Milliman

# ISSUES IN BRIEF

Summer 2008

UK LIFE INSURANCE


## WELCOME

**Welcome to Milliman's UK life insurance newsletter, which discusses current industry issues and aims to bring clarity to an increasingly complex environment.**

**This issue covers topics such as:**

- **internal models and what will be permitted under Solvency II**
- **understanding more clearly how your organisation experiences risk**
- **is this the end of the road for the life insurance securitisation market?**
- **adapting to the new MCEV principles**

**We hope you enjoy reading the newsletter and look forward to your feedback.**

## INSIDE



# SUCCESS IN RECESSION

EVER SINCE the very public run on the bank at the Northern Rock, concerns about the knock-on recessionary effects of the credit crunch have been spreading across the wider economy. What does it mean for insurance companies?

Some insurance companies have reported increasing surrender rates, while others have announced down-sizing or re-organisations of certain parts of the business.

One of the key concerns for shareholders and managers of insurance companies during such times is the dual effect of increased lapses and falling sales. This is particularly the case when executive bonuses are based on embedded value objectives. Increased lapses hit the future profits and hence embedded value of existing business, while falling sales hit the new business value added.

During such times, the business case and need for new variable annuity (VA) type products increases. The need for exposure to upside market performance remains as ever but the guarantees associated with such products become more valuable in falling markets, thereby reducing the incentive for policyholders to lapse. Additionally, as consumers become more risk-adverse during these times the perceived value of guarantees increases, which helps to support sales. This is evident for example in the recent Lehman Brothers report on the success of AXA's

Continued on page 8

# LONGEVITY RISK: EVOLVING GUIDANCE IMPACTING PENSIONS AND ANNUITIES

GUIDANCE THAT could significantly affect how writers of pension and annuity business will price and reserve for longevity risk is rapidly evolving. The three major organisations being closely monitored by pension and annuity providers for releasing new standards are the Pensions Regulator (tPR), the Board of Actuarial Standards (BAS) and the Accounting Standards Board (ASB) – in addition to the changes monitored around Solvency II and IFRS. The timelines and consultation period of the guidance proposed by the various organisations are closely linked to each other (see "Timeline" on page 5).

### THE PENSIONS REGULATOR

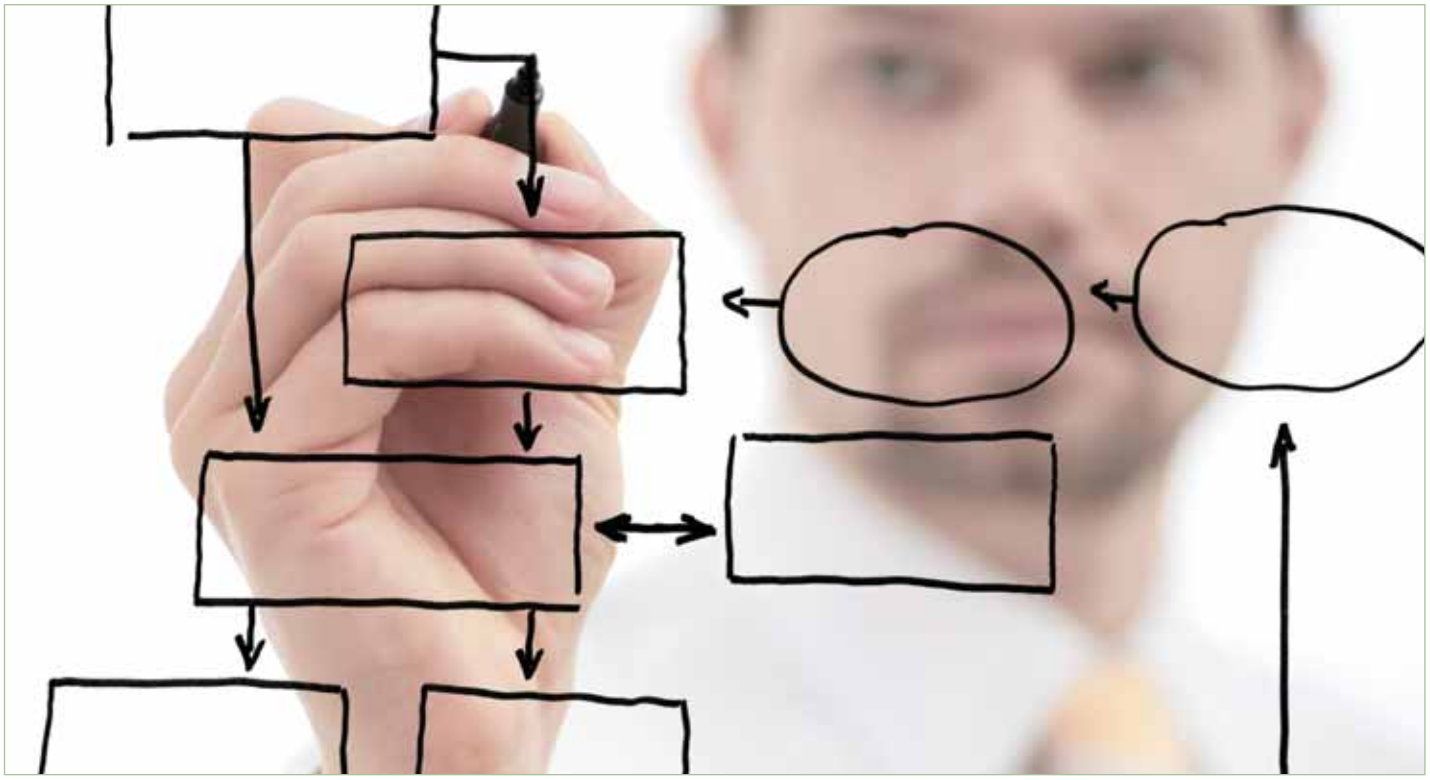
The key principles underlying the new practices proposed by tPR for defined benefit pension schemes are that mortality assumptions should be evidence-based, with an emphasis on clarity and transparency.

