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Measuring Uncertainty Qualitatively (MUQ) Working Party

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22 April 2015

History - GIROC UK Reserving Survey

Practitioners

- Personal lines Reserving Actuaries
- London Market Reserving Actuaries

Stakeholders

- Ratings agencies
- Regulatory bodies
- Other Stakeholder Groups (CRO Forum, CFO forum etc.)
- Investment analysts
- Executive and non-executive directors/Senior management



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GIROC UK Reserving Survey - Conclusions

No appetite for new reserving methods

- Chain ladder and BF still King

Rise of diagnostics

Overall positive feeling

Increased recognition and understanding at board level

Communication

- Not the issue it once was
- Greater engagement from senior management
- Reserving actuaries embedded in companies
- More detailed and explanatory reporting
- Reserving work being fed back into strategic decisions



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But...

Uncertainty

- both measurement and communication

Reporting

- Practice varies considerably from actuary to actuary
- GIROC recommending more to be done on sharing best practice

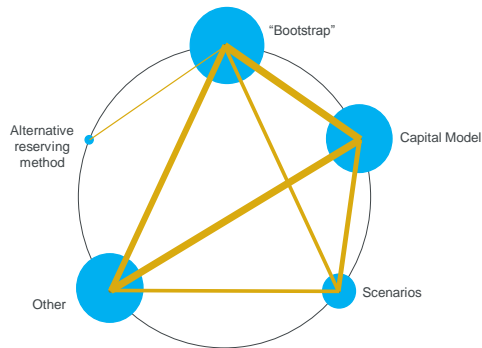


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Survey results

Measuring uncertainty



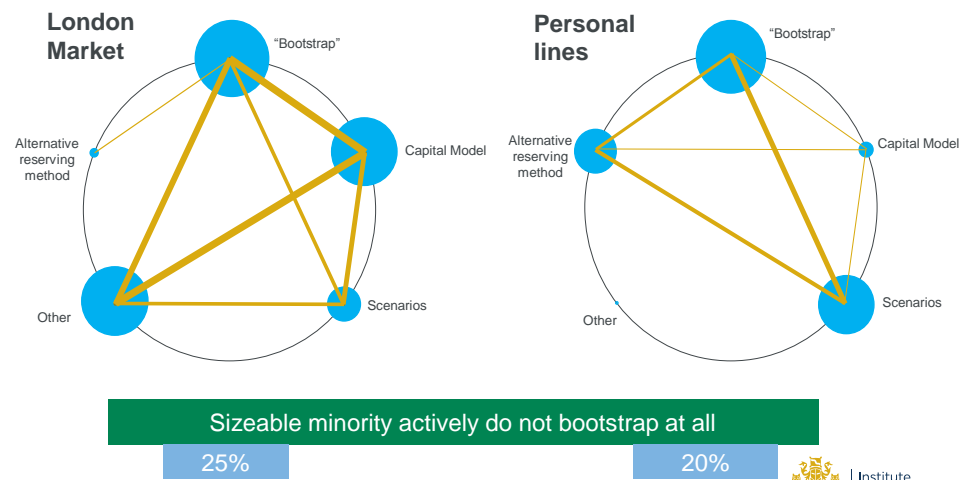
Survey results

'Other' methods

- Benchmark CoVs (coefficient of variance)
- Uncertainty around development factors
- Frequency/severity – stochastic methods
- Tails

Survey results

Measuring Uncertainty



Survey results

Communication of uncertainty



Coordination with other working parties

GIROC working parties

- Pragmatic Stochastic Reserving working party
- The Good Actuarial Report
- Herd Mentality

- Measuring Uncertainty With Professionalism
 - Framing
 - Modelling
 - Reporting



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MUQ Measuring Uncertainty Qualitatively

Remit

- Consider all areas of uncertainty outside of “bootstrap”* methods
- **Not** specifically focussing on communication

Aim

Stage 1:

- Gather current thinking and what has been done to date
- Collate in one easily accessible place

