



# Solvency II and QIS 4 – time to prepare

Richard Bulmer and Dean Swallow look at some of the issues and challenges facing insurers in the run-up to implementation of Solvency II.



### Preparing for Solvency II

Although the year 2012 may at first seem distant, companies which delay may well find themselves at a significant disadvantage when Solvency II becomes fully operational. Furthermore, as demonstrated by the example on the right, there are a number of milestones which need to be passed prior to implementation. This is particularly the case for those firms intending to make use of an approved internal model. These milestones are:

- **Four years prior to implementation –** internal model development and parameterisation, staff training, raising awareness of Solvency II requirements and identifying issues.
- **Three years prior to implementation –** documentation of internal model and risk management processes, additional model development and parameterisation, begin process of 'embedding' internal model into decision-making and risk management processes.
- **Two years prior to implementation –** continue and build on use of internal model in risk management and decision-making processes, final model developments and documentation.
- **Final year leading up to implementation –** apply to FSA for internal model approval, FSA review, incorporate feedback.

**Figure 1 | SCR internal models**

Internal risk management	Regulatory capital requirement
<b>Use test:</b> Is the actuarial model genuinely relevant for and used within risk management?	<b>Calibration test:</b> Is the SCR computed by undertaking a fair, unbiased estimate of the risk as measured by the common SCR target criterion?
Base methodology/actuarial model	
<b>Statistical quality test:</b> Are the data and methodology underlying both internal and regulatory applications sufficiently reliable to support both satisfactorily?	
<ul style="list-style-type: none"> <li>■ high level of embedding (including regular reporting to board)</li> <li>■ full or partial models – approval process</li> </ul>	

Clearly, there is a great deal of preparation, ongoing development and documentation that needs to be completed prior to successful implementation in 2012. The process needs to be started early enough to be able to demonstrate that the 'use test' has been met, and also to afford the FSA sufficient time to carry out its review.

### Internal model approval

In order to be approved by the FSA, internal models will have to meet a use test, calibration test and statistical quality test, as summarised in **Figure 1**.

The **use test** requires (re)insurance undertakings to demonstrate that the internal model is widely used within the business, and plays an important part in the company's risk management systems, strategic decision-making processes and economic and solvency capital assessment and allocation processes. The model also needs to be updated regularly to ensure that it remains appropriate to the company's ongoing risk profile. While this may appear similar to the use test currently applied by the FSA in respect of the ICAS regime in the UK, it is expected that the conditions will be more stringently applied with evidence required via concrete examples that the model has been 'embedded' in the business. Obviously, it will take time to build up such evidence and satisfy the use test.

In addition, the Solvency II framework will require significantly more documentation than is currently required by the FSA, including setting out details of the design and development of the model.

The **calibration test** essentially involves demonstrating that the Solvency Capital Requirement (SCR) assessment has been undertaken using the specified solvency criterion of 99.5 per cent VaR over a one-year time horizon. This differs from the current ICAS solvency criterion, which is based on run-off to ultimate with a one-year underwriting horizon. The model will need to be able to determine the relevant balance sheet items and thereby assess the solvency of the company at the end of the year. This includes modelling the year-end re-reserving process, given the projected claims experience over the year.

It may also be necessary to run a benchmarking test, using a prescribed set of data and assumptions, in order to check the reliability of the model. The model will therefore need to be sufficiently flexible to carry out this test. The requirements of the statistical quality test are potentially quite onerous. In particular, the specification in the draft Solvency II directive includes the requirements that:

- The internal model should be based upon current and credible information and realistic assumptions, which undertakings should be able to justify to the supervisory authorities.
- Credit may be taken for diversification effects provided the supervisory authorities are satisfied that the system for measurement of these effects is adequate.

In many cases, particularly in relation to tail volatilities and correlations, there will generally be a lack of relevant, credible data for parameters to be set at a high level of confidence. Furthermore, the amounts involved are typically material in the context of the overall capital requirement. Although the exact requirements of the FSA in these cases are not yet known, they are likely to involve a balance between the parameters derived from historical data, prudence and theoretical considerations.

In attempting to satisfy the statistical quality test, companies may find it beneficial to include an independent review of their model parameterisation. This would help to demonstrate that the key parameters have been set objectively and are consistent with best practice across the market.