The consultation paper published in February 2008 aims to promote awareness among trustees of the current developments and trends in the two main components of mortality assumptions:

- baseline mortality, which reflects current mortality experience
- future mortality improvements

Continued on page 4

# INTERNAL MODELS UNDER SOLVENCY II



## INTRODUCTION

THE SUBJECT of internal models and what will be permitted under Solvency II is a key one. Various reports suggest companies will gain advantages by using a full or partial internal model, but it is currently not clear how they should reach an approved model.

The July 2007 draft directive allows a company's own internal model to be used as an alternative to the standard formula for calculating the Solvency Capital Requirement (SCR). In some circumstances, depending on the size of the company, the complexity of the business, and/or the nature of the risks to which it is exposed, the supervisor may oblige companies to use an internal model.

In its report on the QIS 3 results, the Committee of European Insurance and Occupational Pensions Supervisors (CEIOPS) estimates that the capital requirement calculated by the standard formula will be approximately 10%-20% higher than that calculated by an internal model. A study by the CRO Forum claims this figure could be as high as 40%. This obviously provides an incentive for companies to use an internal model; doing so should also enhance the company's understanding of their own risk profile and exposures.

However, there is a catch because the internal model will be subject to regulatory approval.

## WHAT ARE THE CRITERIA FOR REGULATORY APPROVAL?

A formal application for approval from the controlling management of the company must be submitted to the supervisor. The application must explain how the relevant model(s) meet the following tests:

- Use:

  Companies need to demonstrate that the internal model is used in the regular management and governance of the company, in particular, in their risk management and economic and solvency capital requirement calculations. Management is responsible for regular reviews of the model to ensure it remains an accurate and up-to-date reflection of the risk profile of the company.

- Statistical quality:
  - The model used should be based on adequate actuarial and statistical methods, covering all the material risks to which the business is exposed.
  - The model should be based on fully justified assumptions and complete, up-to-date and accurate data.
  - The model should allow for and quantify the risks associated with material financial and policyholder options and guarantees.
  - The model should take account of expected payments to policyholders even if they are not guaranteed.
  - The model may include allowance for diversification of risks.
  - The model may include allowance for risk mitigation techniques and management actions expected to be carried out in certain circumstances.

- Calibration:

  The calibration test that the model is required to meet is defined in terms of the level of protection granted to policyholders and beneficiaries by the standard formula – defined to be the 99.5% confidence level of remaining solvent over a 1-year timeframe. Approximations, different timeframes and different probabilities may be used, subject to the constraint that the internal model produces a SCR that provides policyholders and beneficiaries with at least the level of protection offered by the standard formula. The internal model therefore must be capable of producing a capital requirement at a level of protection equivalent to that given by the standard formula.

  Regulators may also require companies to run their models on external data to show that the model produces results in line with the market.

- Profit and loss attribution:

  Companies need to be able to show that the internal model accurately reflects the risk profile of the company.

- Validation standards:

  There should be a clearly defined, documented programme of model validations. These should include checking that the model:

  – is still an appropriate and accurate reflection of the risks faced by the business

  – produces capital requirements that offer policyholders the required level of protection

  – responds in the appropriate way to changes in the key assumptions

  – is based on complete, up-to-date and accurate data

In addition to carrying out the tests described above, companies will need to demonstrate that they performed the tests in a controlled way by providing full documentation of the test results. As well as the changes applied, companies should also document the design and operational details of each model.

Supervisory authorities must decide whether to accept or reject the application within six months of receipt of a complete application from the company.

## THE ISSUES FOR COMPANIES

Notwithstanding the allowances in the draft directive for proportionality, it is likely that developing an internal model (full or partial) will involve a significant investment of resources and expertise, not only to build the model, but also subsequently to satisfy the regulator that the model meets the tests described above.

The exact form that this regulatory approval will take is currently not clear, but approval is expected to be more onerous than that currently taking place in the UK for the ICA. One possibility is for direct regulatory approval through something akin to the current FSA Arrow structure. An alternative is to require companies to seek approval from an independent reviewer or auditor, although this raises considerations around the form required for the third-party opinion and the professional indemnity implications. It is perhaps most likely that approval will take some combination of third-party sign-off and regulator review.

The level and detail of the evidence and documentation required to gain approval is a key issue – in particular that around proving to the supervisor that the model satisfies the use test. Supervisors will be under pressure to provide resources under Solvency II; and the need to review and approve models will increase demand for skilled resources. It will also be difficult to ensure that the standards are consistent across different jurisdictions. Given the significant capital requirement reductions available (as indicated above), variable standards could affect group strategy on selecting a lead regulator.

## SO, WHAT ARE THE KEY STEPS TO BE TAKEN?

The obvious answer to this question is first an analysis of the current position, followed by an analysis of where a particular company wants to be and the improvements required to get there. Then there is the implementation stage.

Initially, some of the key high-level areas to consider are the following:

- The models currently used to assess the key risks

  – What are they?

