Solvency II - Position after the 3 waves of Consultation Papers and the Quantitative Impact Study 5 Technical Specifications

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CASUALTY LOSS RESERVE SEMINAR
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Solvency II - Level 2 implementing measures

The European Commission asked CEIOPS to launch a consultation process with the (re)insurance industry players.

- Three waves of Consultation Papers (CPs):
  - 1st wave of 12 CPs published on 26th March 2009.
  - 2nd wave of 24 CPs published on 2nd July 2009.
  - 3rd wave of 17 CPs published on the 2nd November 2009.

- The outcomes from these consultations assisted CEIOPS in issuing final advice to the European Commission.

The following diagram shows the main topics addressed in the Level 2 implementation measures, organised by theme, with the topics addressed in the 1st, 2nd and 3rd waves of CPs illustrated in orange, blue and red respectively.
Economic Balance Sheet

CP 26 – Technical Provisions – Methods and Techniques for calculating the Best Estimate
CP 27 – Segmentation
CP 28 – Treatment of Future Premiums
CP 35 – Valuation of Assets and “Other Liabilities”
CP 36 – Actuarial and statistical methodologies to calculate the Best Estimate
CP 41 – Calculation of the Risk Margin
CP 42 – Classification and eligibility of own funds
DSS – Technical Specifications

Overview of the main topics addressed in the level 2 implementation measures

Convergence of the regulatory environment:
- Ease financial communications as reporting is on a consistent basis.
- Lead to cost & resource synergies of between SII and IFRS
- Future cash-flows generated by the assets are split between
- Recognition of future profit/loss generated by existing contracts and reserve
- Own funds are the balance between the valuation of assets and liabilities
- SII's balance sheet approach is expected to lead to new KPIs within the industry.

Risk Margin
- SCR Underwriting Life / non-Life / Health (CP48-50)
- SCR Counterparty Default (CP47)
- SCR Group Concentration (CP43)
- SCR Risk (CP28)
- SCR Operational Risk (CP53)
- SCR Risk Margin
- SCR Group Assessment
- SCR Group Supervision
- SCR Internal Model

Economic Balance Sheet

Pillar II
Pillar III

Main Principles to Remember

Economic Balance Sheet

6. The methods of valuation of the different components of the balance sheet are based on two important principles:

- Convergence of the regulatory environment: SII Economic Balance Sheet is defined according to the IFRS principles. This approach should
  - Lead to a consistent reconciliation of between SII and IFRS
  - Base financial communications on reporting in an equivalent basis.
  - Incorporate simplified methods with a more rigorous approach.

- Predominance of the Balance Sheet approach: Valuation principles for assets and liabilities lead to
  - Own funds on the balance sheet for valuation of assets and liabilities
  - Presentation of surplus (following the principles of market and reserve determination of principles
  - Future cash flows generated by the assets at split between
  - Recognition of profit or loss generated by existing contracts and reserve
  - Own funds on the balance sheet in the same basis than the internal model
  - Therefore the economic valuation leads to the consideration of future profits of the net assets.
  - SII economic sheet approach is exposed to losses due to CP 65 addendum
Economic Balance Sheet

Technical Provisions

Valuation of non-life insurance liabilities on a market-consistent basis:

1. **Technical Provisions** are on a **Marking-to-Model** basis, as insurance liabilities are illiquid.

2. **Marking-to-Model** is based on future cash-flows:
   - Cash-flows should be estimated gross of amounts recoverable from reinsurance contracts.
   - Cash-flows should account for the full lifetime of existing insurance contracts and reflect policyholder behaviour and management actions.
   - Companies need to consider all inflows (e.g., premiums and receivables) and outflows (e.g., claims and expenses).

3. **Marking-to-Model** needs to consider:
   - Reinsurance recoverable is shown as asset. The valuation should follow the same principles as the gross claims provisions. Recoverable are exposed to counterparty default risk and do not require any risk margin.

The choice of discount rate:

- Risk-free interest rate term structure (based on government bonds) vs. credit swap rates. QIS4 and CP40 favoured use of government bonds and QIS5 is based on credit swap rates.

- The rate term structure will include a 50% illiquidity premium in QIS5 for non-life liabilities. This is new compared to QIS4 and contrary to the final advice of CP40.

- Risk margin is based on cost of capital approach with a rate of at least 6%. Risk Margin calculation is on undertaking level in QIS5, hence enjoys diversification benefit (contrary to QIS4 and final advice of CP40).

The risk margin is calculated as follows:

\[ \text{Future SCR} = \text{SCR}(0) + \sum_{t=1}^{\infty} \left( \frac{\text{SCR}(t)}{(1+r)^t} + \frac{\text{SCR}(t)}{(1+r)^t} \right) \]

**Run-off of the SCR for Underwriting, Counterparty and Operational Risks**

**CEIOPS has kept the QIS4 approach for segmentation:**

- 14 risk classes for Non-Life (Re)insurance and a double segmentation in Life (Re)insurance with 16 classes.
- A policy covering several risks needs to be split into different segments.
- Pillar 3: CEIOPS might ask economic capital to be split according to the same segmentation.

