On the (Risk) Margin
Paul Fulcher, Milliman
Andy Scott, Hymans Robertson

On behalf of the Risk Margin Working Party

The Risk Margin Working Party

• Set up following criticisms of the Risk Margin in the Treasury Select Committee Inquiry into EU Insurance Regulation

• Two main strands:
  – What can be done to fix known issues with the RM, either within Solvency II or using potential post-Brexit flexibility?
  – What should be the purpose of the RM, and how can that purpose best be fulfilled?

• Members:
  – Andy Peikiewicz (Chair), Waqar Ahmad, Paul Fulcher, Chris Marsh, Stuart Reynolds, Andy Scott
  – Life Research Committee representative: Richard Schneider
Back to basics: Why even have a risk margin?

What do we tell the policyholders about benefit security?

SCR: 99.5% VaR over one year

Risk Margin aims to bridge the gap

Survive the next year, then transfer business

What about benefit security in the longer term?

Cost of transfer typically exceeds best estimate

The Solvency II approach

“Non-hedgeable”

\[ RM = CoC \cdot \sum_{t \geq 0} \frac{SCR(t)}{(1 + r(t+1))^{t+1}} \]

6% Swaps

Transfer to a “reference undertaking”
- No other business and remains closed
- De-risk assets (as far as possible)
- Assume reinsurance transfers with business
- Future management actions consistent with those of original insurer

“Non-hedgeable risks”
- Underwriting risks
- Residual market risk
- Counterparty default risk
- Operational risk
Right question?

Wrong answer!

£44bn across UK life industry

100bps fall in rates: 27% increase in RM

Source: “Solvency II one year in” – speech by David Rule, Executive Director of Insurance Supervision
Data as at 30 September 2016

Interest rate sensitivity

Source: Working Party modelling
Interest rate sensitivity – a different perspective

Source: Working Party modelling

Qualities of a desirable risk margin

“If I had an hour to solve a problem and my life depended on it, I would use the first 55 minutes determining the proper questions to ask.”
— Albert Einstein
“Management action” solution

BAU

Insurer

Contingent on asset derisking

Longevity

Reinsurer

Risk margin scenario

Reference entity

Longevity

Reinsurer

Asset derisking (per RM rules)

Qualities of a desirable risk margin

- Practicality of calculation
- Stability over different risks (and time)
- Consistency between firms / objectivity
- Policyholder protection
- IFRS17 consistency
- Market consistency
- Counter-cyclical
- International Capital Standards consistency
- Right incentives

Source: Groupe Consultatif, 2006 (for first six criteria) – these have been paraphrased by the Working Party for ease of presentation
## Options for change: within Directive

<table>
<thead>
<tr>
<th>Proposal</th>
<th>Justification</th>
<th>What needs to change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower cost of capital from 6%</td>
<td>Simplest change to reduce magnitude of issue</td>
<td>Level II Delegated Acts</td>
</tr>
<tr>
<td>Vary cost of capital with interest rates</td>
<td>Reduces (artificial) volatility and some theoretical evidence</td>
<td>Level II Delegated Acts</td>
</tr>
<tr>
<td>MA or VA used for SCR</td>
<td>Consistent with BEL (although market risk assumed to be derisked)</td>
<td>EIOPA Guidelines</td>
</tr>
<tr>
<td>MA or VA used to discount cost of capital</td>
<td>Insurer should be able to earn liquidity premium on capital held</td>
<td>Level II Delegated Acts</td>
</tr>
<tr>
<td>Tapering of lifetime risks</td>
<td>Theoretically justified, current method can produce paradoxical result</td>
<td>Level II Delegated Acts or Internal Model</td>
</tr>
</tbody>
</table>

## Options for change: more fundamental

<table>
<thead>
<tr>
<th>Proposal</th>
<th>Justification</th>
<th>What needs to change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Link Risk Margin to reinsurance pricing</td>
<td>Market consistent and removes artificial incentives to transfer</td>
<td>Level II Delegated Acts or PRA acceptance of management action</td>
</tr>
<tr>
<td>Confidence level PAD or (Tail-)VaR</td>
<td>Cost of capital method has artificial volatility, alternative permitted under IFRS/ICS</td>
<td>Level I Directive</td>
</tr>
<tr>
<td>Replace RM + SCR with “run-off” SCR</td>
<td>Align with ability to meet liabilities as fall due</td>
<td>Level I Directive</td>
</tr>
<tr>
<td>No Risk Margin</td>
<td>ICAS regime didn’t have risk margin, 50% prob. of meeting benefits post SCR shock</td>
<td>Level I Directive</td>
</tr>
</tbody>
</table>
Comparing options - Magnitude

![Graph comparing options - Magnitude](image)

### Source:
Working Party modelling

As at 30 September 2018

---

Comparing options - Volatility

![Graph comparing options - Volatility](image)

### None of these options change volatility:
- Reduce CoC
- Use of MA or VA

### Source:
Working Party modelling
### Assessing the alternatives (work in progress)

<table>
<thead>
<tr>
<th></th>
<th>Reduce CoC</th>
<th>Link CoC to rates</th>
<th>MA or VA</th>
<th>Reinsurance pricing</th>
<th>VaR / PAD</th>
<th>Run-off SCR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Practicality</td>
<td>✓ ✓</td>
<td>✗</td>
<td>-</td>
<td>?</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>Stability over risks</td>
<td>- -</td>
<td>-</td>
<td>-</td>
<td>✗</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Objectivity / consistency</td>
<td>- -</td>
<td>-</td>
<td>-</td>
<td>✗</td>
<td>-</td>
<td>✗</td>
</tr>
<tr>
<td>Policyholder protection</td>
<td>✗  ?</td>
<td>?</td>
<td>?</td>
<td>✓</td>
<td>?</td>
<td>✓</td>
</tr>
<tr>
<td>IFRS 17 consistency</td>
<td>- -</td>
<td>✓</td>
<td>✗</td>
<td>✓</td>
<td>✓ ✓</td>
<td>✗</td>
</tr>
<tr>
<td>Counter-cyclicality</td>
<td>- ✓ ✓</td>
<td>✓</td>
<td>✓ ✗</td>
<td>✓</td>
<td>?</td>
<td>✓ ✓</td>
</tr>
<tr>
<td>ICS consistency</td>
<td>- ✓</td>
<td>-</td>
<td>✗</td>
<td>✓</td>
<td>✓ ✓</td>
<td>✗</td>
</tr>
<tr>
<td>Right incentives</td>
<td>? ✓</td>
<td>-</td>
<td>✓ ✓</td>
<td>?</td>
<td>?</td>
<td>?</td>
</tr>
</tbody>
</table>

### Industry views

**Which of the following changes do you support?**

- **Link CoC to rates**: 90% support
- **Use MA in SCR calc**: 80% support
- **Use MA in disc rate**: 70% support
- **Use of VA in SCR calc**: 100% support
- **Use of VA in disc rate**: 80% support

*Source: Working Party survey of 9 firms*
Questions

Comments

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 or authors, in the case of non-IFoA research.