* “Bootstrap” - a generic term to incorporate stochastic chain ladder methods such as ODP bootstrap, also includes Mack method



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MUQ workstreams

'Other' methods from the survey
GLMs on aggregate triangles
Individual claims reserving

Effectiveness of methods
Data uncertainty

Uncertainty framework
Expert judgement
Language

What we can learn from elsewhere

- Australia
- US
- Ireland



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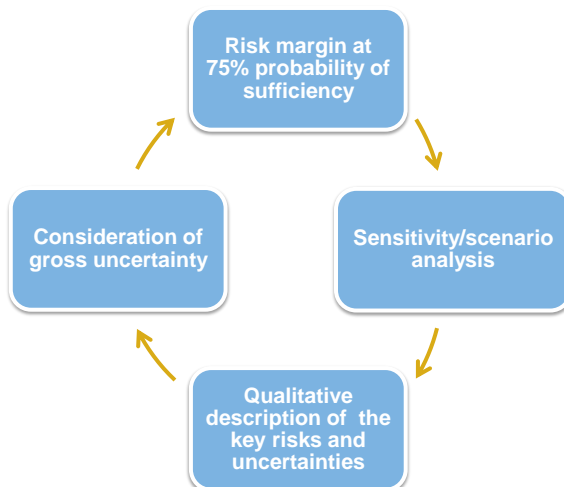


An Australian perspective



Uncertainty

Prudential requirements for an Appointed Actuary



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Risk Margin Requirement in Australia

Some history



Insurance liability provision to include a risk margin that is at least the greater of:

- A value which provides an insurance liability provision with a 75% probability of sufficiency; and
- One-half of a standard deviation above the mean.



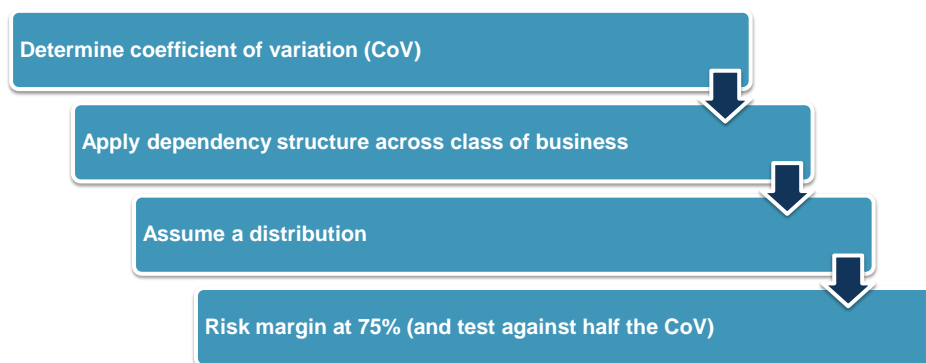
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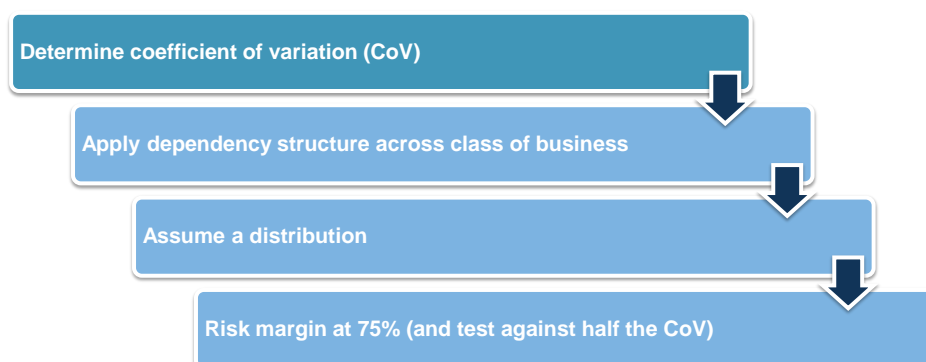
Determining risk margins – ‘Bolt-on’ approach

