

# ISSUES IN BRIEF

UK LIFE INSURANCE



SOLVENCY II: A LOOK AT THE  
CHANGING ACTUARIAL IT LANDSCAPE

EXAMINING THE KEY ISSUES OF QIS 5

THE LONG-AWAITED IASB  
EXPOSURE DRAFT

THE CONTINUED SUCCESS OF THE  
UK OFFSHORE MARKET

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**DESPITE THE SUBDUED STATE** OF THE ECONOMY AS A WHOLE, THE UK LIFE INSURANCE INDUSTRY HAS HAD A BUSY SUMMER. PREPARATION FOR SOLVENCY II HAS CONTINUED TO ACCELERATE, MERGER AND ACQUISITION ACTIVITY HAS PICKED UP, AND INSURERS ARE BEGINNING TO POSITION THEMSELVES FOR THE IMPLEMENTATION OF THE RETAIL DISTRIBUTION REVIEW. IN ADDITION, THE EXPOSURE DRAFT FOR IFRS 4 PHASE II, RELEASED AT THE END OF JULY, HAS BEEN REQUIRED HOLIDAY READING FOR MANY EXECUTIVES AND ADVISERS.

The main features of the exposure draft are summarised in one of the articles in this edition, 'IASB Publishes its Long-Awaited Exposure Draft for Insurance Contracts'. Predictably, the proposed approach does not allow a profit to be recognised at the point of sale of a long-term contract. Less predictably, it is proposed that point-of-sale profits from business in-force when Phase II is introduced will be deemed to have been recognised in past periods, so no liability representing deferred profits will be established in the opening balance sheet. This avoids the need to make (somewhat speculative) calculations of what this liability should be and how it should be amortised, but it also introduces an obvious inconsistency into the resulting earnings, which will be artificially depressed for many years to come. Surely this has to change before the standard is finalised next year?

QIS 5 will feature prominently in the work programmes of many actuarial departments this autumn. While some of the fears about the level of capital required under Solvency II have receded, the practical and resource implications of having everything ready in the required timescales have, if anything, become more daunting – particularly as most of the requirements have not yet been fully specified. There is a danger that the scale of the task will lead to an emphasis on unthinking compliance rather than creating something which adds value to the business. Would a phased introduction lead to a better system in the long run?

**NICK DUMBRECK**  
PRINCIPAL AND  
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Readers may have noticed the announcement that Milliman has been chosen by Phoenix Group, which has one of the largest and most complex portfolios of with-profits business in the UK, to supply and implement a system to streamline its actuarial calculations. The system will be based on Milliman's MG-ALFA<sup>®</sup> actuarial projection system and Daily Solvency Monitoring System. This puts MG-ALFA, the market leader in the US, firmly on the map in Europe. We have been growing our team in London to handle the increase in demand for our services represented by this and other major new projects.

If you would like to hear more, please contact me at [nick.dumbreck@milliman.com](mailto:nick.dumbreck@milliman.com).

# SOLVENCY II: CHANGING THE ACTUARIAL IT LANDSCAPE



As insurance companies increasingly focus on the systems challenges required to ensure that their actuarial models meet Solvency II requirements, they are appreciating that the actuarial IT landscape is fundamentally changing, becoming ever more challenging and expensive to implement and maintain. No longer can actuarial systems be thought of as anything other than mainstream corporate systems that require the same executive attention and IT disciplines as those applied to administration and accounting technology within the firm. This strategic, operational, and IT shift applies equally to large insurers seeking to gain internal model approval and to smaller insurers with more modest standard model aspirations.

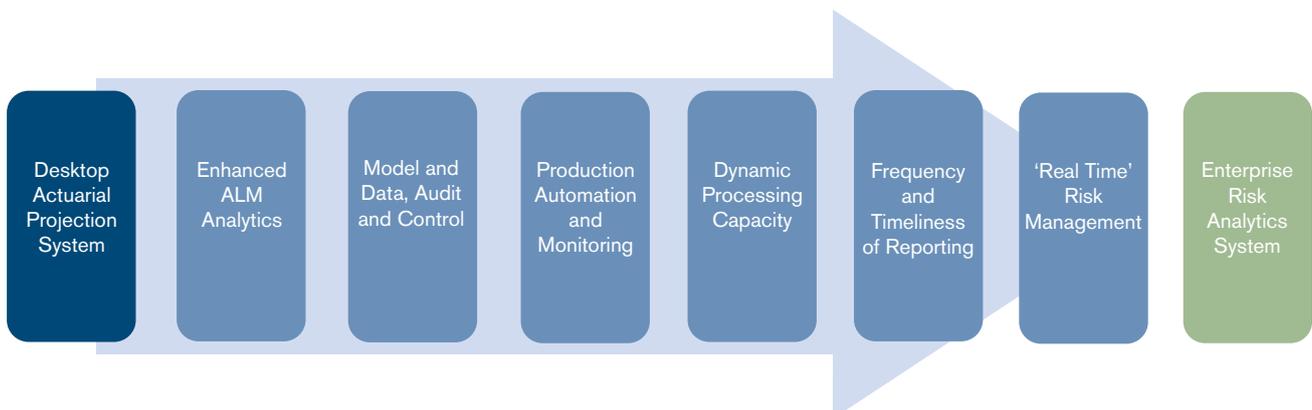
Many insurers have undertaken analytic gap analyses to determine if and how their existing ICAS models can be extended to perform Solvency II Pillar 1 analytics. However, less attention has been given to the Pillar 2 and 3 use case, which requires greater auditability and transparency standards in order to move from a fundamentally desktop modelling world to an enterprise environment. As Figure 1 shows, changes in systems requirements as a result of external pressure for more complex models which are used for more purposes, more frequently with shorter reporting cycles, and with demonstrable audit, control, and reproducibility can be summarised as:

- Enhanced ALM analytics which will further stretch the boundaries of models and systems initially intended and built

for policy-by-policy embedded-value-type projections. Increased asset types with advanced investment and disinvestment strategies are just some of the required enhancements.

