

## BLENDING ALTERNATIVE INVESTMENTS IN A COMPLEX ENVIRONMENT

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Select Asset Management

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Even though alternative investments have gained wider acceptance in recent years, a trend led by some of the most successful global institutional investors, questions still remain in relation to their incorporation in retail and high net worth investor portfolios. This session aims to cover the broad range of alternative investments available and some issues to consider in assessing listed and unlisted vehicles, but importantly will also cover some of the key portfolio construction questions posed by non-institutional investors. Practical implementation examples will include: Where alternative investments fit in a portfolio, the sizing of allocations, liquidity issues (including listed alternatives), various investment structures and diversification options available.

### Introduction

It is somewhat of an understatement that the 12 months to 31 July 2008 presented a tremendously challenging investment environment globally. The sub-prime mortgage cancer has spread its way to broader equity and fixed income markets, and challenges clearly lie ahead in terms of growth and inflation for both developed and emerging economies. Those who have continued to rely on the recent generous returns from equity markets (most notably in Australia where the S&P/ASX200 Accumulation Index returned 21.0% per annum between January 2003 and December 2007, with five consecutive calendar years of positive returns<sup>i</sup>), easy credit conditions, and excessive leverage have suffered the most in the recent environment.

During this time however, many forward thinking institutional, high net worth and a more limited number of retail investors have refrained from chasing short-term directional market performance and have continued to allocate significant portions of their assets to alternative investments. The most notable examples of such investors are larger Australian superannuation funds, a number of overseas pension funds and US endowment funds. It is these groups that had the foresight to realise that diversification and the protection of capital are just as, if not more important, than short-term gains in long-term wealth management. Reported<sup>ii</sup> average allocations to alternative investments by US endowment funds, US family offices and global high net worth investors at 33%, 45% and 11% respectively are significant. Average allocations by the US college endowment funds to hedge funds, private equity and natural resources (including timber, oil and gas partnerships and commodities) have increased by 278%, 475% and 700% over the ten year period to December 2007

As such, many advisors and money managers that have not adopted an allocation to alternative investments or have only made a small allocation to date (those whose clients are the most vulnerable in the current environment with narrow diversification across traditional asset classes and in many cases a focus on equity markets) are increasingly being requested to do so – mainly driven by clients seeking greater diversification and better returns<sup>iii</sup>.

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Certainly in the case of US endowment funds, these high allocations to alternative investments have assisted in some dramatic out-performance of equity and bond markets as well as the rate of inflation over a range of time-horizons, as depicted in Table 1.

**Table 1 - US endowment fund performance summary (annualised), years ending 30 June 2007**

Time period	1 year	3 years	5 years	10 years
Number of survey participants	726	683	636	499
<b>Dollar weighted average endowment performance</b>	<b>21.5%</b>	<b>16.8%</b>	<b>14.4%</b>	<b>11.7%</b>
S&P 500	20.6%	11.7%	10.7%	7.1%
Lehman Bond Aggregate	6.1%	4.0%	4.5%	6.0%
Inflation (CPI) - seasonally adjusted	2.7%	3.2%	3.0%	2.8%

Source: 2007 National Association of College and University Business Officers (NACUBO) Endowment Study. Comparative index returns assume a year-end date of June 30. Rates of return are reported net of management fees and expenses.

From an Australian retail perspective however, despite some adoption of certain alternative investment areas (most notably hedge funds), widespread confusion still remains as to what the alternative investment universe comprises and in particular how to incorporate an allocation to alternative investments in a portfolio. To some extent this is not that surprising given the constantly changing investment landscape and limited amount of available literature on the subject, however practical considerations supplemented with some intuition can assist.