  – Who "owns" them?

  – What are the current documentation standards?

  – Do they cover a complete set of risks to which the business is exposed?

  – How does the current documentation and classification of risks covered compare to the standard SCR formula?

  – Do the current models produce output that provides evidence for the statistical and calibration tests?

- The improvements required to get to where we want to be

  – Are new models required or adjustments to existing models?

  – How should output from the current models be adjusted to fit management requirements?

  – How integrated into the day-to-day risk management of the business are the current models?

  – Are the models and outputs integrated or operating in "silos"?

  – How are the outputs combined to produce a holistic picture of the risk exposures of the business?

  – What resources will be needed to meet these improvements?

  – What training and recruiting needs to be carried out to put in place the improvements and work with the upgraded models when completed?

These are just some of the issues around internal models and Solvency II that we at Milliman are currently working with our clients to solve. Addressing these issues at an early stage will lead to many benefits. A more risk minded organisation, an improved understanding of the risks involved and stronger financial controls may lead to a lower capital requirement and lower volatility of results. This in turn will enable the rating agencies to appreciate the controls and risk management and therefore endorse an improved rating.

**If you would like to know more, please contact oliver.gillespie@milliman.com or john.mckenzie@milliman.com.**

# LONGEVITY RISK: EVOLVING GUIDANCE IMPACTING PENSIONS AND ANNUITIES (CONTINUED FROM PAGE 1)

The proposals are intended to assist regulators in identifying the risks related to longevity assumptions within schemes and to act as a trigger for regulatory intervention. Under the proposals, for recovery plans submitted to tPR, improvement assumptions weaker than long cohort will attract scrutiny from tPR and dialogue with trustees. In addition, the absence of a minimum level of improvement or improvement rates that tend to zero will also attract further scrutiny. Making adjustments to discount rates as a proxy for future improvements will no longer be considered acceptable, and trustees are encouraged to reflect the cohort effects in the UK.

In February 2008, the Pension Protection Fund (PPF) decided that the Section 179 valuations (for PPF levy valuation or PPF-accrued benefits) should be based on a medium cohort with a 1% underpin, by deliberately erring on potentially lower future improvements. The PPF board also recently chose to apply the long cohort improvement tables, with a minimum improvement of 1.5% and 1% per annum for male and female rates, respectively, in valuing their own liabilities for the 31 March 2007 accounts. This could potentially be seen as a benchmark for expected industry practice.

In general, the proposed guidance is much stronger than current market practices, encouraging a move from a medium cohort to a long cohort basis with a non-zero minimum level of improvement. Overall, some pension schemes could see liabilities increase by around 15%, depending on their current bases.

## BOARD FOR ACTUARIAL STANDARDS

In March 2008, BAS published a discussion paper on the mortality assumptions used in actuarial calculations that focuses on developing standards to achieve transparency and comprehensibility.

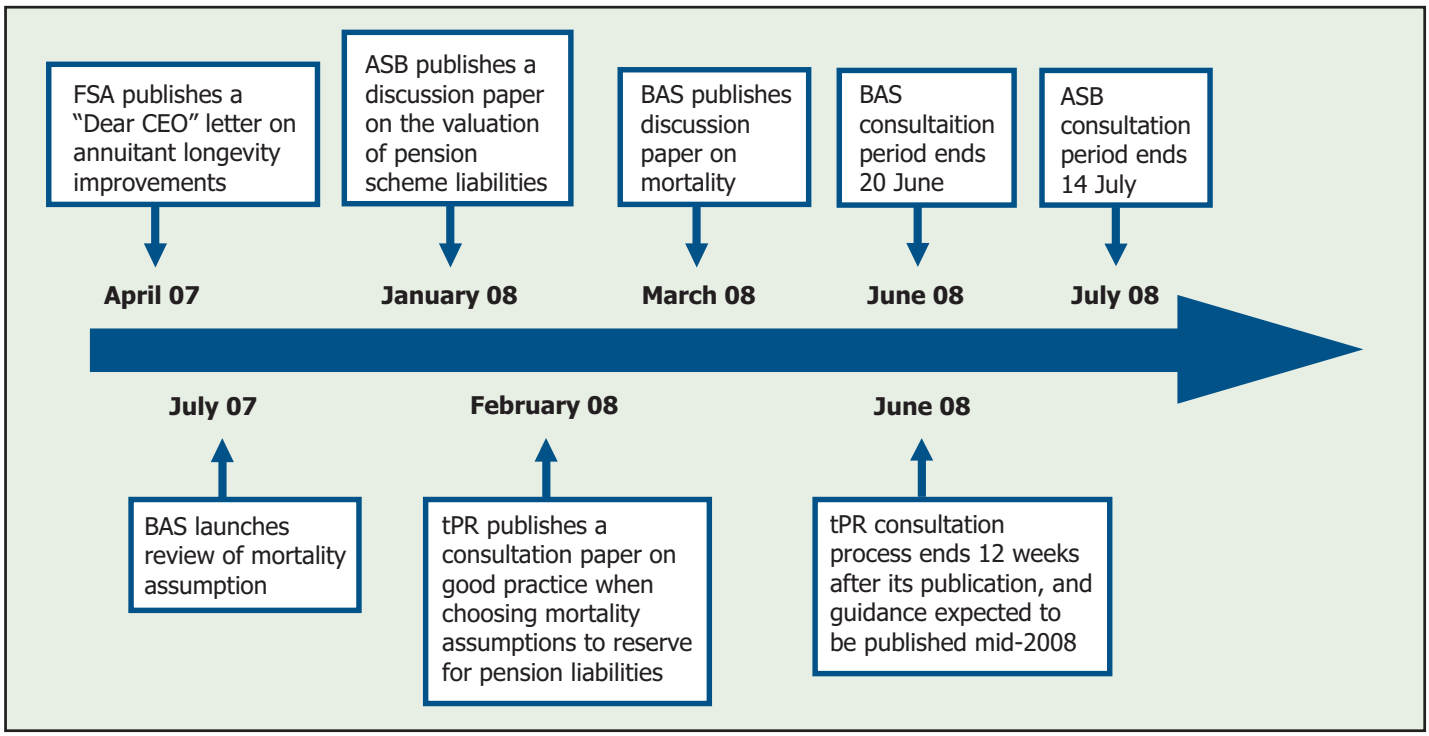
This could have significant impacts in the following areas:

