



Effective investing: The importance of asset allocation in portfolio construction

The fundamentals of asset allocation

Sophisticated investors are well aware that their chances of meeting their long-term investment goals are maximised not by chasing the latest market theme or hot manager quarter by quarter, but rather by defining and sticking to appropriate strategies over an extended period. Such strategies can position a portfolio to benefit from the main long-term forces in the market, enabling investors to benefit from different risk premia (for example, equity risk premia, illiquidity premia and credit risk premia) as they seek higher returns than cash.

The foundation of such an approach is asset allocation. Asset allocation is the process of exposing a portfolio to a range of different kinds of assets, such as equities, fixed interest, and cash. Increasingly, alternative asset classes and techniques, from property and currency to hedge funds and private equity, which have scope to introduce different kinds of risk premium and different sources of return, form part of the mix.

This is not simply a matter of assembling a diverse collection of assets, although the spreading of risk between different types of investment is clearly one important aspect of this approach. Most investors know that concentrating their portfolio into too few securities or too few asset classes can lead to uncomfortably high volatility, as each individual stock (or indeed each individual market) then accounts for a high proportion of performance in any given period.

Even a large collection of different securities can still result in a concentrated portfolio, with somewhat illusory

diversification, if there is a high level of correlation in expected or actual performance: in 2006, a concentrated portfolio of UK equities would have served investors well, in comparison to a more broadly diversified portfolio. However, over the years, too many investors have learnt to their cost that diversification ought to mean so much more than simply holding a range of different UK equities or equity funds.

A sound asset allocation policy develops the idea of diversification further, by analysing the varying risk and return profiles of different asset classes over long historical periods, and examining the correlation of observed and expected returns on these assets. Observations of asset performance in the past may be tempered by study of the present and expectations of the future too, both in terms of asset valuation and the likely economic outlook. Such considerations can enable an investor to combine different asset classes – delivering uncorrelated sources of risk and return – in a portfolio, with the aim of generating any desired level of return with the lowest possible level of expected risk (as measured by volatility of returns); or, alternatively, by maximising expected returns for any given level of volatility that the investor can tolerate. The theory (Modern Portfolio Theory) was outlined in 1952 in the *Journal of Finance*, and was a factor in the award of a Nobel Prize to its author Harry Markowitz.

The importance of an asset allocation strategy

Asset allocation theory has been developed considerably since the early work in the 1950's. The exact conclusions reached by academic studies vary considerably in degree, but most have concluded that the combination of asset

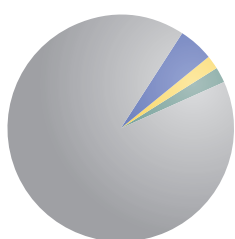
classes in a portfolio is the single most important factor in explaining the variability of returns of an investment portfolio.

A paper published in the Financial Analysts Journal in 1986 suggested that well over 90% of the variation in investment performance of US pension plans could be explained by differences in asset allocation (see graph below). Other studies, including that by Ibbotson et al in 1990, have reached similar conclusions.

In spite of this, many investors – including professional investors and institutions – devote far more time, effort and money to selecting managers and especially to selecting individual securities for their portfolios, or to “timing the market”.

Relatively few investors devote the attention to asset allocation that it would seem to deserve. Equity strategists at Citigroup Smith Barney, the investment bank, in a research note published in September 2002, argued that the investment analysis industry directs the majority of its resources towards relative stock and sector decisions, leaving much of the asset allocation decision-making in the hands of actuaries and consultants. To a large extent, this remains the case today.

Factors Contributing to Portfolio Performance



- Asset Allocation 91%
- Security Selection 5%
- Market Timing 2%
- Other Factors 2%

Source: Ibbotson et al 2000

Similarly, retail investors often make asset allocation decisions themselves, without necessarily realizing it, when they decide how much to invest into a particular fund. Too often, retail investors’ asset allocation may be determined by momentum themes, chasing the latest hot fashion or buzzword. Too many private investors (or their advisers) fail to take into account their full array of current assets and future liabilities, their true tolerance for risk or volatility and their realistic time horizon in first setting up, and then monitoring and evolving, an appropriate asset allocation policy.