***Alternative investments and their performance in market crises***

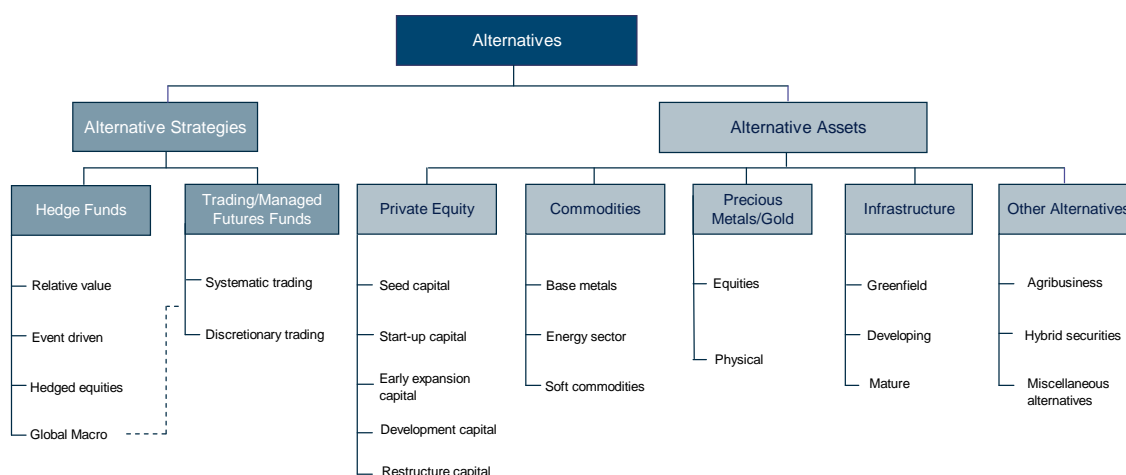
*The alternative investment universe*

Exactly what the universe of alternative investments comprises is subjective, and may also depend on geographic considerations. For example, in the United States property is generally considered alternative, whereas in Australia 6.6% of the market capitalisation represented by the S&P/ASX300 Index comprised listed property (REITs) at 30 June 2008<sup>iv</sup>. This number was even higher at 30 June 2007 (9.6%) prior to significant declines in some listed property trust values in the last 12 months. For Australian investors - property, certainly in listed format, should not be considered an alternative investment given the already high weighting that most investors are likely to own in their traditional portfolios.

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One way to illustrate the range of investments and sub-categories available in the alternative investment universe is displayed in Figure 1, although other areas could arguably also be included as the classification remains fairly subjective.

**Figure 1 – The Alternative Investment Universe**



Source: Select Asset Management

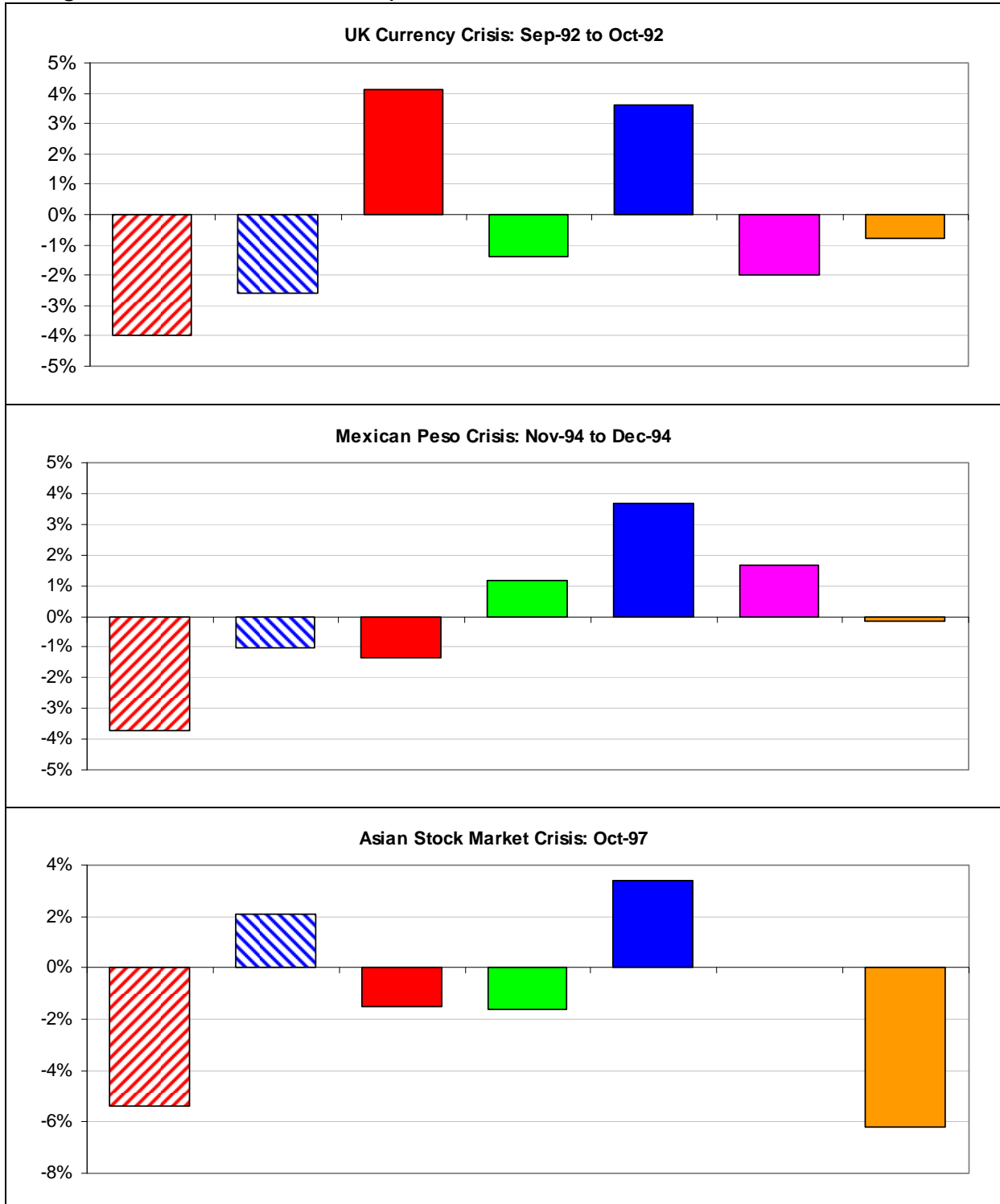
The diagram also illustrates that even within each of the widely recognised alternative investment classes it is possible to gain even further diversification amongst sub-categories of alternative strategies and alternatives assets.

