portfolio construction CONFERENCE
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INVESTORS WANT REAL RETURNS, NOT RELATIVE ONES

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Investors ultimately expect real return outcomes because they need to fund real purchases and pay real bills. This research paper argues that while it is real outcomes that matter, the framework within which the industry makes investment choices and constructs investment portfolios for clients is fundamentally flawed and will not deliver consistent real return outcomes matched to investor objectives. What is required is an objectives-based framework, in which the real objective, combined with the investor's view of asset class returns relative to this objective, is the primary determinant of the portfolio.

"Most of the things we do, we do for no better reason than that our fathers have done them or that our neighbours do them, and the same is true of a larger part than we suspect of what we think." Oliver Wendell Holmes, Jr.

Relative returns don't pay bills, buy cars or fund retirement. At the end of the day, it's real outcomes that matter most. But if it's real outcomes that matter, then the framework with which the industry makes investment choices and constructs investment portfolios for clients is fundamentally flawed. It is implicitly based on a series of assumptions designed to maximise relative performance (and for that matter minimise risk relative to peers), not to deliver consistent real return outcomes matched to investor objectives.

For most investors, the investment management process follows a relatively prescriptive formula. While clearly an oversimplification, the thrust of the process is to profile the investor according to his/her return objectives and tolerance for risk and place him/her into broad investment groupings defined along the lines of "conservative", "balanced" or "growth" definitions. Each grouping then invests according to a well-defined model based around relatively static allocations to growth assets (read equities). This model has been the basis for portfolio construction for at least the last 30 years.

While numerous flirtations with improvement have been tried - such as the shift towards alternative investments (for example, private equity and hedge funds), stable risk (or risk equalisation) portfolios, life cycle funds and more recently the re-emergence of active management of asset allocation (re-incarnated as Dynamic Asset Allocation, or DAA), none have fundamentally addressed the basic shortcomings inherent in the portfolio construction model or process.

WELCOME TO THE REAL WORLD

Investor disappointment and increasing disillusionment with the existing portfolio construction model is understandable and well grounded in fact given the poor performance of most diversified portfolios over the last decade. For example the median growth manager returned 3.8% over the 10

years to 30 June 2010[1], well below the required 8.8% needed to achieve a return of 5% above Australia's inflation rate[2] over this period.

The underwhelming performance of what is in effect a proxy for the industry standard model can be traced to its dependence on a questionable series of assumptions:

- The Strategic Asset Allocation (SAA) will meet our objectives over time
- Valuations don't matter in the long run
- Volatility is a good indicator of risk
- The order of returns doesn't matter

The SAA will meet our objectives over time

The fixed SAA model implicitly assumes that equities will outperform bonds over the medium term and the difference in risk between equity and bond returns is sufficient to warrant holding a substantial exposure to equities at all times. This has been severely tested over the last two decades with bonds outperforming global equities over the last 10 and 20 years respectively as shown in figure 1 below. While Australian equities have performed better, the gap between Australian equity and bond returns is relatively small given to the additional risk.

Figure 1: Long-term returns of equities versus bonds
(to 30 June 2010)

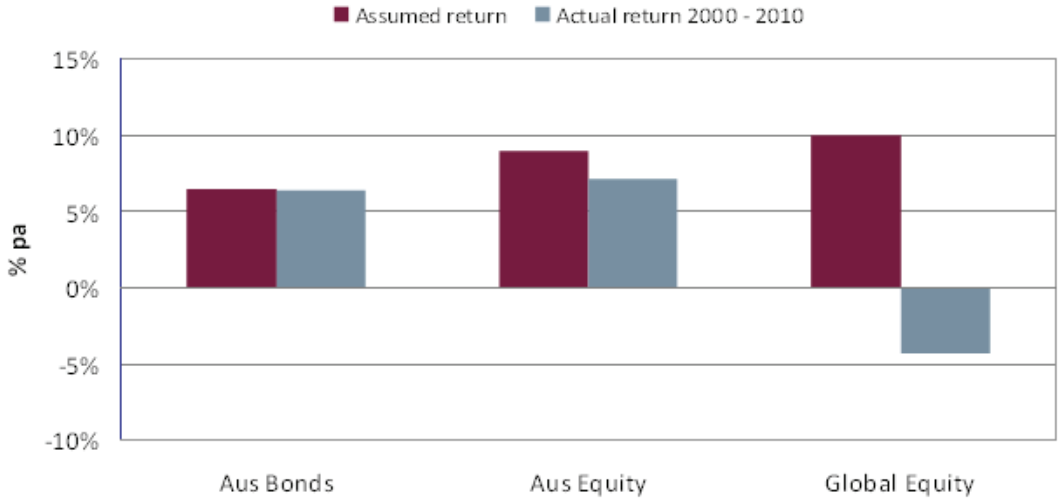
Index	10-year return (%pa)	20-year return (%pa)
MSCI Australia ($A's)	+7.1%	+9.6%
MSCI World – Ex Australia ($A's)	-4.3%	+5.2%
UBS Composite Bond Index ($A's)	+6.4%	+8.8%
CGBI WGBI – All Maturities (Hedged to $A's)	+8.0%	+9.3%

