



A month to remember – lessons for pension schemes from the August correction

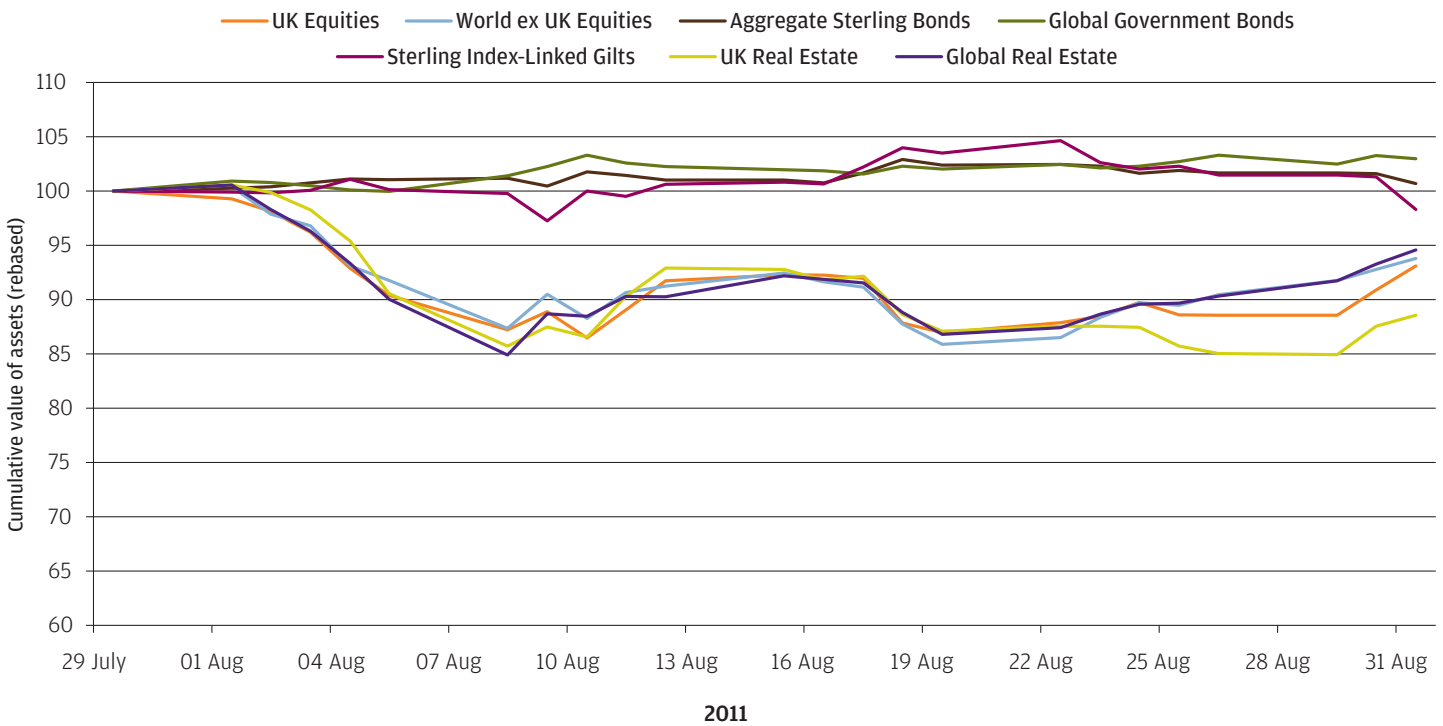
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The summer storm

Pension schemes may have rushed to reconsider their asset allocations in the markets' spectacular early August stumble, just as their subsequent recovery should have served as an object lesson against hasty action. In either event, the August markets underscored the value of a disciplined long-term strategy and the necessity of maintaining and protecting that strategy against sudden volatility.

UK equities finished August 7.5% lower than they started it, having been 13.5% down for the month to date at the end of the third week. Real estate appears to have had similar levels of performance, although the measures for property use quoted securities, which are subject to the same market forces as equities; it will be some time before we are able to assess the extent to which the unlisted equivalents followed the quoted market. In contrast, the winners appear to have been bonds of all flavours (Exhibit 1).

