model historical time series and come up with some risk factors that explain some of the historical variation in returns. While this is all very interesting, it only covers a small part of the complexities of risk management. Why?

“When one admits that nothing is certain one must, I think, also admit that some things are much more nearly certain than others.”

—Bertrand Russell

“All science is static in the sense that it describes the unchanging aspects of things.”

—Frank Knight

“Since the mathematicians have invaded the theory of relativity, I do not understand it myself anymore.”

—Albert Einstein

¹ Note here that there currently is a debate in the academic journals that come our way as to whether an equally weighted portfolio is superior to an optimized portfolio or not. For the purpose of our line of argument, it is sufficient to *know* that there is a debate. The fact that there is a debate tells us that we cannot really *know* for sure whether a 50/50 allocation makes sense or not? Our 50/50 statement, therefore, is naive (and to MPT aficionados potentially vulgar) but not as naive as it initially sounds. The funny thing is, the more we think about it, the more sense it actually makes.

² Picked up in Niall Fergusons’ TV adaption of “Ascent of Money,” Channel 4 (UK), Part 4, 8 December 2008

Our preferred definition of “risk” is:¹

*Risk = exposure to change*²

This definition is very simple and somewhat unscientific but pragmatic and very powerful as it doesn't exclude *uncertainty*. Risk measurement deals with the objective part; what is referred to as “risk” in Box 2. The risk measurer either calculates bygone risk factors, simulates scenarios or stress tests portfolios based on knowledge available today according to an objective (and statistically robust) set of rules. Real risk (as in uncertainty), however, has to do with what we do not know today. More precisely, risk is exposure to unexpected change that could result in a large loss or non-survival. 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, on the other hand, is more quantitative and rule-based, and has a rear mirror view by definition. As the late Peter Bernstein put it in the last chapter of *Against the Gods*:

“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.”⁴

“Visibility is never what we think it is. Uncertainty is a constant, not a variable, and we never know the future—so in the long run is inescapably a frail reed to lean on.”

—Peter Bernstein³

¹ There is of course more than one definition of risk. Rahl (2003) for example defines risk as “the chance of an unwanted outcome.” This definition implies that the two sides of a return distribution (or, more importantly, the investors' utility thereof) are different and that the risk management process should be structured accordingly.

² Originally we've got this definition from O'Connor Associates in the 1980s.

³ “Throw Out The Rulebook!” Interview with Peter Bernstein, welling@weeden, Vol. 5, Issue 4, 28 February 2003

⁴ From Bernstein (1996), p. 336

Practical considerations

The practical implication of this three-step approach of PPMPT would be that the less sophisticated institutional investor would have a 50/50 allocation to equities and bonds for the part of the portfolio that is not held in cash.¹ The advantage would be the simplicity and the layperson's good-night sleep. The disadvantage would be that it isn't a very good portfolio. Speculating a bit, arguably tongue-firmly-in-cheek, it is possible that the less sophisticated investor has only two bad options: (1) A by today's standards poorly balanced portfolio (of which 50/50 is just one example; albeit an intuitive one), or (2) copying more sophisticated investors thereby not knowing what they're doing, being last to invest in the latest idea, and quite likely being exposed to the third and fourth quartile product providers. If this argument has at least some merit, option (1) would be the better of the two bad options and therefore be more intelligent as well as more prudent. This portfolio would have the added benefit that its implementation and running costs are virtually zero.

This is potentially a step too far in our current simplicity-is-the-ultimate-sophistication mode. However, wouldn't it be intellectually more honest for an investor who knows that its set-up is suboptimal and who knows that it is *not* connected to and *not* in the information loop of the prime providers to seek a *simple* strategy that is *cheap* to implement? It is possible that some institutional investors are best advised to go the route that resembles the asset allocation of the *Yale Endowment fund*. However, we doubt that such an equity and alternatives heavy portfolio works for all. Even ivy-league endowment funds have the occasional riff with their stakeholders.

The returns for Yale Endowment fund for 2005-2009 were 22.3%, 22.9%, 28.0%, 4.5%, and -24.6%², thus compounding at 8.7% over this five year period. The allocation range of "Absolute Return" strategies was between 23.3% and 25.7%, i.e. relatively constant. Some market participants have argued that Yale's equity- and alternatives heavy portfolio approach has failed because of the negative 2009 return (fiscal year is from July 08 to June 09). We don't think so. The 20-year return was 13.4% which, among institutional money management, must be among the best. This stellar performance is a function of many things, not just strategic asset allocation, but also proximity to investment talent and manager selection skill and, to paraphrase Ken Griffin from page 45, great intuition, great instinct, and a talking gut.