- Model and data, audit and control with centralised code and assumption management rather than a decentralised desktop Excel-like usage paradigm. Data warehouses, usage rights, transaction logs, roll-back, regression testing, and web-based access are all common ways of achieving this.
- Production automation and monitoring within a separate environment from that of model development. This requires standard production schedules, automated data

FIGURE 1: DESKTOP TO ENTERPRISE RISK ANALYTICS

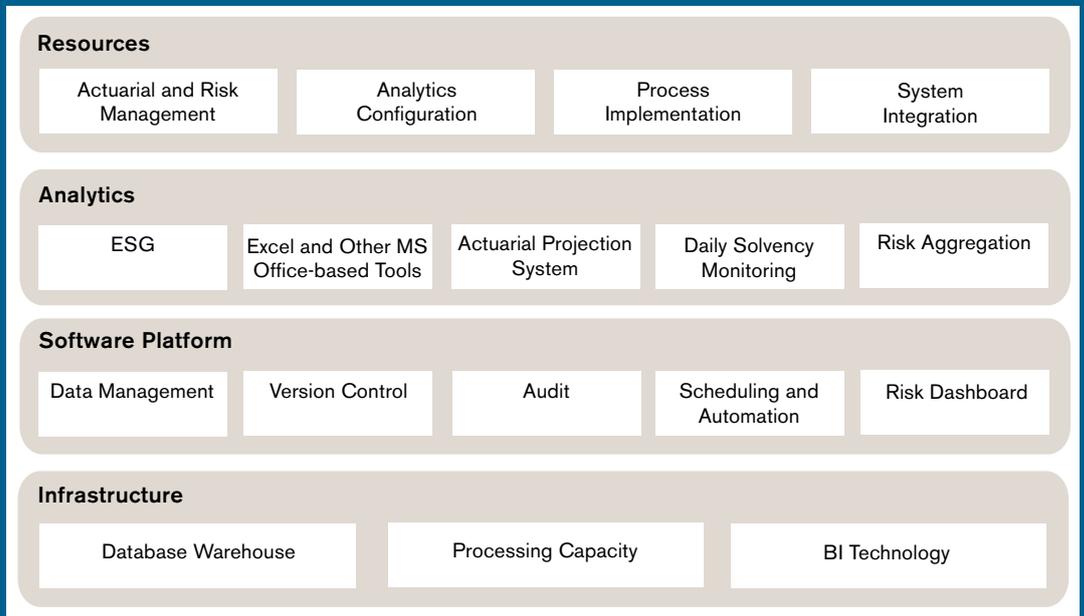


feeds and results aggregation, the ability to re-run jobs, and results version control.

- Dynamic processing capacity to replace or supplement fixed internal capacity to meet peak usage periods. Both the size of runs (numbers of model points and scenarios) and the number of runs (stress tests, alternative strategies, analysis of change, etc.) are increasing the demands on processing capacity.
- Frequency and timeliness of reporting are increasing both the operational and processing demands placed on the actuarial resources at a time of increased pressure to reduce costs.
- 'Real Time' risk management via daily solvency monitoring, active hedging programs, and risk dashboards to provide the information to make decisions to actively manage the risk positions of the organisation. This should be consistent with, and complement, the production cycle actuarial reporting analytics.

These requirements collectively impact the historical silos of self-managed actuarial modelling systems. To meet these requirements, organisations should review their entire actuarial IT landscape in order

FIGURE 2: SOLVENCY II ACTUARIAL IT SOLUTION LANDSCAPE



to implement a holistic and integrated modelling solution that is aligned with the transformed reporting process. Figure 2 outlines what a future Solvency II IT solution landscape might consist of:

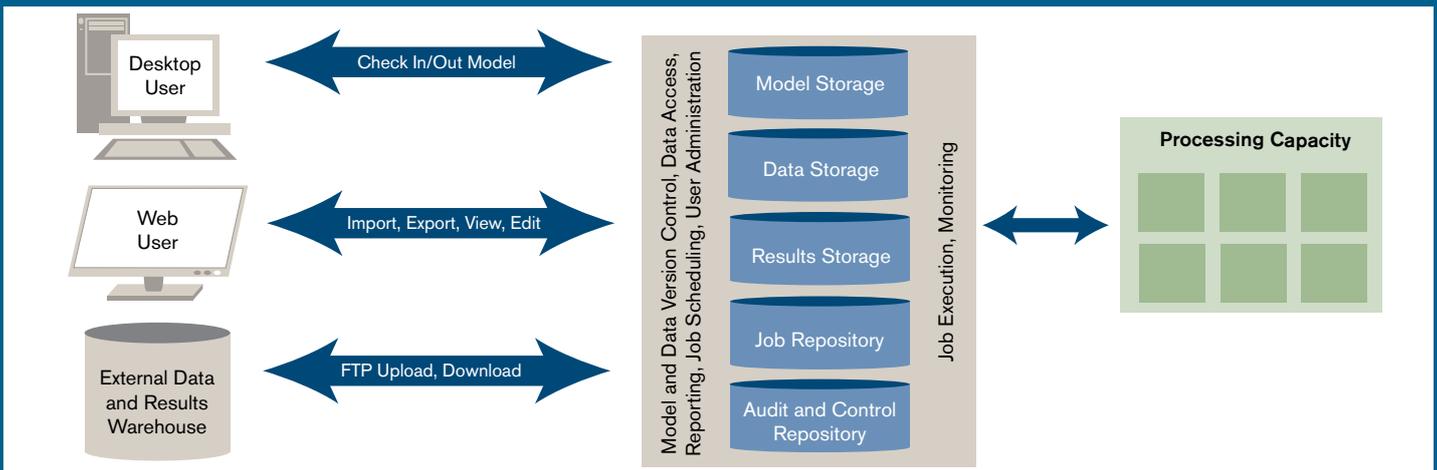
**Infrastructure:** At the base level lie the data warehouse and the processing and business intelligence technology infrastructure within a centralised internal or hosted data centre. This is fundamentally different and uses technology which is more sophisticated by orders of magnitude than that currently adopted by actuarial departments to store data and run projections. This requires active involvement and management by the corporate IT department.

**Software platform:** Sitting on top of the infrastructure is the production environment software platform which provides the data and processing management and the version and audit control as well as risk dashboard reporting tools. This will typically be a web-based interface in order to facilitate widespread internal local and global access.

**The analytics layer** provides all the tools used to produce the Pillar 1 analytics. It is important to recognise that the scope of the analytics used stretches beyond the 'hard-core' actuarial projection and daily solvency monitoring systems to include other (often Excel-based) calibration, input preparation, and output reporting tools.

FIGURE 3: POSSIBLE SOLVENCY II IT SOLUTION

(CONTINUED ON PAGE 7)



# QIS 5: THE KEY ISSUES



**G**iven the continuing evolution of the Solvency II Pillar 1 calculation, from QIS 4 via the Committee of European Insurance and Occupational Pensions Supervisors (CEIOPS) Level 2 advice to the final QIS 5 technical specification, and with talk of a potential QIS 6 exercise, it is tempting to think that we will not know the final quantitative requirements until the stroke of midnight on the eve of the implementation date. However, the forthcoming QIS 5 exercise represents a significant milestone in the development of the new regime, representing as it does the current views of the European Commission following the financial crisis, numerous consultation papers, and substantial industry lobbying.

As with previous QIS exercises, one of the main objectives of QIS 5 is to establish the likely capital impact of the forthcoming regime change on the European insurance industry. The final decisions made by the European Commission will undoubtedly place heavy reliance on the quantitative results and qualitative feedback received from the exercise, and so participation in QIS 5 represents one of the last opportunities for individual companies to help shape the requirements of the final regime. Accordingly, the Financial Services Authority (FSA) is actively encouraging as many UK insurers as possible to take part in the exercise,

with participation likely to be as good as mandatory for those companies that are seeking internal model approval ahead of the implementation date.

