Report from the Risk Margins Taskforce

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Agenda

- Introduction to Risk Margins Taskforce
- Role
- Market practice
- Stakeholder views
  - APRA
  - Board, management, analysts
- Problems with current approaches
- Possible solutions and advancements
- Other areas for consideration
- Challenges and Opportunities
- Future of Taskforce
Introduction

• Risk Margins Taskforce was set up in July
• Current members:
  – Karl Marshall (Chairman) – Promina
  – Scott Collings – Finity
  – Andrew Houltram – Taylor Fry
  – Conor O’Dowd – PwC
  – Brett Ward (Temporary) – Promina
• Members (except Chairman) have contributed to industry thinking in this field
Role of Taskforce

- The role of the Risk Margins Taskforce can be summarised as follows

To provide a framework, tools, information and support to GI actuaries to help them better understand and assess the uncertainties associated with estimating insurance liabilities with a view to selecting risk margins.
Role of Taskforce

• Role involves:
  – Engaging stakeholders for their views
  – Initiating further research
  – Monitoring research and developments in Australia and internationally
  – Reviewing and aligning education material
  – Reporting to members as required
The story so far

• Short-term focus was to report at this seminar

• Efforts so far have focused on engaging key stakeholders, including:
  – GI actuaries via survey of reserving practices
  – Group and individual discussions with Approved Actuaries
  – APRA – Robert Thomson
The story so far

• Focused on understanding:
  – Current approaches to setting risk margins
  – Strengths & weaknesses of such approaches
  – APRA’s view of current practice and where they would like to see change
  – Gaps in the actuary’s ‘toolkit’ that should be a focus of the Taskforce
Market practice

- Large insurers
  - ‘Bolt on’ approach to net central estimate
  - Volatilities assessed by class and correlation matrix applied
  - Typically separate volatilities for claim and premium liabilities then correlated
Market practice

• Large insurers
  – Volatilities assessed using a range of approaches, including:
    • Stochastic analysis of past claims experience
    • Blended quantitative/qualitative approach (O’Dowd, Smith and Hardy)
    • DFA model output, particularly for short-tail premium liabilities
    • Time series analysis of loss ratios often employed to examine premium liabilities volatility
    • Judgemental overlay
Market practice

- Large insurers
  - Tillinghast and, to a lesser extent, Trowbridge papers sometimes used for comparative purposes only
  - Correlation matrices still heavily judgement based
  - Typically different margins for statutory accounts, regulatory accounts and management accounts
  - Approaches have evolved rapidly over last 5 years
Market practice

• Medium and small insurers
  – Some of these insurers, particularly medium ones, apply similar techniques to large insurers
  – However, lack of data and resources often a problem
  – Generally much heavier reliance on mainly the Tillinghast paper, but also the Trowbridge paper
  – Less developed in use of techniques employed by larger insurers
  – Often adopt the 75th percentile margins for both accounting and APRA requirements
  – APRA often concerned about insufficient justification of risk margins assessed
Market practice

• Reinsurers
  – Again, reliance on Tillinghast paper
  – Limited stochastic analysis but obvious issues with data
Market practice

• Runoff insurer issues
  – 99.5% risk margins apply when considering capital repatriation
  – Requires greater focus on volatility including:
    • Scenario testing and simulation
    • Reinsurance exhaustion and doubtful debt
    • Stochastic analysis
    • Non linear correlation, other dependency forms, copulas
Market practice

• Revision frequency
  – Large range of practice, some review the volatilities and margins each valuation, others retain margins for two or so years

• Diversification benefit
  – Some insurers reducing diversification benefits, sometimes to nil
  – Others use subjectively assessed discount factor
  – When diversification benefit modelled, normally appear high and difficult to justify
Market practice

