A Reserve Uncertainty Framework
from the GI ROC MUQ Working Party

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Keith Brown, Chair MUQ WP

With special thanks to current and previous members of the MUQ Working Party

14 September 2018
Agenda

• Introducing the Reserve Uncertainty Framework
• Overlap with reserve-risk assessments?
• What’s your opinion?
• Summary and questions
Introducing the framework
Percentiles – the uncertain uncertainty

- Reserving ultimates are estimates, and some reserving practitioners illustrate this point by adding percentiles to show the range
- As you know, percentiles also have to be estimated

- Percentiles are often more uncertain than the point estimate and frequently have no mention of their own accuracy
- In reserving, we recommend thinking of the user and using qualitative methods and not to relying solely on percentiles
Framework aims

• Promoting development of best practice in measuring and communicating reserve uncertainty; by

• Supporting the generation of wider risk considerations
  – Breaking the problem down and structuring the thought process
One framework, two levels

- A skilled actuary will undertake comprehensive analysis and then communicate the material elements.
Framework uses

By the actuary

• **Base structure** for their own internal framework
  – Record of areas considered
  – Governance and validation
  – Consistency, with little change needed from year-to-year

• **Articulation tool**
  – For example, to support communication to stakeholders

• **Pooling knowledge** and developing best practice in the profession

• **Training tool**

By the user

• **Awareness** of areas of uncertainty

• Provides **inspiration** for users to ask their actuaries powerful questions
The reserving uncertainty framework
The framework document

Reserve Uncertainty Framework

Measuring Uncertainty Qualitatively (MUQ) Working Party 2018

January 2018

Reserve Uncertainty Framework

MUQ working party 2018

The framework document

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Underwriting Risk

How has the level of cover changed?

Have any of the following changed?

- Terms and conditions
- Limits
- Types of cover
- Capacity

- Premium
- Renewal
- Policy
- Exclusions

For more information, please refer to the working party’s minutes.

Exposures

How will the standing exposure change over time?

Have the risks been identified and quantified?

What are the exposures and risk appetite?

How will the uncertainty and exposure change over time?

Is there a risk management plan?

For more information, please refer to the working party’s minutes.

Pricing Risk

How have the pricing bases changed over time?

Have the pricing bases been changed?

Has the pricing level been changed?

For more information, please refer to the working party’s minutes.

Institute and Faculty of Actuaries
Marine risks in a new geographical area example

- **Underwriting**
  - What has been underwritten?

- **Data**
  - Is the data accurate and understood?

- **External influences**
  - Do we understand the new geographical region?

- **Expert opinion**
  - Can the initial views be neutral?

- **Expenses**
- **Random**
- **Parameter**
- **Model**
- **Expert opinion**
- **Behaviour**
- **Lack of knowledge**
- **Reserving cycle**
- **Data**
- **Control risk**
- **Process changes**
- **Communication**
- **Internal/process**
- **Other**
- **Other**
- **Internal/process**

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Example 2
“Oblong Rate” – an example response

Best Estimate of Uplift required is £34m

<table>
<thead>
<tr>
<th>Contributor</th>
<th>Uplift required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base Assumption of 0.0%</td>
<td>£29.0m</td>
</tr>
<tr>
<td>Allowance for issues in claims data</td>
<td>£2.5m</td>
</tr>
<tr>
<td>Allowance for change in speed of settlement</td>
<td>£2.5m</td>
</tr>
</tbody>
</table>

Key Points

1. Expert input from claims team suggests new rate highly likely to be 0.0%
2. Other insurers suggesting the same
3. Assumes new Oblong rate stays the same for the foreseeable future
4. Does not allow for minimal reinsurance recoveries
5. Includes small uplift for Household Liability

Key Areas of Uncertainty

• We do not know what the Oblong Rate will be when it is announced and the uplift is highly sensitive to this
• We do not know if it will affect claimant behaviour
• Some of the information on the base claims data looks incorrect, which we have attempted to allow for
Using the framework with capital modelling
Looking at possible feedback between reserving and capital modelling

• We have just started work to look at how the Reserve Uncertainty Framework could be used in work on reserve-risk assessments for capital models and risk management

• We are working on several key themes
  – Can the framework be used to generate ideas for risk mitigation? – linking risk identification to management actions
  – How can the framework be used to help companies evidence thinking around reserve risk and what are regulators’ opinions on this?
    • No plans to suggest new standards to work from!

• We also look to reach out to a comprehensive set of potential users for feedback, especially those below, to understand diverse views
  – Smaller actuarial departments
  – Developing markets
  – International members
Use in reserve risk assessments

• The objective is to bring together reserving and capital modelling actuarial practitioners, so that organisations can better manage reserve risk

• We also think that there may be some clear links to regulatory reports, such as Own Risk and Solvency Assessments (ORSAs)

• We are not looking to suggest rules or standards, and may augment the Reserve Uncertainty Framework or produce separate examples of how the framework could be used in risk assessment and management

• We encourage your input, and plan to have the work complete by GIRO
Why not get involved?

• Want to help and **contribute to** thought leadership in extending our framework to **reserve risk** component of capital models?
  
  – There is a rolling vacancy open [here](https://www.actuaries.org.uk/get-involved/volunteering-ifoa/volunteer-vacancies/giroc-measuring-uncertainty-qualitatively-working-party-members)

• Need or want to **find out more about the reserving side**?
  
  – We have a **rolling vacancy** looking at wider areas such as IFRS 17 and other topics to help on allowing for reserve uncertainty using qualitative methods
Our website

- The full framework to download
- References and our other work
- Past presentations

Type “MUQ” into the IFoA search bar

Summary

• We have shown you our Reserve Uncertainty Framework
• We hope you find this useful for your future reserving work
• We are working on extending this for uses in risk assessment and management
• We need your help – please give us your view, or even better come and join our working party!
Expressions of individual views by members of the Institute and Faculty of Actuaries and its staff are encouraged.

The views expressed in this presentation are those of the presenter.