### *Performance of alternative investments in periods of market crises*

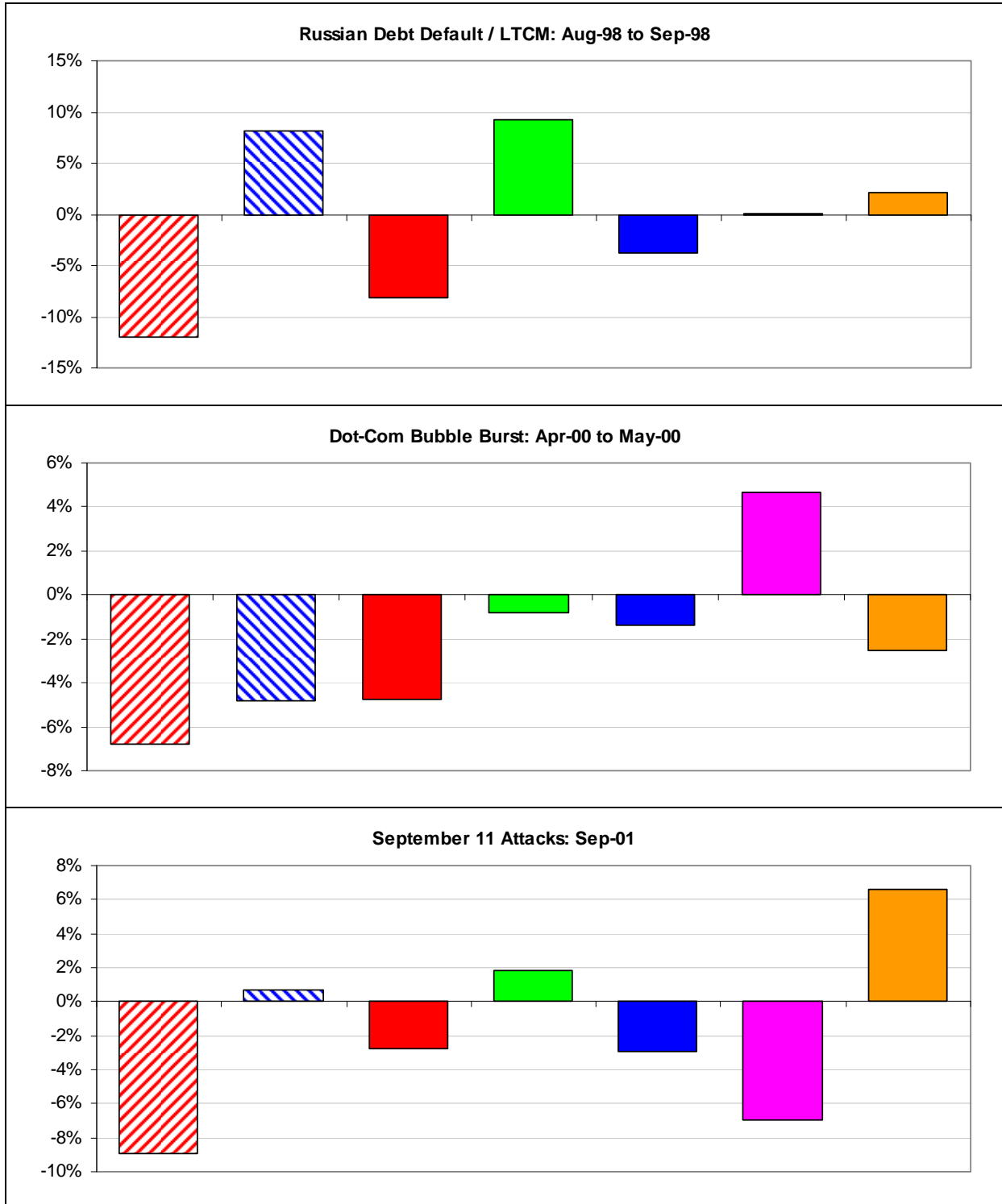
Why have those with allocations to alternative investments generally been able to outperform broader markets over the long-term? Part of the answer lies in the ability to preserve capital. Using index data as a proxy, Chart 1 illustrates the performance of global equity and bond markets versus some alternative investment areas during periods of market stress and crisis over the last 20 years.

