

GIROC Research Workstream

James Orr – Workstream Lead

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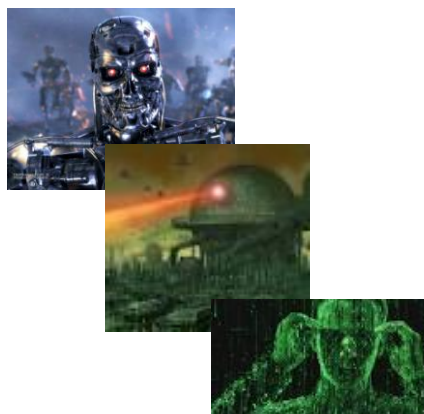
Overview

- Background
 - Two Futures
 - GIROC
- The Challenge
 - Best Estimates and Reserve Uncertainty
 - Questions and Data
- Methods and Models
 - Research and Practice
- GIROC Research Workstream Appeal
- Questions

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Looking to the Future

- What if “GI Reserving” fails?
- How might this arise?
 - under-provisioning
 - under-capitalisation
- Where might this emerge?
 - widespread systemic failure
 - extreme idiosyncratic failure
- What root causes?
 - inadequate methods
 - inappropriate models
 - failed assumptions
 - poor judgement



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An Alternative Future

- Crisis (and scandal) avoided
 - reliable liability estimation
 - appropriate capital levels
- Fit-for-purpose actuaries
 - good business knowledge
 - using the right methods
 - running appropriate models
 - sound judgements



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Our Efforts to Find a Safer Path

- General Insurance Reserving Oversight Committee – GIROC
 - *Securing the Baseline*
 - *Research*
 - *Education*
- Continuing the change agenda set out by GRIT
- Looking to support members, recognising
 - other distractions...
 - high levels of demand for members' time
 - difficulties identified in previous initiatives

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The Challenge – GIROC Research Workstream

- What work can we do now:
 - to better equip reserving actuaries in the future?
 - using existing research?
 - commissioning our own research?
- Okay, but what is the question we're trying to answer?
 - is there more than one question?
 - do we even know what good or better looks like?
 - ...and if we did, how would we test or prove this?

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Best Estimates

- Fundamental role of reserving actuaries
 - to provide reliable liability valuation estimates
- Essential to effective running of insurance firms
 - critical to financial control of firms
 - major component in financial reporting
 - foundation of solvency assessment
 - feeding into pricing and capital assessment

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Reserving Uncertainty

- A key element of ICAS
- Central to appropriate internal models
- Highlighted as useful context by GRIT and in GN12, TASs,...
- Unfortunately,...
 - very difficult to quantify with confidence
 - limited by available data
 - difficult to verify, even in hindsight

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Questions and Data

QUESTIONS

- What is a better estimate?
 - defining accuracy
 - defining robustness
- Costs and practicalities:
 - data requirements?
 - system requirements?
 - software?
 - analytical capability
 - will benefit justify costs?

DATA

- To develop and test methods
- Complete
 - fully developed, preferably
 - consistent / explicable over time
 - if simulated, with distributions
- Representative
 - over a range of applications
- Of sufficient resolution

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Methods and Models

METHODS

- Merits of “simple flawed” tools
 - better results from skilful use?
- Better at dealing with complexity?
 - assimilating extra data / info
 - flexible, dealing with trends
- Problems of reproducibility
 - key to scientific approach
 - underlies “Tiner Principle”...
 - ...reflective of uncertainties?
- Failures → revisit **MODELS...**

MODELS

- Representations of the World
 - ultimately limited...
 - ...and “wrong”...
 - ...but can be useful
- Can leverage results
 - from other fields
 - e.g. inform and give insights
- Provide useful frameworks
 - identifying key elements
- Evolve into **METHODS...**

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Research and Knowledge Transfer

- Society benefits greatly from cross-over technology
 - e.g. Internet, Google, catastrophe modelling
 - ideas matter in a service / knowledge-based economy
- Universities employ thinkers
 - developing frameworks in which to look at problems
 - developing solutions to those problems
- “The Reserving Problem”?
 - is it expressible in a simple / closed form?
 - would a solution be scalable and universal?
 - is it a “Problem” or a “Puzzle”?

