Solvency II Practical Review

Amrita Pattni FIA, Guy Carpenter (Chair)
Cat Drummond FIA, LCP (Capital stream leader)
Susan Yang FIA, Tesco Underwriting (Technical Provisions stream leader)
Yuming Mei FIA, Mazars (Survey leader)
Jamie Grant FIA, Lancashire Group (Capital stream member)

16 October 2017
Agenda

- Overview
- Survey results
- Capital stream
- Technical Provisions
- Conclusion & next steps
Solvency II – the story continues

**1-Year post implementation**

**Issues:**
- Non-reflective required or available capital
- Unintended market behavior
- Overly onerous calculations

**Opportunity:**
- For modifications to Solvency II
- Recommend these changes for PRA to consider

**Confirm Issues:**
- Get market practitioners view on these issues
- Ensure scope is in line with market

**Results and Working Party Paper**

**16 October 2017**

**Paper outlining:**
- Top issues
- Descriptions of each issue
- Proposed solution
- Pros and cons of solution where possible
Solvency II is vast. How best to approach this?
SII Practical Review: Survey Results
Yuming Mei, Mazars
Respondents

- Over 120 responses from a wide cross-section of the market.

Practice Area
- Capital: 31%
- Reserving: 10%
- Pricing: 14%
- Enterprise Risk Management (ERM): 9%
- Reinsurance: 4%
- Other: 32%

Type of Firm
- Large insurer: 32%
- Medium sized insurer: 18%
- Small insurer: 11%
- Reinsurer: 7%
- Composite insurer: 3%
- Consultancy: 2%
- Other: 27%
Before we begin…

What are the top practical issues that Solvency II poses for you in your role?

Please respond using the GIRO app.

Or, browse to sli.do and type U499.

You may select up to 3 answers.
The issues in the market – “you in your role”

16 October 2017
The issues in the market – “the market as a whole”

Consistency and comparability, 16
Volume of reporting, 9
Proportionality and competitiveness, 8
Cost of compliance, 7
Systemic risks, 6
Time pressure, 6
Complexity of regulation, 6
Reporting not understood, 6
Data requirements, 5
Strain on resources, 5
SCR - standard formula, 4
Model change, 4
Clarity of regulation, 4

16 October 2017
Ensuring our scope is in line with the market - Capital

Rating

0 1 2 3 4 5

Standard Formula: Allowing for PPOs
Standard Formula: Application of reinsurance
Standard Formula: Approach to calculating catastrophe risk
Internal model change - granularity of regulatory review
Standard Formula: Currency risk calculation
Standard Formula: Use of premiums as a measure of exposure
Ensuring our scope is in line with the market - TPs

Rating

- Communicating TPs to senior management/investors: 4
- Volatility in TPs over time: 3
- ENIDs/Binary Events: 3
- Expense allocations: 2
"The UK should explore alternative methods to replace the Risk Margin calculation post Brexit"

- Strongly Agree: 23%
- Agree: 48%
- Disagree: 13%
- Strongly Disagree: 2%
- Don't know: 14%

16 October 2017
Wider issues – TSC response – Solvency II Reporting

"Financial reporting under Solvency II is unreasonably onerous and should be simplified."

- 52% Strongly Agree
- 34% Agree
- 6% Disagree
- 8% Strongly Disagree
- 0% Don't Know
"Solvency II has created a competitive disadvantage for UK general insurance firms in relation to firms from outside the UK..."

- Strongly Agree: 16%
- Agree: 38%
- Disagree: 24%
- Strongly Disagree: 4%
- Don't Know: 18%
Wider issues – TSC response – Proportionality

"The implementation of Solvency II allowed sufficiently for different sizes and types of firm."

- Strongly Agree: 26%
- Agree: 22%
- Disagree: 14%
- Strongly Disagree: 14%
- Don't Know: 26%

16 October 2017
Solvency II key issues: capital
Cat Drummond, LCP
Jamie Grant, Lancashire Group
# Summary of capital issues

<table>
<thead>
<tr>
<th>Issue</th>
<th>Mis-states capital?</th>
<th>Risk management issues?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal model change</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Currency risk</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Premiums as a risk measure</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Catastrophe risk</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Allowance for reinsurance</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>PPOs</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Operational risk</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>
Internal model change

Background
- One of the top 3 practical issues identified
- Major change in particular
- Clarity and guidance lacking
- Major change process onerous

Issues
- Discouraging model development / use
- Regulatory expectations on frequency of change
- Data changes?
- Minor change aggregation?
- Major change requirements?