Unsurprisingly, the final technical specification contains several changes to the correlation parameters and stress test calibrations across the various modules of the Solvency Capital Requirement (SCR) relative to the draft documents and the CEIOPS guidance that preceded them. However, QIS 5 also makes a number of significant methodological changes to the proposed Pillar 1 calculation that have implications for the demands on insurers' modelling capabilities as well as for their ultimate capital requirements. In the rest of this article, we discuss some of the more contentious changes.

## ILLIQUIDITY PREMIUM

Perhaps the focus of the most sustained industry lobbying, the presence of the so-called 'illiquidity premium' in corporate bond yields remains widely debated, fuelled by a substantial body of conflicting research. Nevertheless, the inclusion of the illiquidity premium in QIS 5 will be cause for celebration for many insurers, particularly annuity writers, and serves as an important bellwether for the European Commission's thoughts on the issue. The table in Figure 1 summarises the extent to which companies are permitted to allow for the illiquidity premium in the risk-free interest rate used to discount their liabilities.

The introduction of the illiquidity premium into the calculation of an insurer's technical provisions is accompanied by a

FIGURE 1: QIS 5 DISCOUNT RATES

Type of Contract	Allowance for Illiquidity Premium
Annuities	100%
With-profits	75%
All other contracts	50%

corresponding stress in the market risk module of the SCR, which tests the impact of a 65% reduction in the level of the illiquidity premium.

What some industry stakeholders may take issue with is that this classification is completely independent of the investment strategy that a particular insurer employs or whether the lowest level of credit is really applicable to the sheer variety of existing contract designs which are covered by the final category. Therefore, it seems likely, at this stage, that the results produced using these relatively simplistic criteria will be used to directly inform further clarification on this divisive issue.

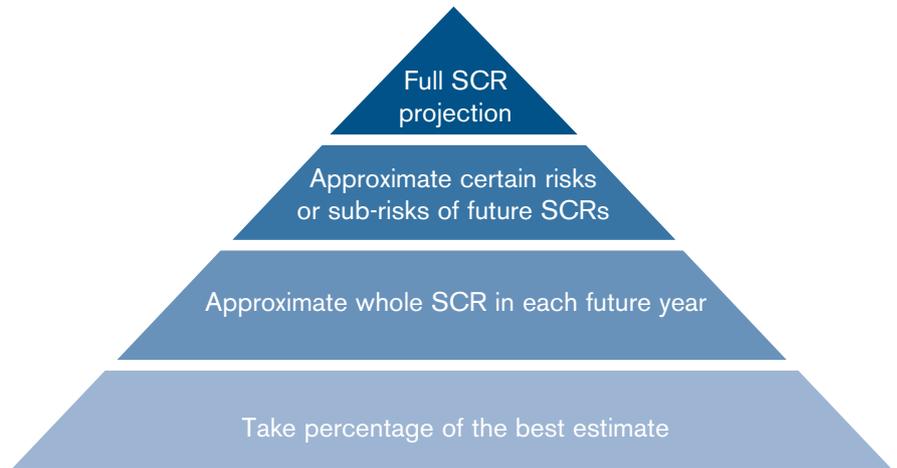
**BOUNDARY CONDITIONS**

The inclusion of future premiums in the best estimate cash flow projection for a particular block of business is heavily influenced by the boundary conditions defined in the technical specification to identify what constitutes an existing contract. The boundaries beyond which the obligations of a particular contract should not be included exist where an insurer has one or more of the following:

- The unilateral right to terminate the contract
- The unilateral right to reject future premiums
- The unlimited ability to amend the premiums or benefits under a contract

A strict reading of these rules potentially suggests that the future premiums payable on significant blocks of UK insurance business cannot be included in the best estimate calculation, for example on certain unit-linked contract designs. The technical specification includes an extensive annex explaining the boundaries for several example contracts, but this is clearly already an area where the need for further guidance has been identified.

FIGURE 2: HIERARCHY OF SIMPLIFICATIONS



**OWN FUNDS**

QIS 5 further complicates the rules on classifying an insurer’s own funds into tiers by introducing the expected profits included in future premiums (EPIFP) as a Tier 1 item. Making sense of concepts such as ‘VIF’ and the ‘Winding Up Gap’ in the market-consistent world of Solvency II has been an ongoing struggle, and the EPIFP is at best an unintuitive solution to the conundrum of how, and whether, to quantify future profit streams separately from the best estimate.

Deriving the EPIFP for a particular group of policies requires recalculating the best estimate liability assuming that on the valuation date those policies are immediately made paid-up. The introduction of the EPIFP adds further complexity to an insurer’s Solvency II modelling requirements; for contracts such as term assurance, where no paid-up value exists, exactly how to calculate the EPIFP (irrespective of the technical considerations) was initially unclear. Following the publication of the technical specification,

CEIOPS has since clarified that for contracts with a zero paid-up value, the EPIFP equals the absolute difference between the negative technical provision and the zero paid-up value.

**RISK MARGIN**

QIS 5 introduces a ‘hierarchy of simplifications’ (see Figure 2) for the calculation of the risk margin, ranging from a full projection of the SCR to an estimate based on a percentage of the best estimate liability.

The European Commission requires that the method selected need only be complex enough to capture the material components of an insurer’s risk profile. Accordingly, companies should choose a method that balances the need for accuracy against the benefits of a proportionate implementation that takes into account the size and complexity of their businesses. In the event that the hierarchy of simplifications survives to the final set

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**THE EUROPEAN COMMISSION REQUIRES THAT THE METHOD SELECTED NEED ONLY BE COMPLEX ENOUGH TO CAPTURE THE MATERIAL COMPONENTS OF AN INSURER’S RISK PROFILE.**

# SOLVENCY II GOVERNANCE REQUIREMENTS



**T**he governance requirements for a company under Solvency II are set out in Articles 41 to 48 of the Framework Directive and are expanded in the Level 2 guidance in what was formerly Consultation Paper (CP) 33.

Under this, a company must have in place an effective system of governance providing for 'sound and prudent' management of its business.

In practice, many companies will structure their governance into three main levels to cascade the board's high-level principles down to the operating procedures used to run the business and control the company's risk exposures.

## RISK APPETITE AND STRATEGY

The first level of governance in this framework sets out the broad principles for the company's organisational structure as decided by the company's board, including the requirement to embed risk management and internal control systems within the organisation. As part of this, the Solvency II guidelines require companies to have in place written policies setting out the principles for at least the following areas within the business:

## THE ORGANISATIONAL STRUCTURE UNDER SOLVENCY II IS ARRANGED AROUND THE PRINCIPLE OF 'FOUR EYES'

- Risk management
- Internal control
- Internal audit
- Outsourcing

The organisational structure under Solvency II is arranged around the principle of 'four eyes', i.e., that at least two people run the undertaking. In practice, this has led many companies to adopt a Three Lines of Defence model as its organisational structure.