Exhibit 1: Asset class performance in August

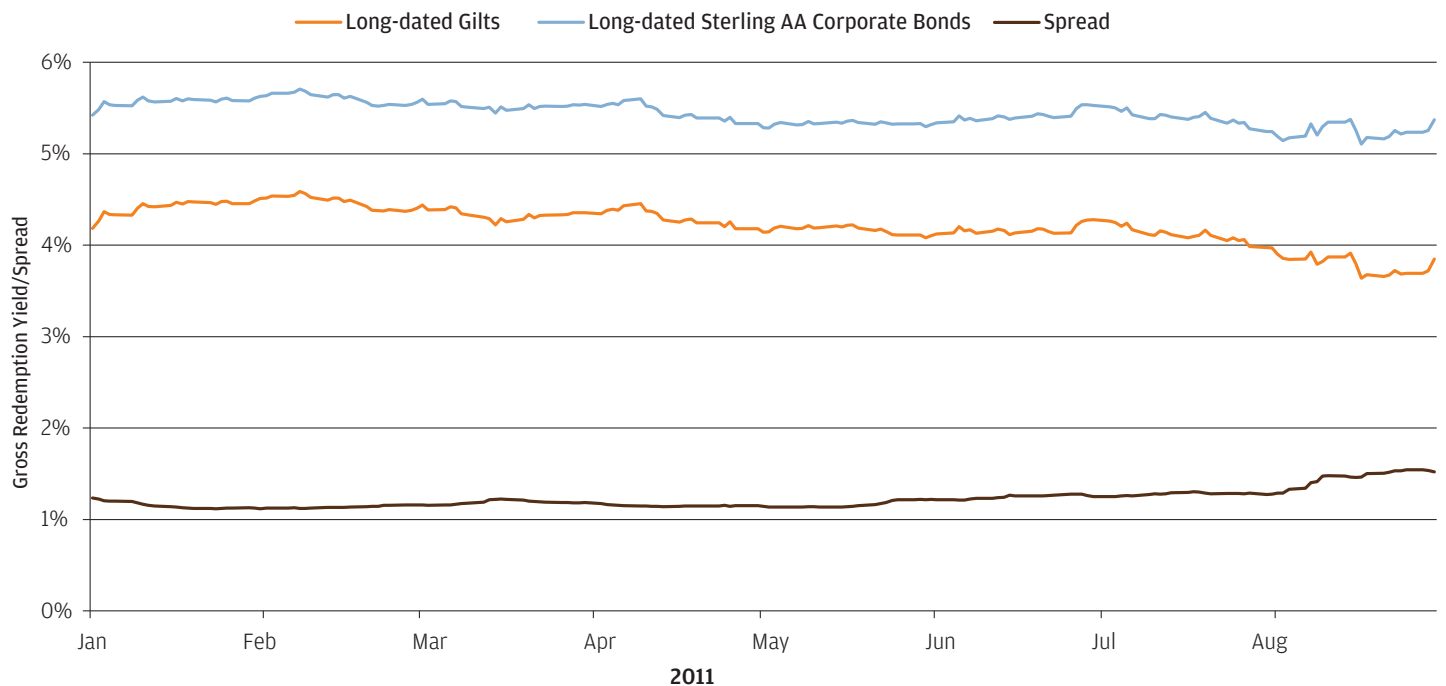


Total return on UK equities (FTSE All Share Index), world ex UK equities (MSCI World ex UK Index), long-dated Sterling aggregate bonds (iBoxx Overall Over 15 Year Index), global government bonds (J.P. Morgan Global Government Bond Index), long-dated Sterling index-linked bonds (Barclay's Sterling Over 15 Year Index-Linked Index), UK real estate (FTSE EPRA/NAREIT UK Index), and global real estate (FTSE EPRA/NAREIT Global Index)

