

We begin this Placard by examining the issues facing pension schemes in a difficult economic climate. Other articles address the challenges that confront consulting actuaries across the breadth of their work...

Problems continue to mount up for workplace pensions

January saw confirmation that the country had, as most of us had expected, been in recession for the latter half of 2008. Many economists suggest that this recession could last at least into 2010. This is therefore a time where stakeholders in occupational pension schemes are dealing with the harsh realities of the economic situation and consider the best way forward. In this article we take a closer look at some of the specific effects of the recession on pension schemes.

Investments

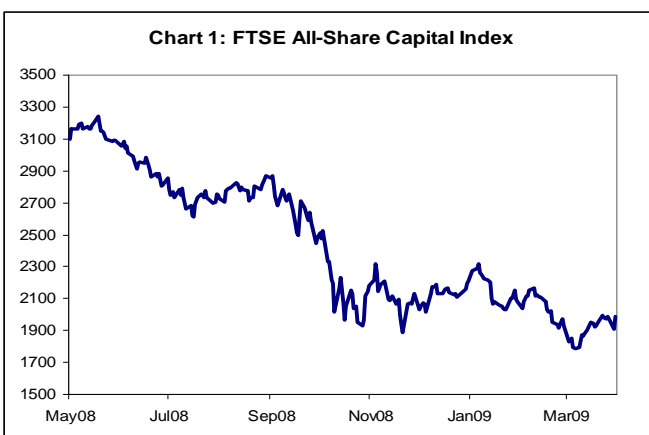
The recession and credit crunch have had a big impact on pension schemes' investments. For instance, schemes invested heavily in equities will have felt the full force of an economy in crisis with the UK stock market losing around a

third of its value over the last year, most of this since September (see Chart 1). For many schemes, this has directly impacted funding positions with deficits having grown ever wider and no certainty as to markets improving in the near future.

Some schemes will have weathered the storm better than others in recent months having already moved to less risky investment portfolios. Looking forward, views as to investment strategies to apply hereafter vary widely. To mitigate similar falls in the future, schemes may consider safer investment options although there can often be conflicting thoughts on this subject as there will be those hoping for an uptick in equity markets as the economy recovers.

Quantitative easing

The Bank of England has begun the process of 'quantitative easing' as a tool to attempt to breathe some life into the



Welcome to this Spring edition of *Placard*, the discussion journal of the Association. In this issue, we examine a range of disciplines in which today's consulting actuaries work and a few of the issues our members are confronting.

Later this year, we will be producing an issue focusing on the ongoing need for further pension reforms, where we continue to believe that the introduction of Personal Accounts from 2012 is not enough. That is why we have championed legislative changes that will allow more 'middle-way' quality pension solutions, offering greater flexibility for employers to control costs, whilst reducing the volatility of pension outcomes associated with many current designs.

For more details about the Association's views, go to our website at www.aca.org.uk



Adam Gillespie, Editor

economy. Whether this will work is open for debate but what is clear is that the policy can and has had significant implications for pension schemes. The policy, which predominately involves buying government bonds back from those holding them, initially resulted in increases in the prices of bonds and falling yields. However, the yields on long dated government bonds are now back up to similar levels as before the quantitative easing process was announced. The policy has also been compared to printing money and as such has also fuelled expectations of higher inflation in the years to come. This has affected index linked gilt yields which have fallen in response to increases in future expected inflation.

Real bond yields are often the basis for assessing the future investment returns in actuarial valuations and therefore falls in real bond yields can lead directly to higher valuations being placed on liabilities. Most pension schemes that have an actuarial valuation after the start of the quantitative easing programme are likely to see higher liabilities as a consequence of increased inflation expectations.

The consequences of quantitative easing also affect other aspects of defined benefit pensions. For instance, higher expected inflation may impact directly on the cost of purchasing annuities but will only be one factor in determining pricing. For example, credit spreads will also have a significant effect on the cost.

Deflation

Although, quantitative easing brings the prospect of inflationary pressures in the future, it is in fact the opposite problem that is perhaps more pressing for pension schemes. Deflation is now a reality and the effects of this can be expensive for pension schemes.

Currently, by law, the vast majority of pensions in payment cannot be reduced. Therefore if deflation occurs the real value of the pension liabilities will increase. *Placard* has estimated the cost of the floor on pension increases as adding approximately £6 billion to the liabilities of private UK defined benefit pension schemes.