• Level of disinterest in APRA risk margins
  – Strong focus on MCR multiple compared to components
  – Overseas parents
• Difficult classes to assess margins for
  – Small volatile portfolios, for example, small high layer catastrophe XOL portfolio
  – Non existent or sporadic claim experience
  – Asbestos
• APRA benchmarking
  – APRA benchmarking difficult to use due to inconsistencies
APRA view

• Large insurers
  – Reasonably comfortable with approach and justification
  – Would like to see a bit more stochastic analysis

• Medium insurers
  – Heavily reliant on Tillinghast/Trowbridge (about 3:1)
  – Reasons for not doing more analysis on own data normally relate to time, resourcing or inability to get data in right form
  – Would like to see more analysis of own data
  – Would like to see more justification and adjustment, if necessary

• Small insurers
  – Again, heavily reliant on Tillinghast/Trowbridge
  – Would like to see more justification and adjustment, if necessary
APRA view

• APRA view of adequacy of risk margins may be influenced by the approach an insurer takes to central estimate
• Linkage between central estimate and ‘bolt on’ risk margin uncommon
• The more limited the information available to an insurer, the greater the uncertainty and higher the risk margins APRA would expect to see
• Stochastic analysis normally an alternative rather than main approach
• Little analysis of adequacy of past insurance liabilities
• Methods are getting more sophisticated for capital repatriation
APRA view

• ‘Fair value’ played a role in the decision to introduce a 75% POS

• APRA actively encouraging further research into risk margins and would like to be involved

• Looking to provide further benchmarking studies in useful format
Stakeholder views

• Boards
  – Typically view APRA 75th percentile risk margins as inherent in the actuarial advice, focus mainly on total MCR relative to total actual capital
  – Considerable disinterest beyond undiscounted estimates and MCR by foreign parents
  – Medium/Small insurers often adopt the 75th percentile margins for accounting purposes
  – Boards of large insurers will focus on volatility assessment, but mainly examine a table of levels of sufficiency
Stakeholder views

• Management
  – Management accounts will often reflect the 75th – 80th percentile risk margin or fair value margin with any excess held at a head office level
  – Main focus is on understanding any changes to these margins, which tend to be less dramatic than risk margins at high levels of sufficiency
Stakeholder views

• Analysts
  – View risk margins with higher levels of sufficiency as providing greater profit smoothing opportunity hence of greater value
Problems with current approaches

• Measuring the right drivers of insurance liability volatility
  – Systemic sources of volatility
    • External to the reserving process
    • Intrinsic to the reserving process (‘model error’)
  – Measuring past volatility
    • Differentiate systemic variance from other or measure as a whole?
    • Can systemic volatility in the future be measured from the past?
  – Actuarial judgement
    • How is actuarial judgement about the future environment reflected in volatilities and correlation? Does it add or subtract?
Problems with current approaches

• ‘Bolt on’ approach, inconsistent with central estimates
  – Different processes for measuring mean and standard deviation of the reserving distribution
  – Difficult to justify results
  – Difficult or impossible to justify assumptions around ‘diversification benefit’
  – Approach is especially inappropriate at high probabilities of adequacy or for distributions with high uncertainty
Problems with current approaches

• Diversification benefit
  – Subjective actuarial judgement still plays a significant role here
  – Limited technical analysis of past correlations
  – Is ‘same actuary’ effect being adequately allowed for
Problems with current approaches

• Reliance on benchmarks
  – Benchmarks can only be a broad check on the adopted assumptions
    • Portfolios differ (requirements of PS300)
    • Size needs to be taken into account
    • Systemic / independent mix is important
  – State-of-the-art has moved on since 2001 (Tillinghast, Trowbridge)
  – Are independent variance CoVs being correctly adjusted for inflation?
  – APRA benchmarks relate to current practice not appropriate practice
  – APRA benchmarks inconsistent
Possible solutions & advancements

• New quantitative modelling approaches
  – Stochastic models
    • Estimated prediction error based on past variation in data
  – Individual claim models
    • Less variation through more powerful fit
    • More powerful intelligence on trends (and attribution to individual claim segments) means improved diagnostics on systemic variation
  – Past systemic risk is better explained
    • But still a problem to quantify for the future
Possible solutions & advancements