The Three Lines of Defence model is used to organise activities into three 'lines':

1. **Risk management:** activities which involve taking risk.
2. **Risk oversight:** activities designed to oversee line one activities in order to ensure that the right amount of the right risks are being taken and to alert the organisation to any breaches under the risk management system.

3. **Independent assurance:** activity designed to look critically at the first two lines and provide assurance that the governance and control framework in place is capable of managing the business to the level of uncertainty set by the board.

Whilst the same people can be involved in different lines of defence at different times, it is imperative that they do not act as separate lines for the same activity, for example performing oversight and risk-taking functions for the same activity.

## RISK POLICIES

In order to embed these high-level principles throughout the company, risk policies are set out by the company's senior management to provide a guide to how the principles are applied within the business. These set out the different types of risk that contribute to the company's overall risk profile, the appetite for each type of risk, and the roles and responsibilities for managing and monitoring each risk type.

Companies are also required under the Solvency II guidance to maintain specific written policies covering at least the following key risks:

- Liquidity
- Concentration
- Operational
- Underwriting and reserving
- Credit
- Asset-liability management

These documents will provide the framework for a company's risk management system, setting out the limits and strategies for managing the risks both at individual and aggregate levels.

The specification for a risk management system is set out in Article 44 of the

Framework Directive, requiring companies to have in place 'strategies, processes and reporting procedures to identify, measure, monitor, manage and report on a continuous basis the risks, at an individual and aggregated level, and their interdependencies'.

In practice, a risk management system is an iterative process making use of a risk register to identify and measure risks, enabling companies to monitor their exposures to these risks relative to their individual risk policies and overall appetite documents and, where necessary, to take action based on their risk strategies.

## OPERATING PROCEDURES

The final level in this governance framework contains the operating procedures, which set out the detailed procedures for implementing the risk policies. This includes allocating roles

and responsibilities to the various actions contributing to risk, specifying limits, and putting in place controls.

These procedures ensure that the company's overall governance structure is fully embedded throughout the business, providing a clearly documented path allowing the company to demonstrate how different activities contribute to the various risk types and to the overall risk profile of the business.

For more information on how Milliman could help you prepare for Solvency II, please contact William Coatesworth at [william.coatesworth@milliman.com](mailto:william.coatesworth@milliman.com), Oliver Gillespie at [oliver.gillespie@milliman.com](mailto:oliver.gillespie@milliman.com), or your usual Milliman consultant.

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# SOLVENCY II: CHANGING THE ACTUARIAL IT LANDSCAPE

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**Resources**, both internal and external, providing traditional actuarial, risk management, and actuarial system implementation functions, as well as wider organisational process transformation and system integration expertise.

How can the current actuarial modelling function evolve to meet this future landscape? Figure 3 (on page 3) sets out a conceptual framework of the future actuarial IT solution in which actuarial modellers continue to use their desktop actuarial modelling tools to develop the model code but store, for version control purposes, the model in a central model storage warehouse. Models are checked in and out in a paradigm consistent with other IT version control best practices. Production users interface with the model, manage data, schedule runs, and view output through a web user interface

which provides global but controlled user access and data management. Model point data, economic scenario generator (ESG) scenarios, market information, and other external data are fed into the system; output results are returned to feed into wider corporate MI systems. Jobs are executed on an internal grid or external cloud processing capacity.

The interesting aspect is that the requirements and the implementation solution are largely independent of the size of the firm. All organisations are seeking better systems and processes with fewer resources and need these capabilities to varying degrees. The only difference is the scale and the capacity of the organisation to implement it internally or through external support, to use existing actuarial systems/models or to implement new solutions, and whether to host the solution internally

or seek to outsource the infrastructure and/or the operation of the models using cloud computing resources.

If you would like to hear more about how Milliman can assist you with your actuarial IT infrastructure or if you would like to hear more about Milliman's own actuarial modelling software, MG-ALFA<sup>®</sup>, please contact Martin Sher at [martin.sher@milliman.com](mailto:martin.sher@milliman.com), Pat Renzi at [pat.renzi@milliman.com](mailto:pat.renzi@milliman.com), or your usual Milliman consultant.

# IASB PUBLISHES ITS LONG-AWAITED EXPOSURE DRAFT FOR INSURANCE CONTRACTS



**O**n 30 July 2010, the International Accounting Standards Board (IASB) published its long-awaited exposure draft (ED), *Insurance Contracts*. The ED contains proposals on the recognition, measurement, presentation, and disclosure of insurance contracts. The publication of the ED is a key milestone in Phase II of the IASB's insurance project. This article explores the key aspects relating to the ED.

## BACKGROUND

In 2004, the publication of IFRS 4 *Insurance Contracts*, represented the completion of Phase I of the insurance project, addressing the more urgent issues in insurance contract accounting. However, comparability across entities and jurisdictions remained difficult, which was due to the continuation of varied practices in insurance accounting. As a result, in 2004 the IASB established the Insurance Working Group to focus on issues specific to insurance contracts. The IASB's discussion paper, 'Preliminary Views on Insurance Contracts', published in May 2007, laid many of the foundations for the current ED proposals.

In 2008, the US Financial Accounting Standards Board (FASB) joined the IASB's project in order to develop a common standard. Many of the decisions relating to the ED were, therefore, made jointly with

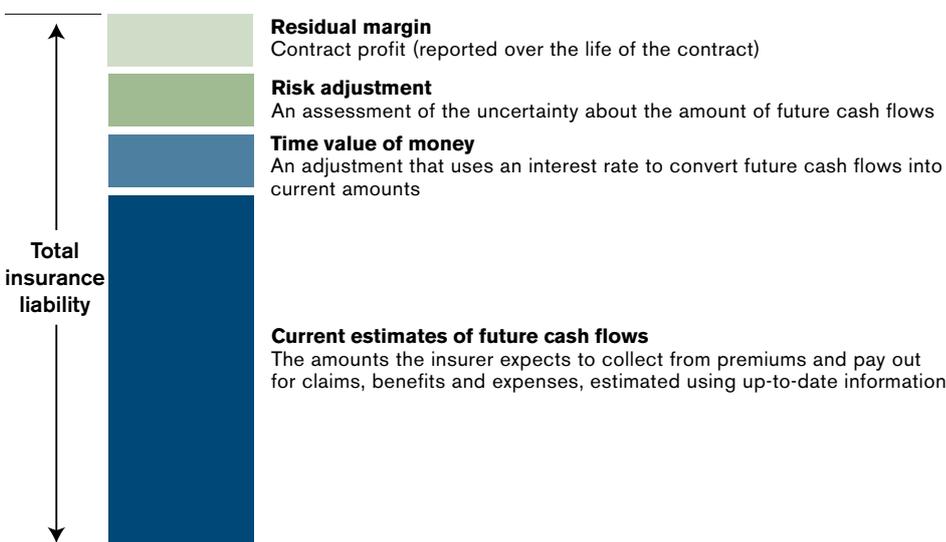
the FASB. Later in this article, we briefly discuss some key points of difference that remain between the IASB and FASB.