Source: MSCI, UBS, CGBI

Figure 2 below also shows the gap between the markets assumptions about returns over the last decade compared to the actual return.

[1] Based on Morningstar Multi-Sector Growth Survey – Median Manager (post fee)
[2] Reserve Bank of Australia's trimmed mean inflation measure

Figure 2: Assumed vs Actual returns
(June 2000 to June 2010)



Source: Schroders, Datastream. Aus bonds = UBS Composite Bond Index. Aud Equity = MSCI Australia ($A's). Global Equity = MSCI World - ex Australia ($A's)

Several points stand out from this:

- the difference between expected and realised returns is substantial for global equities, both in magnitude and direction; and,
- the difference between realised bond returns and realised equity returns shows investors would have been better served by owning more bonds than equities (even before any allowance is made for risk).

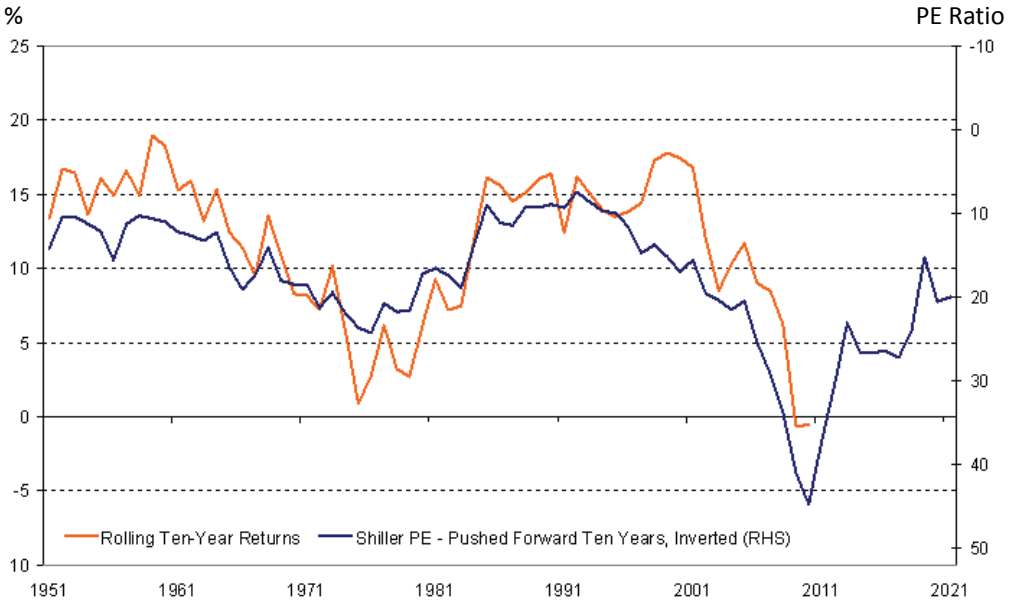
Valuations do matter

The substantial gap between expected and realised returns for global equities can be attributed to valuation being ignored, not that returns were unpredictable.