• Quantitative/qualitative risk framework
  – Top-down view of where reserving risk arises
    • Apply stochastic modelling techniques where it is important (‘quantitative’)
  – Assesses future systemic variability
    • Based on knowledge of the past and future business risk (‘qualitative’) evaluation
  – Risk aggregation model arises naturally from shared risk inter-connects (eg. shared data systems)
Possible solutions & advancements

• Quantitative/qualitative risk framework
  – Requires blend of actuarial and other risk professional skill sets
  – Main problem is not having a consistent and sound framework for the application of subjectivity
    • How do we know we have identified all the risks?
Possible solutions & advancements

• Consistency of approach
  – Consistency in general methodology and application, not necessarily results
    • What are we measuring – total variability in hindsight reserves, regardless of source
    • Better approaches to hindsight reserve measurement including internal attribution to root cause
    • Operational risk database (for eg. data errors)
  – Better benchmarks
    • These compare results, need to be used with care
  – Disclosures
    • Hard to suggest better disclosures without consistency in methodology and application
Other considerations - IFRS

- IFRS giving the concept of ‘Fair Value’ margins more airtime
- Focus cannot be limited to risk margins with particular probabilities of adequacy
- What is a ‘fair’ price for the transfer of insurance liabilities between a willing buyer and a willing seller?
- ‘Fair Value’ played a significant role in the decision by APRA to adopt a 75th percentile risk margin
- Research and developments in this area must be monitored and disseminated to interested parties
Other considerations - education

• Respondents to the reserving practices survey indicated that the syllabus inadequately prepares actuaries for risk margin work

• Current syllabus covers uncertainty, risk margins, fair value margins, modelling approaches and Tillinghast/Trowbridge risk margin reports

• One has to work hard to draw all of the information together

• Little material on how an actuary could make allowance for sources of uncertainty not covered by traditional modelling approaches and benchmarking reports

• Material perhaps lends itself to a ‘bolt-on’ approach
Opinions about risk margins

- I would like to see more research on this topic
- There are sufficient items on this at professional meetings
- There is sufficient actuarial literature on this subject
- Current syllabus of the Institute adequately prepares actuaries for this work

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Challenges

- Wide range of approaches used in market
- ‘Bolt on’ approach still most common
- Lack of consistent and sound framework for the assessment of risk margins
- Tillinghast/Trowbridge reports still play a significant role
- APRA concerned about limited justification of risk margins for small/medium insurers
- Education material incomplete and cumbersome
- Actuaries looking for more support and research
Opportunities

• Opportunity to provide actuaries with greater support in this area:
  – A more robust framework
  – A more complete suite of tools
  – Updates on research and developments
  – Better information for benchmarking
  – Improved education material
  – Regular engagement and feedback

• Actuaries and stakeholders will have more comfort in the advice being provided
Future of Taskforce

- Provide a consistent and sound framework for assessment of risk margins including quantitative and qualitative tools
- Initiate further research into risk margins:
  - ‘Quantitative’ analysis
    - Review and update Tillinghast analysis
    - Descriptions of deterministic/stochastic approaches
    - Strengths and weaknesses in these approaches
    - Analytical approaches to assessing diversification benefits
    - Tools available to implement ‘quantitative’ approaches
  - ‘Qualitative’ analysis
    - Volatility not covered by ‘quantitative’ analysis
Future of Taskforce

- Actively monitoring research and developments in Australia and internationally
- Liaise with APRA to improve benchmarking report, ie consistency of insurer disclosures and information provided
- Review of education material
  - Will involve Taskforce, GIPC, GI Course Leaders and Institute
- Actively report to members on Taskforce activities – probably via GIPC Newsletter
- Anyone interested in helping the Taskforce in any particular area is welcome
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