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ACTUARIAL & STRATEGIC CONSULTING

Solvency II: QIS4 Results December 2008

Introduction

Quantitative Impact Studies (QISs) have played an important role in recent years in the design and calibration of the Solvency II regime. They have provided valuable information to both European insurance supervisors (CEIOPS) and the European industry of the impact on firms' balance sheets of moving to a Solvency II environment.

The results of the fourth Quantitative Impact Study (QIS4) have recently been published by CEIOPS. In addition the Financial Regulator has also released some Irish-specific results (with a more detailed Irish report expected in early 2009).

QIS4 built on the work of earlier QISs and focussed on a number of specific areas including internal models, group supervision and a new approach to the Minimum Capital Requirement (MCR).

Summary of key findings

- **Participation rates** were significantly higher than for QIS3 both in Europe and in Ireland: one in three European insurers participated in QIS4, up from one in four for QIS3. There were 65 Irish participants in total, of which 26 were life companies.
- In relation to **solvency ratios**, the QIS4 results reveal that the majority of European life companies reported healthier solvency ratios under QIS4 than on the current Solvency I basis. The Irish-specific results showed the median Irish life company reporting a 279% solvency coverage ratio compared to 167% at present (when measured relative to the Financial Regulator's 150% "target" coverage level).
- For life business, **technical provisions** were generally lower than the current Solvency I mathematical reserves reflecting the removal of margins for prudence, the removal of any surrender value floor, allowance for lapses and the recognition of future profits. There is still an issue for start-up companies however when it comes to setting expense assumptions.
- For the median Irish life company, the capital charges for lapse risk and equity market risk accounted for two-thirds of the total **SCR (calculated using the standard formula)**, with the remaining one-third split evenly between interest rate risk and other risks. Across Europe there was general feedback that the lapse risk was set too high whereas the equity risk was too low.
- The **Minimum Capital Requirement (MCR)** was calculated using a formula with a very similar structure to the current solvency margin calculation under Solvency I. The MCR is now restricted to a minimum of 20% and a maximum of 50% of the SCR.
- A majority of respondents indicated that they planned to use either full or partial **Internal Models** for their SCR calculations. The QIS4 results indicate that internal models produced

SCRs that averaged some 19% lower than those produced by the standard formula, but CEIOPS cautioned that these preliminary results need to be treated with care.

- QIS4 also gathered information on **Groups** for the first time. The results indicated a 21% average diversification benefit though, again, CEIOPS advised that these results should be treated as preliminary.
- Finally, **QIS5** is now scheduled for the second quarter of 2010. The fact that there will be no QIS in 2009 provides an opportunity for those companies that did not participate in QIS4 to undertake the exercise at their own pace in 2009 and to benchmark their results against the recent CEIOPS and Financial Regulator publications.

The remainder of this note expands on each of these topics in turn.

Participation

Participation levels were considerably higher for QIS4 than for QIS3 with an overall European participation rate of 33.6%, compared to 24.4% for QIS3. Ireland's participation rate increased by 66.7% compared to QIS3 but we still have the fifth lowest participation rate in the EEA. In total, 65 Irish firms participated in QIS4 of which 26 were in the life sector.

Capital Levels

The majority of European life companies reported better solvency ratios under QIS4 compared to Solvency I. Interestingly, the opposite was the case for non-life companies with the majority reporting declining solvency ratios.

The Irish-specific results also indicate that Irish life companies can expect greater capital releases under Solvency II than non-life companies. The following table shows the available capital versus Standard Capital Requirement (SCR) under QIS4 and the available capital versus 150% of the Required Minimum Solvency Margin under Solvency I for Irish companies. The Financial Regulator expects companies to maintain 150% coverage under Solvency I.