While not perfect, a strong relationship has been found between the Shiller PE[3] and subsequent 10-year (or long run) equity returns. The Shiller PE uses the inflation-adjusted average of the previous 10-year earnings to calculate the PE ratio. As Figure 3 below shows, the extent of the overvaluation in the global sharemarket on this metric accurately foreshadowed a decade of very weak (on average) equity returns.

[3] Campbell and Shiller, 2001.

Figure 3: US Equity Market and Shiller PE
(1951 to 2021)



Source: Schroders, Campbell and Shiller, 2001

Risk premium (and therefore prospective returns) can and do change, often markedly. This has been particularly apparent in credit and equity markets over recent years.

Risk is not volatility

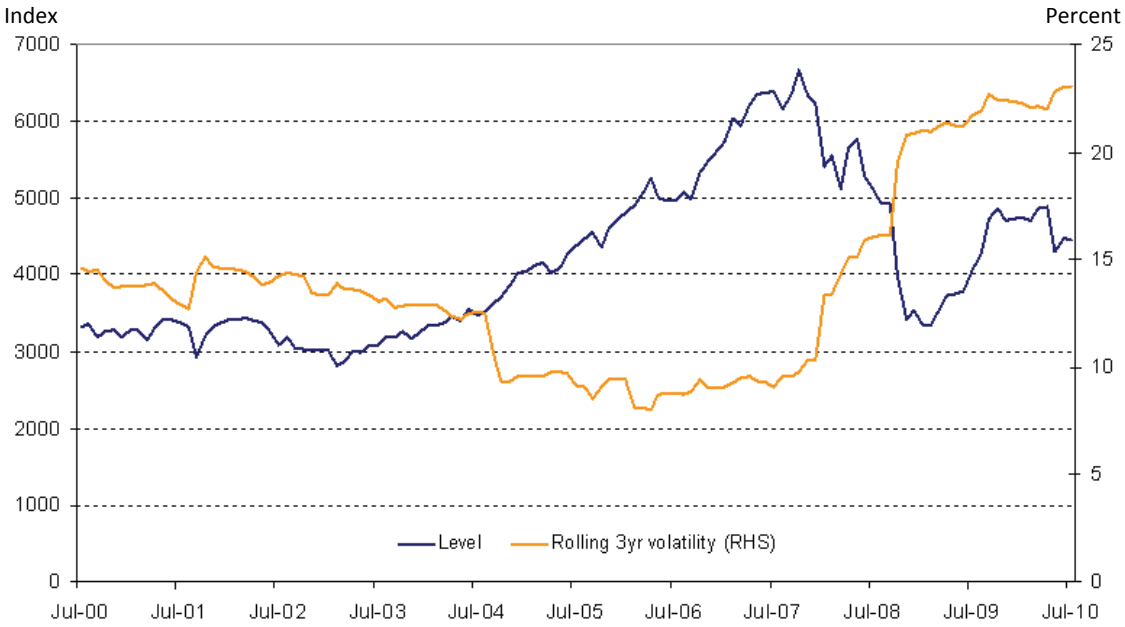
If the proposition that investors want real outcomes is correct, then risk too is often misconstrued. The concept of volatility (or standard deviation) as the market's default risk metric assumes that short-term variation in returns matters. For most investors, "risk" can be better described as the risk of losing money, either permanently or over a timeframe relevant to the investor's investment horizon, and the risk of not achieving a return sufficient to meet liabilities (defined as either actual liabilities or a specific return target).

Against this definition, volatility and risk are inversely correlated as shown in Figure 4 below.

Volatility typically declines as the price of so-called risky assets (such as equities) rise and is often at its lowest in the later phases of a bull market which usually coincides with extremes of valuation. Expensive markets expose investors to substantial downside price risk, meaning that despite low volatility, the risk of losing money (either temporarily or permanently) is high. Conversely, high volatility is typically associated with falling markets, which, all else being equal, improves valuations and thereby reduces the risk of loss over the medium term. Consistent with the analysis on the

Shiller PE in Figure 3, there is a strong correlation between market valuation and future returns – both positive and negative – and a stronger correlation to risk than volatility.

