

The quest for returns in the new world paradigm

David Griffith | BlackRock | April 2014

Given the backdrop of stagnating global growth, lower returns from traditional assets and rising correlations, investors are seeking alternative approaches to investing. The objective of this paper is to outline ways to boost portfolio returns and achieve greater risk diversification by exploring a risk parity approach to asset allocation, together with incorporating alternatives more broadly in investor portfolios. It finds that the individual application of each to investor portfolios can result in a significant improvement in return, risk and diversification. When these two concepts are combined together in one portfolio, the results can be dramatic.

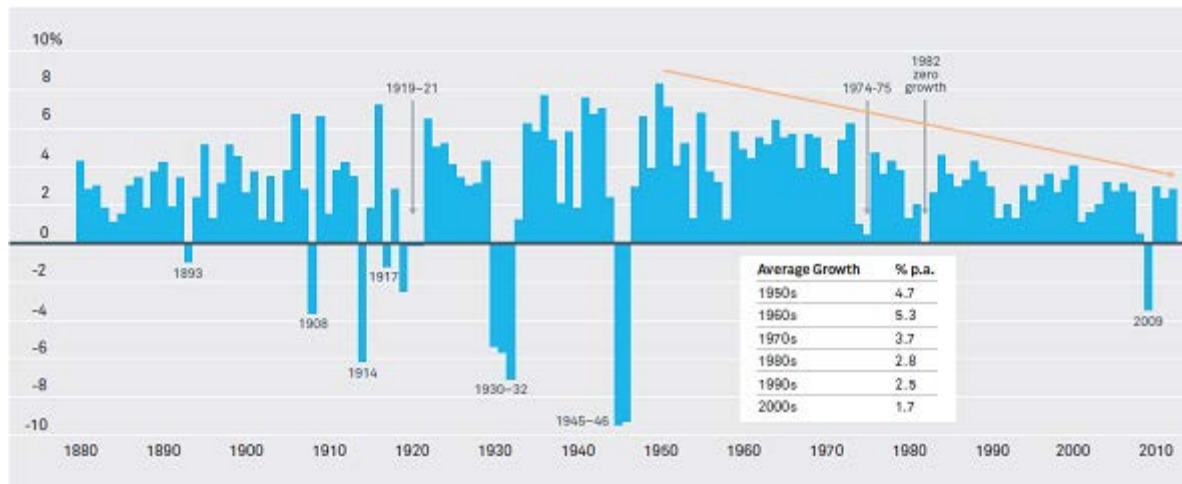
A CHANGED WORLD

A confluence of events – from stagnating developed economies, to a rolling sovereign debt crisis, to political upheavals and continuing operational and regulatory fallout from the global financial crisis – is driving a sustained period of low market returns, high volatility and increased correlation across traditional asset classes. Worse, world economic prospects depend even more than usual on highly uncertain “tail events” which loom in the background. As many investors have realised, this is a world where the old approaches may not work anymore. The quest for returns has suddenly become all the more difficult. New and bold ways of thinking are needed under the new world paradigm.

STAGNATING GROWTH

Over each decade since the 1960s, the average growth rate for advanced economies has faded. As observed in Figure 1, the average growth rate in OECD economies has declined from 5.3% in the 1960s to only 1.7% in the latest decade. Unfortunately, there is no sign that future growth rates will buck this trend. The latest forecast for OECD¹ countries is for growth to remain close to the 10yr average of 1.7% in 2012 and is only forecast to rise to a modest 2.3% by 2013, despite unprecedented efforts by central banks and policy makers in the years post the global financial crisis to stimulate growth across the major economies.

**Figure 1: Major countries' real GDP growth (% YoY)
1880–2012**



Sources: Llewellyn Consulting, Angus Maddison database, OECD.

But what about emerging markets, the rise of the so-called BRIC² economies? Aren't these countries supposed to save us from our developed world growth miseries? Sadly not – the IMF reports that growth rates in emerging and developing economies is also projected to fall from 7.3% in 2010 to 5.4% in 2012³, leaving total world output perched precipitously at a meagre 3.3%.

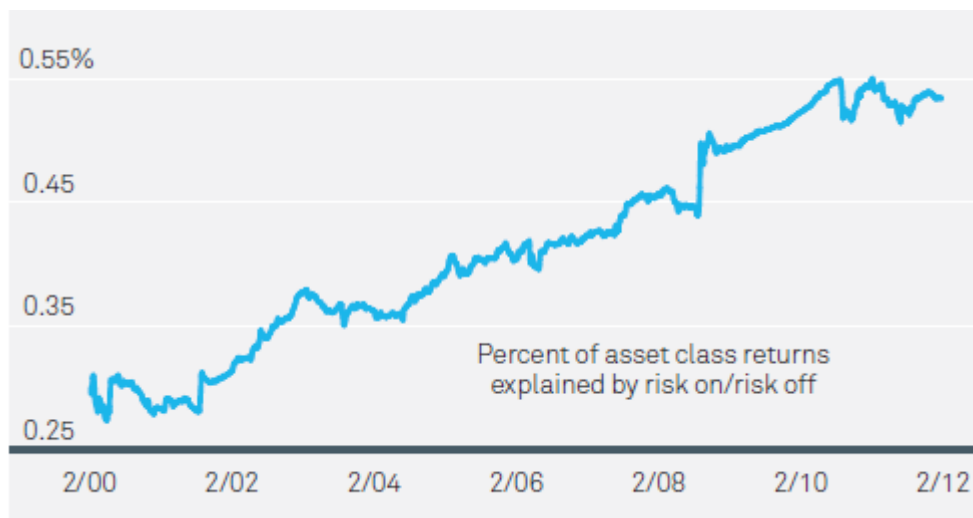
An earlier BlackRock paper, “The Year of Living Divergently”, outlines five possible scenarios for 2012, each with varying probabilities. The outcome regarded as having the highest probability of occurrence (40% to 50%) is described as “Divergence”. Under this scenario, emerging economies continue to out perform developed economies, both the US and Japan “muddle through” and Europe slips into a recession. The outcome with the second highest probability (20% to 25%) is described as “Nemesis”. This scenario is categorised by global recession, credit crunch, social upheaval and steep losses across traditional asset classes, an outcome that could be worse than the 2008/09 financial crisis. Interestingly, the scenario to which we ascribe the least probability to is the scenario is described as “Growth” and is assigned only a 0% to 5% probability. Under this “Goldilocks” outcome, global growth rebounds back above the long term trend, fears of a euro debt crisis dissipate and the continent’s economy rebounds. Emerging markets accelerate and the US recovery solidifies. Unfortunately, the overwhelming view is that the outlook ahead will look strikingly similar to that of the recent past, or worse.

RISING CORRELATIONS

A major premise of Markowitz's Modern Portfolio Theory (MPT) framework is that investors can maximise the expected returns of a portfolio while minimising risk by holding a diversified portfolio of complementary assets. By combining different assets whose returns are not perfectly positively correlated, MPT seeks to reduce total portfolio variance. MPT has been successfully used by investors since Markowitz first introduced the concept in the 1950s. More recently however, investors have been left disappointed, not because the theory is wrong, but because one of the key underpinning assumptions has been challenged – namely, that asset prices move independently of each other, unlocking the potential diversification benefits espoused by the theory. The reality over the last decade is that asset prices have been moving more and more in lock-step.

As seen in Figure 2, correlations between traditional asset classes has risen, eroding much of the potential diversification benefits outlined by Markowitz's portfolio theory.

Figure 2: Risk on and risk off asset classes are highly correlated



Source: BlackRock

TAIL RISKS PERVADE EVERYWHERE

As with the growth outlook, there is no sign that the rise in correlations witnessed in the past few years will mean-revert anytime soon. In fact, the tail risks which quite often drive asset prices to move in lock-step appear to have increased in both number and potential severity of impact on global financial markets. The current environment is characterised by fragile financial systems, high public debt, historically low interest rates and a plethora of non-standard policy measures to address growth. The most critical "tail risk" is the worsening of the sovereign debt crisis in Europe. While the recent incremental policy action may have

bought Europe some precious time, there are still many question marks surrounding the long term resolution of the euro-area's problems.