- funding levels of pension schemes
- capital requirements for insurance companies with annuity business
- costs incurred by users of actuarial information, particularly if standards mandate that more work is required
- pricing of longevity risk

To highlight the importance of mortality assumptions, BAS commented that both overestimating and underestimating future mortality rates can result in adverse effects to the pension and life insurance industry.

BAS recognised the importance of separate base mortality and improvement assumptions, using up-to-

## TIMELINE




date mortality tables and having non-zero improvement factors. In addition, BAS stressed the need to consider risk outside of the scope of longevity models rather than depending on probabilistic interpretation alone.

The proposals include a full list of disclosure requirements which will be onerous for many pension schemes and insurance companies around baseline mortality and future improvement assumptions. BAS also stressed the importance of communicating the extent and impact of uncertainty so that users, such as pension trustees and boards of life insurance directors who are responsible for choosing mortality assumptions, can rely on the paper when making decisions.

### ACCOUNTING STANDARDS BOARD

The ASB published a discussion paper in January 2008 that argued for the use of a risk-free rate for discounting liabilities rather than a high-quality corporate bond rate, as required by the current accounting standard. The risk-free rate is viewed as the more appropriate measure since pension schemes do not apply capital to support their exposure to credit, as required if they were brought under Solvency II. By applying discount rates based on the gilt curve or swap curve rather than the AA corporate bond curve, the reduced discount rate would increase the size of liabilities. The spreads between gilts and AA bonds were historically about 50 basis points, although this has quadrupled in the recent "credit crunch" environment.

### THE OVERALL IMPACT ON BUYOUT

The burden on trustees continues to increase, and a full understanding of longevity risk is now vital. Although trustees are the ultimate decision makers on the mortality assumptions for corporate schemes, actuaries will continue to play a significant role in explaining the impact of the new regulatory proposals – and in particular how these translate into changes to liability values.

The combined effect of the new regulatory proposals – both the potential strengthening of mortality assumptions and the need for risk-free rates to discount liabilities rather than high-quality corporate bond rates – will further increase the size of corporate pension scheme liabilities. Pension scheme liabilities should now be closer to those of an insurance company, which will encourage a more level playing field in the buyout market. In addition as the gap between buyout price and assets reduces, interest in buyouts is expected to increase, especially among schemes which could be pushed into deficit as a result of the pending changes. Consequently, we may see an acceleration in activity in the pension and bulk annuity buyout market in 2008 beyond that previously expected.

**For more information, please contact emma.mcwilliam@milliman.com or farzana.ismail@milliman.com.**

# SEEING IT COMING

IT WOULD BE wonderful if your risk management system could actually tell you about the next big disaster brewing before it arrives. Maybe even do so in time for you to take mitigating action. While risk systems clearly capture a great deal of information regarding risk events that the organisation is concerned about, very often large risks still come as a surprise.

## WHY IS THAT?

A growing body of research supports the view that much economic and business modelling has over-simplified reality to such an extent that it no longer provides a meaningful understanding of the modern world. In the past, these simple models provided great leaps forward in structuring modern economies and societies, but this was largely made possible by the fact that the world was a much simpler place. Over time we have grown into highly complex societies where such modelling no longer yields the insights we need. The patterns are hard to spot and things often appear chaotic. Certainly, simple approaches still work well in certain situations, but it is important to recognise when they do not work.

Current modelling and monitoring fall short primarily because they fail to capture a number of features exhibited by complex systems – which are an essential part of understanding their overall behaviour. First, they are highly connected, meaning that the components of the system can interact to create new behaviour. Second, they are adaptive and therefore generate emergent behaviour that cannot be anticipated simply by studying the individual components. Third, they contain dynamic behaviour that can rapidly spiral and possibly even launch into chaotic behaviour if the conditions are right.

## WHAT ARE WE MISSING?

The evidence and research supports the view that modern organisations, industries and economies increasingly behave as complex adaptive systems. Risk systems often tend to consolidate risk at the enterprise level by aggregating a range of risk observations from lower down the organisation. While using lower level observations is not wrong per se, we noted above that the behaviour of a complex system cannot be understood by just studying the behaviour of its parts. This means that the observations have to be viewed as a whole, rather than forming views about silos of risk and aggregating them. Losing sight of the whole is fatal in this context, and this is generally where risk systems fall down.

Similarly, risk systems that simply summarise high-level risks are not the same thing as those that analyse the structure and connectivity of the risks.

