

Briefing/05/September/01

## - Boal & Co Briefing -

### Solvency II – A Picture Emerges

In February of this year I published a Boal & Co briefing that provided some background on Solvency II (please let me know if you would like to receive a copy of this). Over the last couple of months there have been some significant developments on the Solvency II front and a picture is beginning to emerge on what Solvency II might look like in practice.

The most important document in this regard has been Consultation Paper No. 7 (CP7) produced by CEIOPS (who you will remember from the previous briefing note is the Committee of European Insurance and Occupational Pensions Supervisors). This Consultation Paper provides summary conclusions on many of the capital and reserving implications of Solvency II but it is a whopping 267 pages. This briefing note summarises the key discussions and conclusions contained within CP7 - and should hopefully save you from altering your current bed-time reading!

#### What is the Consultation Process?

Before getting stuck into CP7 it is useful to have a little refresher on the consultation process.

The European Commission has asked CEIOPS for advice and guidance in drafting the Framework for Solvency II. This advice has been asked for in three waves (see figure 1).

#### What is CP7?

CP7 is a consultation document containing CEIOPS draft answers to the European Commission on the “Second Wave” of calls for advice.

#### Figure 1: Three Waves of Calls for Advice

**1<sup>st</sup> Wave:** Sought advice on mainly Pillar 2 issues, i.e. qualitative supervisory requirements, such as the need for companies to have internal control and risk management processes.

**2<sup>nd</sup> Wave:** Sought advice on mainly Pillar 1 issues, i.e. quantitative requirements, such as technical provisions and solvency capital requirements.

**3<sup>rd</sup> Wave:** Sought advice on a range of Pillar 1, 2 and Pillar 3 issues (Pillar 3 covers supervisory reporting and public disclosure.)

The areas covered within CP7 are:-

- Technical Provisions
- Safety Measures
- Solvency Capital Requirements
- Reinsurance
- Quantitative Impact Studies
- Solvency control levels
- Powers of Supervisory authorities
- Fit and Proper
- Peer review
- Group and cross-sectoral issues

CEIOPS' answers on the above areas are only draft at the moment but they do provide

significant insight on the likely outcome. This briefing note considers those areas which will be of most interest to companies.

**How much capital must I have?**

CEIOPS have produced a very useful diagram called the “Supervisory Ladder”. This illustrates the levels of capital that will trigger supervisory action. This ladder is reproduced in figure 2 below. Some of the terminology is explained in more detail in the remainder of this briefing. Note that “Adjusted” SCR, SCR and MCR represent decreasing levels of capital requirement.

**Figure 2: Supervisory Ladder**

<b>Control Level</b>	<b>Capital Position</b>	<b>Implication</b>	<b>Supervisory Action</b>
Level 1	Available capital greater than “adjusted” SCR	More than sufficient capital	No action required.
Level 2	Available capital less than “adjusted” SCR	Emerging risk to financial viability of company	Supervisor will require company to re-establish acceptable level of capital based on a concrete and realisable plan.  Supervisor may require meetings with management, restrict new business, increase supervisory reporting etc.
Level 3	Available capital less than SCR	Emerging risk to financial viability of company	The supervisor views a breach of this control level no differently to a breach of level 2 above.
Level 4	Available capital less than MCR	Company’s viability is in doubt and some restructuring is likely	This is the ultimate breach. The Supervisor will require corrective action within a matter of days. Insolvency proceedings may be commenced by the supervisor.

**Additional measure**

Level 5	Admissible assets covering technical provisions plus SCR	Not only are there sufficient assets but they are also of the correct type	If admissible assets do not cover the control level then a 6 month detailed plan to rectify this position is required
---------	--	--	---

### **How will Technical Provisions be calculated?**

Within the Solvency II context technical provisions are most closely equivalent to mathematical (or actuarial) reserves.

It is almost certain that technical provisions will be calculated on a basis consistent with IASB methodology. For example insurance liabilities should be based on the expected present value of future cashflows with a separate explicit risk margin allowance.