Figure 4: S&P ASX 200
(July 2000 to July 2010)



Source: Schroders, Datastream

The order of returns matters

Implicit in the fixed SAA model is an assumption that return volatility is a necessary price to be paid for return. In other words, the return dispersion generated by the fixed SAA model is inconsequential to the investor provided his/her investment horizon is sufficiently long such that realised equity returns equate to expectations.

However, practical application of this model falls well short.

Consider the case of an employee who joined a fund in July 1994 and contributed 9% of his salary per annum to a fund with a performance objective of Australian CPI +5%. Also assume the investor's portfolio achieves the return of the median manager over this period. The employee's balance is naturally low at the start of this period and rises on the basis of accumulated contributions over time. Figure 5 below shows the position the employee would be in relative to the CPI+5% objective. Based on actual (or money weighted) returns for the period July 1994 to Dec 2009, he is -14.5% below his performance target. In contrast, if we simply use the average (or time-weighted) return, his balance while still below the objective, is substantially better at -6.9%. Figure 6 makes the same assumptions but for an investor starting in July 2000. While the magnitude of the outcomes are in effect reversed, the conclusion is the same.

Figure 5: Difference between actual returns vs objective CPI+5%
(July 1994 to December 2009)

Source: Schroders. Objective assumes 9% of salary contributed per annum to a fund with a performance objective of Au CPI +5%. Actual assumes 9% of salary contributed per annum achieving the return of the median manager over the period.)

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The difference in return outcomes vis-à-vis objectives is simple. Large returns (plus or minus) have a much more substantial impact on outcomes if they occur towards the end of an investment horizon rather than towards the start when the account balance is low. Clearly statistics based on averages are largely irrelevant to individual investors with their substantially varying circumstances, objectives and investment horizons.

BUILDING A BETTER PORTFOLIO

The ideas above highlight some substantial shortcomings in the way portfolio construction has been approached for the last three decades. An alternative approach is therefore necessary to overcome these constraints and deliver the sorts of outcomes investors genuinely require.

A more satisfactory alternative model would satisfy several important criteria:

- focus on the delivery of real outcomes, not relative ones;
- recognise that risk premiums are dynamic, and use them;
- recognise that the path of returns is important;
- manage the risks that matter – not the ones that are easiest to measure; and,
- hold the manager accountable for the delivery of real not relative outcomes.

To achieve these goals, a fundamental change is required to the way portfolios are constructed. Central to this change is a shift away from a redundant fixed SAA approach to an objective-based asset allocation model.

An objective-based asset allocation approach focuses on the application of investment capital to those areas where risk is rewarded (via an appropriate risk premium) and where the expected return matches or exceeds the investor's real objective. It entails a continuous assessment of risk premium (and therefore prospective returns) to continually allocate the risk budget to those assets which in combination meet the underlying performance objective with the greatest certainty.

The standard SAA model is based around the development of long-run risk and return assumptions (often backward looking). These return assumptions rarely change much and rarely change the SAA of the portfolio significantly as the portfolio positions tend to be anchored by convention or simply due to the static nature of the underlying returns.

In an objective-based framework, return expectations respond to changes in risk premium and as they do, so too will the fund's asset allocation - often materially – and, if done correctly, by a magnitude sufficient to fundamentally change the return and risk profile of the portfolio. While all well and good in theory, it is clearly more difficult to achieve in practice. Success is dependent on the quality of the underlying assumptions and given that there is no peer group or industry default model to revert to, it requires a highly disciplined and logical process for developing the underlying assumptions and for implementing these in the portfolio. In essence, the portfolio follows the blank-sheet-of-paper approach in that each day, it should be constructed on the basis of being likely to achieve the return objective without any reference back to some pre-determined SAA.

There are a number of pre-requisites for successful implementation.

- A consistent/repeatable model under which returns can be estimated. This model should be free of embedded biases in terms of asset class preferences and be able to generate returns and risk assumptions over a timeframe consistent with the investment horizon (say three years);

- Sufficient differentiation in return expectations to enable substantive changes in portfolio asset allocation;

- Recognition of the inherent uncertainty in asset market returns and thereby possessing flexibility in the portfolio construction process to accommodate this uncertainty;

- An execution platform that can accommodate substantive shifts in portfolio asset allocation;

- A risk management methodology that can accommodate absolute risk metrics and decisions as opposed to relative ones.