The ED is open for public comment until the end of November 2010. The IASB then plans to finalise the new standard by mid-2011. The FASB has decided to issue a discussion paper (DP) instead of an exposure draft, and this is expected to be released in the third quarter of 2010. At the time of writing, the FASB DP has not yet been issued.

## KEY FEATURES OF THE IASB PROPOSALS

The ED covers all insurance contracts, as per the definition of insurance set out in the current accounting standard, IFRS 4 *Insurance*. With the ED proposals, the IASB aims to introduce a principles-based accounting standard that reflects the economics of insurance contracts. To achieve this aim, the proposed measurement model consists of the following four key 'building blocks' (also see Figure 1):

FIGURE 1: THE BUILDING BLOCKS OF THE PROPOSED MEASUREMENT MODEL FOR INSURANCE CONTRACTS



Source: Snapshot: Insurance Contracts, IASB, July 2010

- Current estimates of future cash flows
- Time value of money
- Risk adjustment
- Residual margin

In any economic framework, avoiding accounting mismatches between assets and liabilities is a key objective. The IASB proposes to approach this problem by ensuring that insurance liabilities reflect changes in economic circumstances, thus making their measurement consistent with that of the assets held to back them. The proposed profit and loss (P&L) impact for insurance contract recognition would therefore include:

- All income and expense during the period
- Underwriting margin during the period, as represented by the release of risk adjustment and residual margin
- Experience variances that are due to differences between expected and actual cash flows during the period
- Changes in estimated future cash flows and discount rates
- Interest on liabilities during the period, including interest accrued on residual margin

**IN ANY ECONOMIC FRAMEWORK, AVOIDING ACCOUNTING MISMATCHES BETWEEN ASSETS AND LIABILITIES IS A KEY OBJECTIVE.**

While the proposed approach to liability measurement attempts to remove accounting mismatches with assets measured at fair value, it is worth noting that IFRS 9 *Financial Instruments*, allows insurers to measure certain assets at amortised cost. This inconsistency with the proposed measurement of insurance liability could lead to accounting mismatches. Therefore,

on transition to the new insurance accounting standard, insurers will be permitted to reclassify assets from amortised cost to fair value through P&L in order to avoid such issues.

**FUTURE CASH FLOWS**

The proposed measurement of the insurance contract is based on the 'current fulfilment value', which encompasses the future cash flows that arise as the insurer fulfils the insurance contract. This basis of measurement, as opposed to, say, 'current exit value', has some interesting implications. For example, indirect costs, such as general overheads, are specifically excluded from the liability under the current fulfilment value.

Cash flows that are dependent on market variables should be valued consistently with observable market prices. The ED specifically mentions the use of replicating portfolio techniques as a way of achieving this consistency.

For participating contracts, the ED proposes that payments arising from the participating feature should be included in the measurement of insurance contracts in the same way as any other contractual cash outflows.

The risk of non-performance of the insurer is not reflected in either the expected cash flows or the liability value.

**DISCOUNT RATES**

The ED proposes current, risk-free discount rates, adjusted for the liquidity characteristics of the liability. As indicated above, if cash flows depend on the performance of the underlying assets, then the measurement of the insurance liabilities should reflect this.

For many non-life insurers, the introduction alone of discounting represents a major step in insurance liability measurement. More generally though, the choice of (a) an appropriate risk-free rate (e.g., government bonds or swaps) and (b) an appropriate illiquidity premium, remain two significant issues that continue to be debated vigorously across the industry. The IASB has not yet stated what it intends in respect of either of these aspects. It is worth noting, however, that the IASB has linked the choice of illiquidity premium to the liquidity characteristics of the liability. This potentially differs from the current approach adopted for Solvency II QIS 5, where prescribed illiquidity premiums of various levels are applied to cash flows of different types of liability.

More generally, it is worth highlighting that this is an area that continues to cause significant confusion for those preparing for Solvency II, in particular the application of the illiquidity premium in a market-consistent valuation framework. Any decisions made by the IASB in this area will require careful consideration in order to maintain a robust economic valuation framework for the new standard.

**RISK ADJUSTMENT**

The risk adjustment is analogous to the risk margin envisaged under Solvency II. It represents the allowance for risk of the ultimate fulfilment cash flows exceeding those expected. Similar to Solvency II, the risk adjustment does not apply to liability values based on market prices (so as not to double-count the implicit risk allowance inherent in the market price).

The ED proposes that the risk adjustment should be measured at portfolio level, which potentially restricts any allowance for diversification benefits across different lines of business.

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# LIMITS MEET APPETITE: CREATING A CONSISTENT RISK FRAMEWORK



**THE RISK POLICY  
FRAMEWORK  
EXPECTED UNDER  
SOLVENCY II  
PROVIDES AN  
OPPORTUNITY TO  
LOOK AT RISKS  
FROM DIFFERENT  
PERSPECTIVES.**

**A** common problem encountered by those creating risk frameworks, whether motivated by Solvency II or not, is that it appears very difficult to create a clear link between the risk appetite set by the corporate board and the risk limits used in operational activity down in the business.

The risk management system envisaged by Solvency II creates a framework which begins with an expression of risk appetite from the board. There are different ways to express this, but fundamentally it comes down to stating some amount of uncertainty that they are prepared to accept in achieving their stated goals. Typically these goals translate into some form of earnings and capital targets. This approach is the same for small or large companies, whether mutual or proprietary.

The problem comes when you try to work out what that ‘certainty’ around your balance sheet means in terms of the plethora of risk categories that you are obliged to consider. Where do you possibly start in translating this, that, or the other reinsurance nuance, or the fact that you want to only allow supervisors to sign off treasury actions, into a clear overall impact on risk appetite? It is a

huge multi-dimensional challenge that may feel overwhelming.

## **UNDERSTANDING IS THE ROUTE THROUGH THE MAZE**

The first step along the path of making this problem feel more solvable is to focus on the underlying uncertainty that you are trying to ‘measure’. The things that could prevent you from achieving your strategic goals are nearly always multi-dimensional. It is very unlikely that a vanilla market risk or credit risk will occur. They nearly always arise in a more complex scenario. The risk policy framework expected under Solvency II provides an opportunity to look at risks from different perspectives – this is not the same as looking for different risks under those labels.

Try thinking about the different risk ‘types’ more as lenses on a risk detector. You are still looking at the same risk but the lens enables you to focus on particular aspects of it. So, under the market risk lens, you see the way that the risk behaves as markets move. Under the credit risk lens you see how the impact of counterparty stability influences the risk’s behaviour.