Downside risks also arise in both the United States and Japan from insufficient progress in developing credible medium term fiscal consolidation plans. The major short-term danger in the United States however is the risk of undermining a fragile consumer sector through premature fiscal austerity. Emerging markets are also not immune to tail risk, most notably the risk of a hard landing. In recent years, many emerging market economies experienced buoyant credit and asset price growth. This has inflated demand and may have led to an overestimation of trend growth rates in these economies – sound familiar? If this in fact proves to be the case, a collapse in confidence and a correction in local real estate and credit markets combined with falling demand from abroad could have a severe impact on economic activity in these economies and more broadly across other interconnected economies.

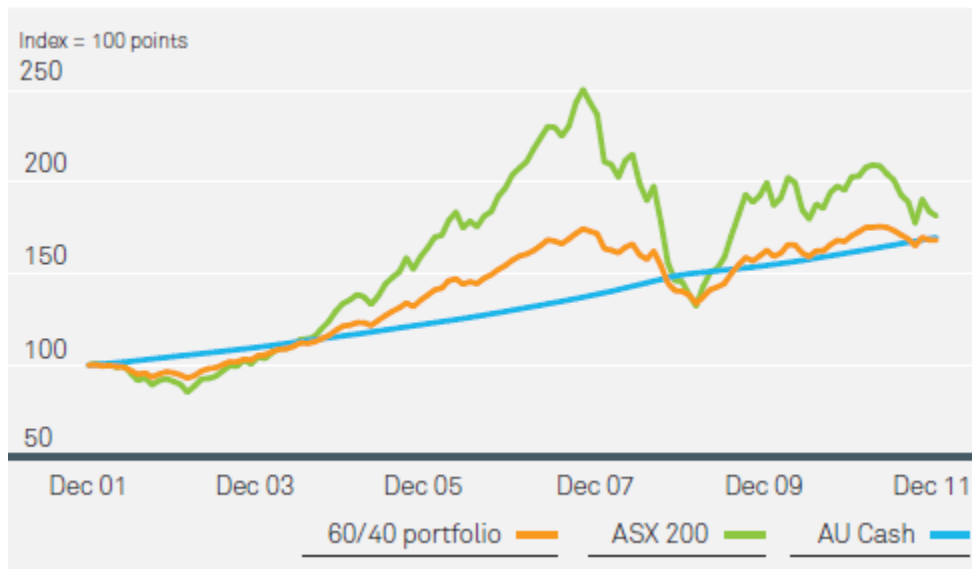
Geopolitical risks are also prevalent as potential conflicts in the Middle East raise the risk of an oil supply shock which could have very damaging effects on the fragility of the global economic recovery. One only needs to look at the political events of 2011 as evidence that the region remains combustible in unpredictable ways.

And these are just the known unknowns. What about the unknown unknowns? To quote Donald Rumsfeld's now famous line, "there are things we do not know we don't know".⁴

THE OLD PARADIGM IS BROKEN

The traditional 60/40 portfolio is not sufficient to meet investor needs. This 'balanced' portfolio moved virtually in lock-step with a 100% equities allocation over the last 10 years (portfolio returns have been 0.96 correlated with the ASX200). This fact in isolation would not be so concerning if equity returns were in the double digits with low and stable volatility. This has clearly not been the case (Figure 3). In fact, a 60/40 portfolio of growth and income assets has only returned 4.6% annualised over the last 10 years with a negative Sharpe ratio (-0.12). Australian investors would have been better investing 100% of their portfolio in cash throughout this time period.

Figure 3: Performance of a 60/40 portfolio versus cash and ASX200
10 years to 31 December 2013



Sources: BlackRock, Datastream. For illustrative purposes only. The 60/40 portfolio comprises a 40% allocation to income assets represented by an equal weight investment in the UBS Composite Index, the Barclays Global Aggregate Bond Index Hedged to \$A, and the UBS Bank Bill Index. The 60% allocation to growth assets is represented by a 20% allocation to the MSCI World Ex Australia Hedged to \$A and a 40% allocation to Australian Equities.

SO WHAT'S THE ALTERNATIVE?

While there is no magical quick-fix panacea to this problem (outside of perfect foresight!), there are however two areas to explore which can potentially improve portfolio diversification and boost returns.

Firstly, there are techniques available to improve the diversification characteristics of an investor's beta portfolio to make it more efficient and less reliant on a single risk factor to drive returns (ie. equity risk) – a so-called risk parity approach to asset allocation. Secondly, portfolio returns can be further boosted by harnessing the most efficient sources of active returns and combining this with the efficient beta portfolio. The next section explores both of these potential solutions in more detail.

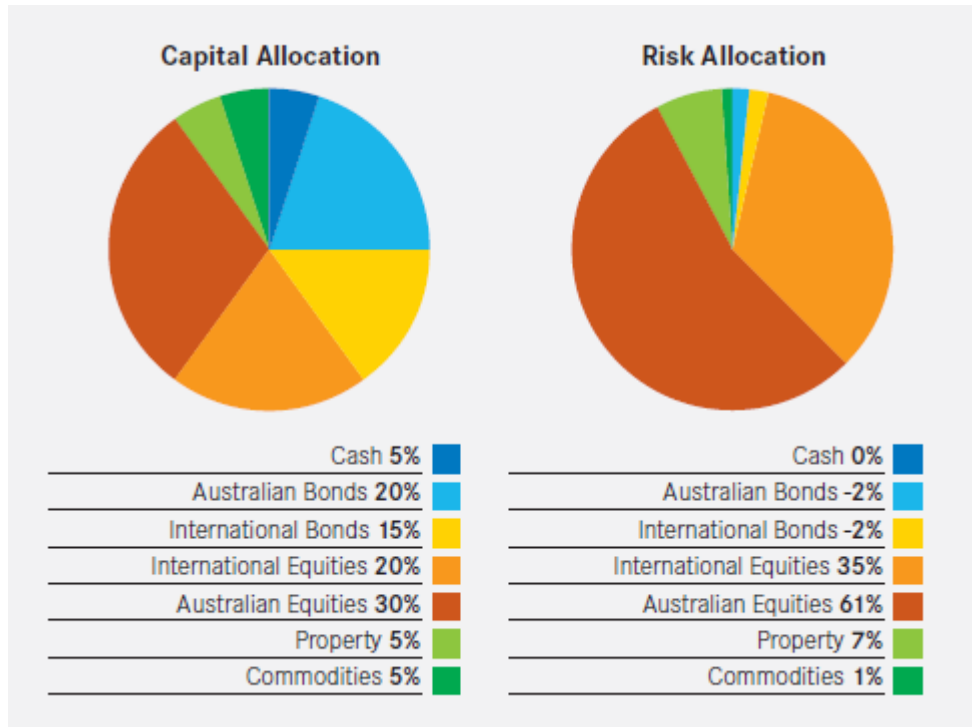
FORTUNE FAVOURS THE BOLD: TWO WAYS TO BOOST RETURNS AND DIVERSIFY RISK

1. A risk parity approach to asset allocation

The basic idea behind risk parity is that while a traditional 60/40 equity/bond portfolio may look well diversified from a capital allocation point of view, from a risk perspective equity returns are the dominant driver of portfolio volatility. This is illustrated in Figure 4 below which shows a pie chart of the capital allocation of a seemingly well diversified 60/40 portfolio, compared with the risk allocation of the same portfolio. In this example equities comprise 50% of the total capital allocation but make up 96% of the expected risk of the portfolio.