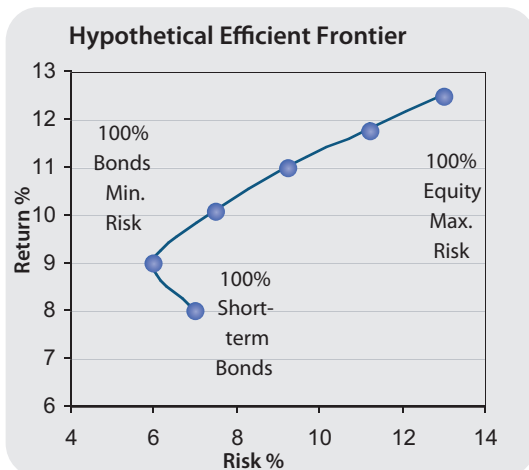
Perhaps it is time for the industry in this country to devote more attention to this crucial element of investment management. In the US it has long been the norm for both institutional investors and retail advisers to asset allocate rigorously ahead of portfolio construction.

The benefits of asset allocation to the investor

Asset allocation should aim to provide investors with an optimal combination of investments, with the potential to give the return they require with the lowest possible risk, or volatility. This should appeal to rational investors.

For any set of assets there is a given maximum return available for each level of risk. Investors are used to expecting a higher level of reward for a given level of risk – if we plotted this on a graph, in general, then, we should expect the curve to slope upward and to the right. However, the benefits of diversification, as long as it is true diversification – in the sense of combining assets with a low correlation in a portfolio – can lead to a “bulge in the curve”. This means that the lowest risk portfolio (i.e. the point on the curve furthest to the left) is not necessarily the lowest return.

The differing combinations of risk and return outcomes make up what is known as ‘The Efficient Frontier’. Taking the expected returns for various asset categories and plotting them against the risk level for that return gives rise to a specific elliptical curve. A pictorial representation of this is shown below, using a very simple two-asset (bond and equity) model.

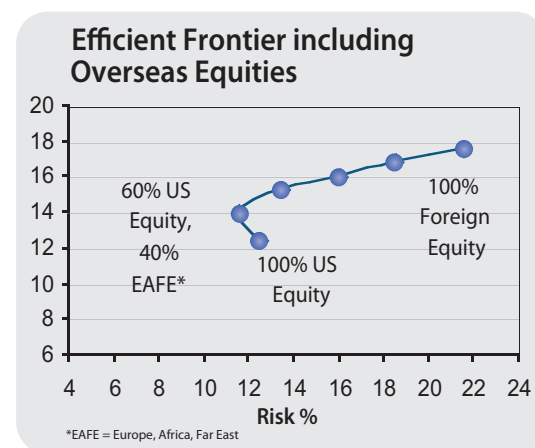


Most of the academic work done to back up this theory has been done on US capital markets, which are generally recognised as the most efficient markets globally. The data from the UK market, for various reasons, does not give quite such a perfect fit – particularly because of the extreme performance range in the UK Gilt market, which came about when inflation was squeezed out of the economy in the 1970's. The general picture, however, remains the same for any market: combining assets with imperfect correlation in different proportions can generate an efficient frontier of different expected risk and return combinations, which may suit different investors.

Using asset allocation to structure an efficient portfolio can be refined with further layers of diversification, for example by using greater geographical and sector diversification within existing asset classes. Equities in different economies tend to show less than perfect correlation (making them potentially useful diversifiers) due to a number of factors, not least the likelihood that they operate in different economic cycles. The role played by holding investments denominated in foreign currency is also crucial: cautious investors may choose to maintain most or all of their investments in their home currency (either through investing solely in the domestic market or through hedging) but this would be to ignore the potentially beneficial diversification effect of holding uncorrelated foreign currency investments in a portfolio.

For a Sterling based investor the natural investing environment tends to be in the UK. However, in order to both diversify risk and potentially achieve better returns, investors should usually be prepared to seek returns outside of the currency area in which their liabilities are denominated.

The 'Efficient Frontier' model can also be used to describe the risk/return levels for different assets classes by geography. Essentially it shows that diversification into foreign investments can spread risk in a portfolio, just as you can by holding different kinds of assets in that portfolio.