	Minimum	*Median*	*Maximum*
Life: Available Capital to SCR	127%	279%	869%
Life: Solvency I capital to 150% RMSM		167%	
Non-Life: Available Capital to SCR	12%	181%	1031%
Non-Life: Solvency I capital to 150% RMSM		274%	

Technical Provisions

Technical provisions were generally lower under QIS4 than under Solvency I. Under Solvency II, technical provisions will now be valued on a best-estimate basis with the addition of a risk margin calculated using a cost-of-capital methodology. The main reasons why this gives lower technical provisions for life companies than under Solvency I include:

- The removal of margins for prudence.
- The absence of a surrender value floor.
- The recognition of anticipated profits from future premiums/charges.
- An allowance for lapses.

The following table shows the ratio of QIS4 technical provisions to Solvency I technical provisions at the 25th percentile, the median and the 75th percentile for life unit-linked policies and for life non-profit policies for Irish life participants:

	25th percentile	*Median*	*75th percentile*
Linked business	93.5%	96.0%	98.1%
Non-profit business	31.6%	64.7%	85.2%

Many participants questioned the appropriateness of the 6% cost of capital rate which had been specified for the calculation of the risk margin and some felt that a factor in the range of 2%-4% would be more appropriate.

It should be noted that the calculation of technical provisions still does not allow start-up companies to include expected future economies of scale. Supervisors commented that this is a major issue for start-ups and that the approach proposed in QIS4 (reference to third-party expenses) was not a sufficient solution.

Solvency Capital Requirement (SCR) – standard formula

The table below gives a breakdown of the median standard-formula SCR for Irish life companies into its major components:

Risk Category	*Lapse Risk*	*Equity Risk*	*Int. Rate Risk*	*Expense Risk*	*Op. Risk*	*Other Risks*
% of total SCR	40%	26%	16%	6%	4%	8%

The relatively high capital requirement for lapse risk reflects the fact that lapse risk is a much more significant risk under Solvency II as credit is taken for future profits in the calculation of technical provisions.

The equity risk module in the SCR tests against a 32% fall in equity values. This received a lot of criticism from many participants and supervisors as not being sufficiently severe for a 1-in-200 scenario. Many correspondents thought that a 40% fall would be more appropriate.

Other comments received included that the counterparty module was too complicated, the life lapse risk was too extreme and the approach to operational risk was inadequate and contained no incentive to improve risk management in this area. The absence of tests for liquidity risk and volatility risk were also identified by a number of responses.

Minimum Capital Requirement

QIS4 tested a new approach to the calculation of the MCR. The calculation for life business is now similar to the current solvency margin calculation (% of reserves + % of sum at risk + % admin expenses) but with a floor of 20% of the SCR and a cap of 50% of the SCR. However, industry remained strongly in favour of simply calculating the MCR as a straight percentage of SCR.

Internal Models

The use of internal models should be expected to result in a lower SCR than under the standard formula. At the European level the median release of capital was 19% of the standard SCR. Survey responses indicated that 69% of large respondents intend to seek approval for a full internal model, whereas 63% of small respondents plan to seek approval for partial internal models. The key reasons given for developing an internal model included better risk management and a reduction in regulatory capital requirements.

Group supervision

111 Groups participated in QIS4 and a number of different bases were tested. The results showed a significant level of "real" diversification (21% on average) and slight increases in Group surplus. Almost no input was received from supervisors on the question of the "group support regime". This regime would allow groups to manage and hold capital centrally with only the MCR held at the local subsidiary level, provided certain conditions were met. The supervisor in the home country would essentially be responsible for the regulation of the group.

Since the publication of the QIS4 results the EU French presidency released a proposal regarding the text of the draft Solvency II directive which has removed all reference to the group support regime. The EU's finance ministers have since supported this version of the text. Negotiations will now begin between the Council and the EU Parliament and if a text can be agreed then it can be put to a vote of the full parliament in February.

QIS5?

It has been announced that the next QIS – QIS5 – will run from April to July 2010. There will be no QIS in 2009. This provides an opportunity for those companies that did not participate in QIS4 to undertake the exercise at their own pace in 2009 and to benchmark their results against the recent CEIOPS and Financial Regulator publications.

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