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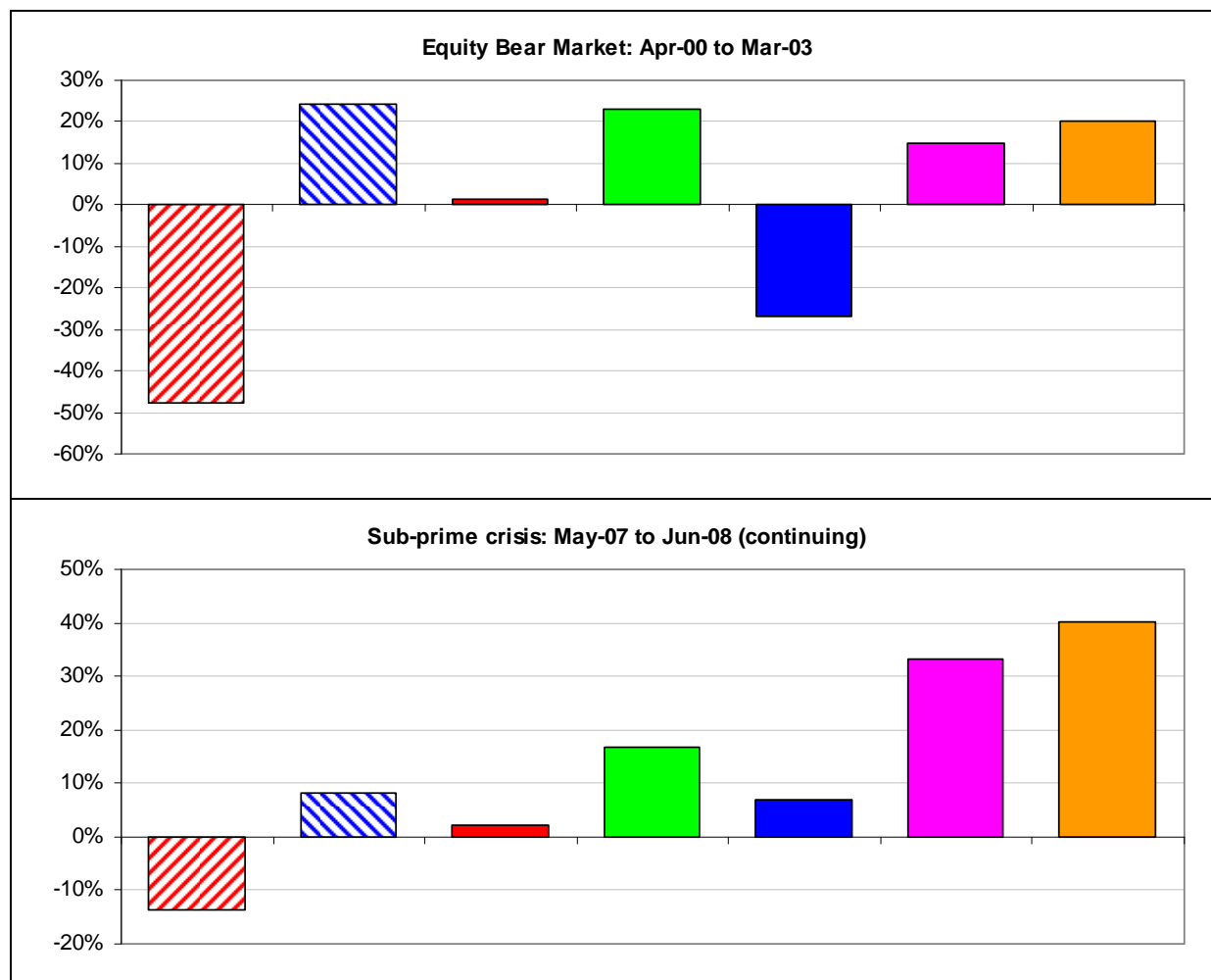
**Chart 1 – Performance of alternative investments in periods of market crises (note that scales change on left hand side of each chart)**



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**Key:**

- Global Equity Markets
- Global Bond Markets
- Hedge Funds
- Trading Funds / Managed Futures
- Unlisted Private Equity
- Commodities
- Gold Bullion

Source: Bloomberg, January 1990 to June 2008, unless otherwise noted. Data is as follows - Global Equity Markets: MSCI World Index (USD), Global Bond Markets: JP Morgan Global Bond Index (USD), Hedge Funds: HFRI Fund Weighted Composite Index (USD), Trading Funds/Managed Futures: Barclay CTA Index (USD), Unlisted Infrastructure: Cambridge Private Equity Index (USD), Commodities: Dow Jones AIG Commodity Index (USD), Gold Bullion (USD). Note that Cambridge Private Equity Index performance is published quarterly - for this analysis quarterly returns have been spread evenly over the relevant months within each quarter.