Source: DataStream

It is worth looking more closely at the returns on sterling bonds, not least because bond yields are used to discount pension liabilities - and pension plan funding is about the liabilities, not just the assets. The liabilities for accounting valuations - that is, FRS17 and IAS19 - are discounted using corporate bond yields, whilst those for Pension Protection Fund (PPF) valuations - also known as s179 valuations - are linked to Gilt yields. If the bonds a scheme holds are not of the appropriate type and duration, then the values of the bonds and the liabilities will diverge (Exhibit 2). Falling growth expectations and worries about events in the eurozone led to Gilt yields falling sharply. In fact, they had been falling steadily since the end of June, pushing liabilities higher. However, when equity markets started to react as well, lower market confidence resulted in credit spreads widening. This meant that while corporate bond yields initially fell in line with Gilt yields, they did not ultimately fall as far. As a result, PPF liabilities rose by more than accounting liabilities, something we investigate in more detail later.

Exhibit 2: The divergence of bonds and liabilities



Gross redemption yield on and nominal spread between long-dated gilts (iBoxx Over 15 Year Gilt Index) and UK long-dated corporate bonds (iBoxx Over 15 Year AA Corporate Bond Index)

Source: DataStream

Changes in equity values, Gilt yields and credit spreads are closely linked, particularly when the moves are large. When the market believes that economic growth will slow, Gilt yields fall as interest rate expectations reduce. However, reduced growth forecasts also put downward pressure on equity returns. The economic drivers of equity returns also drive the credit spread component of corporate bond returns - as markets fall, spreads typically widen. This second factor provided pension plans with a degree of protection in August. However, the relationship between equity returns and credit spreads is not linear, and equities can certainly not be regarded as a short-term match for liabilities, not least because corporate bond returns are also driven by changes in Gilt yields which can move in the opposite direction to spreads.

How pension schemes performed

The net effect of these factors for pension funds differed between the accounting and PPF valuations. We can estimate how each particular valuation result changed by taking known values of assets and liabilities and projecting both forward in line with quoted index returns. To do this, we need to make some broad assumptions in relation to the duration of the liabilities. This methodology also disregards any changes in funded status due to contributions. However, we can still arrive at a good approximation of the current funding ratio for any scheme given a few pieces of information on the plan's finances.

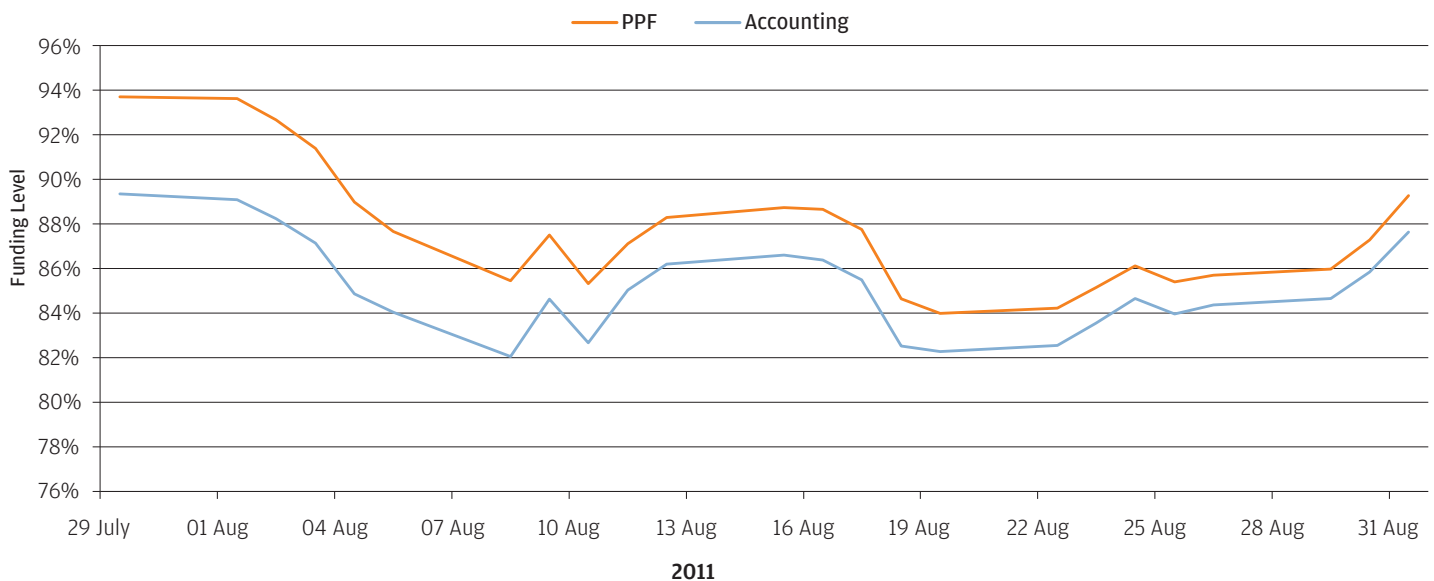
Information on asset allocations is available from Pension Funds Online. This divides assets into nine categories: domestic equities (28.66%); overseas equities (22.06%); domestic fixed interest (16.76%); overseas fixed interest (2.08%); index linked Gilts (10.82%); domestic real estate (5.98%); overseas real estate (0.11%); cash and deposits (3.26%); and other (10.27%) . We assume that the final category is allocated in proportion to the remaining asset classes. We assume that the liabilities have a duration of 12 years. We approximate PPF liabilities using equal amounts of over 15 year Gilts (the iBoxx Over 15 Year Gilt Index) and over 15 year index-linked Gilts (the Barclays Over 15 Year Index-Linked Gilt Index) - the change in these two hypothetical bonds gives the change in the value of the PPF liabilities. For the change in accounting liabilities, an additional component is needed to reflect the change in the credit spread. This is calculated as the difference in the return of a 12-year duration corporate bond - valued using the iBoXX Over 15 year AA Corporate Bond Index - and the conventional Gilt index used above.