Proposed solution
- Need to work as an industry (including regulators) to develop thinking on this
- Best practice / market guidance:
  - Minor changes on per risk category basis, overarching assumptions reported separately
  - Agree triggers
  - Simplified major change process
### Currency risk

#### Background
- Calculation: $25\% \times |(\text{Assets}_{\text{curr}} - \text{Liabs}_{\text{curr}})|$
- Summed across all currencies

#### Issues
- Assumes worst outcome for each currency is 100% correlated
- Discourages holding buffers in currencies
- Discourages good risk management
- CEA (Insurance Europe) raised this in 2012

#### Proposed solution
- 1: apply uplift to liabilities to allow for some buffer
- 2: apply only where liabilities > assets
- 3: allow currencies to offset by considering shock aggregated across all non-reporting currencies
- 4: **compare actual allocation to “optimal” portfolio** (e.g., % assets splits vs % liability splits)
- 5: Assume correlation matrix between currencies (in combination with other options)
### Background

- Premium risk calculation (simplified):
  $$\text{Premiums} \times \text{factor} \times \text{sigma}$$
- Catastrophe risk calculation (simplified):
  $$\text{Loss ratio} \times \text{premiums}$$

### Issues

- Multi-year policies
- Ignores policy limits / terms
- Soft market conditions

### Proposed solution

#### Multi-year:

- Allow for diversification between years
- Limit volumes to over next year only

#### Policy limits:

- Scenario based approach (as for other catastrophe risk calculations)
- Allow firms to take account of policy limits
## Background

- EEA nat cat risk
  - 1 in 200 CRESTA zone damage ratio x TSI
- EEA windstorm, flood and hail losses assumes >1 event for each peril when calculating capital
- For non EEA regions, loss ratio x premium approach currently required

## Issues

- 1 in 200 zone damage ratio calibrated assuming diversification within local CRESTA zones
- Risk can materially differ compared with detailed modelling (eg Flood) +/- 400%
- Firm exposed to windstorm, flood and earthquakes would assume 2 windstorms, 2 floods and 1 earthquake in 1 year – overstated?

## Proposed solution

- Damage ratio USPs
- Top 2 events per year
- Damage ratios for Non-EEA regions

### Results

- Issues around premiums as a risk measure already discussed
Allowance for reinsurance: cat risk

Background

- Method 0:
  - Apply reinsurance to peril losses
  - Combine perils through correlation matrix

- Method 1:
  - Combine perils through correlation matrix
  - Allocate resulting aggregated SCR back to perils
  - Apply reinsurance
  - Add net losses to get total SCR

Issues

- Method 1 highlighted in guidance for applying outwards reinsurance under standard formula
- Method 1 shown to be encouraged by auditors
- Results in unconventional risk management by buying more horizontal cover instead of vertical cover

Proposed solution

- Move to Method 0 (where total recoveries does not exceed maximum recoverable)
- Guidance to highlight implications of Method 1
Allowance for reinsurance: premium and reserve risk

Background

- Non-proportional reinsurance can be allowed for within Standard Formula reserve and premium risk capital
- Allowed for via reduction to standard deviation factors

Issues

- Can only be allowed for within 3 lines of business:
  - Motor vehicle liability
  - Fire and other property damage
  - Third party liability
- Reduction is 20% regardless of actual cover
- May lead to unconventional risk management / reinsurance purchase

Proposed solution

- Adjust the standard deviation factor by considering the % TSI that is reinsured
# Allowance for PPOs

## Background
- Periodical Payment Orders largely a UK / Irish issue
- Standard formula allows for longevity risk (life underwriting risk) and interest rate risk (market risk) which are relevant for PPO exposures

## Issues
- PRA noted concern at inadequacy of standard formula for PPOs
- Longevity risk likely to be greater than that allowed for within life underwriting
- Does not allow for inflation risk
- Limited risk management incentive

## Proposed solution
- Introduce an impaired life module
- Introduce inflation risk stress
Operational risk

**Background**
- Operational risk capital calculation a simple calculation:
  \[ \text{25\%} \times \text{Expenses}_{\text{unit-linked}} + \min (30\% \times \text{BSCR}, \max (\text{Op}_{\text{prem}}, \text{Op}_{\text{res}})) \]

**Issues**
- Linear relationship assumed (generally)
- Indicates size not risk
- Doesn’t allow for differences in risk management systems
- Doesn’t promote good operational risk management

**Proposed solution**
- Option 1: Scenario based approach
- Option 2: Scorecard approach
Technical Provision Key Issues
Susan Yang, Tesco Underwriting
## Summary of technical provisions issues

<table>
<thead>
<tr>
<th>Issue</th>
<th>Mis-states capital?</th>
<th>Risk management issues?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk margin</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Expected future profit</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Validation</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>ENIDs</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Expenses</td>
<td>✓</td>
<td></td>
</tr>
</tbody>
</table>
# Risk Margin

## Background

- Current Risk Margin method and calibration may lead to inappropriate TP and unintended behaviours.
- The working party Market Survey shows more than 70% of respondents either strongly agree or agree to review the current method.