Diversification of style or investment technique can also be a useful tool to help reduce overall portfolio volatility. Some asset allocation strategies are implemented using passive, indexation strategies. Others use a range of active management strategies, in an attempt to add further value, both by outperforming the index, and by adding a further layer of diversification. Arguably, combining different fund managers and complementary investment philosophies (for example, combining deep value managers with stockpickers who try to identify high growth companies, or quantitative model-driven stock selection with highly skilled subjective managers) within the allocation to any given asset class in a portfolio can improve the risk/reward profile of that portfolio further, and may justify the extra costs and resources involved. Derivative-based strategies or structured products can also help tailor risk-reward trade offs and improve portfolio efficiency.

The current popularity of hedge funds in portfolio construction is partly based on this perception. Diversification is properly achieved by combining assets with relatively low correlations in a single portfolio. Hedge funds (surely a technique of investment rather than an asset class in their own right) are run to generate absolute, rather than relative, returns, and many are designed to have low (or zero) correlations to mainstream bond and equity markets. Including managers which operate in such a way in a portfolio can help shift the efficient frontier up and to the left.

Other asset classes, like property, private equity or commodities, may have relatively low correlations with core assets like bonds, cash and equity, and this could give them a role in portfolio construction too. This aspect of portfolio construction is becoming increasingly accepted, both by institutional and retail investors, and the range of tools in the marketplace to enable investors to invest in previously inaccessible asset classes provides possibilities for sophisticated portfolio construction that were inconceivable for many investors only a few years ago. Advances in the development of exchange traded funds and exchange traded commodities, securitised derivatives and the acceptance of closed-end investment company structures as a solution for a variety of illiquid underlying investments (like property and hedge funds) enable even relatively small investors now to construct highly sophisticated portfolios.

A variety of other asset classes or investment techniques are becoming accepted and investment vehicles appearing to provide access to them. In general, these are viewed as investments with potential for positive absolute returns over time, with low correlation to equities and bonds. These might include Timberland investing (where biological growth of trees is a significant driver of returns, with a strong positive bias and low correlation to the business cycle); Infrastructure (investing in assets like toll roads, utilities, ports and airports, that tend to show low sensitivity to the business cycle but can generate sustained real cashflows); and Currency (increasingly regarded as a source of sustainable “alpha”, or returns generated through manager skill).

Setting an asset allocation strategy

While we would all like to have the certainty of high returns for minimal risk, the reality is that there is usually a close relationship between risk and return. Over time, financial markets have tended to reward investors who are willing to take higher risks with their capital with higher returns, but over shorter periods risky assets like shares or bonds (let alone commodities or private equity) can experience considerable volatility.

A sound asset allocation process should therefore be based on finding a balance between three critical variables, and how they relate to each investor. These variables are return, risk and time horizon. In order to develop a consistent, long-term approach, we need to consider the following questions:



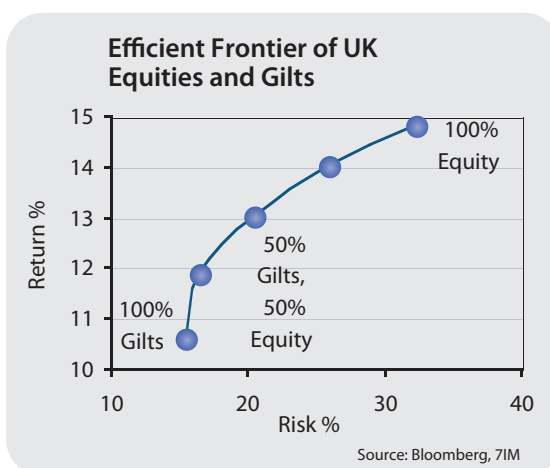
In looking for the answers to these questions, we can start with an analysis of the past. In general, analysing very long-term returns and risks on financial assets is desirable, in order to build a picture of the relative qualities of different asset classes. The table below presents the variations in risk and return* observed in UK equities and government bonds over the last 26 years.

Risk and Return Observed on UK Asset Classes, 1980 - 2006*

	Risk	Return
100% UK Gilts	15.4%	10.6%
75% Gilts; 25% Equity	16.4%	11.9%
50% Gilts; 50% Equity	20.4%	13.0%
25% Gilts; 75% Equity	25.9%	14.0%
100% UK Equity	32.3%	14.8%

Source: Bloomberg, 7IM

These observed data can be represented graphically as below; the five points represent the plots of observed data, with the line joining them representing a theoretical efficient frontier.