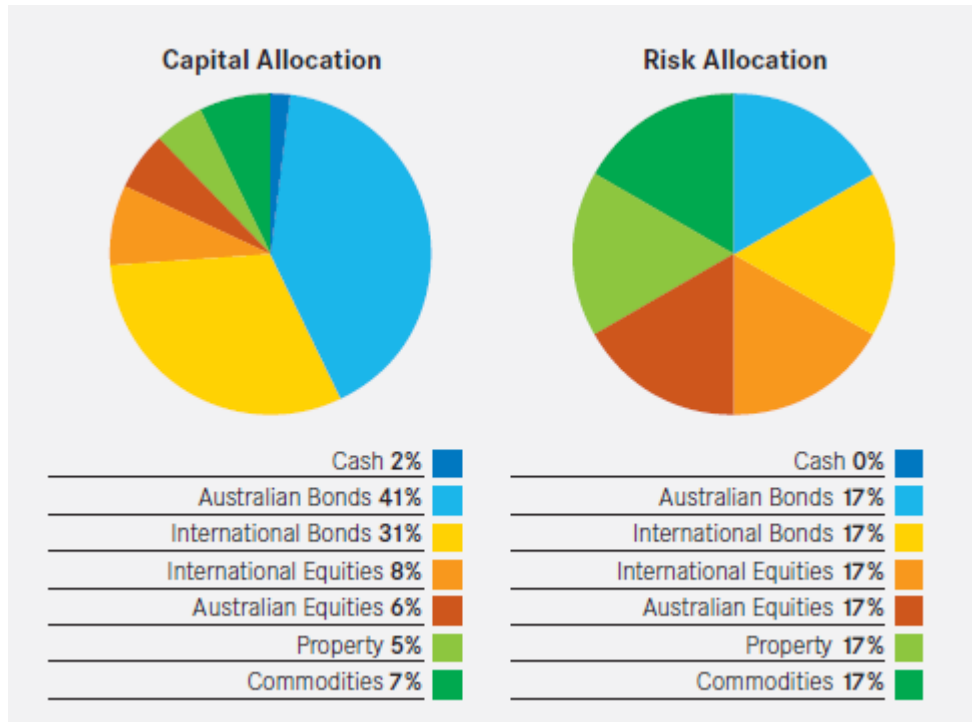
Risk parity asset allocation techniques look to spread portfolio risk more evenly across asset classes, or in some cases across risk factors, so that the resulting portfolio is more diversified. The objective is to achieve a higher risk adjusted return compared with that offered by the traditional capital allocation approach to asset allocation. The effect of a risk parity allocation relative to the traditional approach is essentially a reduced weighting of equities and an up-weight to other less volatile or lowly correlated asset classes (eg. fixed income, real estate, commodities etc). This can be seen in the example risk parity portfolio in Figure 5 below where the equity allocation drops to 14%, with the bulk of the capital allocation shifting to bonds and a smaller up-weight to property and commodities.

Figure 4: Traditional 60/40 portfolio



Source: BlackRock

Figure 5: Example risk parity portfolio



Source: BlackRock

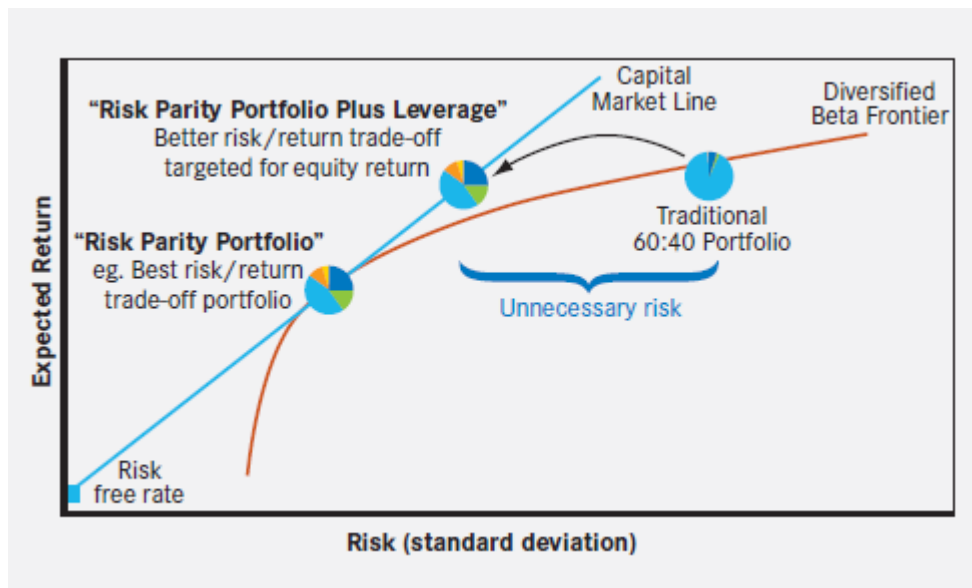
The end result is a portfolio where the risk is spread equally across asset classes. In the stylised example illustrated below, the expected contribution to total portfolio risk from equities falls from 96% to 33%.

While the offer of a higher Sharpe ratio sounds attractive, the total return expected from a risk parity approach will most likely be lower than that offered by the 60/40 portfolio if the traditional assumption that equities should out perform bonds holds over the long term. This is illustrated in the efficiency frontier in Figure 6. The 60/40 portfolio, with a high risk weight to equities, and the risk parity portfolio, with a more even distribution of risk, both fall on the efficiency frontier, however, while the risk parity portfolio offers the highest return per unit of risk, the expected return of the portfolio is less than that offered by the 60/40 portfolio. This problem can be overcome through the use of leverage.

By using leverage to increase the returns of the risk parity portfolio, the same expected return can be achieved as the 60/40 portfolio with less risk. This portfolio is represented by the "Risk Parity Portfolio Plus Leverage" portfolio depicted in Figure 6 which has a higher Sharpe ratio than the traditional 60/40 portfolio but the same expected return. In the case of the example outlined in Figures 4 & 5 above, based on our assumptions for the risk and return of underlying assets, the expected Sharpe ratio increases from 0.3 for the traditional

60/40 portfolio to 0.5 for the risk parity portfolio. The leverage required to achieve the same expected return of the traditional 60/40 portfolio used in this example is a reasonably modest 1.5 times. From a practical perspective, leverage can be obtained either via direct borrowing or employing derivatives such as futures to implement the various asset class exposures which results in a more cost effective implementation of the strategy.

Figure 6: Risk parity portfolio with leverage “optimal beta”



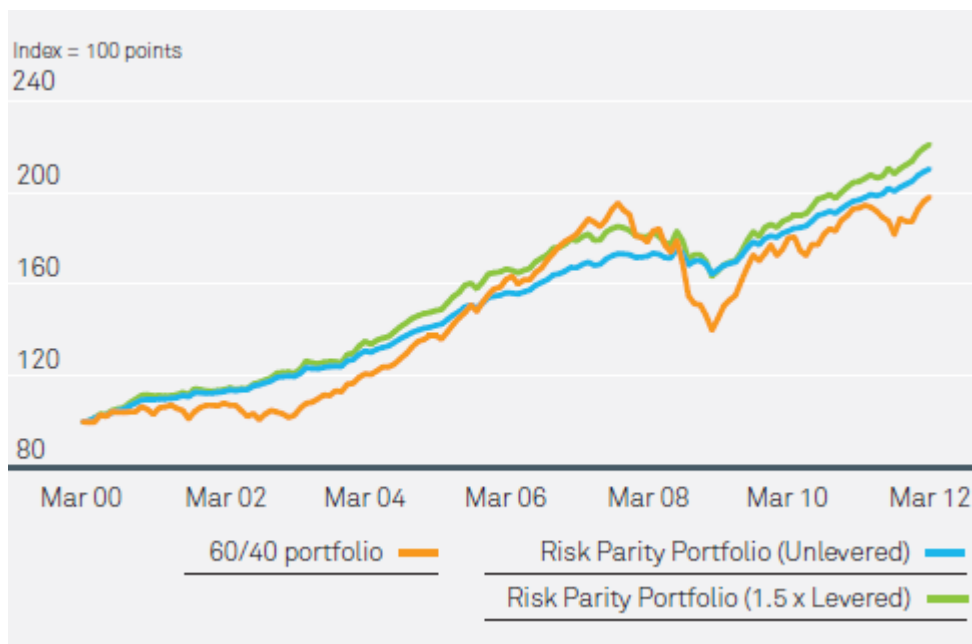
Source: BlackRock. Pie charts indicate portfolio risk exposures and are for illustrative purposes only.