Frameworks tend to follow the relatively common approach of looking at categories of risk and then trying to combine them in some way to form an overall perspective. Such a presentation is not unhelpful, but categorisation can lead to considering each item separately rather than as part of a whole. The interactions between the risks are then lost.

In the context of risk capital modelling, it is recognised that risks are very unlikely to occur simultaneously and so the risk profile of the entity might be expected to be lower than the sum of each individual risk. This leads to the use of correlations to derive so-called "diversification benefits". In reality, the risk events are sharing some common underlying cause and so correlations are essentially a factor of ignorance. It is more correct to consider the common events that lead to risk occurrences and model these directly.

## MAKING SENSE OF IT

The good news is that science in other areas has been tackling the issues of understanding complex systems for quite some time. A wide range of different tools and techniques already exists that can be used to gain insight into these types of systems – and therefore represent real, usable tools that can bring real insight into your organisation's strategic risks and opportunities. In our previous newsletter we described part of our CRisALIS™ methodology, which is designed to capture the structure of your strategy and associated risk exposure in a manner that enables these tools to be used.

While complex systems appear random and impossible to understand when using traditional methods, it is possible to spot the patterns emerging if you use the right tools.

## EARLY WARNING

"Entropy" is one measure for understanding how vulnerable your organisation is to emerging strategic risk. Put simply, this measure looks at the amount of complexity building up in your organisation and assesses it against the maximum amount that your organisation can handle. This maximum is an intrinsic feature of the organisation's current state and is not a subjective input, but determined from the data. If you approach this limit too closely, inevitably a dramatic release of the complexity will occur through some kind of strategic risk event.

Research indicates that a certain level of organisational complexity is required before the business is able to achieve a meaningful level of performance (around 60% of maximum). However, levels of more than 90% are indicative of imminent failure (see graph below). Management's task is therefore to maintain operations within a healthy range so that the organisation is sufficiently complex to generate interesting performance, but not so complex that it is overly fragile.

Our CRisALIS methodology brings you the ability to identify the build up of complexity in your organisation through the monitoring and analysis of your management information and other data related to your organisation's performance. Management actions can therefore be taken to release the pressure through strategic and operational actions, thus keeping the organisation within the desired range.

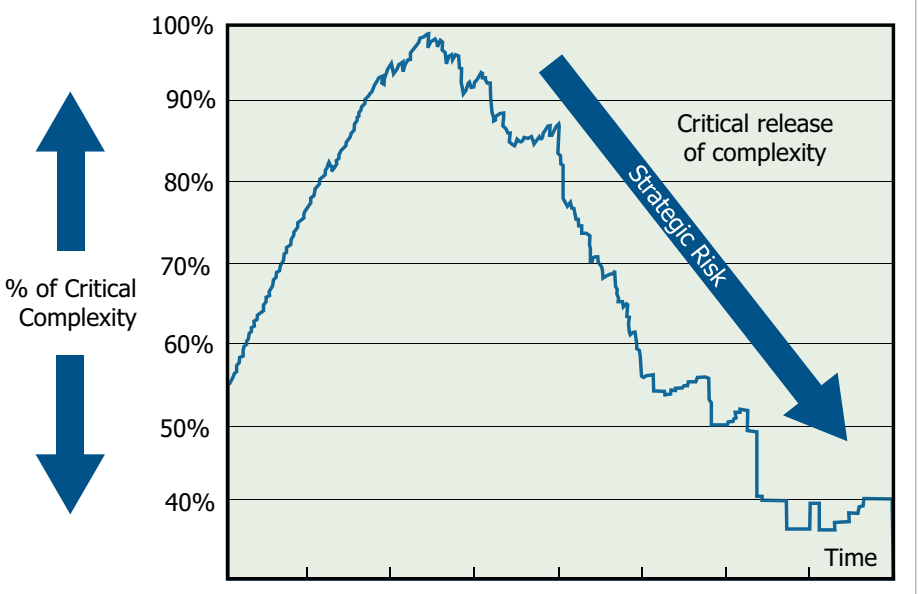
Indeed, measuring risk in this way affords you the opportunity to define risk appetite in a more useful way. This effectively enables your statement of risk appetite to allow for sources of risk of which you may be currently unaware. Traditional risk appetite statements require you to identify risks and examine how much of them you would like to take. This is an essential part of the risk management process, but the ability to capture the "unknown" within the risk appetite setting and management is critical in the context of allowing for emerging risks.

## UPGRADE YOUR ERM

By understanding more clearly how your organisation experiences risk, you gain more insight from your risk measures and can link the opportunities and threats associated with your strategy into your monitoring activity. Tackling the complexity head-on, CRisALIS brings you a range of additional tools and approaches that will enhance your existing framework and increase your chances of spotting the next big thing in advance.

**If you would like to find out more about how CRisALIS could improve the effectiveness of your risk and strategy planning, please contact neil.cantle@milliman.com or tom.wicling@milliman.com.**

**SIGNS OF IMMINENT FAILURE**



# SUCCESS IN RECESSION

(CONTINUED FROM PAGE 1)

roll-out of variable annuity products across Europe. Aegon and Hartford have also reported impressive growth in the volumes of variable annuities, and we expect further significant launches in the coming quarters among major players across Europe. Other new entrants such as MetLife and Lincoln are also making in-roads in Europe, and recognition of the product concept is being strengthened by the activities of companies such as Ergo, Generali and ING, among others.