The funding level for schemes covered by the PPF was 93.7%. While the funding level of our hypothetical scheme might not move in exactly the same way as the PPF figure - the duration of the liabilities and asset allocation may differ, for example - the PPF number at least gives a reasonable starting point.

For the IAS19/FRS17 funding level as at the end of July, we need to roll forward an earlier figure. The August 2011 edition of the JLT Pension Capital Strategies quarterly report on FTSE100 pension disclosures¹ gives this information as at 30 June 2011. Using the same asset and liability assumptions as before - except for the liability discount rate - we get a funding level as at 31 July 2011 of 89.3%. This is lower than the PPF funding level, despite the fact that the PPF liabilities use a lower discount rate, because the level of benefits covered by the PPF is lower than that assumed under FRS17 and IAS19.

At the depths of the correction, the funding level on the PPF basis had fallen to 84.0%, although by the end of August it had recovered to 89.3%. On the accounting basis, the funding level fell to 82.0% before rising to 87.6% by the end of the month. In other words, the PPF funding level was 4.4% lower at the end of the month, while the accounting measure had fallen by only 1.7% (Exhibit 3).

Exhibit 3: Changes in funding levels in August 2011



Source: DataStream; PPF; JLT Pension Capital Strategies/J.P. Morgan Cazenove; J.P. Morgan Asset Management analysis

¹ "The FTSE 100 and their pension disclosures" (August 2011), JLT Pension Capital Strategies/J.P. Morgan Cazenove

The benefits of bonds

The difference between asset class returns highlights the importance for a pension fund of holding bonds – in particular, bonds that match liabilities. This means that it is important for pension schemes to consider which liabilities they wish to hedge with their bonds. In August, using corporate bonds to hedge PPF liabilities would have resulted in the realisation of significant basis risk. Using interest and inflation swaps without credit exposure to hedge the change in accounting liabilities could also be risky if the spread between swaps and AA corporate bonds diverges.

It might be more accurate to say that the events of August highlighted the benefits of having held bonds, and many may wonder whether it is too late to hedge interest rate risk either with bonds or using swaps. If this is the case, it is worth considering the demand and supply dynamics of the sterling fixed income market.