We've tried to illustrate our thoughts in Chart 1. The shown trade-off gives an incentive for all decision makers to continuously move up the learning curve. We even believe there is a mini trend of professionalizing the decision-making process of the institutional investor at the strategy level. Note that with *real estate* we mean real estate and land and with *real assets* we mean commodities and infrastructure. (And yes, we are aware that asset classes can be classified differently.)

"To invest successfully over a lifetime does not require a stratospheric IQ, unusual business insight, or inside information. What's needed is a sound intellectual framework for decisions and the ability to keep emotions from corroding that framework."

—Warren Buffett

"Real knowledge is to know the extent of one's ignorance."

—Confucius

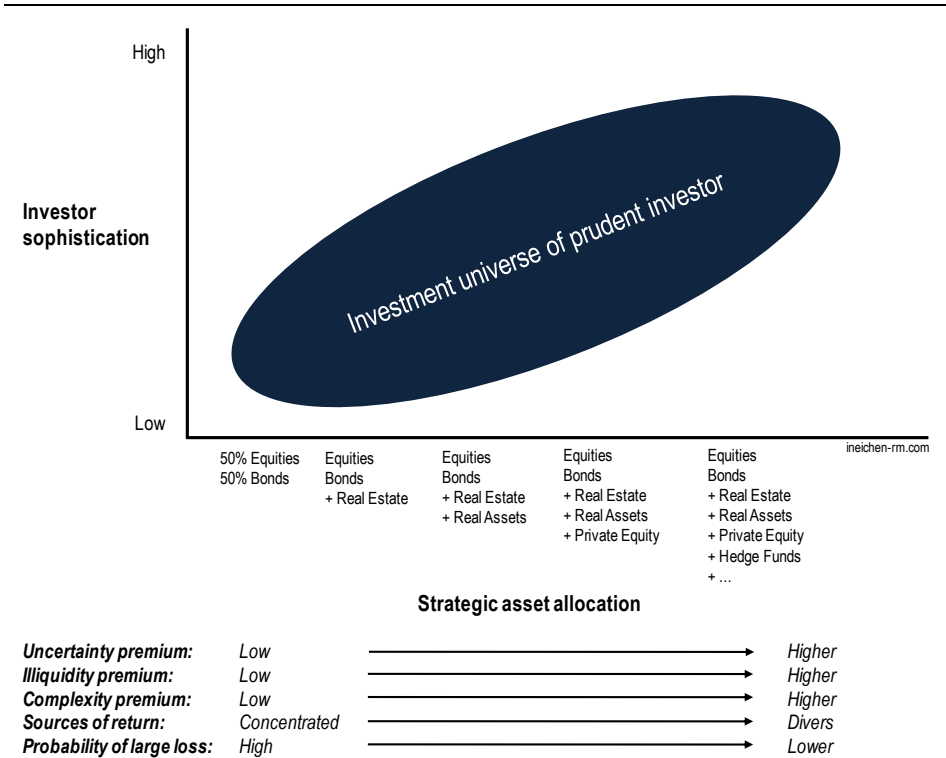
"I've been imitated so well, I've heard people copy my mistakes."

—Jimi Hendrix

¹ In areas where real estate is not an "alternative investment" this would mean one third each in equities, bonds and real estate.

² <http://www.yale.edu/investments/>

Chart 1: Investor sophistication versus uncertainty premium



Source: Ineichen Research and Management

The further to the right one goes in the chart, the less appropriate is mean-variance optimization. The ideal case on the right hand side is a well balanced portfolio that is regularly rebalanced (because mean reversion is such a powerful phenomenon) and reasonably well understood by all who carry responsibility.¹ Uncertainty, illiquidity, and complexity premiums should be higher for such a portfolio. The sources of returns are obviously more divers and the probability of a large loss, therefore, should be smaller.