It is worth noting several things in relation to this analysis:

- Whilst protecting capital in many instances, alternative investments have performed differently in various market crises and in some cases have performed poorly. Notable cases of this are hedge funds during the Russian debt default/LTCM crisis and unlisted private equity during the 2002/2003 global equity bear market;

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- The dispersion of performance by alternative investments during these periods has been wide. As such, it illustrates that breadth of diversification across a range of alternative investments is potentially useful – i.e. there is a risk of over-reliance on one single alternative strategy or alternative asset class in any historical crisis period; and
- While it can be instructive, the over-reliance on such historical data for portfolio construction is inherently flawed, something discussed in detail later in this paper.

**Where alternative investments fit in a portfolio**

Are alternative investments suitable for all?

The answer to this question obviously depends on individual circumstances, but the answer is potentially (and increasingly) yes for all but:

- The most aggressive investors who can take a very long-term view and handle market volatility associated with a very traditional asset allocation model; or
- The most conservative investors seeking ‘cash-like’ performance over the long-term.

The mid-2008 market environment and associated declines in investment returns are the starting point of reasons to allocate to alternative investments that are not as subject to the same drivers of performance, however other incentives to incorporate some alternatives exposure in a portfolio include inflation mitigation, capital preservation, and a potential reduction in overall portfolio volatility. Some of the institutional precedents and the results of such allocations have been discussed above, but the hardest questions for most remain:

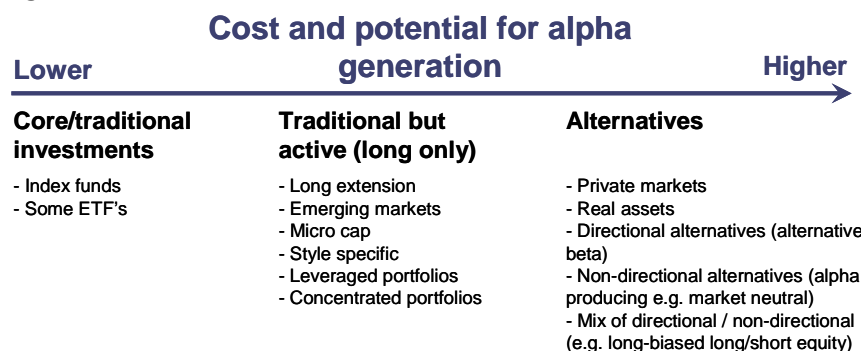
- 1) How do I go about constructing such a portfolio?
- 2) What are some of the risks involved?; and
- 3) How much should I allocate to alternative investments?

These are the issues which the majority of this paper will seek to address.

*Traditional versus active versus alternative investments*

Figure 2 displays the ‘barbell’ spectrum of traditional, active and alternative investments, whereby it is increasingly possible to access very cheap index exposure and a broadening array of exchange-traded funds (ETFs), through the extension of active management as well as an increasing number of alternative investment solutions. As such, the choices available from a portfolio construction and diversification perspective are also increasing.

**Figure 2 – Core/traditional versus active versus alternative investments**



Source: Adapted from Scott Welsh / Jean Brunel. Welsh S., "Incorporating Alternative Investments into High-Net-Worth Portfolios", *IMCA Journal*, March/April 2008, p26.

As the range of products along the spectrum has increased, so has the availability of various synthetic market exposures predominantly through derivatives, futures and options. This in turn has enabled a more granular separation of alpha and beta exposures, and in some cases a core/satellite approach to portfolio management had been adopted – whereby 'cheap' index exposure is supplemented by more 'expensive' alpha generating assets, or more expensive exotic/non-traditional beta sources – so called alpha budgeting.

Two approaches that can be taken when considering an allocation to alternative investments from a mainstream portfolio (there may be many more) are a core/satellite approach and a goals-based or behavioural asset allocation approach. These are summarised below.