Figure 7 shows the returns experienced over the last 12 years by an investor in a stylised risk parity portfolio relative to an investor in the traditional 60/40 balanced portfolio based on the capital allocations shown in Figures 4 & 5. The returns for the risk parity portfolio are shown on both an unlevered and levered basis (using leverage of 1.5 times). Interestingly, both the levered and unlevered portfolio outperformed the traditional 60/40 portfolio over this period. In addition, the two risk parity portfolios experienced higher returns, but with much lower realised volatility; 4.1% for the levered risk parity portfolio versus 7.0% for the traditional 60/40 portfolio. The resulting Sharpe Ratio increased from 0.1 for the traditional 60/40 portfolio to 0.4 for the risk parity portfolio.

Not only did the risk parity portfolio deliver a higher Sharpe Ratio but also a much lower correlation with the S&P/ASX 200 (0.61 for the risk parity portfolio versus 0.96 for the traditional 60/40 portfolio) and a greatly improved maximum drawdown statistic (maximum drawdown of only 12% for the levered risk party portfolio versus 28% for the traditional 60/40 portfolio).

Figure 7: Comparison of returns

Return Analysis (Apr 2000 – Mar 2012)	Traditional 60/40 Portfolio	Risk Parity Portfolio (Unlevered)	Risk Parity Portfolio (1.5 x levered)
Return	5.9%	6.4%	6.9%
Risk	7.0%	2.7%	4.1%
Sharpe Ratio	0.1	0.4	0.4
Max Drawdown	28%	6%	12%
Correlation to ASX	0.96	0.61	0.61



Sources: BlackRock, Datastream. For illustrative purposes only. The 60/40 portfolio comprises a 40% allocation to income assets represented by an equal weight investment in the UBS Composite Index, the Barclays Global Aggregate Bond Index Hedged to \$A, and the UBS Bank Bill Index. The 60% allocation to growth assets is represented by a 20% allocation to the MSCI World Ex Australia Hedged to \$A and a 40% allocation to Australian Equities.

1.1. Risk parity portfolios sound great but where can it go wrong?

While the risk parity approach seems to address many of the problems associated with the more traditional approach to asset allocation, it often faces criticism on several fronts.

Firstly, opponents to the risk parity approach argue that the use of leverage can be a dangerous tool for investors. While it allows investors to magnify returns, it also magnifies

losses. Leverage is generally implemented using marked-to-market securities (eg. using futures to gain exposure to equity and bond beta). As such, during periods of drawdown an investor may be faced with margin calls which result in a forced selling of portfolio assets to fund losses, particularly at the time when the price of these assets is most suppressed. Unlevered investors have the luxury of waiting for prices to converge back toward economic rationality and are therefore not forced liquidators during drawdown periods.

It has also been argued that the return benefits of the risk parity approach of the type outlined in Figure 7 are overstated as the last 10 to 20 years was a unique period where inflation and bond yields both fell from very high levels following a period of high inflation in the 1980s. In addition, the last decade was a particularly volatile period for equity markets with the tech crash in 2001 and the global financial crisis in 2008. So, it is not surprising that a portfolio heavily weighted to bonds with a lower weight to equities would have significantly outperformed a traditional 60/40 portfolio over the last decade, even on an unlevered basis. However, if an investor adopts a medium-to-longer term view that a deflationary and or low-growth environment lies ahead, then the adoption of a risk parity approach may continue to have merits.

A third issue often faced by an investor looking to implement a simplified risk parity portfolio is how to define “risk”. Investors seek to build portfolios with equal risks across the portfolio building blocks, which are often narrowly defined by asset class (eg. domestic & international equities, government and corporate bonds, commodities etc). A risk parity approach in its most basic form simply seeks to have equal risks, defined as the standard deviation of returns, across each asset class. This takes no account of the risk asymmetry exhibited by different asset classes (ie. different asset classes can exhibit different tail risks), nor does this approach account for overlapping risks between asset classes. For example, there may be limited diversification benefit of allocating equal risk between domestic and international equities.

The extent to which diversification benefits are gained through a simple risk parity approach is highly dependent on which categories of assets comprise the portfolio and across which asset classes risk parity is sought. In addition, while risk parity portfolios may be effective in reducing risk defined by return volatility, the increased use of leverage and derivatives needed to implement the strategy may result in the introduction of other risks in the portfolio, for example, basis risk between the derivative and underlying physical asset, together with increased counterparty and collateral risk.

1.2. Next generation risk parity

While these are all valid concerns surrounding early stage thinking on the risk parity approach, investment managers have made significant enhancements to the basic risk parity approach over the last few years which address many of these concerns.

To address the concern surrounding the use of leverage which magnifies both gains, and losses, some risk parity managers have incorporated sophisticated “risk conditioners” into their investment process which act to cut risk and de-lever the portfolio during periods of heightened market volatility. Managers have also incorporated an element of fundamental analysis which takes into account the time varying nature of risk premia across different asset classes and adjusts exposure to asset classes which exhibit extreme deviation from fair value.

Finally to address the third concern outlined above, rather than using asset classes as the building blocks to determine risk parity, some managers take a factor exposure approach to risk parity. Under this approach asset classes are viewed as composites of exposures to common systematic risk factors for which investors are rewarded (eg. real rates, inflation, default risk, economic growth, political risk and liquidity). For example, the dominant risk factors for nominal government bonds are real rates and inflation, whereas for developed equities the dominant risk factors are economic growth risk and default risk. Asset classes are then mapped to each of these risk factors and an optimal portfolio is constructed which aims to diversify across risk factors as apposed to strict risk parity between asset classes.

While risk parity portfolios, or “efficient beta strategies” as they have become more commonly known, are still in their infancy compared to the traditional 60/40 approach, at BlackRock we are seeing increasing interest in these strategies from investors, particularly US and European pension funds looking to diversify their portfolios away from equities. While there has been growing interest from Australian investors in these strategies, the adoption of the risk parity approach has been slower in Australia given the defined contribution nature of Australian superannuation funds relative to the defined benefit nature of offshore pension funds which have a strong focus on matching liabilities. A further consideration for Australian superannuation funds is the peer risk faced by funds taking a radically different approach to the norm. Nonetheless, risk parity strategies could play an important role for Australian superannuation funds as the focus shifts from accumulation building to capital preservation for retirees.

This paper has explored some new approaches to help improve and diversify portfolio beta. Attention now turns to exploring more efficient ways to harness alpha within investor portfolios to further diversify and boost portfolio returns.

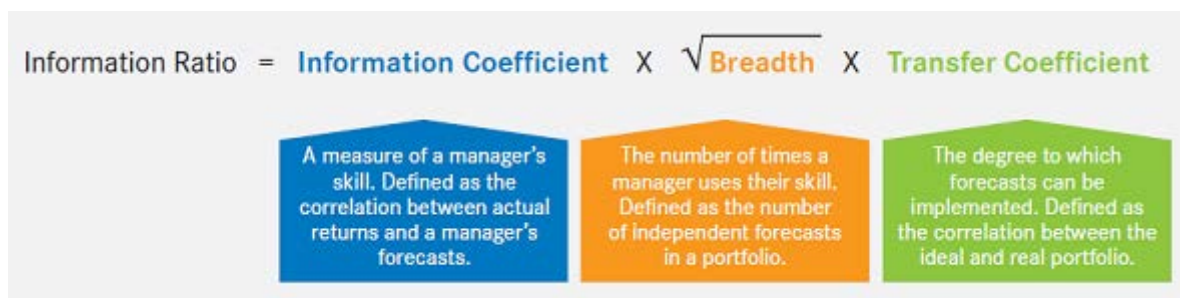
1.3 My portfolio returns are on a diet, can I have some fries with my beta?