At 31 March 2010, the total buyout value of liabilities was estimated to be £1,359.2 billion². The value of s179 liabilities at the same date was £887.9 billion³, the difference reflecting the fact that the PPF liabilities covered in the s179 valuation are lower than those for a buyout valuation. However, the market value of all bonds at this date was only £1,187.6 billion⁴ and of this amount only £534.4 billion⁵ had a term in excess of ten years – and it is these longer-dated bonds that are needed to match pension scheme liabilities. These asset values had risen to £1,300.9 billion and £597.9 billion⁶ respectively by 31 August 2011, but we estimate that the fall in interest rates over the same period will have led to liabilities rising by over 5% to around £1,400 billion.

Defined benefit pension schemes are increasingly looking to remove interest rate risk by investing in bonds or using interest rate swaps – which themselves are ultimately backed by bonds. Insurance companies also have a structural need for long-dated fixed income assets, which they use to back long duration liabilities. These structural issues mean that the yield on long duration bonds is likely to remain depressed for some time yet, so those waiting for rates to rise before hedging interest rate risk might be disappointed.

² “The Purple Book” (2010), The Pension Protection Fund

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⁴ iBoxx/DataStream

⁵ iBoxx/DataStream

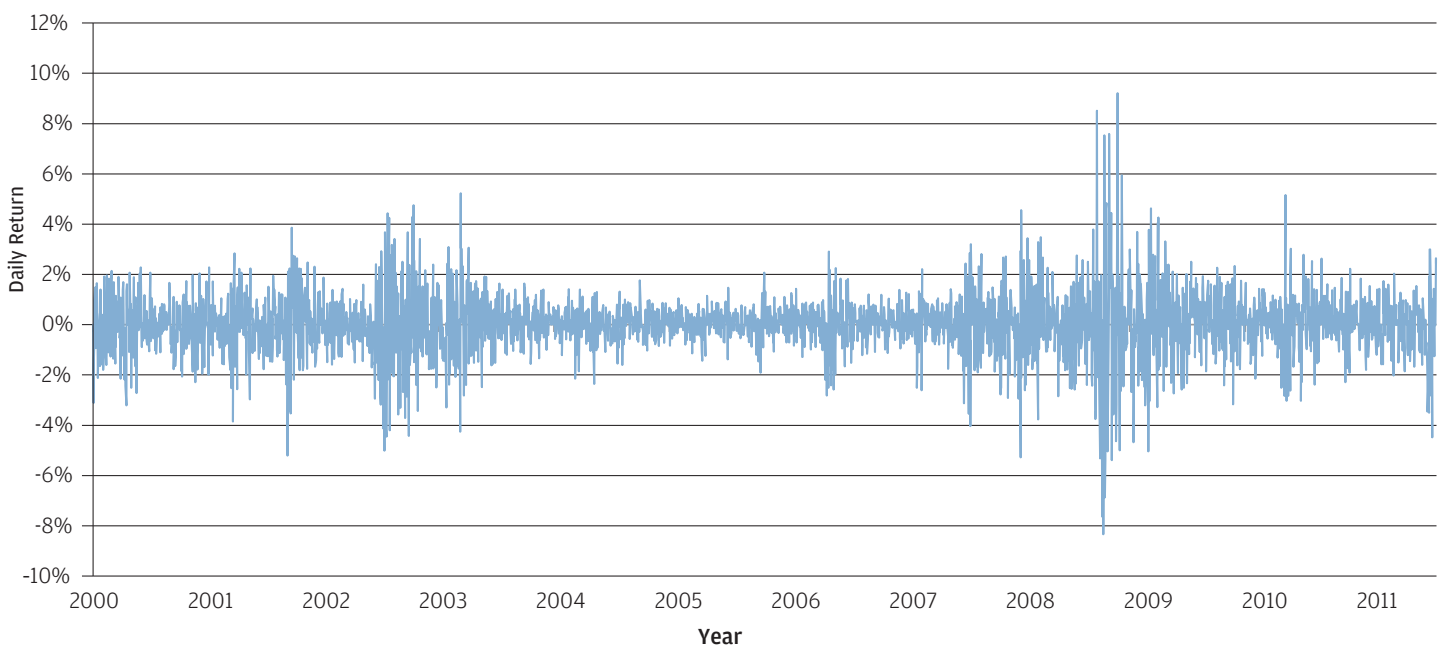
⁶ DataStream

Staying the strategic course

However, this does not mean that pension schemes should look to move additional assets into bonds immediately. Schemes with asset allocation glide paths should continue to rebalance according to the rules they have already set out; those with other strategic objectives should similarly maintain asset allocations in line with these objectives; and those with no well-articulated strategic objective should develop one.