**Figure 1 | Actuarial function – Solvency II draft directive**

**Actuarial function – Solvency II draft directive**

- To coordinate the calculation of technical provisions
- To ensure the appropriateness of the methodologies and underlying models used as well as the assumptions made in the calculation of technical provisions
- To assess the sufficiency and quality of the data used in the calculation of the technical provisions
- To compare best estimates against experience
- To inform the administrative or management body of the reliability and adequacy of the calculation of the technical provisions
- To oversee the calculation of technical provisions in the cases set out in Article 80
- To express an opinion on the overall underwriting policy
- To express an opinion on the adequacy of reinsurance arrangements
- To contribute to the effective implementation of the risk management system referred to in Article 43, in particular with respect to the risk modelling underlying the calculation of the capital requirements set out in Chapter VI, Sections 4 and 5 and the assessment referred to in Article 44

**Actuarial function**

The Solvency II directive envisages an ‘actuarial function’. This role does not have to be fulfilled by an actuary, but is likely to be an actuary or actuarial group for many companies. The anticipated role of the actuarial function holder is summarised in the table above.

As can be seen, this is a wider role than that currently undertaken by most non-life insurance actuaries. Where necessary, it may be possible to outsource some of the actuarial function requirements if sufficient in-house resource and expertise are not available.

**Initial observations from QIS4**

The fourth CEIOPS quantitative impact study (QIS4) took place from April to July 2008 and the results are due to be published by CEIOPS around November 2008. There appears to have been a higher level of participation in QIS4 than was the case for QIS3, including a stronger participation by groups.

**Standard formula for SCR and MCR**

There is a common misconception that the SCR requirement will be similar to the current ICAS requirement in the UK. While this may be so in certain cases, our experience is that many companies participating in QIS4 are finding that the

standard formula is producing a relatively high SCR compared with that under ICAS. This appears to be largely because the premium risk and reserving risk factors in the SCR standard formula are significantly heavier than would seem to be implied by recent experience. This was identified as an issue in the QIS3 report, but has not been addressed sufficiently in the QIS4 specification.

The Minimum Capital Requirement (MCR) formula has been completely re-worked between QIS3 and QIS4 and is now producing higher capital requirements for many companies.

In our view, it is essential that companies have a good understanding of their likely SCR and MCR calculations, based on the standard formula. Even if companies are permitted to assess their SCR using an internal model, they are likely to be required to calculate the SCR using the standard formula for at least a couple of years following the implementation of Solvency II. It also remains to be seen how willing European insurance regulators will be to accept SCR internal model assessments which are significantly below the SCR using the standard formula.

**Impact of Solvency II on insurance groups**

Some of the key Solvency II issues affecting insurance groups are as follows:

- Groups are likely to be able to calculate their SCR at the group level, provided funds can be transferred freely around the group entities.

“ There is a common misconception that the SCR requirement will be similar to the current ICAS requirement in the UK. ”

- Each entity may be required to satisfy the MCR locally.
- For solvency purposes, a single regulator will be appointed to lead the group supervision. Typically, this would be the regulator applying to the parent company.
- It remains to be seen what approach will be taken in cases where the parent is not domiciled in Europe.
- If an internal model is being used to calculate the group SCR, approved by the lead regulator, then each of the local regulators would need to agree that the model is appropriate for local entities (if not, the standard formula could be enforced).
- Solvency reporting will be at the consolidated group level.

Given the ability for a group to claim diversification credit between entities, it appears that Solvency II may encourage significant merger and acquisition activity across Europe, due to the potential for greater capital efficiency as part of a group than as a standalone insurer. Companies with weaker capitalisation may become particularly vulnerable acquisition targets.

There will inevitably be winners and losers in this process, and the winners are most likely to be those which are well prepared to meet the many challenges presented by Solvency II.

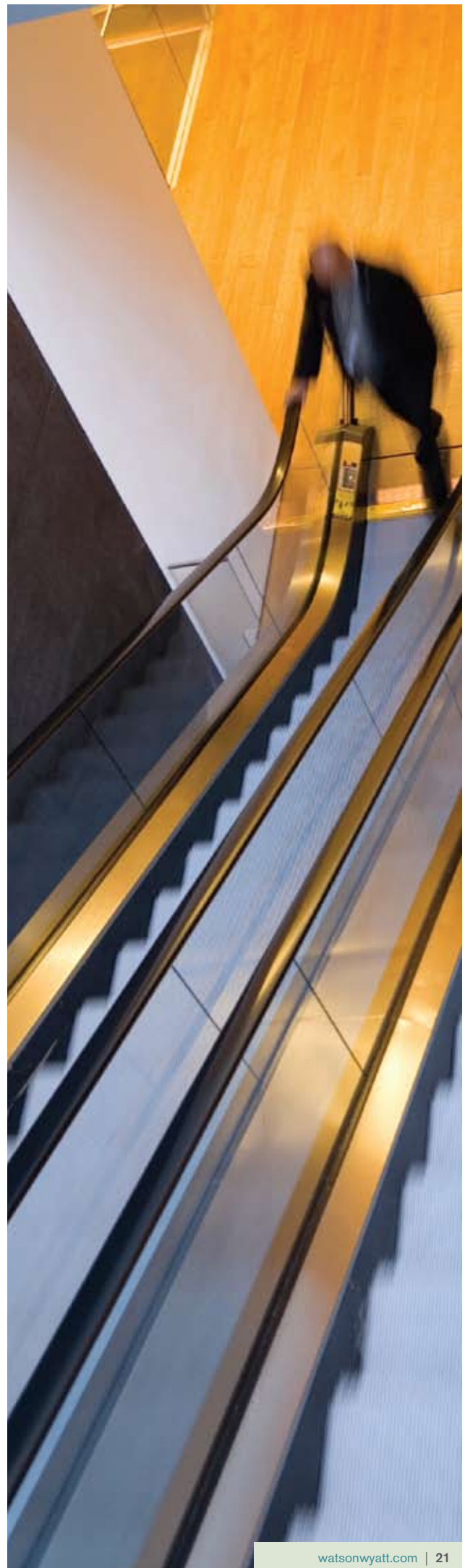
QIS4 has been testing a number of possible alternatives for assessing the SCR at a group level:

