

Solvency II – the transition to risk-based solvency calculations



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The structure of Solvency II and the insurance industry's transition process to Solvency II is well documented and is too big a subject to be given a complete treatment in this article. Over the last few years, Milliman has worked with clients to help them prepare for the implementation of Solvency II. Our assignments have covered both knowledge transfer, and technical assistance and analysis.

For knowledge transfer and education we have worked with a number of our clients to provide training on Solvency II, particularly at board and senior management levels. Our work has included a broad outline of the principles and aims of Solvency II and/or an analysis of the industry results from the Quantitative Impact Studies (QIS) series of exercises.

Our technical assistance to clients has included detailed modelling and calculations whilst working alongside our clients to produce results under QIS 3 and QIS 4. We have also carried out a number of assignments reviewing the results that our clients have produced – this has been for both the companies where we hold the Actuarial Function Holder (AFH) and With Profits Actuary (WPA) roles and those where we don't. We have also worked with clients outside the QIS exercises to analyse at a high level the likely effects of the Solvency II proposals on their provisions and capital requirements as well as on their calculation processes.

Some of the key issues we have come across in our work with companies on Solvency II include:

Technical provisions—allowance for future premiums

Under QIS 4 there are restrictions on when future premiums may be taken into account. In particular, future premiums will not be recognised on yearly renewable products such as certain term assurances and recurrent premium-savings contracts.

Treatment of with-profits business

The market-consistent pricing of options and guarantees on with-profits business in company reserves is already largely in place in the UK for those companies reporting on a realistic basis under Pillar One.

The draft directive includes allowance for management actions in the calculation of the solvency capital requirement (SCR). But QIS 4 is unclear as to whether other management actions can be allowed for in the scenario testing for the SCR, for example the

action to switch asset classes in certain investment conditions or to raise charges. This has potentially serious implications for UK with-profits business.

Internal models

The draft directive allows the use of a company's own internal model as an alternative to the standard formula for calculating the SCR or partial internal model as an alternative to part of the standard formula. 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 via an internal model. A study by the CRO Forum claims this figure could be as high as 40%. This obviously provides one incentive to companies to use an internal model and use of an internal model 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. The directive states that approval will depend upon three tests: a use test, a statistical quality test, and a calibration test.

The use test requires the model to be embedded in the day-to-day management of the business. The statistical test considers the predictive ability of the model and therefore, amongst other things, requires assessment of the accuracy of the data, assumptions, and modelling methodology. The calibration test in the UK is similar to the current Individual Capital Assessment (ICA) test of a 99.5% confidence level of remaining solvent across the next 12 months.

Precise details of the process by which such approval will be gained are not currently firm, but they are expected to be more onerous than the current UK ICA requirements.

It will be important for companies to contribute to the QIS 4 request for information and comment, and to subsequent QIS exercises, in order to influence the debate and to ensure that the implementation measures, when they are released, are achievable.

Diversification

According to the results from the QIS 3 exercise, the overall effect of using the correlation matrices suggested in the technical specifications of QIS 3 was a reduction of approximately 20% for life insurance companies, but there was a wide variability depending on the types of business written.

Allowance for diversification remains an issue with Solvency II in a number of areas—for example, the allocation of group diversification benefits to the individual entities. Other potential issues include the fact that the correlation between interest-rate risk and equity risk is zero, and that the correlation between disability risk and longevity risk is zero. At Milliman, as part of our risk-management solutions, we have been developing an approach to measure the diversification benefit using statistical copulas.

Whatever the method of allowance for diversification, companies with the most diversified businesses will reap the most reward. Smaller companies will need to maintain a niche and develop their knowledge and ability to add value to specific products in order to maintain capital efficiency.

Off-load capital-inefficient portfolios

Analysis of risk-based capital highlights capital-inefficient blocks and portfolios of business, and may encourage insurers to focus on their core and niche businesses and to offload inefficient blocks.

This could be via securitisation, closure (and subsequent sale), and/or the outsourcing of services or business blocks.

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Under Solvency II, outsourcing will require prior approval from the supervisor; the responsibility for the risks to policyholders from the outsourcing contracts remains with the insurer. Therefore, companies will need to regularly review and monitor the outsourcing arrangement and how it is actually working in practice, and to document this to a standard to satisfy the supervisor.

Minimum Capital Requirement (MCR)

For life insurance undertakings, the MCR itself has a minimum value of two million euros, which is a reduction from the current Solvency I requirements.

The specifications as to how the MCR should be calculated are not in the draft directive and are still being developed through the QIS series of exercises.

Classification of capital

Under Solvency II, companies are required to classify their capital into three tiers that reflect the characteristics of the backing assets such as permanence, availability and efficacy in absorbing losses. Only instruments falling in tiers one and two can be used to cover the MCR and only one third of the SCR may be covered by tier-three capital.

Under QIS 4, each hybrid capital instrument must be classified in one tier, and has a number of conditions attached for it to be classified as tier one, in contrast to its treatment by some of the rating agencies.

Derivatives and securitisations are also recognised as risk management tools under Solvency II (subject to a credit charge in the SCR calculation). This could lead to further demand for securitisations and an increase in hedging activities.

Disclosure

The draft directive proposes disclosure of information by insurers that goes further than the disclosure currently required in the UK. For example, the SCR and supervisor add-ons are included in the disclosures as well as descriptions of valuation methods and assumptions. This will place an additional burden on resources and will require careful consideration in the context of confidentiality and strategy.

The final details of Solvency II are subject to a complex and lengthy political process. However, the principles are in place and, although 2012 may seem a long way off, and whilst this may seem to be a costly and demanding exercise, it does offer opportunities to embed best practice in governance and risk management.