As shown above, a well-diversified portfolio of market betas can improve returns with lower risk and greater diversification from equity markets, however the total returns achieved by these portfolios is still only two to three percentage points above Australian cash rates, even after a tremendous bull market for bonds. Investors are rightly asking the question: “How can I boost returns without taking on more equity risk?” The obvious answer to this question is to utilise some form of active management to increase returns – but at what risk? If the

objective of a rational investor is to maximise returns while minimising risk, it stands to reason that an investor should allocate risk to strategies that have the highest return expectation for the risk that is allocated. Investors should also have regard to the diversification benefits that an active return stream may have when blending with the broader portfolio. From a practical perspective, this commonly means choosing active return streams which have the highest expected information ratio⁵ and the lowest possible correlation with the existing portfolio or risk factor that the investor is seeking diversity from. The addition of these “superior quality” active returns should have the effect of increasing total portfolio returns with minimal incremental risk.

This leads to the investor’s next question: “So which strategies have the highest expected information ratio?” To understand this it is worth breaking down the information ratio into its constituent components. Perhaps the best description of this is by Grinold and Kahn (Active Portfolio Management, 2000) who introduce the Fundamental Law of Active Management. An extended version of this is shown in Figure 8.

Figure 8: The Fundamental Law of Active Management



Sources: Grinold, R and Khan, R. (2000) Active Portfolio Management, 2nd edition: McGraw-Hill.

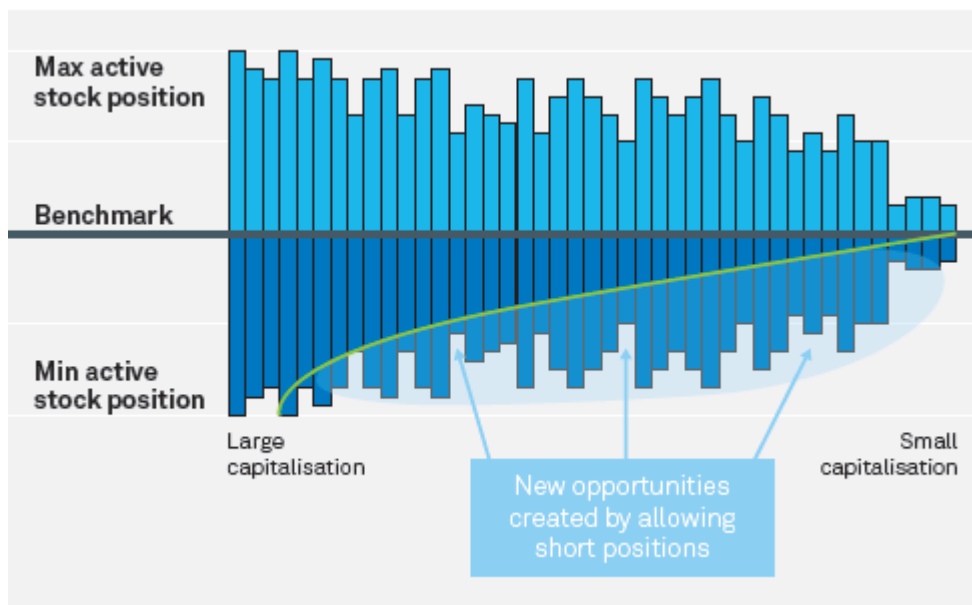
According to the Fundamental Law of Active Management, a manager has three ways to improve the information ratio of their portfolio: either improve their skill at forecasting returns (the “information coefficient”); look for additional ways to apply their skill within a portfolio (breadth); or reduce the constraints inhibiting implementation of their insights (maximise the transfer coefficient) . For example, to increase the information ratio from 0.5 to 1.0 a manager either needs to double their skill or increase breadth by a factor of four or double the transfer coefficient, or some combination of the these. If taken a step further to better reflect an implementable portfolio, a third term can be introduced; the Transfer Coefficient (TC). The Transfer Coefficient is a measure of the extent to which a manager’s active views can be implemented in a ‘real’ investor portfolio.

So how does this relate to the investor’s question around which strategies tend to have the highest information ratio? It is the transfer coefficient that is of most relevance here. Naturally, all active managers purport that they have more “skill” than the next manager, and outlining a framework for separating skilful managers from the less skilful is beyond the

scope of this paper. The second term, “Breadth” is typically a function of the style of active management. All else equal, combining skill with higher frequency of active views will result in a higher information ratio. But in the ‘real’ world there are transaction costs and portfolio constraints that limit the extent to which a manager’s ‘ideal’ portfolio translates into a ‘real’ portfolio. This effect is measured by the transfer coefficient and it can be used to easily distinguish between those strategies that are expected to have a higher information ratio than other strategies, all things equal.

Essentially, it comes down to the extent to which portfolio constraints and transaction cost restrict a manager’s opportunity set for applying their skill (via active positions versus a specified benchmark). For example, a long-only active equity manager expresses their investment insights by taking active positions in securities relative to their holding in the benchmark. While there is no constraint for a manager wanting to buy more of a stock they like, for stocks they dislike, the maximum negative active position possible for each stock will be to hold no shares at all. This reduces the opportunity set for the long-only manager and reduces the transfer coefficient of the portfolio. The inability to take full advantage of negative stock forecasts becomes particularly detrimental when assets comprise a small percentage of the benchmark. The green line in Figure 9 below represents the binding short constraint for the long-only manager portfolios.

Figure 9: Portfolio constraints faced by long-only strategies



Source: BlackRock

In contrast, a market neutral manager has no benchmark-related constraints. In addition to taking long positions, they “sell short” to create negative weights in those stocks which have relatively poor return expectations. Negative positions are achieved by borrowing securities

and then selling them in the market as normal trades. Stocks that have been identified as overpriced are sold short. When the stocks have returned to fair value, they are repurchased and the borrowed stocks are returned to the stock lender. This increases the transfer coefficient of the strategy and a more complete implementation of the manager's stock selection insights. The increased opportunity set is illustrated in Figure 9 as the light blue shaded area under the green line.

The expected improvement in a manager's information ratio can be estimated using the Fundamental Law of Active Management⁶. Let's assume that a manager is benchmarked against the S&P/ASX300 and has an active view on each stock in the index but can only implement 50% of these active views in the client portfolio due to the portfolio's long-only mandate constraint (ie. transfer coefficient = 0.5). To achieve an information ratio of 0.5, the manager needs to have an information coefficient (skill) of 0.058. The same manager can improve his/her information ratio simply by relaxing the long-only constraint which will allow the manager to express more fully both positive and negative views across a greater number of stocks in the index. For illustrative purposes, assume that by relaxing the long only constraint, the manager can now implement 80% of these active views in the client portfolio. The manager's information ratio can improve to 0.8⁷ without increasing skill or breadth.

So what's the point of all this theory? Generally speaking, strategies which have fewer constraints should have a higher transfer coefficient, as such they should produce higher quality returns than those which are constrained, all else equal. As a group, hedge funds which are less constrained and have the potential to position both long and short across assets should have the ability to produce higher returns per unit of risk compared with more constrained long only active strategies.

This has important implications for investors looking to make the most efficient use of their active risk budget. Recall the statement at the start of this section that the objective of a rational investor is to maximise returns while minimising risk, it stands to reason that an investor should allocate risk to strategies that have the highest return expectation for the risk that is allocated. So an investor who relies heavily on long-only managers to provide active returns should, in the author's view, either ensure they have their money invested with very skilful managers or think about shifting more of their risk allocation to less constrained investment strategies to improve the efficiency of their portfolio, eg. via hedge funds and other alternatives.