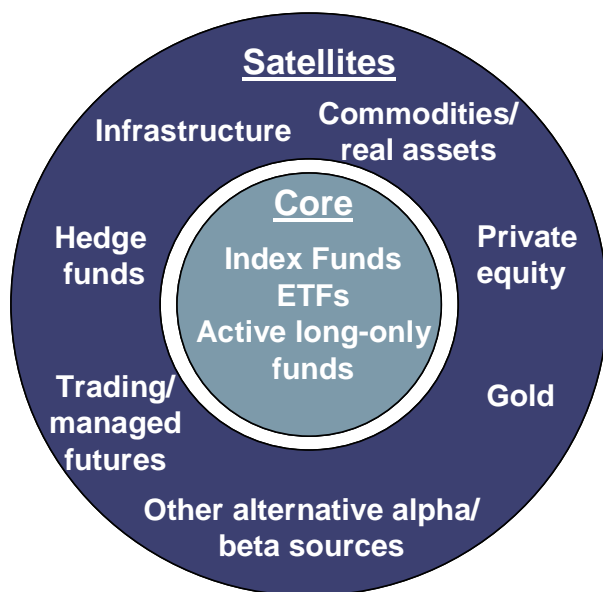
#### *Core/satellite approach*

Alpha/beta separation can become a very scientific and time-consuming exercise at the institutional level. However at the most simple (and therefore probably the most appropriate) level for most retail and high net worth investors, a core/satellite approach can be a workable solution in terms of allocating capital to alternative investments. This is an approach whereby a core portfolio of traditional investments (typically comprising managed funds and/or listed investments which are long only and therefore demonstrate significant market correlation and beta) is supplemented with a variety of non-traditional 'satellite' investments, as is illustrated in Figure 3.

The choice of satellite vehicles depends of course on availability and appropriateness for the investor in terms of liquidity and expected risk/return profile (i.e. diversification benefits) against the core portfolio. It is worth mentioning here that for most retail investors, adequate diversification amongst managers, strategies and themes is challenging. One of the most important questions also remains – how much to allocate to each of the core and satellite portfolios? This is addressed later.



**Figure 3 – Core/satellite approach**



Source: Select Asset Management.

### *Goals-based or behavioural asset allocation approach*

While it may not neatly fit with purists of investment theory, a so-called goals-based or behavioural asset allocation approach to portfolio construction has some merits from a practical implementation perspective.

Such an approach is suggested by Brunel<sup>v</sup>, Chhabra<sup>vi</sup> and Nevin<sup>vii</sup>, and is essentially a supplement to mean-variance analysis, whereby an overall portfolio is broken into sub-portfolios, with construction of each sub-portfolio based on specific client goals or time horizons, using a different mix of investments or different asset classes. Brunel suggests a simple analogy where this approach is akin to eating at a restaurant: *“When you go to a restaurant you order from a menu of dishes, not from a menu of ingredients.”* If you’re a chef, you know what ingredients combine to best effect, to produce a particular dish. As a restaurant patron, you just want to order the soup. In a portfolio construction sense, a financial planner or fund manager can be thought of as a chef, having intimate knowledge of the ingredients that go into a recipe and the technique for creating the perfect soufflé. As an investor, you’re the customer in the restaurant: you just want to know what you want to eat rather than the meal’s exact composition....by focussing on the meal rather than the ingredients, he says an investor stands a better chance of understanding why his portfolio contains what it does, and what the portfolio is supposed to do<sup>viii</sup>.

While the analogy may seem simplistic, it can make sense. For example, an investor that seeks some income may hold a bond fund in their portfolio, whereas another investor who is more concerned with capital protection or growth could choose to invest in a diversified market neutral fund of hedge fund, or a multi-strategy fixed income hedge fund instead. Of course, this ignores issues of

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idiosyncratic / single manager risk, liquidity and taxation which are addressed further below. However this logic can be extended – in essence to supplement traditional market exposures with some alternative diversification – as illustrated in Table 2.

**Table 2 – Goals-based or behavioural asset allocation approach**

<b>Traditional asset classes</b>	<b>Potential alternative supplements</b>
Cash	-
Fixed Interest	Market neutral fund of hedge funds, multi-strategy fixed income funds
Equities	Long/short equity, private equity, sector specific exposure
Property	Infrastructure, agriculture (timber, land-based)

Source: Select Asset Management.

While this is somewhat of a half-way measure, it can add some portfolio diversification (the desired result) without the need for a specific ‘carve-out’ alternative investment category.

*Growth versus defensive alternative investments*

One note of caution in relation to classifying alternative investment exposures as either growth or defensive in nature. While it is tempting to try and ‘shoe-horn’ alternative investments into a traditional asset allocation framework it is also important to note that different alternative strategies and assets contain:

- Differing underlying exposures;
- Differing performance objectives; and
- Differing use of leverage.

In addition, there may be other nuances that those lacking significant experience in the area may miss, and hence care should be taken in using such an approach. Some examples of vastly different investments are market neutral hedge funds versus macro/directional hedge funds and mature/regulated infrastructure versus greenfield infrastructure. It should be noted however that a diversified portfolio of alternative assets and strategies itself can exhibit defensive characteristics if there is low correlation of underlying investments to each other and to traditional asset classes.

**Portfolio construction and analysis of investment drivers**

In many cases, the analysis of and determination of an ‘optimal’ mix of alternative investments in a portfolio has relied on historic data and traditional portfolio optimisation techniques. This is a fundamentally flawed approach particularly for alternative investments where history is less of a guide to the future because:

- The correlation of assets to each other varies over time;
- Many alternative investments have non-normal distributions (fat tails, skewed distributions etc.), hence problems with mean-variance optimisation;

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- The illiquidity of some alternative investments makes optimisation more complicated, and in some cases provides a ‘free ride’ in volatility terms for such historic analysis; and
- Discounts / premiums on some vehicles (e.g. listed invested companies) complicates the inputs.