Expectations of deflation have also affected investments that can be made. In particular, obtaining liability driven investments, such as inflation swaps with a floor of 0%, has become increasingly difficult leading to potential issues with implementing de-risking strategies for schemes. Insurers have similar investment issues meaning that the cost and processes associated with buy-outs for index-linked pensions are more problematical.



The Pensions Regulator's response

The Regulator has made several statements as to how it expects schemes to respond to the current economic environment. The key message has been that determining liabilities should still be done prudently with reference to the strength of the company covenant, with more prudence incorporated where there is evidence of weak company backing for schemes. In volatile times, company covenants can change quickly and, as with many aspects of pension schemes currently, continued monitoring is of benefit.

However, the Regulator has been somewhat pragmatic in the area of recovery plans, suggesting that more lenient recovery plans might be acceptable such that employers can weather the tough economic conditions. This easing may take various forms ranging from simply longer recovery plan periods, to back-end loaded plans or even more innovative solutions. This change of emphasis from the Regulator shows a wel-

suffered significantly, which, for older members in particular, may not be recovered in the short term to their retirement. Adding to the perfect storm are the effects of quantitative easing, namely lower bond yields and higher expected long-term inflation, which have increased the cost of buying annuities at this time.

Unlike defined benefit schemes, members retiring in these circumstances with a defined contribution set-up cannot necessarily plan for recovery and often have little or no choice but to retire now with a much reduced pension compared to if they had retired in more benign times, highlighting the risk that individuals face with such a pension.

Good governance vital

Clearly the economic environment in which pension schemes and their members find themselves is not pretty. We have had the combination of falling equity markets and falling



come understanding that, as long as risks to the scheme are managed, the best outcome for all parties is continuing support of long-term viable sponsoring employers for pension schemes.

Defined contribution schemes

The issues discussed above in relation to defined benefit schemes also have had a similar, if not more acute, effect on defined contribution schemes.

Under defined contribution arrangements, falls in equity markets means that members' fund values are likely to have

yields increasing defined benefit deficits, often dramatically. At a time when many employers are struggling there will be pressure from trustees to increase cash contributions to pension funds as a result of this.

Good governance and de-risking strategies can help ease the pain to some extent until the 'green shoots' of recovery become apparent. Alas, this will be too late for some members of defined contribution schemes who have little option but to deal with the full effects of an economy in crisis.

Matthew Furniss
ACA Member

General Insurance and the Credit Crunch

The credit crunch hit all sectors of the financial services industry with alarming speed. It not only destroyed value but also the valuation process. The effects on the finance industry and the lack of trust between institutions have been well-documented. General insurers have not been immune and have seen the same pressures on their balance sheets on both asset and liability sides.

Premium income

There is downward pressure on premium income despite some rate increases. Some policyholders are reducing premium expenditure by increasing self insurance and retention. Worse, others may not seek the protection they need. On the claims side, there is the inevitable concern that there will be growth in theft and fraud and claims activity generally. The unkind description of the ship-owner is that profits depend on trade in the good times and on the insurance policy in the bad times.

Currency risk

The bulk of insurance cover involves payment of premium and claims in the same currency. But there are large risks placed in international markets, including at Lloyd's, which involve exposure to a range of currencies. The insurance contract may be agreed in one currency, premium paid in another, reported in a third, reinsured in a fourth and settled in a fifth. The large movements and the general increase in volatility in the rates of currency exchange have presented new challenges in the analysis. The accounts are typically drawn up on average rates of exchange over the reporting period. The balance sheet is drawn up using prevailing rates at the year end. All this, and there is, of course, no official market in currencies to determine a unique rate of exchange.

Discount rates

In stark contrast to pensions and life insurance valuations, it is usually anathema for general insurance valuers to discount for interest earning. Once any projection has been adjusted for risk, for claims inflation, for claim delays and reinsurance recoveries - it is not clear that the resulting discounted reserve will be less than the undiscounted reserve - and it often is not. Where reserves are discounted, typically for long tail liabilities, the existing discount rates used appear to be high. The assets may be yielding 5% on an ongoing basis but, any sensitivity test may highlight exposure to lower disinvestment or reinvestment rates - at least in the short term.