Drafting risk policies is often a fairly 'silo' activity. Experts within the business are asked to write down the principles which should apply to the identification, assessment, monitoring, and management of that risk. This often immediately results in the error of assuming that each policy relates to a different 'type' of risk rather than a different 'aspect' or 'characteristic' of it.

To see a clear path through this apparent maze, start by identifying, in plain non-technical language, how you see the uncertainty in your business strategy. Solvency II projects encourage people to make statements like 'our risk profile is all about longevity and credit' but that is not going to resonate in the boardroom. Something about particular operational nuances and the fact that the chosen strategy introduces risks, such as longevity and credit, through the product would seem more natural. This description provides the context into which those different lenses can be put.

When drafting the risk policies ask questions like, 'How could credit risk arise in our business?' Think about the

## TO SEE A CLEAR PATH THROUGH THIS APPARENT MAZE, START BY IDENTIFYING, IN PLAIN NON-TECHNICAL LANGUAGE, HOW YOU SEE THE UNCERTAINTY IN YOUR BUSINESS STRATEGY.

factors which are relevant to that view of risk. As you put the policies together, you will soon find that the underlying factors relating to the different views of risk start to overlap and interact. It is precisely this interaction which gives rise to the ultimately observed risk and so this provides a natural and simple method to capture the non-linear way in which risks interact within the linear structure of risk policies.

This description of risk interaction very naturally captures the way that day-to-day risk limits feed through to impacts on different aspects of risk, and ultimately through to uncertainty about strategic goals.

If you would like to hear more about how you can properly integrate your risk policies,

limits, and appetite into a consistent and meaningful framework, please contact Neil Cantle at [neil.cantle@milliman.com](mailto:neil.cantle@milliman.com) or Oliver Gillespie at [oliver.gillespie@milliman.com](mailto:oliver.gillespie@milliman.com).

## QIS 5: THE KEY ISSUES

(CONTINUED FROM PAGE 5)

of rules, companies will need to be ready to demonstrate to supervisors that the chosen method is sufficiently risk-sensitive.

### LOSS-ABSORBENCY OF TECHNICAL PROVISIONS

The allowance for the risk-sharing potential of certain insurance liabilities, such as UK with-profits contracts, is structurally unchanged from previous definitions of the SCR, remaining a separately identifiable adjustment to the base solvency capital requirement (BSCR). However, QIS 5 tests two possible approaches for placing a value on this item. The 'modular approach', which is carried over from QIS 4, requires that each sub-risk module of the SCR be calcu-

lated both gross and net of the loss absorbency. The second approach, the 'equivalent scenario', compares the standard gross BSCR result with a BSCR calculated net of loss absorbency, using a single scenario in which all the risks are assumed to arise simultaneously. The latter approach will be a far less onerous calculation for most firms, but its inclusion in the final rules will depend on how closely the result matches the equivalent adjustment derived using the more accurate, modular approach.

All of these issues will, for many companies, be compounded by the stronger emphasis (compared with QIS 4) on carrying out the necessary calculations in a manner which is fully consistent with

the technical specification rather than on a 'best efforts' basis. With over two years to go until implementation, satisfying this requirement will be a significant challenge in itself, but one which, if successfully met, will move forward insurers' preparedness considerably. This will afford their boards more time to digest the potential capital implications of Solvency II and will facilitate increased focus on the qualitative Pillar 5 elements of the new regime.

If you would like to discuss any of the topics raised in this article, please contact Fred Vosvenieks at [fred.vosvenieks@milliman.com](mailto:fred.vosvenieks@milliman.com), Russell Osman at [russell.osman@milliman.com](mailto:russell.osman@milliman.com), or your usual Milliman consultant.

# CONTINUED SUCCESS OF THE UK OFFSHORE MARKET



**SALES OF OFFSHORE BONDS IN THE FIRST QUARTER OF THIS YEAR ACCOUNTED FOR ALMOST 40% OF ALL INVESTMENT BOND SALES IN THE UK.**

**A**ccording to the latest sales statistics published by the Association of British Insurers, sales of offshore bonds in the first quarter of this year accounted for almost 40% of all investment bond sales in the UK. While overall sales are down relative to previous years, this represents the continuation of a strong trend which has begun to emerge. This trend has seen the offshore bond market gain momentum (as illustrated by Figure 1), moving from representing 16% of total UK investment bond sales in 2007, to 29% in 2009, and now to 38% based on these latest figures. If this trend continues over the next few years we will see offshore sales outstripping onshore sales for the first time.

## EARLY DAYS

The UK offshore bond market has come a long way since the early days of its existence. It is interesting to look back through its history to see the conditions that brought about the advent of the offshore market and to consider their continued relevance today. Chief amongst these was gross roll-up of investment returns. When the top rate of income tax in the UK hit 83% between 1974 and 1979, opportunities to defer the payment of tax were much sought after and became very attractive propositions for UK investors.

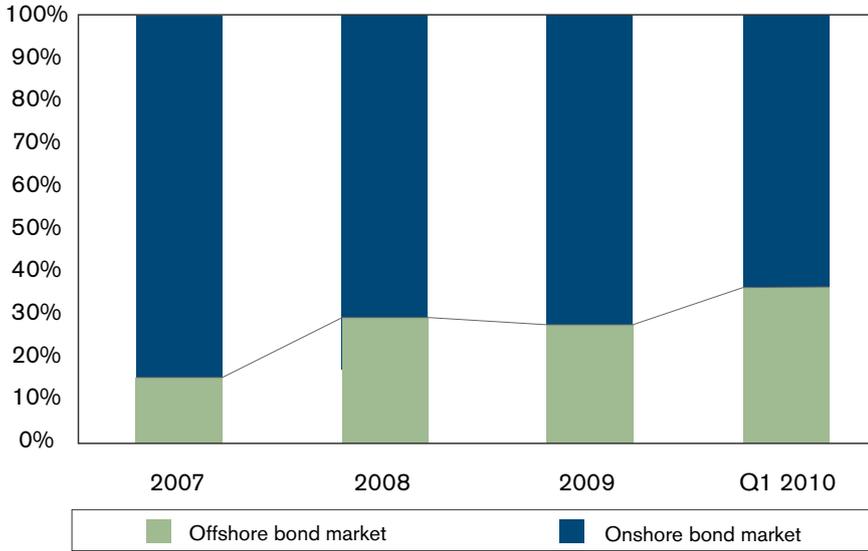
A further catalyst to the emergence and growth of the industry was the decision by the Isle of Man in 1986 to scrap corporation tax on profits generated by international insurers. Of course, the Isle of Man, along with other offshore centres, has now ended the distinction between the taxation of domestic and international companies by setting the tax rate for both at zero.

The emergence of new centres, such as Ireland, Luxembourg, Liechtenstein, Jersey, Guernsey, and Gibraltar, created favourable conditions to nurture the development of the fledgling offshore industry. Of course, much of this development was accommodated in no small way by the passing of the Third Life Directive, which effectively opened up Europe to international insurers by enabling them to sell cross-border from any EU member country. This fuelled the development of the UK industry as we know it today.