When determining asset allocations, whether to traditional or alternative investments, it is appropriate to use long-term return and risk characteristics, which should not be conditional on current or near-term market and business cycles, instead focussing on characteristics relevant for the portfolio over a long time horizon. When using historical return, volatility and correlation data the danger from a traditional mean-variance optimisation process is that a disproportionate allocation will be recommended to alternative investments, as the lack of frequent observable market prices in some cases has a smoothing effect, muting volatility. In turn, this can lead to the artificial constraint on maximum allocations, which themselves often pre-determine any allocation to alternative investments – hence the flawed methodology.

An alternative approach suggested by Terhaar, Staub and Singer<sup>ix</sup> is to use forward looking optimisation with:

- Estimates of true risk exposures – where risk estimates for traditional and alternative investments are made consistent by considering the long-term risk characteristics and drivers of each asset (as advocated by Swenson<sup>x</sup>);
- A factor approach to generate the covariance matrix for portfolio optimisation – using primary factors that capture systematic risk characteristics of each investment, and its sensitivity to each factor or risk driver;
- Examination of forward looking risk and liquidity premiums; and
- A multi-period simulation approach which incorporates both the cost of illiquidity (i.e. allowing rebalancing only to the extent possible in practice) and the benefits of illiquidity – i.e. the liquidity premium.

The authors note that in their analysis an upper limit was placed on actual alternative investment allocation (based on moderate tolerance for illiquidity) at 30%. They also note that the results of the analysis are an “appropriate” mix rather than an “optimal” mix, as there are any number of portfolios that satisfy the objectives, and hence many different allocations may be appropriate – factors which also change depending on the risk tolerances and liquidity requirements involved.

The overall point however is that while the use of forward looking risk estimates is intuitively a more appropriate process for alternative investments, it is not an easy task, hence the temptation for many to use publicly available (in many cases flawed) historical data and constrained optimisation processes.

## Performance measurement and risk management issues

In addition to portfolio construction considerations, there are also factors that need to be considered when evaluating the performance and risk management of alternative investments. Risks obviously differ across the range of investment options available, and it is difficult to generalise these without specific examples, but some of the issues (Till, 2003<sup>xi</sup>) incorporate short-comings from over-reliance on the Sharpe ratio, including:

- Asymmetric returns with positively and negatively skewed outcomes and associated issues with the mean variance paradigm (further to the discussion above);
- Illiquidity – difficulties in measuring a required return premium and the potential for artificially stable (and hence misleading) returns; and
- The ability of some investment returns to trend.

Till suggests some alternative risk-adjusted return metrics and other risk metrics such as Conditional Value at Risk (VAR), which accounts for some shortcomings of traditional VAR analysis by focussing on the 'left tail risk' and hence expected losses and Modified VAR – which incorporate adjustments to VAR to account for skewed distributions.

Overall, there are different views and a wide spread of manager risks and returns in the alternative investments arena (including some more esoteric and non-traditional considerations) and there is therefore no 'perfect' alternative investment mix. Diversification across a range of alternative strategies and alternative asset classes is definitely of key significance. With regard to the points above, for those investors that may not have great insight into alternative investment markets and cannot access such portfolio and risk management tools it may be more appropriate to utilise a multi-manager approach to investment. In essence the fund manager is employed to undertake such portfolio construction and risk management on behalf of investors.

## The sizing of alternative investment allocations

Research into the optimal size of alternative investment allocations does vary, and in practice it will invariably differ for any investor based on a number of factors, including (but not limited to):

- **Illiquidity:** A significant benefit that many endowment and superannuation funds have is their access to 'patient' capital, and therefore the ability to invest in less liquid investments. Some of these investments may be in private markets (such as unlisted infrastructure or private equity) and therefore not subject to regular mark to market as is the case with publicly traded investments – therefore reducing portfolio volatility. Assuming that they can even access these types of investments directly, the required investment timeframes for many retail and high net worth investors may simply preclude these types of investments from portfolios or severely limit their use.

[Note: There are also an increasing array of alternative investment vehicles available which can provide a partial liquidity solution to these problems for retail and high net worth investors. Typically these are either managers that invest in listed securities (e.g. listed infrastructure assets) or managers than run vehicles that are listed themselves (Listed Investment Companies

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or LICs). In relation to LICs it is worth noting that they can be an efficient structure for managers as capital is generally stable, some high quality managers are available in this format, in some cases there is the opportunity to buy them at a discount to their asset-backing and hence benefit from discount narrowing, and some have tax benefits e.g. Pooled Development Funds (PDFs). Obviously, the liquidity they provide needs to be balanced against any market beta that is introduced through the listed format of the investments.]