Credit risk

The general insurer is exposed to credit risk on both bond investments and similar assets but also the counterparty risk on reinsurance recoveries. Typically assessments of these risks reflect historic default ratios often maintained by the rating agencies. The rating process is, itself, going through some turmoil. Ratings have been reduced and the creditability of some of the rating processes have been undermined. Insurance to protect you from the failure of an insurer is available. Care is required to ensure that this protection is not offered by your insurer to the insurance company that is protecting you against the failure of your insurer.

Fortunately, the general insurance arm of the profession is well equipped to advise on these developments.

John O'Neill
Chairman

ACA General Insurance Committee

SWAPS: how to avoid collateral damage

In recent years pension scheme trustees have found swap contracts to be a valuable tool in helping them manage the risk that their assets do not move in tandem with their liabilities. As a result, their use in the pension scheme industry has increased significantly. In particular, contracts are typically used to provide a greater degree of matching between assets and liabilities to changes in interest rates and inflation.

A swap is a derivative contract and is an agreement between two parties to exchange (i.e. swap) cashflows which are based on agreed parameters. The most common swap contract specifies that one party pays a fixed predetermined cashflow in return for the other party paying a cashflow that varies with interest rates. Typically the variable interest rate will be based on the London Inter Bank Offered Rate (LIBOR). Both the fixed and variable interest rates will be applied to a notional amount of capital.



An example of where a pension scheme may use swaps is to gain exposure to inflation. For example, a scheme holding fixed interest gilts could pay a fixed rate (it receives a fixed rate from its gilt holdings) and receive a payment linked to inflation.

In the case of a pension scheme, the counterparty to their swap contracts will be a bank. The scheme can either transact directly with the bank or, if investing via a pooled fund approach, the pooled fund will enter the agreement with the bank. With the latter case, although the scheme does not enter directly into the contract with the bank, the eventual return it receives is still reliant on that party being able to meet its promised payments.

At the outset, if we ignore (the relatively small) transaction costs, a swap contract is commonly structured so that it represents zero value to both parties. Over time though, as interest rates change, the value of the contract will represent a positive value to one party (with a corresponding negative value to the other party).

The exchange of payments between the two parties is calculated to take place at regular intervals. However, for practical reasons, the actual cashflows may not be exchanged until the end of the term of the swap contract. Indeed, for pension schemes, the majority of the cashflows will not be exchanged for many years given the long dated nature of their liabilities. As a result, in the intervening period, the scheme is exposed to the risk that the counterparty fails and cannot fulfil the obligation it has to the scheme. If such a situation occurred then the pension scheme would suffer a loss.

Addressing default risk

Naturally this gives rise to the question about what measures a scheme can put in place to protect against the risk of default of the counterparty. As a starting point, schemes can consider two aspects – quality of counterparty and diversification.

Credit rating agencies assess banks against their risk of default and rate them accordingly. An initial step for schemes therefore is to set minimum ratings for the banks that they are prepared to transact with. They may also specify in their contracts that an agreement may be terminated should the credit rating of the counterparty fall below a specific level. This is good governance and will provide a degree of protection (however, we note that Lehman Brothers were 'A' rated at the time they filed for bankruptcy).

Diversification involves using a number of different counterparties rather than relying on a single entity. Again this represents good governance but it should be noted that there are only a relatively small number of counterparties in the market and so there is a limit to the extent of diversification (and hence protection) that can be achieved.

There is a limit to the protection that these two steps can provide a scheme. A much stronger, and almost universally adopted, line of defence comes from the use of collateralisation. Suppose that at any point in time the value of a swap is positive for a pension scheme but the swap will not mature for many years. Collateralisation requires that the other

party provides ('posts') assets to a separate account. In the event of the other party failing, the pension scheme will be able to access the assets set up in this account.

The types of assets that can be used as collateral will be set out in the Credit Support Annex (CSA) that forms part of the International Swaps and Derivatives Association (ISDA) Master Agreement. The ISDA agreement is a standardised form of contract which sets out the framework of the terms under which two parties will trade swaps.

There is variation in the types of assets which may be used as collateral and these may be negotiated in some cases. For swap arrangements, the quality of collateral used is generally very high consisting, for example, of cash and government bonds. However, the CSA may allow alternative, lower quality assets to be posted as collateral.

Where lower quality assets are used, a 'haircut' will typically be applied to the market value of these assets reducing their value for collateralisation purposes. This means a greater market value of the asset needs to be posted than if higher quality assets were posted. This reflects the greater variability and uncertainty in their market value and provides an additional buffer for the scheme. The CSA sets out the details of the haircuts being applied and these may be negotiable.