Determine mean estimate and risk margin separately



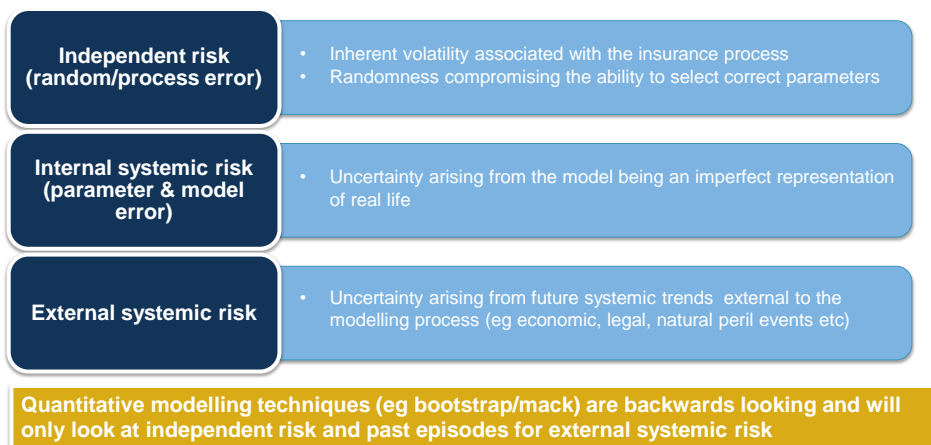
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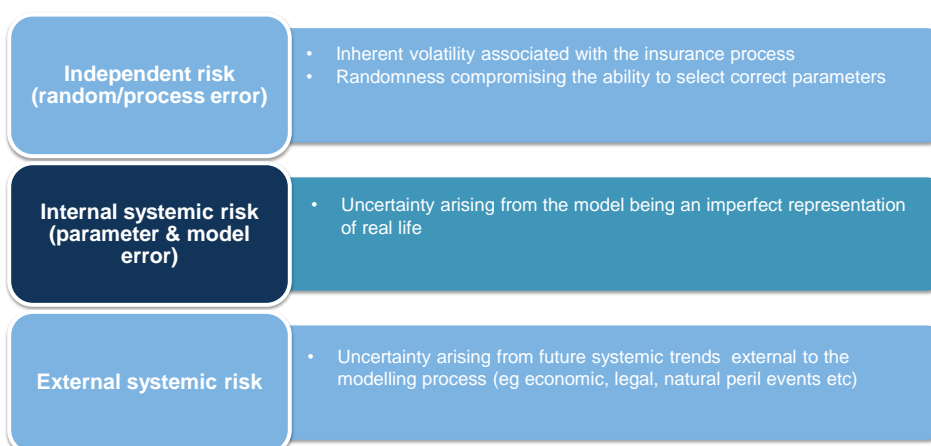
Sources of uncertainty

What could cause the valuation estimate to be wrong?



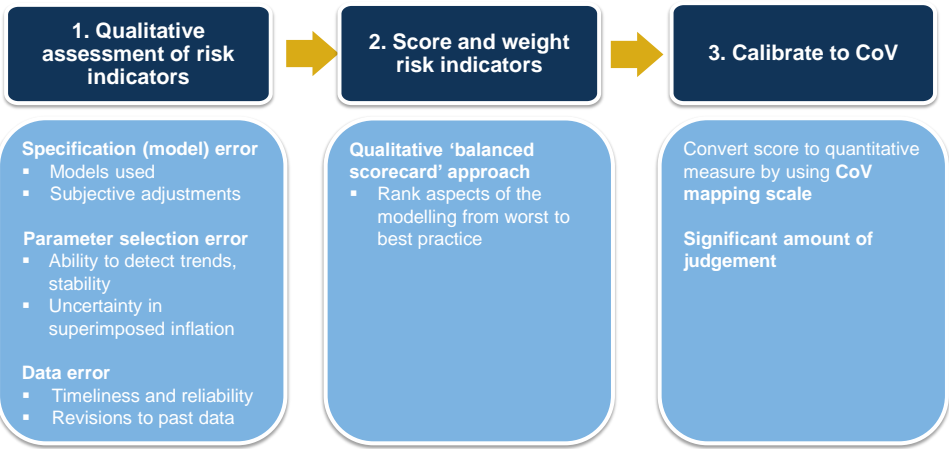
Sources of uncertainty

Internal systemic risk – how wrong could the actuary get it?