*Return is defined as the observed compound annual growth rates of UK Gilt and Equity, Total Return Indices, from 1980 to 2006. Risk is defined as twice the observed standard deviation on the rolling twelve month returns of the five asset class combinations.

This provides a starting point for an asset allocator. In essence, this line represents the possible strategic asset allocations an investor might select, if basing a portfolio on historical returns and variances from these two asset classes. Of course, there is no reason to suspect that future returns will mirror those in the past. Expectations of future asset returns and volatility need to be considered in the light of not only past experience, but also in the light of current valuation and the likely medium- to long-term outlook for growth, inflation and interest rates, as well as structural factors affecting demand for various asset classes: this can be as much art as science!

However, research and careful consideration of these issues can help an investment manager develop long-range expectations for average returns on asset classes, the possible volatility of these returns and the expected correlations between returns on different asset classes. These expectations can then be fed into the portfolio asset allocation and optimisation process, developing different portfolios for different investor profiles.

The levels of return an investor seeks may be defined; they may simply be "as much as possible". The levels of risk that an investor can tolerate need to be probed more deeply, and might be understood in terms of the levels of loss that an investor can bear in a given period, or a simple "sleep at night" test. Likely maximum losses can be modelled and projected from the forecast returns and risk levels and increasingly sophisticated software and risk monitoring systems are available to help this process. These issues can help match an investor to an appropriate portfolio asset allocation strategy.

The possibilities range from a very defensive strategy (based on bonds and cash), through a balanced strategy combining bonds and equity in similar proportions, to the most volatile, an aggressive growth strategy based only on equities. The efficient frontier above represents the relationship between the returns an investor might have expected to receive from such a two-asset strategy in the past, and the level of risk (i.e. volatility) associated with these returns. An investor's acceptance of this volatility – which can rise substantially in an equity-oriented portfolio – may be a deciding factor in setting a strategic asset allocation profile for that investor. The "bulge" in the curve, which implies a lower level of risk for any given return than would be the case if the 100% Gilt and 100% Equity portfolios were simply joined by a straight line, may be regarded as an illustration of the benefits of diversification.

Of course, the picture becomes substantially more complex when other diversifying asset classes and techniques are added to the mix. Most research will demonstrate that the addition of modest percentages of other asset classes, such as commodities, hedge funds, property or private equity, can reduce risk for any given level of return or increase

expected return for any level of risk – in effect making the efficient frontier more efficient, by moving the curve upwards and to the left. It should be noted, however, that due to the short history of data on many of these investments and in some cases due to their illiquid, inefficient or diverse nature (notably property) there are problems in drawing a meaningful efficient frontier using such alternative assets; some would argue that the more illiquid of these assets simply should not be included on an efficient frontier, as their price and risk-return history is distorted by infrequent valuation, self-selection / survivorship bias and other factors. However, the broad thrust of the argument remains the same in spite of this: assets with low expected correlation to an efficient equity and bond portfolio may be expected to improve diversification further.

The investment time horizon is clearly an important factor. Over longer periods of investment it is fair to expect that returns from the various asset classes will approximate to the mean expected return. Over a twenty or thirty year time horizon, there is less risk that a short period of unusually high or low returns will have a disproportionate effect on overall portfolio returns. Longer time periods also allow the power of compounding to become apparent on a portfolio, assuming that dividends and other income are reinvested. The importance of compounding in driving long-term returns is well known, and is not the subject of this paper. Suffice to say, however, that in a world of low inflation and low nominal investment returns, reinvested income could play an even greater than usual role in overall investment returns.

Of course, where the equation of return, time and risk does not provide the solution that an investor is seeking, and there can be no compromise on any of these elements, there may be no alternative for that individual other than to invest a greater sum to ensure that their long-term needs can be met. Far better this than unrealistic expectations of what can be achieved, or investors taking on more risk than they can comfortably bear.