**Segmentation is part of the process.** Assumptions must be consistent with:

- Financial market data
- "Generally available" insurance risk data.

Must be documented, justified and validated.
Economic Balance Sheet

Own Funds

Own funds are classified in three tiers which are based on 6 key characteristics: subordination, loss absorbency, sufficient duration, free from requirements to redeem, free from mandatory fixed charges and absence of encumbrance.

In addition, capital tiering will have to satisfy the following requirements:

- SCR Limits applicable
  - Tier 1 items >= 50%
  - Tier 2 items = 50%
  - Tier 3 items < 15%

- MCR Limits applicable
  - Tier 1 items >= 80%
  - Tier 2 items = 0
  - Tier 3 items = 0

Other Limits
  - Tier 1 (preference shares + subordinated liabilities) <= 20%

Supervisory approval of own funds is principle based: The undertaking assesses the appropriate classification of the own fund items for which it seeks supervisory approval. The undertaking is responsible for providing all related documentation.

Future Premiums

Future premiums within the valuation of the Best Estimate for technical provisions is a very sensitive issue impacting directly the capital requirement:

- Scope
  - CP30 clarifies cases where future premiums should be included in the valuation of the Best Estimate.
  - Some of the rules suggested in CP 30 for the treatment of future premiums may lead to incoherence.

- Complexity of the calculation
  - Insurance contracts which include for example options lead to complex modelling issues (insurance contract with reinstatement premium is a standard simple example of an option).

Deferred Taxes

CP35 does not mention the possible tax deduction for the gross SCR.

The other points relating to deferred taxes are of a lesser importance.

SCR Solo

CP47 – SCR Market Risk
CP48 – SCR Underwriting Risk
CP51 – SCR Counterparty Default
CP53 – SCR Operational Risk
CP55 – Undertaking Specific Parameters
DESS – Technical Specifications
Article 101 of the Solvency II Framework Directive

"The Solvency Capital Requirement (SCR) shall be calibrated so as to ensure that all quantifiable risks to which an insurer or reinsurer undertaking is exposed are taken into account. It shall cover existing business, as well as the new business expected to be written over the following 12 months.... It shall correspond to the Value-at-Risk of the basic own funds of an insurance or reinsurance undertaking subject to a confidence level of 99.5% over a one-year period."

SCR calculation must be based on appropriate methods and correspondingly documented.

Solvency II allows for five methods to determine SCR:
- Simplification
- Standard Formula
- Standard Formula with Undertaking-Specific Parameters
- Partial Internal Model
- Full Internal Model

The standard formula for the SCR is a specified set of stress tests or factor based formulae that companies will have to apply to their assets and liabilities to the following risks:
- Market
- Non-life Underwriting
- Life Underwriting
- Health Underwriting
- Counterparty Default
- Intangibles
- Operational

Standard formula uses correlation matrices to aggregate across the risks.

The standard formula is calibrated to the whole EU market and may not be suitable for every single company.
**Solvency Capital Requirement**

Recent developments in the Standard Formula and USP

<table>
<thead>
<tr>
<th>Minimum Solvency Capital Requirement: τ</th>
<th>Other Premium Risk Factors: Σ</th>
</tr>
</thead>
<tbody>
<tr>
<td>This calculation of MCR combines a linear formula with cap of 45% of SCR and a floor of the higher of 25% of SCR and an absolute floor, expressed in euros, depending on the nature of the undertaking.</td>
<td>If undertakings write material amounts of non proportional reinsurance or have material amount of exposures outside the EU, these adjustments are, however, not simple without sufficient data.</td>
</tr>
<tr>
<td>An illiquidity premium adjustment to the risk-free interest rate term structure will now be allowed for in the discounting of cash-flows. Non-life contracts should use 50% of the illiquidity premium while risk margins should use no adjustment.</td>
<td>Most factors and approaches for calculating market risk have increased significantly in QIS5. This includes higher spread risk factors.</td>
</tr>
<tr>
<td>12.5%</td>
<td>20.0%</td>
</tr>
<tr>
<td>15.0%</td>
<td>21.5%</td>
</tr>
<tr>
<td>30.0%</td>
<td>25.0%</td>
</tr>
<tr>
<td>17.0%</td>
<td>15.0%</td>
</tr>
<tr>
<td>17.5%</td>
<td>15.0%</td>
</tr>
<tr>
<td>11.0%</td>
<td>12.5%</td>
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<tr>
<td>10.0%</td>
<td>9.0%</td>
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<tr>
<td>10.0%</td>
<td>10.0%</td>
</tr>
<tr>
<td>5.0%</td>
<td>7.5%</td>
</tr>
<tr>
<td>7.5%</td>
<td>8.5%</td>
</tr>
</tbody>
</table>

Changes have, however, been made to this methodology. One of the changes was the reduction in number of separate geographical regions from 54 to 18.