Estimating returns

Crucial to the success of an objective-based asset allocation approach is the ability to forecast returns from a broad array of asset classes in a consistent manner that captures factors that will shape returns over the medium to long term. This list includes factors such as the impact of globalisation, technological change, demographics, inflation paradigms and the impact of rising/falling leverage as well as meaningful longer run valuation effects. It should also be sufficiently sophisticated to capture the higher moments of the return distribution (skewness and kurtosis) so as to allow the portfolio manager to better understand and manage the risks that matter most - losing money and shortfall vis-à-vis objectives.

Debate regarding the appropriate timeframe for calculating long-term returns can be problematic. However, what is typically required is a timeframe that is long enough to capture the structural factors described above, but not too long that these effects wash through. Thinking about how these factors would impact returns over a seven to 10-year period is believed by the author to be most relevant.

These effects then need to be synthesised into a quantitative framework. The Gordon Growth Model (R_E=Y+G)[4] can be useful in this regard as it provides a filter for all asset classes and influences. By breaking return expectations down into the component parts, it enables the investor to factor in the impacts of a variety of medium-term factors on returns in a consistent basis, even where assets have no growth potential (ie. bonds). A useful addition to the standard form Gordon Growth Model is a factor that adjusts for long-run valuation anomalies. As discussed earlier, valuations/price has a significant impact on future returns and must be taken into account.

Not only should this framework enable the development of medium-term return forecasts, it should also define the likely return environment reflected in the lower moments of the return distribution (skew and kurtosis).

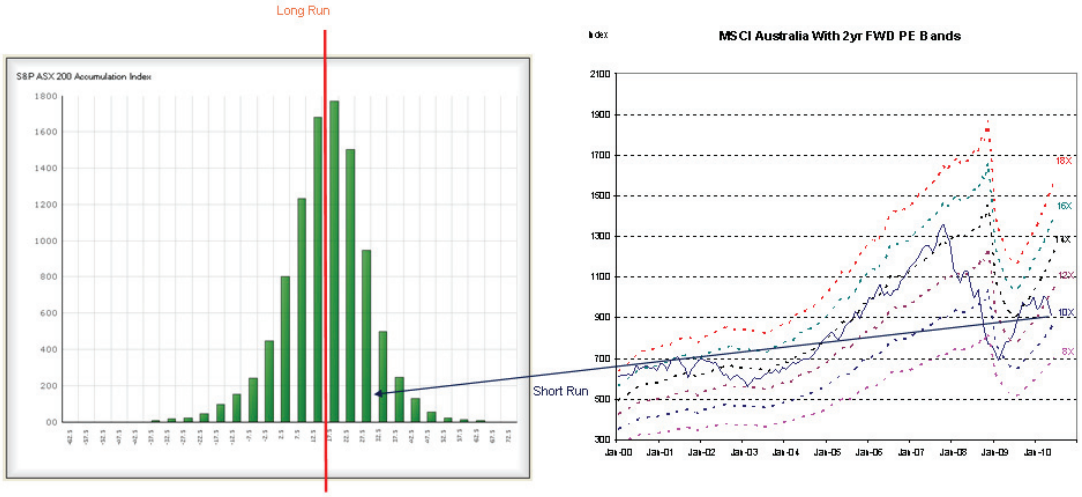
Reconciling long-term returns with short-term objectives

While the above describes the process for thinking about long-term returns, markets can deviate substantially from the long run equilibrium and it is this deviation that will substantially affect the return outcome and the path taken (the path of returns matters as discussed above). In effect, if the steps described above correctly estimate the likely return distribution and its central tendency (ie. equilibrium fair value), then shorter-term valuation anomalies position return expectations within this distribution. One methodology is to adjust the long-term return for short-term valuation risks derived from shorter-term valuation tools to formulate a return adjusted to reflect a shorter-term investment horizon. While this methodology is not perfect, what it does provide is a strong indication of where the risks to the long-run return are, and in particular the proximity of the likely return from the asset to the tails of the distribution. Examples of this are shown below.