Reviewing an asset allocation strategy

In many cases, retail investors' asset allocation is not only haphazard, lacking clarity and ill-suited to their investment needs; it is also rarely reviewed and adjusted. Even investors who have structured an initial portfolio using a sensible asset allocation strategy may neglect to review it. But asset allocation cannot be a "fire and forget" exercise; it needs regular monitoring and, on occasion, adjustment in its aims.

There are two levels of the review process on any asset allocation framework. The first relates to the investors' long-term strategic framework and is the prime key to the process for the individual. The strategic asset allocation is set to reflect an investor's needs and objectives over a defined time horizon, and reflecting that investor's attitude towards risk, and other personal circumstances. This strategic asset array should be reviewed at least once a year. Have the investor's objectives changed? Have changes in personal circumstances led to a shortening or lengthening of the investment time horizon? Have differences in performance between the underlying investments moved the asset allocation away from the desired strategy? Is the investor still happy with the level of risk implied by the portfolio?

Important changes of this nature may need to be reflected by changes to the investor's strategic asset allocation.

The strategic asset allocation is firmly based on each client's individual objectives and attitudes, and is designed for a long-term perspective. It is driven by the long-term average rates of return and levels of volatility associated with each asset type. It should not take into account a short-term view of market movements. But these shorter-term market movements can create threats or opportunities for an investment portfolio, and a flexible asset allocation framework should be able to react.

This is the "tactical" approach to asset allocation. This is a refinement to a strategic asset allocation process, in which an investment manager will assess the short- to medium-term outlook for different asset classes and markets. This may be based on macro-economic conditions, analysis of

asset valuations and company performance, political and social factors and market sentiment. Developing a view of the shorter-term outlook can allow a manager to implement tactical variations around the strategic asset array.

These tactical variations may be regarded as temporary departures from a strategic norm, aiming to improve overall returns from the long-term average expectation by taking advantage of anomalies in asset pricing to maximise gains, or minimise losses, in the portfolio. In general, these should not be dramatic shifts in the asset split of a portfolio, except in extraordinary circumstances. Overly dramatic moves between asset classes and sub-sectors could increase the riskiness of an investment strategy. However, the flexibility to implement more moderate adjustments around a long-term strategy could be especially valuable.

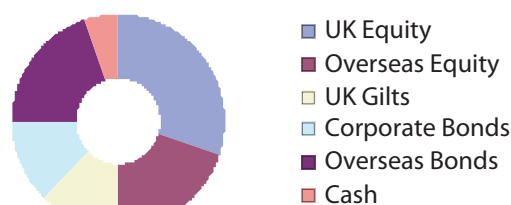
Investment managers should define tolerance bands within which tactical asset allocation may be applied. A maximum variation of 10% or 15% either side of the strategic allocations may be appropriate; perhaps a smaller 5% or 10% maximum tolerance for tilts in the regional or sub-sector allocation.

Under such a regime, a strategic asset allocation defined for an investor with a moderate appetite for risk, and requiring a blend of capital growth and income for a portfolio to be invested for the long-term, might be based on a balance between bonds and equities, each at 50% of the portfolio; this could perhaps be modified to include alternatives (hedge funds, property, timber and commodities, etc) as a diversifier, say resulting in a 40% equity, 40% bond, 20% alternatives strategy. In this example, an investment manager applying a tactical asset allocation tilt to this portfolio would have the flexibility to increase equities up to 65% if attractive valuations and an improving economic outlook justified a bullish stance; in the reverse situation, bonds could be increased to 65% to protect capital in more difficult times. Similarly, on a regional basis, if 30% of the 50% held in equities were held in UK securities under the strategic asset allocation, 10% tolerance bands would allow a manager to vary this between 20% and 40% depending

on the outlook for that particular market relative to other equity markets – whilst remaining, of course, within the tolerance bands for the asset class as a whole.