At the beginning of the last decade Peter Bernstein challenged the investment community by appealing to investors to rethink strategic asset allocation and the static policy portfolio which in the US was around 60:40 equities versus bonds and 70:30 in the UK with allocations to real assets and alternatives being non-existent or negligible. The assertions were provocative because the status quo, i.e. equity-heavy long-only portfolios, worked so well for so long, and the interpretation from Bernstein's remarks were that he—rightly or wrongly—advocated *market timing* which most investment professional believe doesn't work on a consistent basis. (Note that active risk management is not the same as market timing.) In an interview in 2003 he answered the question—probably with Keynes' work somewhere at the back of his mind—whether “institutions should trash their strategic asset allocation policies” as follows:

“Yes, if you consider that the purpose of a policy portfolio has been to establish an asset allocation structure that would remain in place until circumstances changed so fundamentally that a revision in the policy portfolio

¹ The problem of “all who have no responsibility” intervening and telling those with responsibility what to do, is an interesting one; albeit beyond the scope of this report.

² “Throw Out The Rulebook!” Interview with Peter Bernstein, *welling@weeden*, Vol. 5, Issue 4, 28 February 2003

“Seek simplicity and distrust it.”
—Alfred North Whitehead (1891-1947), *English mathematician and philosopher*

“My point is that we've reached a funny position where the long run doesn't work. Where long-run evidence doesn't fit circumstances as they are today.”
—Peter Bernstein in 2003²

would be necessary. The keystone supporting the entire strategy was the long run.”

Rob Arnott and Peter Bernstein argued in 2002 that some of the axioms supporting the case for equities as long-term investments are founded on some debatable assumptions and long-term return expectations were most likely too high; 8% real return and a 5% equity risk premium being the standard assumptions in the US at the time. Their paper was used as an argument for diversifying what was arguably a very concentrated and poorly balanced (policy) portfolio. Moving from a poorly designed portfolio to an improved and better balanced one is not market timing by any stretch of the imagination. Improving portfolio construction was wise then, and it still is. The funny thing is, of course, that during the 2000s the portfolio with the *lower risk* (less market concentration) has been the portfolio with the *higher return*.

Bottom line

We close this line of argument with a comment by Peter Bernstein on the change of asset allocation, taken from an interview in 2003.

“I am suggesting that we have to begin by focusing on the meaning of the long run—think about it differently in the post-bubble world. That means that our approach to investing’s fundamental problem, asset allocation, has to change. The thrust of my argument is that we are going to have to learn to live without the crutch of things like policy portfolios—because the conditions that justified their existence for so long have been shattered.”²

These words still seem wise today; after the bubble that burst six years after the bubble that Mr. Bernstein was referring to.

Box 3: How to finance pensions for the long term

Many societies have in their pension legislation a retirement age of 65 or a figure very close to 65. Where does this number originate?

We believe today’s pension idea can be traced to Otto von Bismarck (1815-1898) who in 1881 recommended to the then emperor, Wilhelm the Great (1797-1888), to introduce worker friendly laws to protect workers from illness, accident, disability and old age. The “Old age and disability insurance bill” (Gesetz zur Alters- und Invaliditätsversicherung) was passed on 24 May 1889 and became law on 1 January 1891. The scheme was funded by taxing workers and was designed to provide a pension for workers who reached the age of 70 and had contributed for 30 years. Life expectancy then was around 40-45 years. The contribution was 1.7% and was shared equally between employer and employee. Ideologically the idea of saving *during* work-years for *after* work-years goes back even further, at least as far back to Frederick the Great (1712-1786) who in 1775 created a scheme for old age and widows. Some cooperative arrangements of a similar nature of some guilds can even be traced back to the Middle Ages.

In the midst of WWI, probably with the prospect of ever reaching 70 being rather slim, Kaiser Wilhelm II reduced the retirement age from 70 to 65 in 1916. And there it is to this day—nearly 100 years later—with new-born life expectancy around 80.

The gap between life expectancy and retirement age of 65 therefore was around -15 years in 1916, assuming life expectancy of 50. Today this gap is closer to +15 years, i.e. a difference of 30 years. One possible solution to funding issues is to restore the old gap of -15 years, i.e. increase retirement age to 95.

¹ The conclusions from that award-winning paper are still worth a read today, especially in the light of these two gentlemen getting it uncomfortably right.

² “Throw Out The Rulebook!” Interview with Peter Bernstein, welling@weeden, Vol. 5, Issue 4, 28 February 2003

“The recurring pattern of history is that exceptionally poor or exceptionally rapid economic growth is never sustained for long.”

—Rob Arnott and Peter Bernstein (2002)¹

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