There is some debate on the interest rates that will be used to value these liabilities but CEIOPS appears to currently favour a risk-free interest rate curve determined using government bonds. This implies that the nature and yields of the underlying assets backing the liabilities will have no impact on the value of the liabilities (except to the extent that they effect the benefits payable to the policyholders). Also, as an aside, this implies that the creditworthiness of the insurance undertaking will have no effect on the value of the liabilities which is one difference from the probable IASB approach.

The required risk margin is the difference between the expected value and the value needed to achieve a given level of confidence. No firm decision has yet been made on what value the level of confidence should be set at

with CEIOPS recommending that the 75% and 90% confidence levels be investigated during the Solvency II field testing.

CEIOPS envisage that the insurer will be able to use discontinuance assumptions in the calculation of the technical provisions to the extent that these are based on credible and relevant experience.

There will remain a requirement to calculate non-unit reserves for unit linked business to the extent that future income is less than future expenses but there remains some ambiguity on whether this may now be done at a product level rather than a per-policy level.

### **What are the safety measures?**

The safety measures include:-

- The minimum capital requirement (MCR)
- Rules on eligible assets covering technical provisions, MCR and Solvency Capital Requirement (SCR)
- Asset diversification limits

#### **Minimum Capital Requirement**

The MCR represents the level of capital below which there is an unacceptable risk to policyholders. As such, if an insurance company's capital falls below the MCR then ultimate supervisory action is triggered.

CEIOPS have recommended that the MCR should be calculated by a factor-based formula and that it should include an absolute floor expressed in Euros.

There is some work to be done on exactly what the factor based formula might look like but the following alternatives have been suggested:-

- A percentage of the existing Solvency I requirements
- An MCR determined as a margin over liabilities
- A percentage of the standard formula of the Solvency Capital Requirement (SCR)

In addition CEIOPS envisages a transition period of up to three years between Solvency I and Solvency II during which time the MCR will be based on a percentage of the existing Solvency I requirements.

#### Eligible assets

It has been recommended to apply the same eligibility criteria for the coverage of the technical provisions, the MCR and the SCR.

In addition the same criteria would apply whether the standard SCR model or an internal model was used.

CEIOPS have suggested that eligibility should be based on a combination of overall principles and a list of eligible asset classes.

The key principles are to include the following:-

- Assets need to be realisable before liabilities need to be met
- The asset's value needs to be ascertainable

Other principles may also apply e.g. the risk of an investment should be measurable.

The current list of eligible assets is recommended as a starting point. However it is also recommended that a simple procedure be in place to revise this list to reflect financial market developments.

#### Asset Diversification Limits

It has been suggested that there should be quantitative limits and that as a starting point these should be based on the existing limits.

There may be some softening of the application of the existing limits e.g. excess holdings may be recognised partially.

CEIOPS is considering a rule whereby the total exposure of an insurer to a group of closely related counter-parties should not exceed a portion of an insurer's available capital, e.g. 25% or 50%. There would be some exclusions to this rule, e.g. exposure to subsidiaries, government bonds, bank deposits, and reinsurance.

### Qualitative asset management requirements

There is a long list of qualitative requirements. These include, amongst many others, the following:-

- The need to take into account asset volatility
- The need for adequate asset-liability management
- The need for an investment strategy to be drafted and approved by the Board

### What will the Standard SCR look like?

The Solvency Capital Requirement is the level of capital that enables the insurer to absorb significant unforeseen losses and gives reasonable assurance to policyholders that payments will be made as they fall due.

Insurers will be expected to have a Board approved policy on solvency capital and CEIOPS have outlined the elements that this policy needs to include, e.g. target level of solvency capital vs. SCR, approaches for monitoring solvency capital vs. SCR.

As a working hypothesis, CEIOPS will consider how the SCR might be calibrated with a 99.5% confidence level that, over the next one year period, assets will be greater than the technical provisions.

Heroically (and sensibly) CEIOPS envisage that insurers **will not need to perform complex modelling** to calculate the standard

formula SCR. Instead the standard formula will aim to simulate the 99.5% confidence level.