The frequency of collateralisation will be specified in the CSA and it is common practice for this to be done daily. Apart from any loss occurring on the swap contract, the collateral can be used to defray any costs associated with having to put in place alternative counterparties.

Whilst the collateralisation process provides a strong degree of protection in theory the actual proof of its effectiveness only really becomes tested at the point of failure of a large counterparty. The principles of collateralisation are sound given 'normal' market conditions but the type of market events that can give rise to a large counterparty failing may be very extreme in nature.

Lehman tested collateralisation system

On 15 September 2008, Lehman Brothers filed for bankruptcy and as a major swap counterparty the process of collateralisation was tested in 'live' market conditions. The scale of Lehman's bankruptcy was unprecedented and sent tremors throughout the banking and investment world. Contingency procedures that had never before been used in anger were put into operation. Default notices were issued to Lehmans, collateral seized and new counterparties found for the cancelled swap contracts. This was all achieved within a matter of days and worked well to protect pension schemes and other parties from the failure of Lehmans.

The lessons learned are that collateralisation worked as intended and highlighted the need for frequent collateralisation, high quality collateral and low minimum transfer amounts. It also put the spotlight onto other areas in which

fund managers can reduce the risks associated with such an event by effective contingency planning, monitoring the credit risk of counterparties and reducing exposure where appropriate, and having effective systems in place for consolidating exposures on the termination day.



Although collateralisation was shown to offer a large amount of protection there are some other risk factors to note. For example, following counterparty default, the swap contract is terminated and the scheme must serve a termination notice. At this point the value of the swap is crystallised but to retain its market exposure the scheme must put in place new swap contracts. Therefore even though a scheme may have been fully collateralised there is a risk if it has to renegotiate replacement interest rate and inflation cover that these terms will be significantly worse. This may arise due to, for example, many other counterparties looking to reinstate cover at the same time or simply general financial instability following a large default event.

Inevitably, there will be situations in which a loss has occurred and recovery of the difference between the profit on the swaps and the collateral may take some years and not be entirely successful. However, it is fair to conclude that the experience of Lehman Brothers has shown that collateralisation has proved successful in shielding pension schemes from the potential losses occasioned by the failure of a counterparty.

Brian St John Hall
Chairman
ACA Investment Committee

How are life insurers weathering the credit crunch?

In September last year over one dramatic weekend that saw the failure of Leman Brothers and the US government providing financial assistance to AIG the credit crunch suddenly became real and moved into the wider economy.

The impact of the credit crunch on banks has been discussed in detail, but less light has been shone on how it is impacting life insurance companies. In general UK insurers have not reported significant problems and their new business figures and results have so far been at least in line with market expectations. The full impact on their solvency positions will become more apparent as they report their year end 2008 positions in their returns to the Financial Services Authority and in their 2008 accounts and presentations to analysts.

Where problems have, so far, arisen for insurers it has been where they have operated in the capital markets and have acted more like banks. The writing of credit default swaps has been a notable example of an area that has brought significant problems to some insurers.

Capital challenge

Whilst so far UK insurers have not reported solvency issues the raising of additional capital has become more difficult encouraging insurers to use their existing capital more efficiently.

Volumes of many lines of business have held up for insurers although those reliant upon mortgage related business, typically term assurance and accelerated critical illness policies, are seeing a decline in their business. So far the decline does not appear to have been as dramatic as the drop in the number of new mortgages being taken out.

The credit crunch has had a material impact on the level of bulk annuity business being written. Although as a whole the market for bulk annuity business tripled in 2008 to over £8bn the level of business and transactions dropped in the fourth quarter compared to the third. Uncertainty around asset values, in particular corporate bonds, made it difficult to enact transactions. Pension buy-ins and pure longevity related transactions, for example longevity swaps, are becoming increasingly popular.

FSA review ahead

In light of the very significant widening of the interest rate spread on corporate bonds over those of government gilts the FSA is reviewing its rules and regulations on what propor-

tion of the spread insurers can use in their valuation bases to allow for the liquidity premium and what level of default risk should be used. The FSA will not publish any changes until later in 2009, but if the proportion of the interest rate spread insurers can use for liquidity premia is reduced this is likely to make some lines of business, such as bulk annuities, more capital intensive.

As with the banks some insurers are moving back into their core insurance areas and away from capital markets and "sticking to the knitting". Being conservative and unadventurous has become desirable characteristics for financial institutions.