[4] *R_E (Expected return). Y (Income) = dividend yield, yield to maturity (default adjusted). G (Growth in Income) = inflation, productivity, profit share, demographics.*

Figure 6 (left) shows an expected return distribution for Australian equities calculated using an ex-ante Monte-Carlo simulation based on 10,000 simulations. Figure 6 (right) is a valuation proxy for the Australian sharemarket calculated on the basis of the forward (2yr) PE Ratio. All else being equal, a cheap market would tend to suggest a return outcome towards the right of equilibrium fair-value and an expensive outcome to the left. By extending this methodology across asset classes, it is possible to calculate a set of dynamic returns that are consistent with long- and short-term influences and which will change as valuations and risk premium adjust.

Figure 6: Expected returns for Australian equities

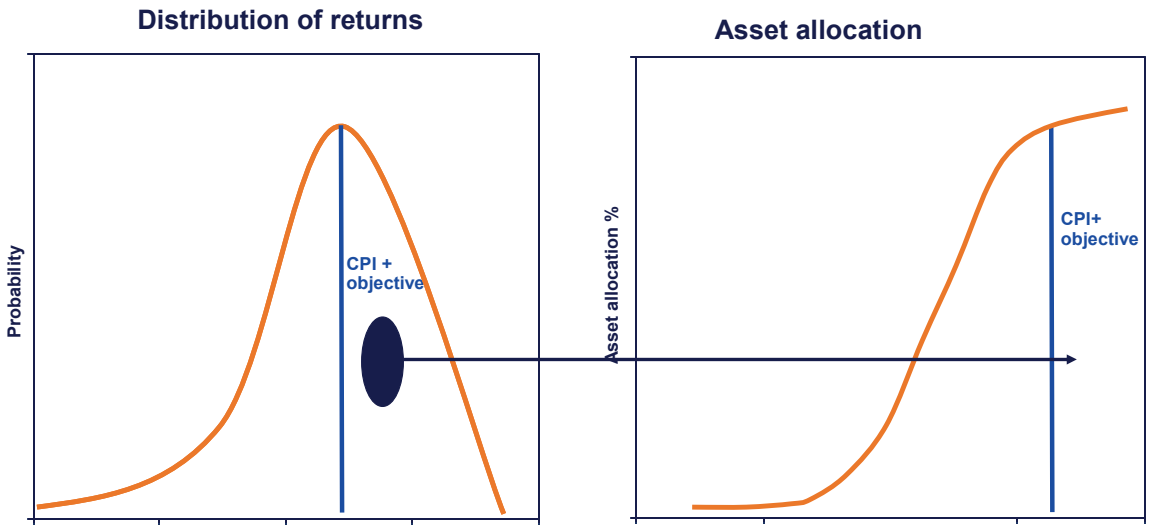


Source: Schroders SMART, Datastream.

Constructing an objective-based portfolio

The approach described above effectively positions each asset on the risk distribution. This gives the portfolio constructor a strong indication of both absolute and relative returns but also the proximity of the return to the tails of the return distribution. In an objective (or real return) environment, this is critical as the portfolio should be constructed around those assets offering the greatest potential for returns around/exceeding the target. In other words, it is important to avoid assets where the risk of a return substantially below target is high.

Figure 7: Distribution of returns vs asset allocation



Source: Schroders

The need for normal portfolio management techniques is not obviated by this methodology, merely premised around return and risk expectations that better reflect the outlook. Another important point of differentiation is that the portfolio should be constructed around maximising the prospect of achieving the return outcome, rather than simply maximising the return on the portfolio for a particular level of risk (defined as standard deviation). Correlation is still highly relevant, but downside risk (or risk of underperformance versus the return target) is critical given the path of returns does matter.

Managing uncertainty

While valuation issues and concerns have been addressed during the return distribution development stage, most investors recognise that valuation anomalies can take time to play out. Other influences such as stage of the cycle, liquidity and momentum can and will have an impact on risk and return. It is necessary to ensure the final portfolio is constructed from assets that pass cyclical screens and is economically diversified as well as being simply diversified by asset class.

