

Reserving for General Insurers

– *Current Challenges and Future Opportunities*

SEMINAR



Institute of Actuaries of Australia

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SHANGRI-LA HOTEL 176 CUMBERLAND ST, THE ROCKS, SYDNEY

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

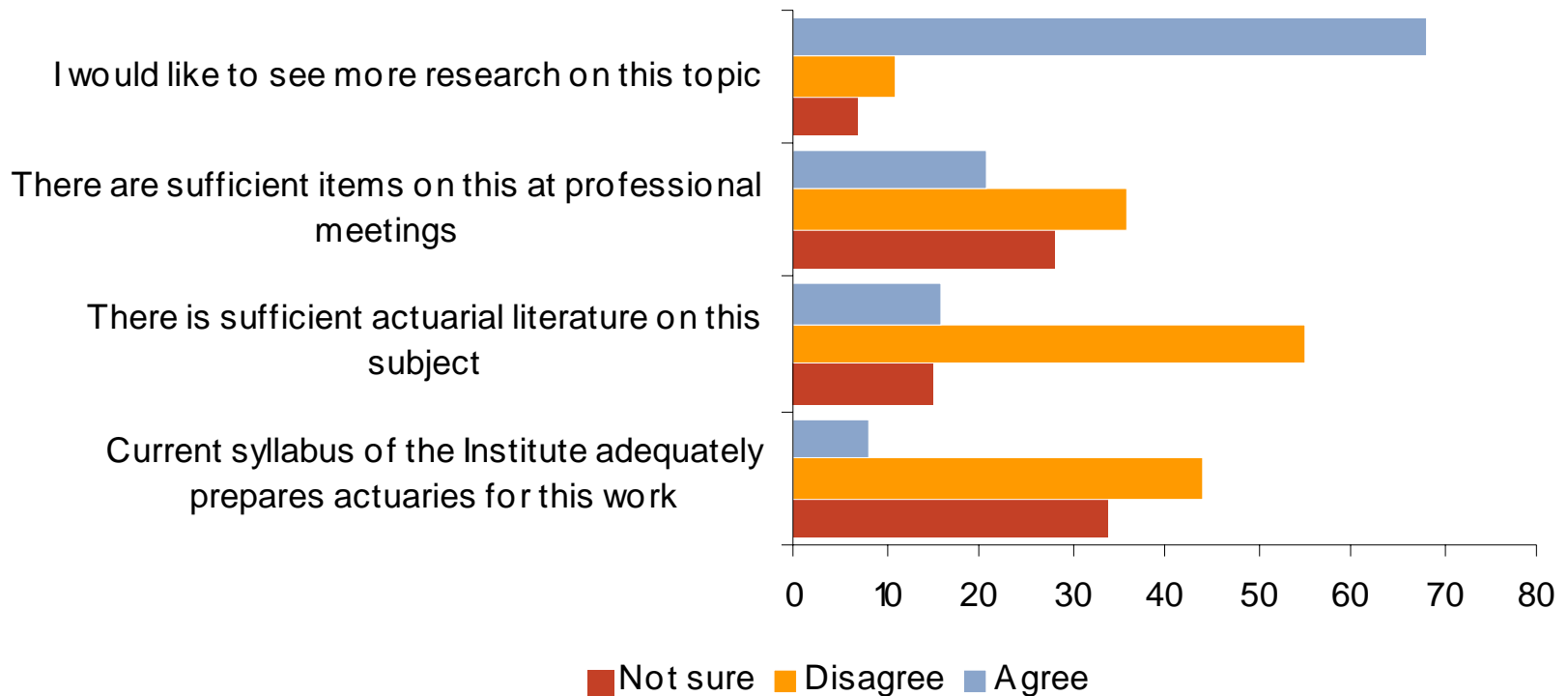
- IFRS giving the concept of 'Fair Value' margins more airtime
- Focus cannot be limited to risk margins with particular probabilities of adequacy
- What is a 'fair' price for the transfer of insurance liabilities between a willing buyer and a willing seller?
- 'Fair Value' played a significant role 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

Challenges

Opinions about risk margins



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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