## UNCERTAIN TIMES

While the UK offshore market has continued to post a very impressive performance in recent years, it would be wrong to assume that this has been achieved in the absence of significant challenges. An obvious challenge in recent times has been posed by the current economic downturn and its knock-on effects on investor confidence. Deteriorating

FIGURE 1: OFFSHORE AND ONSHORE BOND MARKETS



Source: Association of British Insurers

market conditions, together with a lack of demand amongst both UK advisers and consumers, were cited as the reasons behind the recent exit of one market participant from the offshore market.

A sometimes less obvious challenge, and one which is arguably more pertinent to the offshore market, has been the recent tinkering with capital gains tax (CGT) rates in the UK as well as the speculation from some quarters about the future of the onshore 'I-E' tax regime. Changes, whether actual or speculative, to tax rates or regimes tend to have amplified effects on the offshore market. Tax planning, as part of inheritance tax planning or as deferral of tax on investment gains, continues to be one of the main attractions of offshore bond investment and a key factor in the ongoing success of this market.

**VIBRANT PROSPECTS**

While it is certainly true that recent conditions have been quite difficult, there are many reasons to be upbeat about the future development of the offshore industry. Recent UK budgets have started a trend towards higher taxes on both income and gains. While this might not be good news all round, it is good news

for sales of tax deferral products such as UK offshore bonds, which are typically aimed at high net worth individuals and offer a wide range of investment choices. Improving consumer sentiment in recent months bodes well too for a return to growth in new business levels in the UK market. Continued product innovation, such as the recent emergence of the variable annuity market, will also continue to serve the industry well.

Both established and new players in the UK market are now beginning to turn to Europe in search of further opportunities. The EU is seen both by UK offshore product providers and UK IFAs as being a key market for the future. Likewise, as a major market within the EU, the UK offshore market is likely to receive further attention in the future from European players not currently involved in it at present.

Harmonisation of regulatory regimes, together with the decline in the importance of taxation as a differentiating factor between onshore and offshore activities, will serve to drive further competition between the many offshore centres. This will only benefit the industry as standards of service are continually improved and the costs of doing business are beaten down or, at the very least, kept under control. More recent entrants to the UK market have tended to base themselves in Ireland, a location which has also seen quite a lot of activity recently in relation to centralising insurance operations in one jurisdiction under the so-called 'hub-and-spoke' model.

Such developments will ensure that the UK offshore market, and offshore markets in general, are here to stay, not only in their current forms, often seen by some in the industry as being peripheral to 'core' activities, but as the focus of future activity.

If you would like to discuss any of the topics raised in this article, please contact Eamonn Phelan at [eamonn.phelan@milliman.com](mailto:eamonn.phelan@milliman.com), or your usual Milliman consultant.

**WHILE THE UK OFFSHORE MARKET HAS CONTINUED TO POST A VERY IMPRESSIVE PERFORMANCE IN RECENT YEARS, IT WOULD BE WRONG TO ASSUME THAT THIS HAS BEEN ACHIEVED IN THE ABSENCE OF SIGNIFICANT CHALLENGES.**

# GUARANTEED PRODUCTS: MARKET UPDATE



**THE REAL PROSPECT OF A SECOND DIP NOW EXISTS, THIS TIME DRIVEN BY FEARS OVER SOVEREIGN DEFAULT.**

## CURRENT MARKET ENVIRONMENT

In 2009, evidence of a healthy recovery in world markets began to emerge, following a crisis driven primarily by institutional lending risk. Yet the real prospect of a second dip now exists, this time driven by fears over sovereign default.

Concerns surrounding the stability of the Greek economy back in June served to remind us that market risk has not been fully contained, but has merely evolved into a different form. We saw 15-year and 30-year Euro swap rates drop by around 70-75 basis points between the beginning of the year and the start of June, reaching a level close to that observed in the second half of 2008.

Both the short-term and medium-term implied volatilities in the equity markets have marched back up in the same period, as investors seek downward protection in this environment. This is illustrated particularly well by the 7% increase in the five-year volatilities on the FTSE index.

These market reactions, amongst other factors, have driven up the hedge costs for guaranteed products such as variable annuities (VA) to levels close to those observed in late 2008. While existing

policyholders are comforted by their guaranteed benefits in this period of uncertainty, the current market environment surely poses challenges to both existing and potential new VA providers. However, we are optimistic with regards to the outlook for guaranteed products. First, there was the encouraging sight of the VA market weathering the storm of 2008. This was particularly the case for those companies with hedges that performed well and were demonstrated to be highly effective. In addition, the market participants, gaining further valuable experience from living through the financial crisis, continued to innovate new products such as the so-called protection account business.

A more detailed analysis on the impacts of the current market environment on European VA business, as well as recent developments in this sector, can be found in the recent edition of the European Variable Annuity Factbook, published by our Financial Risk Management (FRM) practice.

## MILLIMAN GUARANTEE INDEX

Volatility is one of the main parameters involved in valuing the cost of guarantees, and the VA writers commonly use data from the over-the-counter (OTC) options market. However, there is a fundamental

disconnect between the OTC options market and VA guarantees. The OTC market is largely influenced by hedge funds and investment banks which are exposed to forced liquidation, whereas VA guarantees generally have no liquidity exposure as policyholders cannot normally surrender their guarantee early in return for its market value. However, there is a substantial liquidity premium built into OTC options prices; reflecting this premium in VA guarantees can distort the valuation of these products.

At the end of the day, the ultimate cost of hedging guarantees is influenced by actual realised volatility rather than market quotations.

In addition, where the insurance company is looking to make a retail margin on the terms offered in the wholesale market, the high return on capital requirement imposed by the wholesalers can make it harder for the insurer to compete with other insurers who manufacture more directly.

To address these issues, the FRM practice started publishing the Milliman Guarantee Index around the end of 2008. The Index provides the volatility parameters necessary for VA guarantee valuation on a monthly basis. It represents a risk adjustment which reflects the uncertainty in life insurers' ultimate cost of funding VA guarantee claims. The Milliman Guarantee

## **AT THE END OF THE DAY, THE ULTIMATE COST OF HEDGING GUARANTEES IS INFLUENCED BY ACTUAL REALISED VOLATILITY RATHER THAN MARKET QUOTATIONS.**

Index and the accompanying Hedge Cost Index are currently being provided to over 10 insurance and reinsurance companies, and also being sent to all major rating agencies as well as several analysts covering the life insurance sector at investment banks.