<table>
<thead>
<tr>
<th>Premium Risk Factors</th>
<th>QIS 4</th>
<th>QIS 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>QIS 4:</td>
<td>QIS 5:</td>
<td></td>
</tr>
<tr>
<td>Siret vehicle liability</td>
<td>9.5%</td>
<td>10.0%</td>
</tr>
<tr>
<td>Other Motor</td>
<td>9.5%</td>
<td>10.0%</td>
</tr>
<tr>
<td>Fire</td>
<td>12.0%</td>
<td>12.5%</td>
</tr>
<tr>
<td>In party liability</td>
<td>12.0%</td>
<td>12.5%</td>
</tr>
<tr>
<td>Credit</td>
<td>20.0%</td>
<td>21.0%</td>
</tr>
<tr>
<td>Capital</td>
<td>7.5%</td>
<td>7.0%</td>
</tr>
<tr>
<td>Assistance</td>
<td>7.5%</td>
<td>6.0%</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>11.0%</td>
<td>12.0%</td>
</tr>
<tr>
<td>Net foreign exchange</td>
<td>15.0%</td>
<td>15.0%</td>
</tr>
<tr>
<td>Net foreign interest</td>
<td>15.0%</td>
<td>15.0%</td>
</tr>
</tbody>
</table>

An Intangible Asset risk charge has been introduced as 80% of the fair value of intangible assets. An undertaking would consider the fair value of intangible assets and would use the methodological approaches in the Standard Formula.

**Comparison of Standard Deviation σ for Premium Risk**

A non life lapse risk module has been introduced to take account of the effect of higher than expected policy lapses due to increased mortality, missed payments and general economic changes.

A non life lapse risk module has been introduced to take account of the effect of higher than expected policy lapses due to increased mortality, missed payments and general economic changes.

In QIS5, risk margins must take account of diversification between lines of business. Risk margins are still required for each line of business. The allocation of the whole account risk margin, allowing for diversification, must recognise the contribution of each line of business to the overall SCR over the lifetime of the liabilities.

Geographical diversification has been kept in QIS5, despite CEIOPS proposing that it should be removed. Syndicates may either assume that all business falls into one segment or may use the specified methodology and geographical segmentation.

The correlation factor between non-life premium and reserve risk and non-life catastrophe risk has increased from 0 to 0.25. An undertaking should not use both USP and geographical diversification as this would result in double counting.

The specified methodologies to be used in deriving the USP have changed from QIS4 to QIS5.

**USP can be used to adjust the standard formula parameters to reflect an undertaking's risk profile for non-life premium and reserving risk, but not catastrophe risk.**

Many of the factors applied in calculating premium and reserve risk have increased since QIS4 leading to what may be a significant effect on the risk charges. Particularly evident for non-proportional reinsurance classes. QIS5 factors, however, tend to be lower than those in the CPs and Final Advice.
Comparison of Standard Deviation \( \sigma \) for Reserve Risk

<table>
<thead>
<tr>
<th>Reserve Risk</th>
<th>QIS 4</th>
<th>CEIOPS Final Advice</th>
<th>QIS 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motor vehicle liability</td>
<td>12.0%</td>
<td>12.5%</td>
<td>9.5%</td>
</tr>
<tr>
<td>Other Motor</td>
<td>7.0%</td>
<td>10.0%</td>
<td>10.0%</td>
</tr>
<tr>
<td>Wind</td>
<td>10.0%</td>
<td>17.5%</td>
<td>14.0%</td>
</tr>
<tr>
<td>Fire</td>
<td>10.0%</td>
<td>19.0%</td>
<td>15.0%</td>
</tr>
<tr>
<td>Total bodily liability</td>
<td>18.0%</td>
<td>25.0%</td>
<td>11.0%</td>
</tr>
<tr>
<td>Credit</td>
<td>18.0%</td>
<td>20.0%</td>
<td>19.0%</td>
</tr>
<tr>
<td>Legal expenses</td>
<td>10.0%</td>
<td>10.0%</td>
<td>9.0%</td>
</tr>
<tr>
<td>Assiduousness</td>
<td>10.0%</td>
<td>15.0%</td>
<td>11.0%</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>10.0%</td>
<td>20.0%</td>
<td>19.0%</td>
</tr>
<tr>
<td>FP vmt (group)</td>
<td>18.0%</td>
<td>30.0%</td>
<td>20.0%</td>
</tr>
<tr>
<td>FP vmt (casualty)</td>
<td>18.0%</td>
<td>30.0%</td>
<td>20.0%</td>
</tr>
<tr>
<td>FP vmt (IC)</td>
<td>18.0%</td>
<td>30.0%</td>
<td>20.0%</td>
</tr>
</tbody>
</table>