- A default method which involves applying the SCR standard formula to the consolidated group position.
- The sum of the solo SCRs, based on the standard formula.
- The sum of the solo SCRs, adjusted for intra-group transactions.
- A group SCR assessment which is based on the group internal model and other qualitative information.

A comparison of the results emerging from the first three of these methods can then provide an indication of the potential extent of group diversification benefits. The QIS4 specification has also suggested a possible method to allow for geographical diversification of non-life underwriting risk.

The extent of diversification benefits is potentially significant. For example, the Chief Risk Officer Forum (CRO Forum) has suggested that:

- Diversification across risk types within legal entities could reduce capital requirements by 31 per cent.
- Diversification across legal entities within a geography could reduce capital requirements by 11 per cent.
- Diversification across geographies could reduce capital requirements by 7 per cent.





It remains to be seen how the final Solvency II formula will deal with these issues. However, it is likely that some insurance groups will seek to change their group structures in order to optimise their regulatory capital requirements and diversification credits under Solvency II.

Insurance groups should be obtaining an understanding of the potential effects on their capital requirements of the most likely alternatives, and considering if their current group structure is 'fit for purpose' in the new environment.

### Impact of Solvency II on Lloyd's syndicates

Under the ICAS regime, Lloyd's is treated as a special case. Managing agents produce an ICA for each syndicate, which is reviewed by Lloyd's. Lloyd's then produces an ICA at the market level, and sets capital for each syndicate.

Although Lloyd's is a group in certain ways, it does not satisfy the condition of being able to transfer funds freely between entities. At present, there are many areas where it is not clear exactly how Solvency II will apply to Lloyd's. For example, there are issues relating to whether Lloyd's will be able to continue as a special case with self-regulation, and the level of capital that can be met by letters of credit posted as Funds at Lloyd's.

Further complications arise where a Lloyd's syndicate is part of an insurance group, and the

requirements in these cases are also uncertain at present. Lloyd's continues to campaign on behalf of its members to preserve its status as a special case for regulation and capital setting.

The key issue at present for Lloyd's syndicates is to keep up-to-date with developments, and understand the implications of the various possible alternatives for regulation and capital setting under Solvency II.

## Conclusions

In summary, companies need to be preparing now to ensure that they will be able to meet the modelling and documentation requirements of Solvency II. The key areas to bear in mind are as follows:

- There is a great deal of preparation, ongoing development and documentation that needs to be completed prior to successful implementation in 2012.
- In order to be approved by the FSA, internal models will have to meet a use test, calibration test and statistical quality test.
- The use test will be much more stringently applied than at present, with a bank of evidence required to demonstrate that the model is embedded in the business, particularly for decision-making and risk management.
- The calibration test may require existing models to be developed further and adapted to meet the Solvency II requirements.
- The statistical quality test is potentially onerous, with parameters subjected to a higher level of scrutiny than at present.
- The documentation of models and the risk management process will need to be much more thorough than under ICAS.
- The range of activities covered by the actuarial unit may need to be expanded to meet the 'actuarial function' requirements.
- Companies should be aware of the likely SCR and MCR using the standard formula, and of the range of alternatives considered as part of QIS4.
- Solvency II may lead to significant merger and acquisition activity across Europe, as groups seek to take advantage of the rules and make more efficient use of group capital.
- The implications for Lloyd's are currently unclear. Syndicates will need to keep on top of developments and understand the implications of possible outcomes.

For more information on Solvency II, please visit our new website: [www.eusolvency2.com](http://www.eusolvency2.com)