There are two reasons why it is important to follow strategic objectives rather than trying to make significant changes now. First, while it is difficult to predict the direction in which markets will move on a day-to-day basis, it is easier to predict levels of volatility. In particular, large market movements on one day are likely to be followed by further large market movements in subsequent day - in other words, volatility clusters. Exhibit 4, which shows the daily price change in the FTSE All Share, illustrates this point. The clusters of volatility can clearly be seen. More importantly, so can the recent large increase in volatility at the far right-hand side of the chart.

Exhibit 4: Volatility provides a warning against deviation from strategic objectives



Daily price change on the FTSE All Share Index from 31 December 1999 to 31 August 2011

Source: DataStream

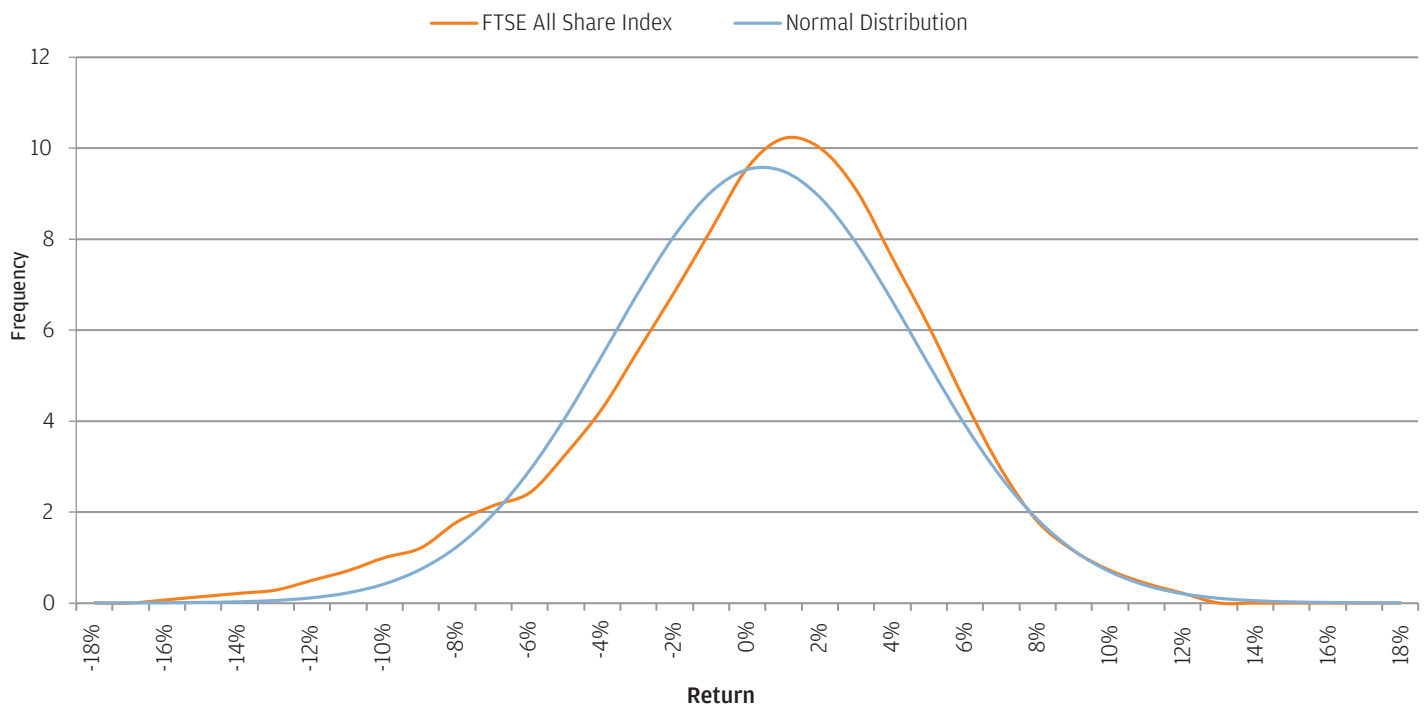
This means that there is greater entry point volatility at the moment - in other words, volatility around the price at which you trade. A large change in asset allocation at this point could turn out to be the best decision you ever made. It could just as easily prove to be the most costly.