## Issues

- Risk Margin is volatile over time and is difficult to hedge
- CoC% calibration maybe too prudent?
- Risk Margin is sensitive to interest rate movements
- Risk Margin incentives poor ALM
- There is macro-prudential implications
- Risk Margin could encourage pro-cyclicality
- No diversification allowed at Group level

## Proposed solution

- Consider alternative methods
- Benchmarking other regulations and countries, e.g. IFRS17
Expected Future Profit

Background

- The Delegated Acts suggest that the EPIFP should be calculated as the impact on technical provisions if future premiums are not received.
- Guideline 77 then expands the above and stated it should be assumed that policies continue to be in force and no other reduction should be made to the technical provisions.

Issues

- Conflicting and counterintuitive requirements
- Guideline 77 does not seem appropriate given the premium is not received, and would result in the EPIFP being equal to the future premium only.

Proposed solution

- WP asked PRA for clarification on this issue
- **PRA confirmed** it is reasonable to assume no further claim will be paid from a GI contract if no future premium is received.
# Validation

<table>
<thead>
<tr>
<th>Background</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Validation was a central topic in the original IFoA GIRO paper on SII Technical Provisions.</td>
</tr>
<tr>
<td>• Our focus is on the practical implementation of validation, more specifically the non-uniformity of validation that is observed across firms and how this may be addressed pragmatically.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Issues</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Non-uniformity in validation approach observed in the market</td>
</tr>
<tr>
<td>• The approach for validation is company-specific leading to disparity in approach and the level of standards.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Proposed solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓ A structured checklist based on Regulatory guidance</td>
</tr>
<tr>
<td>✓ The outlined proposal should provide a framework for firms to address validation of the SII valuation consistently</td>
</tr>
</tbody>
</table>
## ENIDs

### Background
- Estimation of ENIDs rely on a high level of judgement, with little or no supporting data.
- Therefore, validation of ENIDs is problematic.

### Issues
- How does one validate that all possible outcomes have been considered?
- How have judgements been made and challenged?
- How does one prove that an allowance for ENID is overstated?
- Are both ends of the distribution being considered?
- Truncated distribution mean
- Transparency

### Proposed solution
- Challenge to judgements for ENIDs should happen more frequently and widely; and evidenced within insurance companies.
- Consider exposures and policy limits, and articulate judgements through scenarios.
Expenses

Background

- Inconsistency of interpretation across the market in expenses calculation may lead to inappropriate technical provision.

Issues

- Expense calculation is more complicated under SII compared to IFRS
- Providers of different expense components may not fully understand the SII requirements
- Inconsistent interpretation across the market

Proposed solution

- More guidance on best practice
- Improve consistency across the market
- WP paper provides guiding principle on different expense elements to consider for claims provision and premium provision.
Conclusion

Amrita Pattni, Guy Carpenter
### Summary

<table>
<thead>
<tr>
<th>Capital Issues</th>
<th>Technical Provisions Issues</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal model change</td>
<td>Expenses</td>
</tr>
<tr>
<td>Currency risk</td>
<td>Risk Margin</td>
</tr>
<tr>
<td>Premiums as a risk measure</td>
<td>Expected Future Profit</td>
</tr>
<tr>
<td>Catastrophe risk</td>
<td>Validation</td>
</tr>
<tr>
<td>Allowance for reinsurance</td>
<td>ENID</td>
</tr>
<tr>
<td>PPOs</td>
<td></td>
</tr>
<tr>
<td>Operational risk</td>
<td></td>
</tr>
</tbody>
</table>

#### Not tackled in paper 1

"Financial reporting under Solvency II is unreasonably onerous and should be simplified."

- **52%** Strongly Agree
- **34%** Agree
- **8%** Disagree
- **6%** Strongly Disagree
- **8%** Don't Know
Next steps...

Feedback on current research
- Was this useful?
- PRA feedback

More targeted market survey on Key Issues & Reporting
- Streamline issue list
- Reporting highlighted as a top issue – Identify where and how this can be tackled

Future Inquiries?
- Possible TSC inquiries going forward
- Contribute to these

Working Party Paper 2
- Update on future TSC inquiries
- Survey results
- Focused research on streamlined issues and reporting

16 October 2017
The views expressed in this presentation are those of invited contributors and not necessarily those of the IFoA. The IFoA do not endorse any of the views stated, nor any claims or representations made in this presentation and accept no responsibility or liability to any person for loss or damage suffered as a consequence of their placing reliance upon any view, claim or representation made in this presentation.

The information and expressions of opinion contained in this publication are not intended to be a comprehensive study, nor to provide actuarial advice or advice of any nature and should not be treated as a substitute for specific advice concerning individual situations. On no account may any part of this presentation be reproduced without the written permission of the IFoA.

16 October 2017