Demand in this burgeoning market is also underpinned by long-term demographic and structural trends; in particular the tidal wave of wealth accumulating in the pre-, at-, and post-retirement market. For example, in the UK there are 20 million people over the age of 50, and these proportions are increasing, as is the average wealth accumulated per capita.

Clearly guarantees come at a price and this can vary for new business as the economic conditions (interest rates, volatility and expected lapses) vary. Accordingly, we at Milliman have commenced publishing in this newsletter a time series, in the form of an index of variable annuity prices, which tracks how the key pricing risk factors have varied over time, and what this would have meant for the cost of hedging a popular benchmark variable annuity product. This time series is included in the "Financial Statistics" section inside the back page of this newsletter. We observe that over the second quarter of 2008, equity-implied volatilities in the UK and Europe eased back from their recent highs by a couple of percent, more so in Europe than in the UK. While the short end of both the UK and European yield curves increased, long-term UK rates have reduced marginally and European long-term rates have increased somewhat. This has led to relatively unchanged VA hedge costs for the UK and a decrease of around 20bps for European VA hedge costs.

Of course the hedges supporting these products need to be effective. A frequently asked question of late is how well have hedge programmes performed during the recent times of market turbulence. Fortunately, the answer is positive. Milliman recently surveyed the leading variable annuity writers in the world for their views and candid comments on the performance of their hedge programmes. Hedging results from the 16 study respondents revealed few unanticipated losses and validated the efficacy of the financial risk management programmes. These results are significant because many of the programmes were implemented since the last significant market downturn in 2001; the recent market volatility has provided a real-life market test of these programmes.

**Please do not hesitate to contact gary.finkelstein@milliman.com or joshua.corrigan@milliman.com for a copy of this report, titled "Impact of Recent Market Turbulence on Hedging Programs for Equity-Linked Guarantees".**

# INSURANCE-LINKED SECURITIES:
## END OF THE ROAD FOR SECURITISATION?

SINCE 2001, more than US$15 bn of securities have been issued to capital market investors on transactions involving life insurance risks. Most have included a "wrap" from a financial guarantor, providing a guarantee of interest and principal payments to investors, enhancing the rating for the offered securities, and making the securities easier to sell (investors typically rely on the due diligence efforts of the financial guarantors). But because of troubles associated with subprime mortgages and collateralised debt obligations (CDOs) and the downgrades of several of the financial guarantors, the value of a wrap has been significantly reduced.

Is this the end of the road for the life insurance securitisation market, or just a bump in the road?

The difficulties the financial guarantors are now facing do not change the fact that there are real capital management benefits to insurers here. Investors have been interested in insurance-linked securities because these investments provide an attractive risk/return profile. Different tranches of notes have appealed to differing levels of investor risk preference. These securities are generally not correlated with other investments held by investors, creating diversification opportunities.

### BANK OF IRELAND CASE STUDY

The motivation for an insurer structuring either a "value of in-force" (VIF) transaction or an excess statutory reserve transaction is to optimise its capital allocation programme. Bank of Ireland, for example, was able to convert its intangible embedded value on a block of unit-linked business into a market-defined tangible amount when it completed its VIF transaction in October 2007. This enabled the bank to get Equity Core Tier 1 capital credit for the VIF.

The securitisation raised €400m on the surplus emerging from a defined block of existing business, primarily unit-linked business with an embedded value of approximately twice that. This securitisation, of an open book of business, needs to be constructed to have minimal impact on the operations of the company and not constrain its ability to operate and write new business.

The structure of the transaction was in concept relatively straightforward. A special purpose vehicle (Avondale Securities) issued €400m of notes to investors, and the return on the notes was contingent on sufficient surplus emerging on the securitised block of insurance business. Bank of Ireland benefited by being able to take credit on its balance sheet for the €400m raised. In practice, a complicated structure emerged both to protect investors and because of tax, legal and regulatory requirements.

Most previous securitisations had been on a company's entire book of business or a tightly defined block of business, and allowed either a small amount of new business or no new business to be included in the securitisation. For this securitisation a flexible block of business was included; this was termed the dynamic defined block (DDB).

The DDB had two components: the defined block of existing business and the new business arising on the defined block. At regular intervals the DDB's value is reviewed to allow for changes in the existing business together with the profitability of the new business (modelled in a manner consistent with the modelling of the defined block) written since the DDB's last valuation.

The Bank of Ireland case illustrates that using a DDB with new business has several advantages: it fits in with the operational nature of an active company and allows for the value of the block of business being securitised to increase the security of the transaction (provided that the new business is profitable). The inclusion of new business also lengthens the transaction.

Mortality catastrophe bonds or swaps, issued by five companies (Swiss Re, Scottish Re, AXA, Munich Re and Scor Re) to date, also continue to be of interest. These are short-term bonds (typically three to five years in tenure) that transfer extreme mortality risk to capital market investors. They are structured comparably to natural catastrophe bonds.

The fallout from the subprime CDO mess has ramifications throughout the structured finance markets, including transactions involving life insurance risks. It will take some time to rebuild, as this market evolves more towards transactions not dependent on a financial guarantor wrap.

However, given the interest and needs of insurance companies, we do expect to see continued development in the structured life insurance marketplace, focusing first on mortality catastrophe bonds and on private placement transactions. We then expect to see development of more unwrapped transactions and continued diversification in the types of life insurance risks being securitised, including life settlement risks and longevity risks.

