



Risk Margins

Presentation to AAE Joint IC, PC and RMC Meeting
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Agenda

1. Background
2. Initial views of AAE SII Risk Margin Workstream
3. Differences between the Solvency II risk margin and the IORP II risk margin equivalent
4. Areas where feedback particularly welcome

Note: All views expressed in this presentation are tentative, are presented in a personal capacity, and should not be taken to represent the unanimous view of the whole Workstream, of the AAE or of employers of individual workstream members

Background

Solvency II WG Risk Margin Workstream

- Issues have been highlighted with the existing Solvency II risk margin (RM) design and/or calibration
 - AAE keen to engage in debates on such topics, via its Solvency II Working Group
 - This WG Workstream is seeking to develop a paper to provide robust justification of any views we might express
 - Currently workstream involves: Malcolm Kemp (Chair), Peter Brühne, Simon Cureton, Shane Fahey, Maria Kamenarova, Daphné de Leval, Tjemme van der Meer, Dong Qingsheng, Frank Schiller, Jolanta Tubis and Lutz Wilhelmy
- Many thanks to all the active workstream members for their ongoing assistance with this project!

EU Commission 2020 Solvency II Review Request for Advice (from EIOPA) includes text on Risk Margin

EIOPA is asked to assess the appropriateness of the design of the risk margin, without challenging the approach based on the cost-of-capital. In particular, EIOPA should assess the ongoing appropriateness of:

- *the design of the risk margin, in light of the work currently undertaken by EIOPA on the transfer value of liabilities, in the context of the Commission's Call for information;*
- *the assumptions regarding the asset mix of the receiving undertaking, in particular with regard to the assumption of risk-free investments. This assessment should take into account the potential interactions between the recognition of market risk and the use of the volatility adjustment and the matching adjustment in the risk margin calculation;*
- *the use of a fixed cost-of-capital rate for all insurance and reinsurance undertakings;*
- *the assumptions used to derive the cost of capital rate, including the absence of leverage and the derivation of the equity risk premium"*

Initial views of AAE Solvency II Risk Margin Workstream

Current Solvency II RM methodology

- The Solvency II RM is based on an ‘exit valuation’ that in theory targets a specific well-defined and implementable approach to ‘production’ of insurance liabilities (involving a ‘run-off’)
 - Aligns with broader market consistent focus of Solvency II
 - No apparent appetite from EU Commission to change this fundamental approach
- Current calculation per DR Articles 37-39, where $SCR(t)$ is projected reference undertaking (‘RU’) SCR, $r(t)$ is annualised risk-free rate and *CoC rate* is currently time-independent and set at 6% pa:

$$RM = CoC\ rate \times \sum_{t=0}^{T-1} \frac{SCR(t)}{(1 + r(t + 1))^{t+1}}$$

Desirable qualities for RM

- Workstream of course wants RM design to be theoretically sound
- But there may be trade-offs with other desirable criteria regulatory capital computations should exhibit, e.g.:
 - Robustness of end result
 - Ease of interpretability of the formulae involved
 - Simplicity of computation
 - Risk responsiveness
 - Avoidance of undue sensitivity to factors that are largely or wholly irrelevant to features the computation is aiming to capture

Topics initially highlighted by workstream

- 1) Overall magnitude and sensitivity to economic conditions (particularly interest rates)
- 2) Interaction with developments elsewhere: particularly the MOCE in IAIS's ICS (and the IFRS 17 Risk Adjustment)
- 3) Risk coverage: risks the reference undertaking ('RU') should be assumed to carry
- 4) Cost of capital (CoC) and discount rates to use
- 5) Handling of multi-year dependencies
- 6) Treatment of tax
- 7) Added later: interaction with Long Term Guarantee (LTG) measures (and related topics such as UFR and transitional measures) that arguably diverge from 'strict' market consistency

Overall magnitude and interest rate sensitivity

- Many commentators believe risk margin pitched too high, or even if pitched reasonably is too sensitive to interest rate movements
 - EIOPA figures for Q3 2016 indicate total RM for entire insurance industry of c. €210bn of which €150bn from life insurers and composites (> 45% of overall EU life insurance industry SCR). Issue across many member states
- High apparent sensitivity to interest rates
 - Seems to be related to long term guarantees within insurance contracts written by many EU life insurers
 - Hence interaction with LTG measures

Interaction with ICS MOCE etc.

- IAIS currently developing a risk-based global insurance capital standard (ICS). It is expected to include a concept similar to the RM, i.e. the Margin Over Current Estimate (MOCE). Current ICS field testing includes:
 - Cost of capital ('C-') MOCE: similar to Solvency II RM, but lower CoC rate (5% pa) or one varying according to economic conditions
 - Prudence ('P-') MOCE: Different approaches for life and non-life, but both aiming (in conjunction with capital requirement) to provide a targeted level of protection
- Thinking behind C-MOCE may be relevant to Solvency II RM review
- IFRS 17 risk adjustment concept also explored, but Workstream thought likely too principles-based to offer specific assistance

Risk coverage

- Assumed structure of RU important with a CoC approach. Some assumptions seem motivated to make calculations simpler, more robust or less open to ambiguity. Perhaps biggest issues are:
- Operational risk
 - Are consolidators likely to have better operational risk disciplines, because minimising operational risk is more important to them?
- Interest rate risk
 - Currently assumed can be hedged away. But is this always possible for long-dated risks e.g. relating UFR change risk?
- RU a shell writing no new business
 - Entity most likely to maximise diversification benefits may be most likely to win auction for insurance obligations