‘New’ Framework

Internal systemic risk – how wrong could the actuary get it?

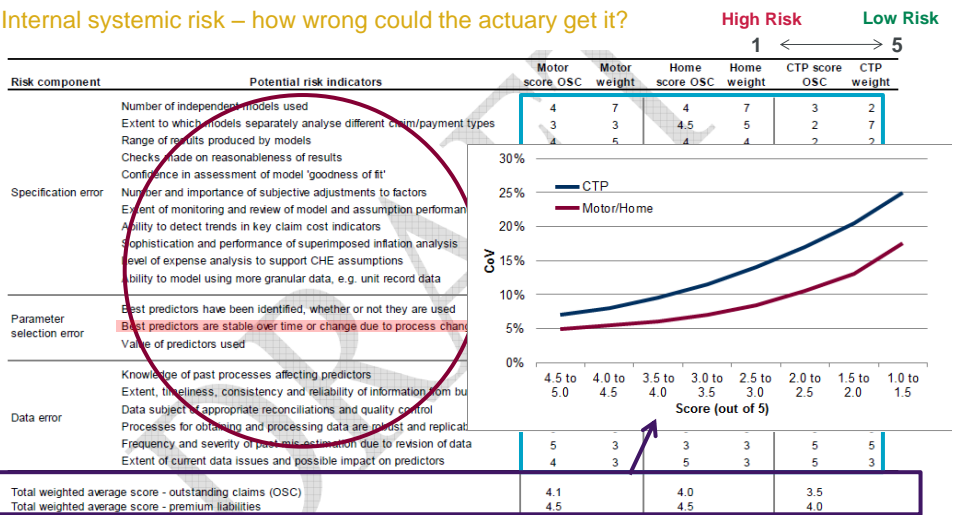


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‘New’ Framework

Internal systemic risk – how wrong could the actuary get it?



Source: ‘A Framework for Assessing Risk Margins’, Prepared by the Risk Margins Taskforce

<http://www.actuaries.asn.au/Library/Framework%20for%20assessing%20risk%20margins.pdf>

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Sources of uncertainty

Internal systemic risk – how wrong could the actuary get it?

Independent risk (random/process error)	<ul style="list-style-type: none">Inherent volatility associated with the insurance processRandomness compromising the ability to select correct parameters
Internal systemic risk (parameter & model error)	<ul style="list-style-type: none">Uncertainty arising from the model being an imperfect representation of real life
External systemic risk	<ul style="list-style-type: none">Uncertainty arising from future systemic trends external to the modelling process (eg economic, legal, natural peril events etc)



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‘New’ Framework

External systemic risk – non random risks outside the modelling process

	Economic and social risks
	Legislative, political and claims inflation risk
	Claim management process change risk
	Event risk
	Latent claim risk
	Recovery risk



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Representing uncertainty

Further requirements

Sensitivity analysis

Scenario analysis

Qualitative description of the
key risks and uncertainties

Consideration of gross
uncertainty



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CHECKLIST

- ✓ Are you adequately capturing all sources of uncertainty?
- ✓ Does the Board have appropriate understanding?
- ✓ New approaches to estimating and reporting



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MUQ - Get involved

Still open to new volunteers

- via IFoA volunteering pages, or email Sarah

Share your thoughts and experiences with us

- Particularly if you have experience of
 - Benchmark CoVs
 - Uncertainty around dev factors
 - Tails
- Or any alternative methods

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Questions

Comments

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.



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