2. Move alternatives from the periphery to the core

Australian investors were early adopters of alternatives through the late 90s and early 2000s. As an asset class, alternatives rose from 5% of investor portfolios in 1997 to an allocation of 13% in 2011. Breaking the alternatives category down further, the majority of the 13% allocation comprises currency and infrastructure investments with only 2% of total assets

invested in hedge funds⁸. This seems a low allocation given the potential return and diversification benefits offered by hedge funds. In some cases, investors have funded hedge fund investments from their cash allocation given most hedge funds seek absolute returns versus a cash benchmark. This has tended to restrict the utilisation of hedge funds in a portfolio.

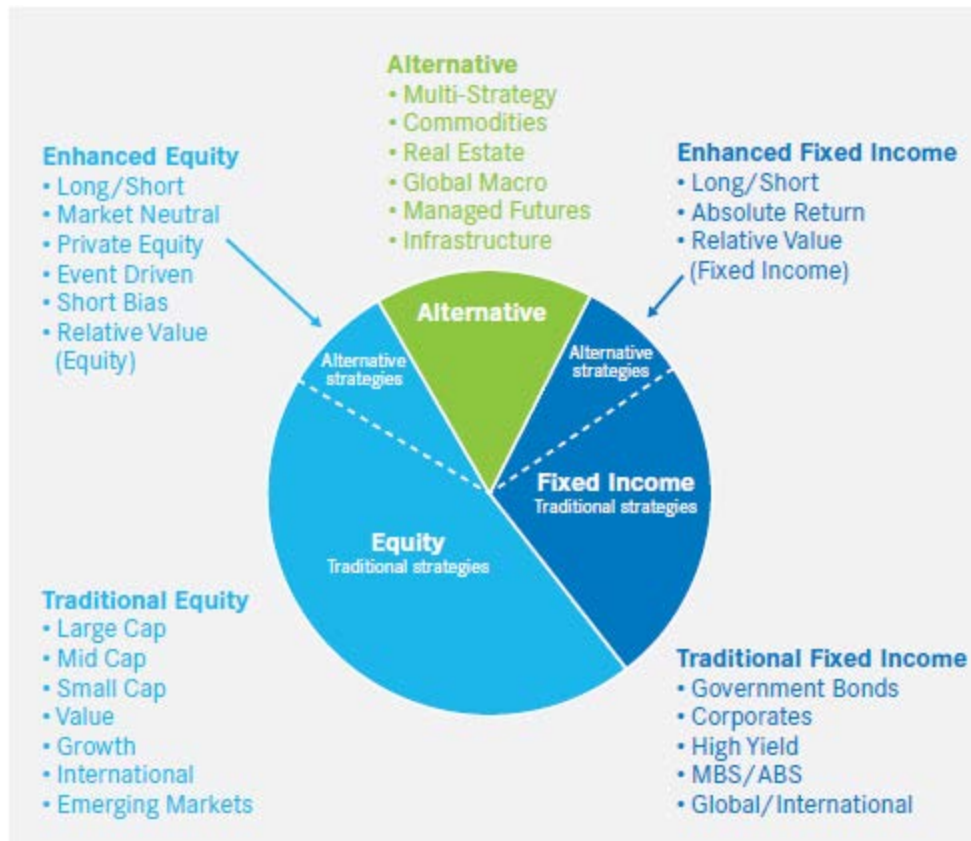
More broadly, investors are taking a closer look at their alternative investments to understand the types of risks they are taking and rethinking where these investments fit in their asset allocation models.

It is the author's contention that alternatives should take a broader role in investor portfolios. Some examples of how this can be achieved are:

- Reallocating part of an existing long-only equity portfolio to long/short equity strategies.
- Redefining private equity allocations as 'equity' rather than 'alternative'.
- Reducing exposure to traditional fixed income products such as Government bonds and investment grade credit, and increasing exposure to long/short absolute return and relative value fixed income strategies.
- Replicating existing equity and fixed income allocations synthetically, unlocking cash to invest in other strategies.

These measures are illustrated in Figure 10.

Figure 10: Alternatives taking broader role in investor portfolio



Source: BlackRock.

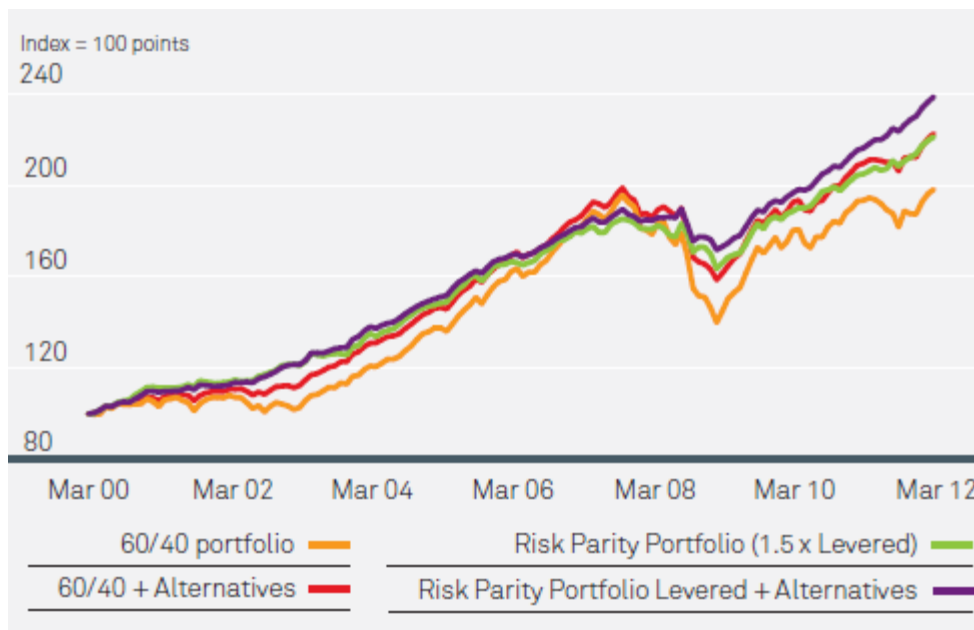
Moving investments previously considered ‘alternative’ into the core of a portfolio can have dramatic results. Taking the same 60/40 allocation used in Figure 4 above and replacing a portion of the traditional equity and fixed income exposures with absolute return focused equity and fixed income strategies, together with the inclusion of a global macro strategy to provide tactical asset allocation views in the portfolio, results in an increase in total portfolio returns from 5.9% for the traditional 60/40 portfolio to 6.9% with a 2% reduction in portfolio risk (portfolio volatility declines from 7% to 5%). The portfolio’s Sharpe ratio increases from 0.1 to 0.3. In addition, the maximum drawdown experienced by the portfolio reduces from 28% to 20%. These figures are outlined in Figure 11.

Adding alternatives to the traditional 60/40 portfolio greatly improves the portfolio’s return characteristics. But what would happen if the the traditional 60/40 portfolio was replaced with a risk parity portfolio and combined with the above allocation to alternatives? The historical results for the last 12 years are also outlined in Figure 11. The portfolio return increases to 7.5%, risk declines further from 5.0% to 3.3% and the Sharpe ratio doubles from

0.3 to 0.6. In addition, portfolio drawdown halves from 20% to only 9% and the correlation with equities falls from 0.93 to 0.65.

Figure 11: Including alternatives as a core allocation

Return Analysis (Apr 2000 – Mar 2012)	Traditional 60/40 Portfolio	60/40 Portfolio + Alternatives	Risk Parity Portfolio (1.5 x levered)	Levered Risk Parity + Alternatives
Return	5.9%	6.9%	6.9%	7.5%
Risk	7.0%	5.0%	4.1%	3.3%
Sharpe Ratio	0.1	0.3	0.4	0.6
Max Drawdown	28%	20%	12%	9%
Correlation to ASX	0.96	0.93	0.61	0.65



Sources: BlackRock, Datastream. For illustrative purposes only. The 60/40 portfolio comprises a 40% allocation to income assets represented by an equal weight investment in the UBS Composite Index, the Barclays Global Aggregate Bond Index Hedged to \$A, and the UBS Bank Bill Index. The 60% allocation to growth assets is represented by a 20% allocation to the MSCI World Ex Australia Hedged to \$A, a 30% allocation to Australian Equities, a 5% allocation to the S&P/ASX300 REIT Index and a 5% allocation to the Dow Jones–UBS Commodity Index. Risk Parity Portfolio returns comprise index returns outlined above using the capital allocations outlined in Figure 5.