The regulatory fallout of the banking crisis is currently unclear, but it appears that there will be a root and branch review of risk management in banks and how this is regulated. Whilst the focus of the reviews will be on banks it is perhaps inevitable that there will be wider regulatory impact of life insurance companies.

Ups and downs

The impact of the credit crunch on consulting actuaries working with life insurance companies is likely to be both positive and negative. Whilst consulting budgets may be constrained the impetus to improve risk management systems and in particular implement Solvency II as it develops over the next few years will offer opportunities.

The credit crunch is also likely to stimulate some mergers and acquisition activity. Insurers constrained in raising capital may look to divest themselves of non core businesses or to restructure to increase the efficient use of the capital they have. Strong insurers will be able to take advantage of any fire sales from their competitors and acquire blocks of business, or whole insurance companies, at very attractive prices.

Overall UK insurers are weathering the credit crunch quite well, but if the economic downturn is particularly long there will be testing times ahead for insurers and this may further encourage merger activity.

Philip Simpson
Chairman

ACA Life Insurance Committee

Discount rates: assumption setting for IAS 19

At the end of 2008, the *Financial Times* published an article which started, “Auditors are pressing companies to reconsider how they calculate their pension liabilities and urging them to use formulas that could give rise to much larger reported deficits than would be the case if they stayed with the current approach.”

Arguably this contrasts with an earlier article which reported that the UK’s pension regulator “slams pension rules as bizarre”, when talking about the use of corporate bond rates for accounting as “having the flattering, but misleading, effect of pushing down liabilities”. Are these statements true? And are they consistent?

International Accounting Standard (IAS) 19 requires the discount rate to be based on high quality corporate bond yields. Unlike Financial Reporting Standard (FRS) 17, which stipulates AA rated bonds, IAS 19 does not specify what is meant by high quality. Convention is AA rated or better. In past years looking at the bonds which make up the indices based on AA rated securities you might expect to see a range of defensible answers of between 50 and a 100 basis points above the yield on Government bonds depending on the duration of the liabilities, assumptions about the shape of the yield curve and how conservative or optimistic a company is. Typically, companies used a discount rate close to the yield on one of the published indices.

In current market conditions a reasonable challenge from auditors is “even though a bond is a constituent in an index called ‘AA rated bonds’ are you satisfied that it is ‘high quality’?”. The rules used to prepare the indices change from time to time. For example, a change from using a single rating agency’s classification to including bonds which are AA rated by any of the leading rating agencies.

With some bonds yielding over 6% more than the average (and considerably more than some bonds with lower credit ratings) it seems pretty clear that the market thinks some high quality bonds are higher than others. It is also reasonable to expect that the markets will react (or possibly over react) to developments more quickly than the rating agencies and those who prepare the indices.

Unprecedented times

During the working life of most actuaries, the margin between Government and AA rated bonds has been around 1%. It has fluctuated from below 0.5% to over 1.5%, but prior to last autumn it had never been above 2%. To have a period

when long dated Government bond yields have fallen by around 0.5% whilst the yield on an index of AA rated bonds has risen by almost 1% is unprecedented. Whatever such a gap reflects it seems that it is far more than the default risk that most of us would expect to be associated with the term high quality.

It would seem the FT articles do not tell the whole story:

Using a discount rate set simply by reference to the yield on a corporate bond index, without consideration of the quality of constituents of that index and the duration of both the constituents and the liabilities is likely to be challenged by auditors. Whilst that may be a change in practice it is hardly a fundamental change in the valuation of pension benefits.

How bizarre it seems to see liabilities go down, when yields on Government bonds are falling depends on your view of what is an appropriate measurement basis for pension liabilities. This depends on why you are measuring them and is a subject actuaries have been debating for a long time. Basing the discount rate on a risk free rate, a risk adjusted (for the specific entity and plan) rate, high quality corporate bond rate, an expected return on assets, the entity’s marginal cost of borrowing (secured or unsecured), the rate underlying buy-out policies, the entity’s weighted average cost of capital or the entity’s weighted average return on capital have all been suggested at some point for some purpose.

Where you draw the line and how you determine what is or is not high quality in accordance with the accounting standards is a judgement call for the directors, in preparing their accounts, and for the auditors, in scrutinising those accounts. There is no generic right or wrong answer and it will be very interesting to see the range of different approaches taken by companies publishing accounts throughout this year.

Richard Davis

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