**For more information, please contact philip.simpson@milliman.com or steven.schreiber@milliman.com.**

# MARKET CONSISTENT EMBEDDED VALUES

NEW AND IMPROVED embedded value principles were issued by the CFO Forum on 4 June 2008. The new Market Consistent Embedded Value (MCEV) principles will replace the current European Embedded Value (EEV) principles and must be implemented by CFO Forum companies for year-end 2009 reporting.

A main aim of the CFO Forum was to achieve a more consistent and transparent basis of reporting. The EEV principles, released in 2004, were a first major step in that direction but still allowed a wide variety of methods, assumptions and reporting formats for disclosures making comparability a challenge. The new MCEV principles aim to address this through a number of measures including:

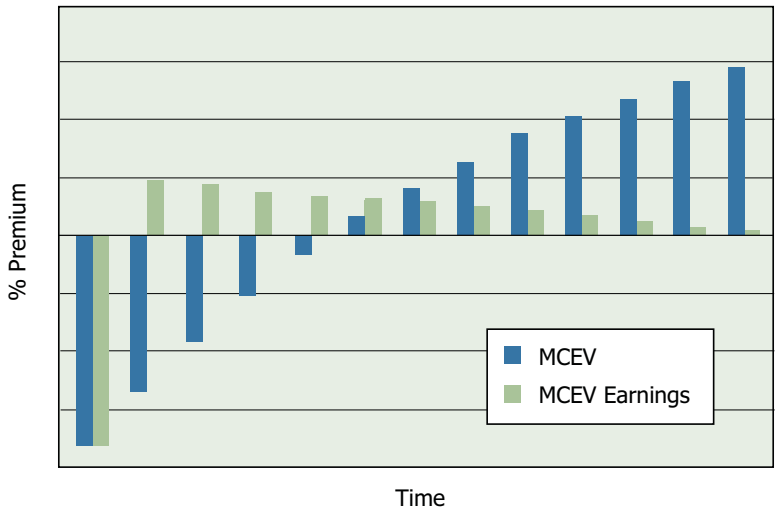
- More narrowly defining the methodology for valuing risks. EEV allowed companies to choose either real-world or market consistent methods. Under MCEV real-world methods will no longer be allowed (except as supplemental information). In addition, the methods for calculating cost of capital and accounting for market and non-market risks are standardised.
- More clearly defining the assumptions allowed. For example, the risk-free rate should be equal to swap rates. Whereas under EEV principles companies could choose swap rates or government bond rates.
- Further standardising the disclosures, including the definitions and presentation of key amounts, especially around the MCEV earnings.
- Making mandatory the external review of the EV methodology, assumptions and results.

Companies basing their reporting on traditional or real-world methods will have a significant amount of work to do to adapt models and assumptions, especially for guarantees and options. They will also need to understand the impact of the move to an MCEV method. Furthermore, work will be needed to communicate the new results to investors and analysts and explain differences to prior reported results. For example, annuity providers moving to MCEV from EEV based on real-world assumptions will need to explain why the value of in-force annuities looks less profitable. The diagram below illustrates the MCEV and MCEV earnings profile for an annuity portfolio.

As the CFO Forum companies move to market consistent reporting, this will increase the pressure on other insurance companies to also move their reporting bases to be in line with these principles. Industry standard setters will also be keenly watching the developments as the insurance industry moves ahead with its market consistent reporting prior to Solvency II and Phase II reporting under International Financial Reporting Standards.