### **STOCHASTIC MODELLING REFERENCE BOOK**

Variable annuity guarantee valuation requires various stochastic modelling techniques, which are interesting but often complex. Milliman, in collaboration with the International Actuarial Association (IAA), has recently published *Stochastic Modelling: Theory and Reality from an Actuarial Perspective*. This is a three-year joint effort from Milliman offices around the globe, combining the experience and expertise of the life and casualty practices. It is a comprehensive and readable reference book on the current stochastic modelling techniques applied by actuaries. It focuses on the background, principle, and implementation of different methodologies, as well

as their advantages and disadvantages. This would surely be a valuable and welcome bookshelf addition for any actuaries practising or interested in the field of stochastic modelling. The book can be ordered from the IAA's website, <http://www.actuaries.org/>.

If you would like to discuss any of the topics raised in this article, please contact Gary Finkelstein at [gary.finkelstein@milliman.com](mailto:gary.finkelstein@milliman.com), Neil Dissanayake at [neil.dissanayake@milliman.com](mailto:neil.dissanayake@milliman.com), Peter Lin at [peter.lin@milliman.com](mailto:peter.lin@milliman.com), or your usual Milliman consultant.

# IASB PUBLISHES ITS LONG-AWAITED EXPOSURE DRAFT FOR INSURANCE CONTRACTS

(CONTINUED FROM PAGE 9)

Proposed techniques in the ED for measuring the risk adjustment are limited to:

- Confidence level (also known as value at risk)
- Tail value at risk (also known as conditional tail expectation)
- Cost of capital

Despite these prescribed techniques, significant judgment remains in the measurement of the risk adjustment. For example, neither the target level of confidence nor the level of capital are specified in the ED. This is clearly one area that carries significant potential for lack of comparability between companies.

## RESIDUAL MARGIN AND TREATMENT OF DAY 1 PROFITS AND LOSSES

The residual margin is the key mechanism for ensuring an appropriate emergence of profit over the duration of the contract. It is calibrated at contract inception such that the insurer recognises no gain on entering into an insurance contract. Furthermore, incremental acquisition expenses are included as cash outflows in the initial liability measurement, which correspondingly reduces the residual margin and offsets the impact of those expenses in the P&L as they are incurred. All other acquisition costs are recognised as an expense when incurred. This approach is essentially equivalent to setting up an asset for deferred acquisition costs (relating to incremental acquisition costs only). The residual margin is subject to a zero floor; hence any loss at initial recognition is recognised immediately in the P&L.

The different treatment of incremental and fixed acquisition costs means that earnings will be enhanced by increasing the proportion of acquisition costs that are incremen-

tal; this may lead to some changes to the terms of service company agreements.

The residual margin is released over the contract duration in line with an appropriate amortisation schedule. The amortisation over time is not prescribed in the ED, but should reflect the future claims pattern. The amortisation of the residual margin should not be adjusted at each valuation date, even if future cash flow estimates change.

On adoption of the new IFRS standard, the residual margin will not apply to in-force business as at the date of transition (see 'Transitional Measurement' below). This has the benefit of reducing significantly the amount of data needed to determine the re-measured liability at the implementation date.

## MODIFIED MEASUREMENT FOR SHORT DURATION CONTRACTS

For the pre-claim liabilities of some short-duration insurance contracts, a simplified measurement is proposed. This essentially involves adopting an unearned premium reserve approach, adjusted for incremental acquisition costs. This approach is subject to a liability adequacy test, which involves comparison with the present value of fulfilment cash flows.

## CONTRACT BOUNDARIES

A key area of debate, and one which can significantly impact the balance sheet, relates to contract boundaries of multi-period, regular premium insurance contracts. The ED proposes that the boundary of an insurance contract would be the point at which an insurer either:

- Is no longer required to provide coverage, or

**THE RESIDUAL MARGIN IS THE KEY MECHANISM FOR ENSURING AN APPROPRIATE EMERGENCE OF PROFIT OVER THE DURATION OF THE CONTRACT.**

- Has the right or the practical ability to reassess the risk of the policyholder and, as a result, can set a price that fully reflects that risk

For certain types of contract, this definition potentially conflicts with the current definition proposed by Solvency II (as specified in the QIS 5 technical specifications), which could potentially lead to significant differences in best estimate liabilities between IFRS and Solvency II.

## KEY DIFFERENCES BETWEEN IASB AND FASB

There are several key areas where the FASB proposals differ from the IASB. Most notably, a single composite margin is proposed by the FASB, rather than a separate risk adjustment and residual margin. The FASB proposes that the composite margin is released over both the coverage period and the claim handling period. The implication is a different expected emergence of profit over the duration of contract, as compared to the IASB's proposal.

Based on the joint IASB/FASB board meeting in June 2010, we understand other key areas of difference potentially remain (e.g., treatment of acquisition costs, participating contracts), details of which are not discussed in the ED. We eagerly await the publication of the FASB discussion paper for more clarity on the current FASB position on these points.

## TRANSITIONAL MEASUREMENT

On the date of transition to the new standard, it is proposed that the insurance contract liability specifically excludes a residual margin. Additionally, any existing balances of deferred acquisition costs should be derecognised. The difference between the existing and new liabilities will represent an adjustment to retained earnings, but will not be recognised in the P&L.

## THE RELEASE OF THE ED IS A MAJOR STEP TOWARDS THE NEW ACCOUNTING STANDARD FOR INSURANCE CONTRACTS.

As mentioned earlier, companies who currently classify certain financial assets as amortised cost will be permitted to reclassify those assets as fair value through P&L in order to avoid accounting mismatches that could result from the new proposed measurement of insurance liabilities.

## CONCLUSION

The release of the ED is a major step towards the new accounting standard for insurance contracts. It is clear, however, that additional work remains in certain key areas in order to refine the proposals into a full standard that meets the goals of both the IASB and the FASB.

If you would like to discuss any of the topics raised in this article, please contact Scott Mitchell at [scott.mitchell@milliman.com](mailto:scott.mitchell@milliman.com), Matthew Cocke at [matthew.cocke@milliman.com](mailto:matthew.cocke@milliman.com) or your usual Milliman consultant.

## EVENTS TO COME

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DATE	ORGANISER	EVENT
26-28 Oct. 2010	Infoline	Stress Testing & Operational Risk for Insurance Firms
7-9 Nov. 2010	Actuarial Profession	Life conference and exhibition 2010
8-10 Dec. 2010	Actuarial Profession	Momentum conference 2010

Milliman hosted its regular Forum on 28 September 2010 at The Brewery, Chiswell Street, London. The focus of the event was Solvency II. Many thanks to those who attended what we hope was a worthwhile and interesting event which provoked lively discussion. If you attended and have any feedback on the event, or would be interested in attending the next Forum, we would be happy to hear from you at [expertforums@milliman.com](mailto:expertforums@milliman.com).

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- Munich
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- Warsaw
- Zurich



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## ...AND IN ASIA

Recently we have also expanded our presence in Asia and the Middle East, with new teams of experienced insurance consultants in Mumbai, Singapore and Dubai, and significant strengthening of our team in Hong Kong. Milliman has been well represented in Japan and South Korea for many years, and also has offices in Shanghai and Taipei. We will include more details in a future edition of *Issues in Brief*.

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