At a minimum the SCR should address underwriting, market, credit and operational risk and these are expected to be captured through either factor-based or stress-tested calculations.

### Underwriting Risk

For underwriting risk the main components to be addressed are mortality, expense and lapse risk. CEIOPS have suggested a factor-based model for mortality and expense risk with lapse risk captured either with a factor-based model or a stress test.

### Market Risk

For market risk CEIOPS have indicated that the main components to be addressed should be interest rate risk, equity risk, property risk and currency risk. It is suggested that these might be captured through pre-specified stress tests.

### Credit Risk

CEIOPS have recommended a factor-based approach to model credit risk as a starting point, with appropriate supplements for concentrated exposures, e.g. a factor of the market value of the credit risk exposure.

### Operational Risk

CEIOPS has recommended testing a multiple factor-based approach, e.g. a series of different factors applying to gross premiums written, technical provisions etc.

### A new term – the “Adjusted SCR”

The “adjusted SCR” has emerged within CP7. This is an add-on measure to the SCR calculated above. It will be a pillar II requirement, i.e. this “subjective” adjustment may be added on by the regulator if they believe that the insurer’s risks are not wholly captured by the quantitative measures above.

### What does CP7 say about Internal Models?

CEIOPS have indicated that they want the new framework to encourage the use of internal models. However they recognise that there is a cost / benefit decision to be made by insurers. They expect that the benefits will be greatest for innovative or niche players, large insurers and reinsurance undertakings and will be encouraging the use of internal models by these entities.

In principle there will be no limitation on the range of modelling approaches that can be taken. The important thing will be that the model meets certain validation and approval constraints.

The approval of an internal model will be subject to:-

- A statistical quality test – i.e. accuracy and reliability
- A calibration test – i.e. testing against the 99.5% required confidence level
- A use test – i.e. that the model is used as part of the internal risk management process

No black boxes will be allowed with IT systems needing to be fully documented.

Finally, as expected, partial internal models will be allowed but these will be subject to the above approval regime.

### To what extent can I allow for reinsurance?

It will be the responsibility of the Board of directors to approve a reinsurance management strategy.

CEIOPS have indicated that in principle the MCR should allow for the effects of reinsurance - although there is little detail on the extent of this allowance.

The SCR calculated under the standard model will also be able to allow for reinsurance, but again there is little detail on the extent of this allowance.

In relation to the SCR calculated through internal models CEIOPS have indicated that there should be **no further restrictions** on allowing for the impact of reinsurance.

However simultaneously the risk of reinsurance failure needs to be reflected within the assessment of credit risk.

### **Field Testing?**

The encouraging thing is that there appears a clear commitment to a series of Quantitative Impact Studies on what all of the above might

mean to companies in practice. It is therefore envisaged already that the field testing will require a number of iterations.

Duncan Robertson  
Director and Actuary, Boal & Co  
14<sup>th</sup> September, 2005

### **About Boal & Co**

Boal & Co (Ireland) is the Irish member firm of Milliman Global, an international organisation of actuarial and consulting firms represented in major countries and principal cities worldwide ([www.millimanglobal.com](http://www.millimanglobal.com)). Milliman Global employs more than 3,000 people, with over 100 offices in 30 countries. Milliman Global is composed of consulting firms recognised as leaders in their respective countries, providing international resources and capability suited to international client needs.

Boal & Co have been providing specialist actuarial consultancy services to the international life assurance industry since 1995. Our team comprises qualified actuaries with extensive experience of the offshore business world. We operate out of offices in Dublin and the Isle of Man, and additionally advise life companies in other offshore centres, including Luxembourg and the Channel Islands. We currently provide appointed actuary services to three companies in Ireland, and three in the Isle of Man and are actuarial function holder to one company in the UK.

**For more information** on how our expertise can work for your interests, please contact Duncan Robertson:

tel: + 353 1 676 9868  
e-mail: drobertson@boal.co.uk  
web: www.boal.co.uk  
fax: + 353 1 676 9869