IF IT'S THAT EASY, WHY ISN'T EVERYONE DOING IT?

The common criticisms of the risk parity approach were outlined earlier, but what about hedge funds? Many investors are still smarting from a poor experience with hedge funds and funds of hedge funds through the global financial crisis, and the media has been quick to criticise the asset class – rightly so in some cases (eg. Madoff). However, the author's view is that the pendulum has swung too far to the negative and many investors may overlook the asset class just at the time when a well chosen institutional quality hedge fund may be the answer to investor needs, particularly given the suppressed outlook for returns from traditional assets.

So what are the key considerations that investors should take into account when thinking about investing in hedge funds?

HEDGE FUNDS ARE RISKY....OR ARE THEY?

The term “risk” is very broad and can encompass many types of investment risk. Firstly, the most common use of the term risk, particularly in relation to hedge funds, refers to the volatility of returns. It is true that hedge funds typically target a higher level of expected return than more traditional active strategies.

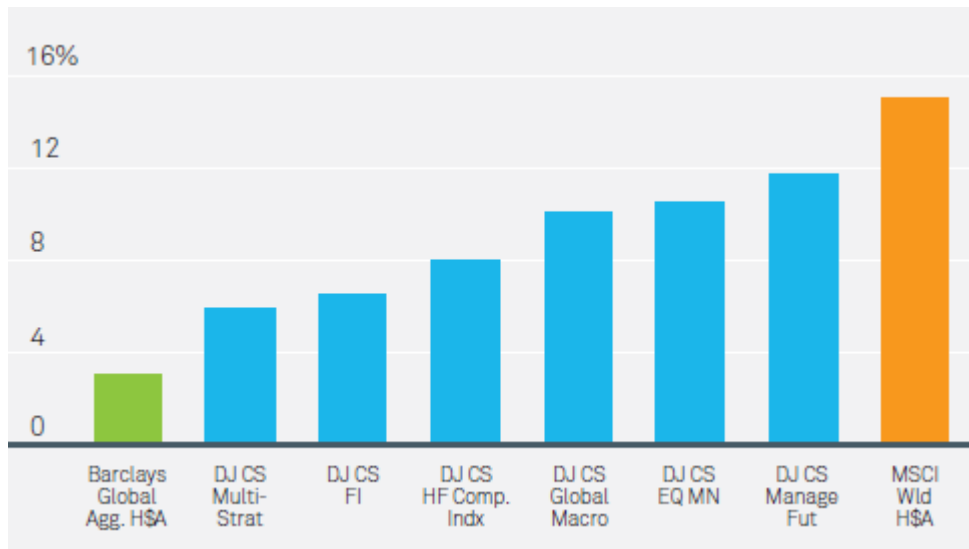
By their nature, hedge funds are typically less constrained than long only active strategies which provide hedge funds with the greatest opportunity to maximise the information ratio of their returns (refer above section on the Fundamental Law of Active Management). In addition, hedge fund strategies aim to be capital efficient for investors. These strategies typically target high levels of returns, and correspondingly higher risk so that investors only need to invest a small amount of capital to achieve the desired return contribution at their own portfolio level.

For example, an investor looking to add 1% to their overall portfolio only needs to invest 5% in a hedge fund which targets 20% return above cash to achieve the desired outcome, assuming the manager meets that return target. As long as an investor has a good understanding of both the return expectations for a strategy and what risk the manager expects to utilise to achieve that return, the investor can tailor their investment to suit the desired outcome for their own portfolio.

The key question that investors should ask is how the volatility of returns compares with the volatility of returns of the other assets in the portfolio? As seen from the risk parity discussion above, investor portfolios have historically been dominated by equity risk. The common misperception is that hedge funds are riskier than equity markets. Figure 12 below shows the standard deviation of returns for several common hedge fund styles as measured by the Credit Suisse Dow Jones Hedge Fund indices from inception of these indices in January

1994 to December 2011. As illustrated, all have exhibited lower return volatility than global equities, with several styles exhibiting risk closer to bonds than equities.

Figure 12: Hedge fund return volatility vs. Equities and Bonds
Annualised Risk (Jan 1994 – Dec 2011)

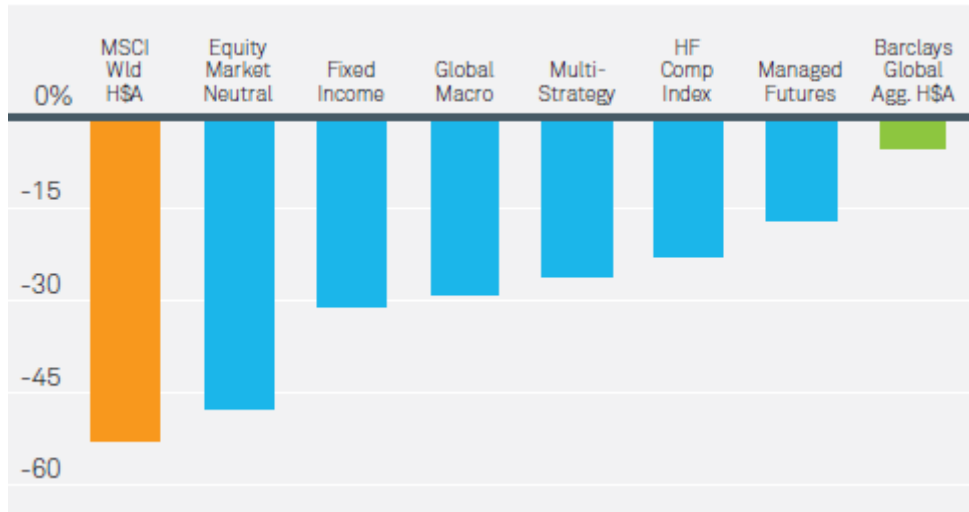


Sources: Dow Jones/Credit Suisse, Datastream.

But, standard deviation of returns is only one measure of return risk – what about similar analysis using the maximum peak to trough drawdown? Figure 13 show these results. Again, the findings show that using maximum drawdown as the risk metric, the risk of each hedge fund style in all cases falls below equities, but higher than bonds. One area of disappointment for the asset class has clearly been the underperformance of Equity Market Neutral strategies during the global financial crisis. This is evident in the Figure 13 where in most cases the maximum drawdown for each hedge fund style was concentrated in the months following the collapse of Lehman Brothers in September 2008.

Much has been documented about the reasons behind this level of drawdown for equity market neutral strategies which essentially boils down to commonality between portfolio holdings across managers and the liquidity squeeze that took place due to the requirement to reduce leverage and hold cash. The global financial crisis provided a wake up call for many of these equity market neutral managers to diversify their insights away from the more generic factors (which results in commonality of positions) and strengthen their risk controls. Nonetheless, while the perception is that hedge funds are riskier than equities, it does not appear to be the case.

Figure 13: Hedge fund maximum drawdown vs Equities and Bonds
Maximum drawdown (Jan 1994 – Dec 2011)



Sources: Dow Jones/Credit Suisse, Datastream.

COST EFFICIENCY AND FEE CONSIDERATIONS

There has been a heightened focus on investment manager fees across all asset classes in recent years as many strategies have fallen short of delivering the returns expected. In addition, for Australian superannuation investors, the MySuper reforms have increased this focus. Hedge fund fees have naturally been in the spotlight as, by simply ranking headline Management Expense Ratios (MERs), hedge funds are typically at the top of the list, with index funds at the bottom. Doing this simple comparison fails to take into account both the level and the quality of returns targeted by each strategy and an investor falls into the trap of comparing apples with oranges. In order to obtain a fairer comparison of fees between funds, one must first scale fees according to the expected return.