The series of charts below help to illustrate the concept of tactical asset allocation ranges. Taking as an example an investor seeking a balance of income and capital growth over the longer-term, and with a moderate appetite for risk, the first chart outlines a simple hypothetical strategic asset allocation profile, diversifying both asset classes by geography. **These charts should be regarded as hypothetical illustrations only, not as recommendations.**

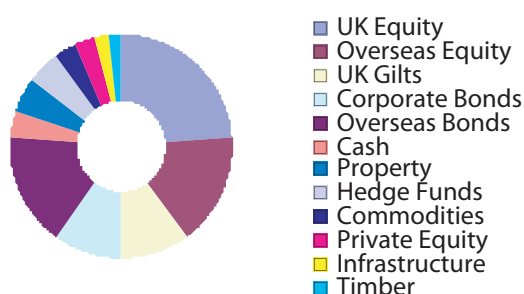
Sample Strategic Asset Allocation — Balanced Profile



Source: YIM

This simple equity and bond portfolio could be further refined; perhaps an allocation to alternatives could be made, based on the investor's views of the prospects for these assets and their qualities as diversifiers.

Sample Strategic Asset Allocation — Balanced Profile, with 20% in alternatives

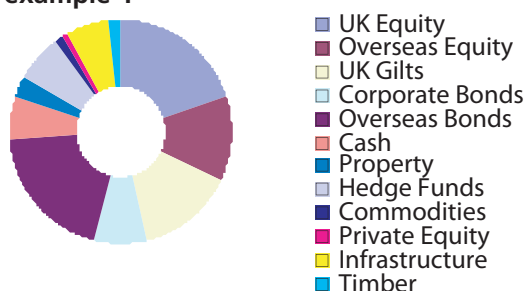


Source: YIM

The investment manager monitoring and adjusting the tactical asset allocation framework on this portfolio may take a cautious view of the world economy. In such a

scenario, expectations of economic growth may be cut, and inflation and interest rates may be expected to fall. The manager may regard equities as expensive relative to bonds, and may prefer to tilt the alternatives exposure away from assets with sensitivity to the economic cycle (like property, most commodities and private equity) to those with less sensitivity (perhaps some classes of hedge funds or infrastructure). The asset array below represents a possible extreme variation of the portfolio structure, given such a view of the economic and market outlook.

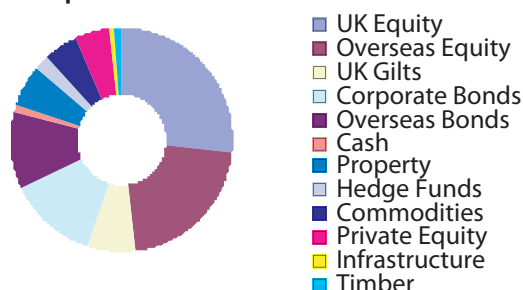
Balanced Profile — Tactical Allocation example 1



Source: 7IM

We may consider the tilts applied to the same portfolio in a more positive scenario. If the manager expected stronger economic growth, and regarded equities as good value in comparison to bonds and cash, then a more bullish tactical allocation might be appropriate. Once again, this could extend to a more aggressive view being applied in the selection of alternative asset classes too, as outlined in the next chart.

Balanced Profile — Tactical Allocation example 2



Source: 7IM

In all likelihood, it would be rare for an investment manager to take an extreme view, applying a tactical asset allocation that approached the tolerance limits. It is more reasonable to expect that levels of conviction in all but the most unusual circumstances would dictate much smaller tilts and variances from the strategic asset allocation framework. The necessary research and analysis of macro-economic developments, market valuations, political and social issues, corporate profitability and other factors that can affect short-term market movements is extensive and time consuming. However, the ability to seek to add value – or minimise losses – to a portfolio through applying such a flexible tactical structure, is a valuable additional feature of an effective asset allocation process.

Conclusion

There are a series of crucial decisions to be made in setting up and managing a portfolio for any investor. These centre around an analysis of the investor's needs and objectives, in conjunction with an understanding of the likely risk and reward profile of the available asset classes, and how they work in combination with each other in a truly diversified portfolio. This can enable the construction of an appropriate strategic asset allocation, designed to meet an investor's long-term requirements. This should be reviewed for continued suitability at least annually. Portfolio asset allocation accounts for the majority of variation in investment returns – research efforts should be focussed therefore on monitoring and adjusting asset allocation, rather than market timing or security selection. There is an opportunity for an effective tactical asset allocation process to add value over the longer-term by applying temporary tilts and changes of emphasis to the portfolio's strategic asset array within agreed boundaries.

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Sources: Bloomberg, Citibank Smith Barney, Financial Analysts Journal, FTSE, Global Financial Data, Reuters.