The second reason not to make dramatic changes now is that it is strategy that gets a plan from where it is to where it should be - it should not be torn up in times of market volatility. A strategy should not be immune to significant market events - it might be that contributions have to increase or timescales need to be moved back. However, any amendments should be changes to the long-term strategy, not just tactical changes to the current allocation.

Preparing for volatility

There are, however, steps that can be taken now based on what we already know about asset class returns. The most important of these is to ensure that returns are adequately diversified. This is particularly important given that the risk of extreme negative returns in many asset classes is higher than implied by the normal distribution, and so higher than many investors might expect. Exhibit 5 shows the distribution of returns for the FTSE All Share Index compared with the distribution that would be expected if the returns had a normal distribution with the same average return and volatility. As can be seen, the risk of negative returns is higher in the observed returns, as is the risk of extreme returns generally.

Exhibit 5: The normal distribution does not fully capture the risk of negative returns



Observed and normal-simulated monthly price change on the FTSE All Share Index from 31 August 1991 to 31 August 2011

Source: DataStream

Correlations between risky asset classes tend to increase in periods of market stress. As such, measuring the relationship between asset classes using only correlation may not provide the full picture. More accurate techniques such as copula theory can be used to describe the relationship between asset class returns, but the way to deal with the issue is to ensure that assets are truly diversified. These issues are discussed in more detail in our paper on modelling non-normality⁷.

Within each broad asset class, it is important to ensure that returns come from as broad a range of sources as possible, to understand the true level of diversification that each asset class can provide, and to recognise the level of risk that it contributes. This means allowing for the fact that some asset classes might be more risky than they appear, and for the fact that correlations do not capture all aspects of the relationship between asset class returns.

⁷Sheikh, A. Z. and Qiao, H. (2009). "The non-normality of market returns: a framework for asset allocation decision-making," J.P. Morgan Asset Management.

So, for example, in equities this means considering not just global developed market equities but also emerging market equities as well. However, it is also important to look more widely at the sources of return. Whilst global equity returns are, by definition, globally diversified, they are still driven by the expected profitability of companies. These are not the only sources of return. For example, while real estate is influenced by some of the same economic drivers as corporate profitability, there are enough independent factors to make it a good diversifier for equity returns. Asset classes such as commodities, meanwhile, are affected by a different set of factors again.

Even more independent are returns derived from illiquidity – that is, the premium available for investing in asset classes that are not readily realisable. If you invest in an asset that can take time and money to liquidate, then the cost of the asset will often be lower to compensate for this fact. Due to the long-term nature of their obligations, pension schemes are in a unique position to take advantage of illiquidity. The premium available for taking on insurance risk constitutes yet another uncorrelated return stream. Investors can access the premiums directly through insurance-linked securities that enable insurance companies to shift potential policy liabilities off their balance sheets. Commodity futures can also deliver insurance-like returns. Commodity futures are used by many counterparties as ways of hedging the risk of price changes. Any investor willing to take the other side of a commodity future may earn an insurance-type premium for taking on this risk. This is in addition to any return seen from the movement in the underlying price of commodities.

A single asset class can often give exposure to several factors at once – for example, small corporate debt issues give returns based on corporate profitability, interest rates and illiquidity – but the broad principle is to aim for as great a degree of diversification as possible for the return target required.

Conclusion

August provided a rollercoaster ride for pension plans. Although funded ratios recovered significantly by the end of the month, the sharp market moves illustrated how exposed some plans were to market movements. Funding strategies cannot and should not change in response to every turn in the market, no matter how dramatic. However, pension schemes should ensure that they are well prepared for periods of market stress. One of the surest means of insulating plans against a sudden onslaught of volatility is a careful and exacting diversification of the sources of expected return.



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