CoC rates and discount rates to use

- Are not mutually independent. Current formula can be generalised in two ways which are mathematically equivalent:

$$RM^* = \sum_{t=0}^{T-1} \text{fixed CoC rate} \times \frac{SCR(t)}{(1 + r^*(t+1))^{t+1}}$$

$$RM^{**} = \sum_{t=0}^{T-1} \text{varying CoC rate}(t) \times \frac{SCR(t)}{(1 + r(t+1))^{t+1}}$$

- So consider:
 - A. Overall level of CoC rate
 - B. Whether CoC rate should be time-varying and/or a risky-discount rate should be used

Overall level of CoC rate (1)

- CoC rate typically justified via a weighted average cost of capital (WACC), i.e. along the following lines:

Equity Risk Premium (ERP) \times Beta \times Leverage Adjustment

- The ERP ‘puzzle’:
 - Past realised excess returns (6-7% pa, forms the basis of the current CoC rate calibration) seem too high to be justifiable or, alternatively, equities can be viewed as having benefited from a historic repricing that is unlikely to be repeated
 - E.g. Norges Investment Bank (2016) propose a forward looking ERP of 4% pa

Overall level of CoC rate (2)

- Not easy to identify robust evidence of divergence between insurers and other corporates for other elements of WACC
- E.g. Damodaran (2019) quotes the following market betas:

	General insurance	Life insurance	Property / casualty insurance	Total market	Total market excluding financials
(Basic) beta	0.92	0.99	0.74	1.04	1.06
'Unlevered' beta	0.64	0.50	0.61	0.58	0.77
'Unlevered' beta corrected for cash	0.87	0.67	0.65	0.67	0.82

- Figures also fluctuate with economic conditions (although not by as much as implied by second ICS C-MOCE CoC rate approach)

Should CoC be time-varying (or discount rates be higher than risk free?)

- Using a fixed CoC rate and risk-free discounting contradicts market consistency for long-dated contracts if the ‘emergence’ of uncertainty through time has certain characteristics
 - E.g. mass lapse risk. Projected SCR for RM purposes assumes that mass lapse occurs at time t having not previously happened, for each t prior to contract maturity. However, if a mass lapse does occur then absolute size of possible mass lapse in subsequent years reduces.
- Appendix to paper analyses these contradictions in more detail
 - Can be addressed by having CoC rate taper through time (or by correspondingly increasing discount rate)
- Market consistency may also be contradicted if insurer has unilateral option to terminate (may influence definition of obligation lifetime)

Multi-year dependencies

- Draft paper explores such dependencies, and highlights that:
 - Emergence of uncertainty through time may be correlated: c.f. risks referred to in previous slide
 - RU may price risks in a way that exhibits multi-year dependencies: typical venture capitalist will discount ventures at a risky rate
 - Possible justification for using a different correlation matrix in SCR for RM versus base SCR:
 - base SCR is entity-specific
 - SCR for RM should theoretically target diversification of likely winner of auction to take over insurance obligations, so should ideally focus more on likely market-wide diversification levels

Tax

- Could influence CoC rate, but again no clear differentiator versus other corporates
- Current requirement that any LACDT should be ignored in RM calculation in theory conservative
 - But may be tricky to identify a practical approach that does not also offer scope for double counting or regulatory arbitrage

Interaction between RM and LTG measures

- A specific part of EU Commission call for advice
- Matching Adjustment (MA) and Volatility Adjustment (VA) arguably diverge from 'strict' market consistent principles, because impractical to measure value that might be ascribed to illiquidity in isolation
 - If illiquidity premium is 'capturable': presumably discount rate used should be adjusted accordingly, but some allowance should be included in RM for default risk introduced by relying on VA and MA
 - If illiquidity premium is 'illusory': RU won't necessarily want the asset portfolio, so revert to risk-free
- UFR: how to include UFR change risk?
- Transitional measures: timeline for phase-in an explicitly political decision, so outside scope of workstream analysis

Differences between the Solvency II risk margin and the IORP II risk margin equivalent

Solvency II RM versus IORP II risk margin equivalent

- No specific solvency requirements mandated by IORP II Directive
 - But an equivalent is implicit in recent IORP II Stress Tests and may also be included in EIOPA guidance to National Competent Authorities on ORA etc.
- In theory, *“Where technical provisions are not calculated “as a whole” IORPs should determine technical provisions as the sum of the best estimate and a risk margin based on the cost-of-capital approach”* (2019 Stress Test Annex 2.6.1)
- In practice, if assets exceed liabilities, 2019 Stress Test Annex 2.6.4 indicates that *“the risk margin should be 3% of the [gross] best estimate of non-pure DC obligations”*
 - A simplification, is it robust?
 - Treatment of operational risk (only type of risk for pure DC)?



Areas where feedback particularly welcome

Areas where feedback would be helpful

- Do you agree with suggestion to use a CoC that declines through time or an equivalent risky discount rate?
- How (if at all) should UFR change risk be included in RM?
- How, ideally, should the RM interact with MA and VA?
- What is the most appropriate treatment for operational risk within the RM?
- Are there other inherent differences between Solvency II and IORP II and if so should any conclusions be drawn?
- Are there other topics the Workstream should be seeking to explore?
- Who would like to read / comment on the draft paper when ready or to contribute in other ways to the Workstream?

Summary

- RM likely to be prioritised in 2020 Solvency II Review. Also relevant for IORPs. AAE keen to be able to comment effectively
- We think overall design of SII RM is theoretically valid
- But CoC rate arguably too high and some tapering and/or discounting at risky rates seems appropriate
 - E.g. ERP ‘puzzle’, way uncertainties emerge through time, venture capitalist pricing of business ventures
- Risk Coverage
 - Some areas of debate highlighted, including operational risk
- Interaction with LTG measures (and e.g. UFR change risk)
 - Challenging as the LTG measures arguably diverge from ‘strict’ market consistency