- **Single manager diversification:** The size of minimum allocations may make it difficult for many investors to gain a large degree of diversification amongst underlying investment strategies and/or managers. Many alternative investments contain non-normal distributions and an element of idiosyncratic/single manager risk, where such diversification is a desirable outcome – again, in such areas a fund of fund / multi-manager solution may be an appropriate solution for investors; and
- **Taxation:** Although not always true, investment in some alternative investments may not be as tax-effective as some traditional vehicles. The net performance outcome may adequately compensate investors for this, but taxation must also play a role in investment decisions.

The short answer is that there is no optimal allocation to alternative investments for all investors, no 'one size fits all' approach. A 10% to 30% allocation is a reasonable starting point for most investors, if liquidity can be managed appropriately. Some investors such as the Yale Endowment Fund (endowment funds are referred to rather dryly by Welch as the 'cool kids' portfolios) clearly have a higher appetite for alternative investments than many – Yale had a 69.9% allocation to non-traditional asset classes (including real-estate in the real assets portion of the portfolio) in 2007, a complete reversal from an 80% allocation to traditional stocks bonds and cash in 1987<sup>xii</sup>. This said, Yale has a very different set of performance objectives – predominantly to beat long-term inflation and a very patient capital base which allows them to invest in many illiquid / non-market traded opportunities that are beyond the reach or inclination of others. The research undertaken by Terhaar, Staub and Singer and outlined above suggests that for a "middle risk" institutional balanced portfolio an allocation of 20% to alternative investments may be appropriate (suggesting 10% in real assets, 5% in private equity, 3% in hedge funds and 2% in natural resources – providing an expected +0.5% increase in annual returns and a -0.2% reduction in average risk). Clearly their definition of the eligible alternative investment universe is different, due to the geographic interpretation of what constitutes traditional and alternative investments, but it is a sizeable allocation.

While there is no optimal solution, any allocation to alternative investments must be large enough to make a difference particularly in periods of difficulty for mainstream markets. It is clearly not prudent however to swamp the return profile of all traditional investments in a portfolio with alternative investments, assuming the main objective of an investor is to increase the breadth of diversification. In addition, the potential universe of alternative investments should take account of other existing investments – for example it would be unwise for someone to take significant exposure to commodities if they already have a resource-heavy portfolio, as the nexus of risk/return drivers are not that far apart.

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Essentially the key is to lower portfolio correlation to traditional asset classes in order to preserve wealth in periods of market crises and hence live to fight another day – something that becomes more imperative each and every day.

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**ENDNOTES**

<sup>i</sup> Source: Standard and Poor's.

<sup>ii</sup> Sources: US Endowments - 2007 National Association of College and University Business Officers (NACUBO) Endowment Study, US Family Offices - Institute for Private Investors' Family Performance Tracking® 2007 Survey, High Net Worth - CapGemini/Merrill Lynch 2008 World Wealth Report.

<sup>iii</sup> Sources: Johnston, M. and Uddin, B., 2007, "Macquarie/Investment Trends Alternative Investments: Investor Report". Collins, M., 18 May 2007, "Alternatives Go Into Overdrive", InvestorDaily.com.au..

<sup>iv</sup> Source: Standard and Poor's, S&P/ASX300 GICS sector weightings.

<sup>v</sup> Brunel J.L.P., 2005-2006, "A Behavioural Finance Approach to Strategic Asset Allocation: A Case Study", *Journal of Investment Consulting*, vol, no. 3 (Winter). Brunel J.L.P., 2006, "How sub-Optimal – If At All – Is Goal-Based Asset Allocation", *Journal of Wealth Management*, vol. 9, no. 2 (Fall).

<sup>vi</sup> Chhabra, A.B., 2005, "Beyond Markowitz: A Comprehensive Wealth Allocation Framework for Individual Investors", *Journal of Wealth Management*, vol. 7, no. 4 (Spring).

<sup>vii</sup> Nevin, D., 2004, "Goals-Based Investing: Integrating Traditional and Behavioural Finance", *Journal of Wealth Management*, vol. 6, no. 4 (Spring).

<sup>viii</sup> Hoyle, S., 2004, "Perfect the recipe for portfolio success", *The Age Company Ltd.*

<sup>ix</sup> Terhaar, K., Staub, R. and Singer, B., 2003, "Appropriate Policy Allocation for Alternative Investments – A factor approach and simulation techniques", *The Journal of Portfolio Management*, 2003 (Spring), p101-110.

<sup>x</sup> Swenson D.F., 2000, "Pioneering Portfolio Management: An Unconventional Approach to Institutional Investment", *New York Free Press*.

<sup>xi</sup> Till, H., 2006, "Risk Measurement of Investments in the Satellite Ring of a Core-Satellite Portfolio: Traditional versus Alternative Approaches", *Edhec Risk and Asset Management Research Centre*.

<sup>xii</sup> Yale Endowment Fund 2007 Annual Report.