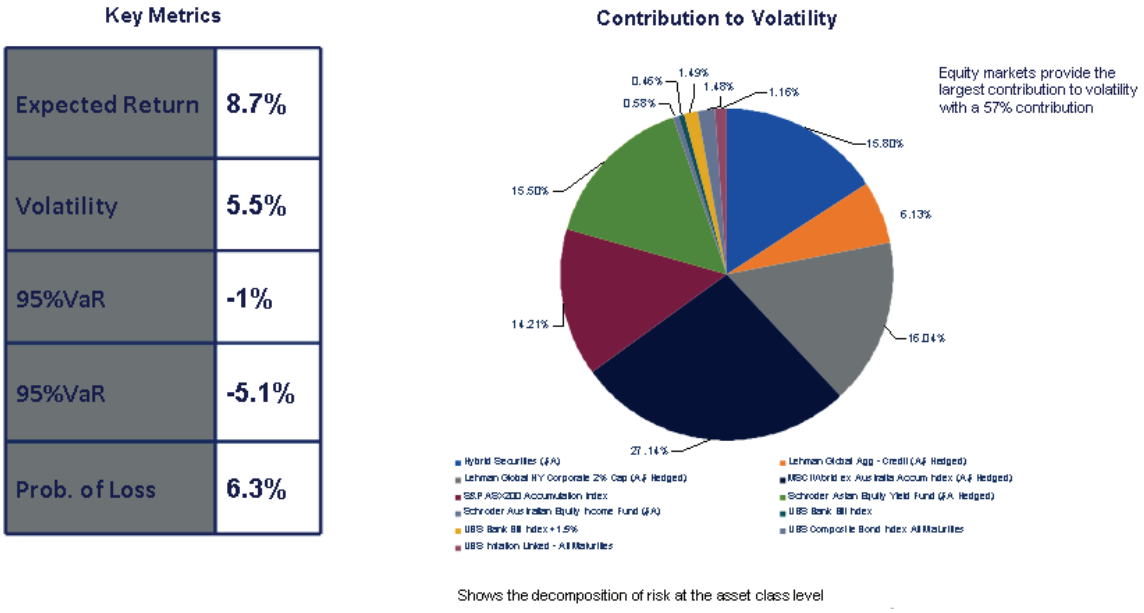
Objective-based portfolio construction also does not obviate the need for diversification. The portfolio construction process should ensure that the portfolio accesses a broad array of risk premium.

Another key differentiator will be the use of risk mitigating strategies such as the purchase of put options over risk assets (be they equities or currencies) as well as the active use of pure defensive strategies such as government bonds and cash to mitigate downside risk – in effect, paying away upside return potential (and/or the associated optionality) to manage downside risk and smooth the profile by which returns are delivered (again, the path of returns matters).

In determining the final objective-based asset allocation, not only does the constructor need to be comfortable that the portfolio meets the return objective, but that it also satisfies a broad range of risk tests including:

- Absolute volatility;
- Relative or tracking error risk around this target;
- Var< CVaR and Stress VaR metrics;
- Probability of loss, probability of a negative return.

Figure 8: Contribution to risk (portfolio volatility)



Source : Schroders (Based on Schroder Real Return Fund, June 2010)

Accountability

The importance of achieving real not relative outcomes has been discussed. In the traditional fixed SAA model – the manager focus shifts almost entirely to relative performance - after the SAA is assumed to deliver the target absolute outcome over the investment horizon. In an objective-based framework, the portfolio constructor is effectively holding him/herself accountable for the portfolio's absolute return and the path taken to achieve it. This is an important difference between the two frameworks. The SAA is not the objective and assuming it will meet the objective over time accepts some very large basis risk predicated on very long-term equity data. Yet adopting this model effectively obviates responsibility for the thing that matters most, the real outcome. Objective-based investing holds someone accountable for this.

CONCLUSION

- Investors ultimately expect real return outcomes. This is because they need to fund real purchases and pay real bills.
- The normal portfolio model that evolves around a fixed SAA is redundant in an objective-based world.
- Valuations matter. Risk premium are not static and have a substantial impact on return expectations as well as the risk assumed in generating this return.
- In an objective-based framework, it is the real objective, combined with a view on asset class returns relative to this objective that is the primary determinant of the portfolio, not convention.
- Objective-based investing holds someone clearly accountable for the delivery of real outcomes.