**For more information, please contact bruce.keenan@milliman.com or philip.simpson@milliman.com.**

**ILLUSTRATIVE IMMEDIATE ANNUITY MCEV PROFILE**



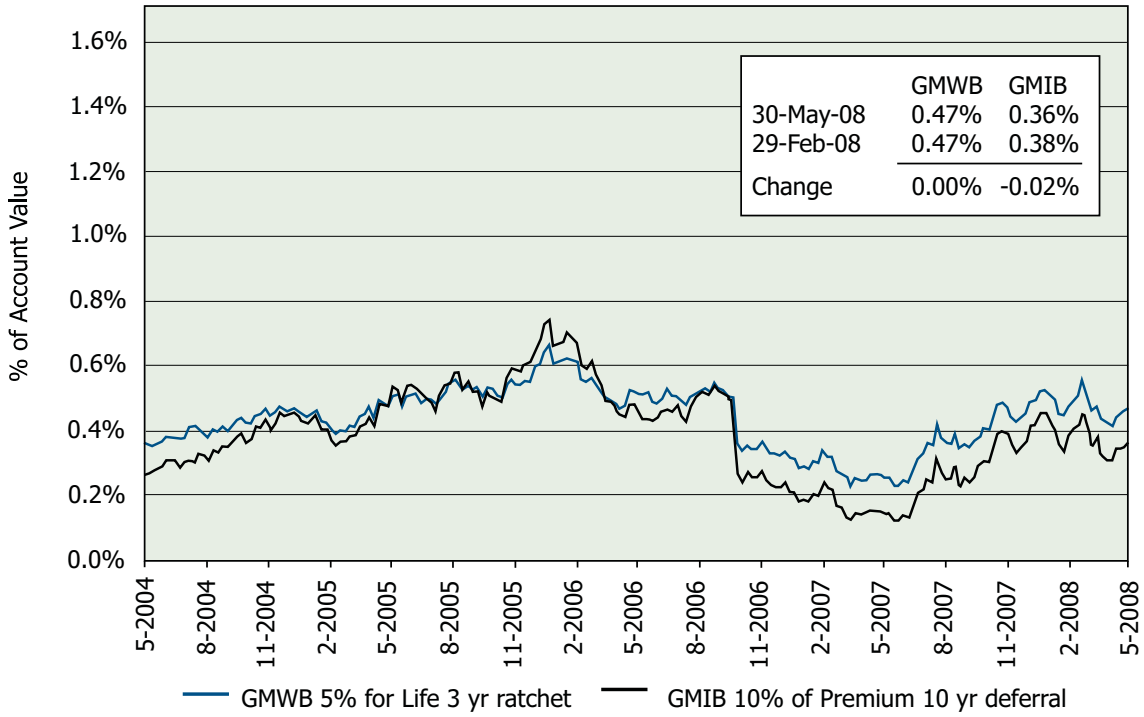

# CONFERENCES

MILLIMAN CONSULTANTS are speaking at a number of forthcoming events. If you have not signed up already, it may be possible to get a discount by mentioning that you are a Milliman client.

| DATE | ORGANISER | EVENT |
|---|---|---|
| 17 - 18 September | **Jacob Fleming** | Life Insurance Securitisation |
| 01 - 02 October | **Westminster and City** | Pension Buyouts Buy-ins and Derisking Solutions<br>Sign-up at **www.westminsterandcity.co.uk** |
| 21 October | **Infoline** | Pension Buyouts and Derisking<br>Sign-up at **www.infoline.org.uk** |
| 05 - 06 November | **Westminster and City** | Rethinking Life Insurance<br>Sign-up at **www.westminsterandcity.co.uk** |
| 9 December | **Infoline** | Milliman led workshop: IFRS for Life Insurers<br>Sign-up at **www.infoline.org.uk** |
| 11 December | **Infoline** | Milliman led workshop: Solvency II for Life Insurers<br>Sign-up at **www.infoline.org.uk** |

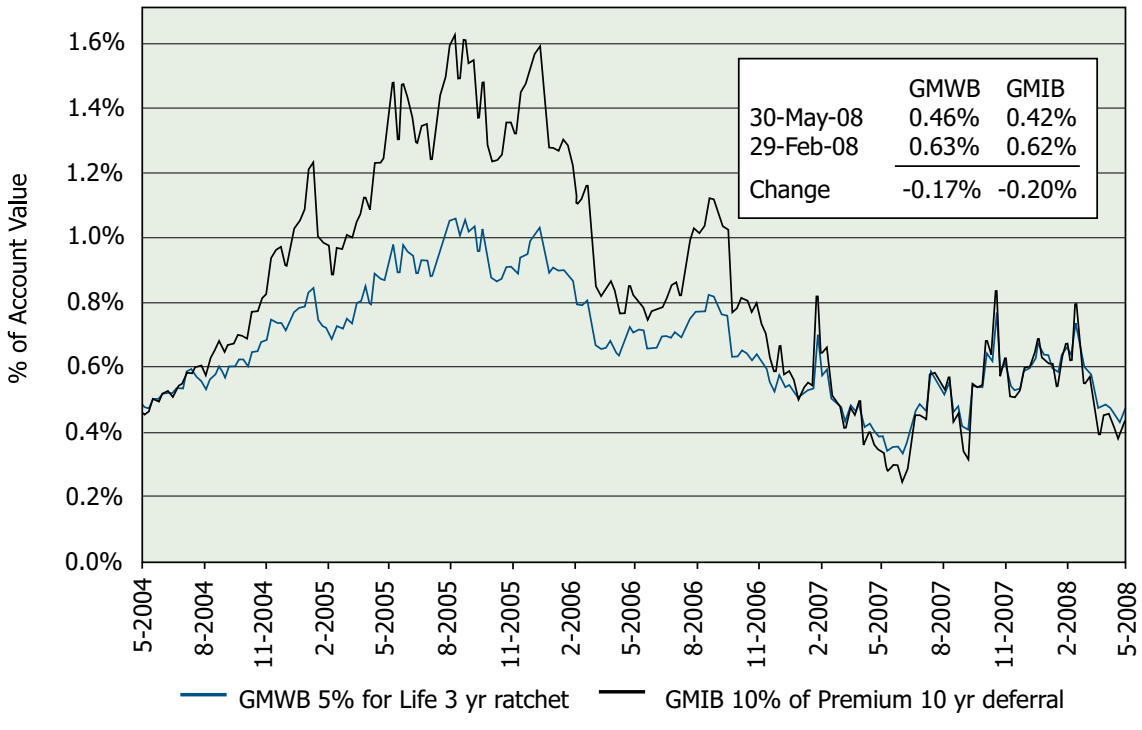
# FINANCIAL STATISTICS

## UK VARIABLE ANNUITY HEDGE COSTS




*Asset allocation: 60% domestic equities, 40% bonds; 65 year old male*
*Source: Milliman*

## EUROPEAN VARIABLE ANNUITY HEDGE COSTS




*Asset allocation: 60% domestic equities, 40% bonds; 65 year old male*
*Source: Milliman*

**CONTACT INFORMATION** Milliman, Finsbury Tower, 103-105 Bunhill Row, London EC1Y 8LZ. Tel: +44 207 847 1500
Fax: +44 207 847 1501 uk.milliman.com **OFFICES WORLDWIDE** UK – Germany – Italy – Poland – Netherlands – Spain – Switzerland – United States – Bermuda – Latin America – India – Japan – Hong Kong – China – Korea – Australia. For additional copies of the newsletter and to provide feedback, please contact your usual Milliman consultant or lyndsay.wrobel@milliman.com