For example, assume an institutional investor wants to compare fees between a hedge fund investment which targets a 20% active return and a long only active equity mandate which targets 2% active return over an equity benchmark. Assume the hedge fund fees are the “typical” 2% base fee and 20% performance fee and that the long only active equity mandate fee is 0.30% flat. Clearly, the headline management fee is much higher than the equity mandate. but what if we return-adjust the hedge fund fee to match the expected return of the equity mandate? (A similar calculation can be done to determine the capital allocation required in the hedge fund to meet the same target return contribution to the client portfolio.⁹) First, assume that each investment delivers the target level of out-performance over their respective index, so that the fee scaling is valid. On this basis, the total fees levied by the hedge fund would be 5.6% (2% base fee plus 20% of net of base fee alpha of 18%). On

a return (or capital) adjusted basis the total fee for the hedge fund investment would be 0.56%¹⁰. Clearly this is a fairer comparison of hedge fund fees with the long only equity mandate than simply comparing headline fees of 2% plus 20%.

But why pay 26 basis points more for the same level of return? There is a problem with the return assumption, because we are again comparing apples to oranges. The quality of return or in other terms, the consistency of return as measured by the information ratio of the two return streams is vastly different. While the long only equity mandate hopes to achieve its return by taking 3% risk providing investors with an expected information ratio of 0.67¹¹, the hedge fund looks to achieve the 20% return target by taking 16% risk resulting in an information ratio of 1.25, almost twice that of the equity mandate. Or stated another way, to achieve the same level of excess return, the hedge fund only requires around half the risk of the equity mandate to achieve the same return goal.

In addition, the correlation of active returns for the hedge fund versus equities compared with the correlation of active return for the equity mandate are expected to be much lower. As such, the returns streams for a well chosen hedge fund are most likely diversifying to an investor's overall portfolio – possibly actually reducing overall portfolio risk. Depending on the investor's preferences, a decision will need to be made whether the risk and diversification benefit offered by the hedge fund warrants the fee premium over the long only mandate.

But what if the return targets of the two investments are not met, surely an investor still pays more for the hedge fund? For this, the above calculations must be redone but assuming each manager fails to deliver any excess returns. As the hedge fund fee structure comprises both a base fee and incentive fee, in a period where there is no alpha delivered, the fund only charges the base fee. On a return-adjusted (or in this case, as returns are zero, a capital-adjusted basis) the investor will pay 0.20% for the hedge fund while due to the flat fee structure of the long only mandate, the investor will pay 0.30% regardless of poor performance. The performance fee structure typical of hedge funds is important as it aligns manager and client interests and ensures a manager is only rewarded for delivering excess returns, as opposed to more traditional strategies which charge a flat fee regardless of performance.

When analysed in the correct context, fees charged by hedge funds are not too dissimilar to that of other active strategies. Managers of "institutional quality" hedge funds who deliver diversified returns on a consistent basis and protect investor capital during times of market stress should continue to command a fee premium over traditional strategies. Nonetheless, fees are an important consideration and there are cost effective ways for investors to gain exposure to the higher quality return streams that many of these funds can offer.

For example, rather than investing in several single strategy funds to obtain style diversification across asset classes (eg. Equity Market Neutral, Global Macro, Commodities, Fixed Income), where each fund charges its own performance fee in isolation, a more cost

effective approach would be to invest in a multi-strategy fund that combines these strategies into a single fund which charges an aggregate performance fee for overall delivered performance. Under a single strategy approach, an investor would still pay those managers who exceeded their benchmarks even though the overall portfolio of hedge funds may have experienced negative returns due to the underperformance of one or two managers. In contrast, a multi-strategy fund with a single layer of fees that only charges performance fees if the fund in total exceeds its benchmark is a much more cost effective way to gain exposure to several hedge fund styles. Fee savings upwards of 20% of total fees may be achieved by using a multi-strategy approach which utilises this performance fee netting methodology.

The focus on fees will likely continue for some time until further clarity is reached on the pending MySuper reforms. The logical outcome should be that investors take into account the level of fees, together with the level of returns across various investment options. Ultimately, what is important to the end investor is the net of fee return on their investment and what mix of strategies are best placed to maximise this outcome. Investment managers are also responding by increasing the alignment of interest with clients through offering different splits of base and incentive fee, looking at ways to extend the assessment of performance fees over a longer time horizon and incorporating fee deferral mechanisms.

LIQUIDITY

Along with fees, the importance of liquidity has also been elevated in the list of investor considerations in recent years. Liquidity terms across hedge funds differ dramatically depending on hedge fund style and the underlying asset universe utilised by the strategy. It is not uncommon for hedge funds to provide quarterly liquidity with various gates and lock-up mechanisms. For some strategies, there are very sensible reasons why these strategies are less liquid than a portfolio of traditional assets. Hedge fund strategies by their nature seek to deliver diversified returns from traditional assets and look to exploit sources of risk premia which are difficult to access for the normal investor. There is quite often a trade-off between delivering high quality diversified returns that hedge funds can offer versus liquidity.

In addition, it is important to remember that a fund's stated liquidity terms (ie. monthly, quarterly etc) are only as good as the liquidity of the securities used to implement the strategy within the fund. While some funds advertise daily or weekly liquidity, investors in these funds need to thoroughly understand the liquidity profile of the assets traded in the fund to determine if the stated liquidity profile holds in times of market stress.

Many institutional investors quite often do not require daily access to funds. For investors who are willing to accept monthly liquidity there are very good returns and risk premia that investors can access across many hedge fund styles. By limiting the universe to hedge fund managers that claim to offer enhanced liquidity, the investable universe of these managers will naturally be restricted and the return streams offered may be of lower quality than other managers who look to exploit risk premia outside of traditional asset classes. Investors

should look to see whether a manager has consistently met the stated liquidity terms of the fund or if the fund has been gated, as part of the qualitative due diligence process prior to investing.

UNCERTAIN TIMES CALL FOR BOLD MEASURES

The great Irish statesman and scholar Edmund Burke once wrote, “You can never plan the future by the past.” Never were truer words written for investment practitioners. In a world of stagnating growth, rising correlations and lacklustre returns from traditional assets, investors are rightly looking at alternatives to the traditional approach.

While there is no single solution to the return conundrum that many investors face, this paper has highlighted the risk parity approach to asset allocation as a way to diversify a portfolio and improve its risk adjusted returns. In addition, integrating alternatives more fully into investor portfolios has the potential to offer significant return and diversification benefits and as such, these strategies deserve fresh consideration by investors.

While investors may understandably feel apprehensive about departing from traditional approaches, bold measures are needed in these uncertain times.

ENDNOTES

1. OECD Economic Outlook, Volume 2011, Issue 2.
2. BRIC refers to the countries of Brazil, Russia, India and China.
3. World Economic Update, 24 January 2012, International Monetary Fund (IMF).
4. Donald Rumsfeld, United States Secretary of Defense, Press statement, February 2002.
5. Information ratio measures the quality of an active return stream. It is defined as the ratio of active returns divided by active risk over a given period. Investors seek to maximise active returns per unit of active risk.
6. Grinold, R and Khan, R. (2000) Active Portfolio Management, 2nd edition: McGraw-Hill.
7. $IR = 0.058 \times \sqrt{300} \times 0.8 \approx 0.8$.
8. Rainmaker, December 2011.
9. Assume the investor wants to add 1% excess return to their portfolio. The investor would need to invest 50% of portfolio assets in the Equity Fund but only a 5% investment will be need in the hedge fund to achieve the 1% excess return target.
10. Return (or capital) adjusted fee = $2\%/20\% \times 5.6\% = 0.56\%$.
11. Information ratio = Active return/active risk = $2\%/3\% = 0.67$.

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