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Knowledge Transfer – To Whom?

- **homo acturius (generalis)**
- **c.f. homo economicus**
 - rational
 - narrowly self-interested
 - c.f. homo reciprocans
- **typically a lapsed mathematician**
 - or a talented economist...
 - or an idealistic physicist...
- **a survivor of the CTs**
 - good with spreadsheets
 - but success and seniority means less Excel-time...
- **can we re-train him/her?**

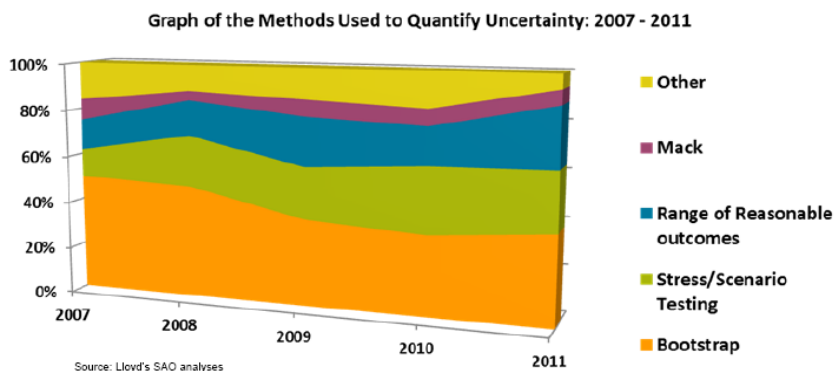


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How are Reserving Actuaries Quantifying Uncertainty? [Data from Lloyd's – slide *stolen* from Jerome Kirk]

- SAO reports comment on methods used to estimate reserve uncertainty...
 - ... and the Bootstrap remains the most common approach

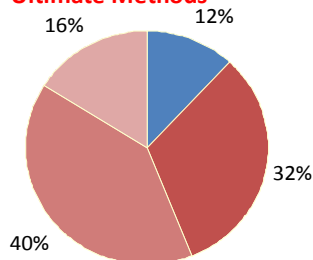


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Methods and Models in Use

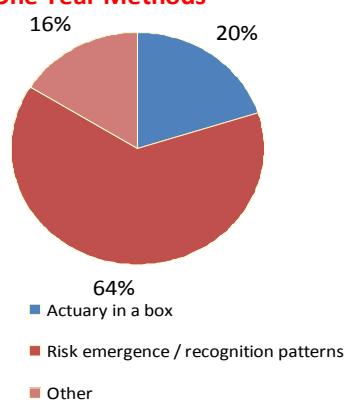
Ultimate Methods



- Mack Bootstrap
- ODP Bootstrap
- Parametric*
- Other

*Lognormal used for all parametric models

One Year Methods



- Actuary in a box
- Risk emergence / recognition patterns
- Other

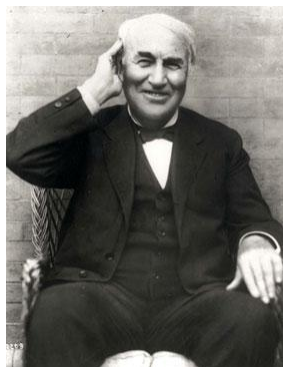
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GIROC Research Workstream – Next Steps

1. Survey of Influential Papers
 - call to arms for GI sector
 - ...
2. Practitioner Workshop
 - what is the question?
 - what data might we use?
3. Commissioning Scoping Paper
 - Profession defines scope
 - not reliant upon volunteers
 - but needs to reflect their needs

"Results! Because, man, I have gotten a lot of results. I know several thousand things that won't work."

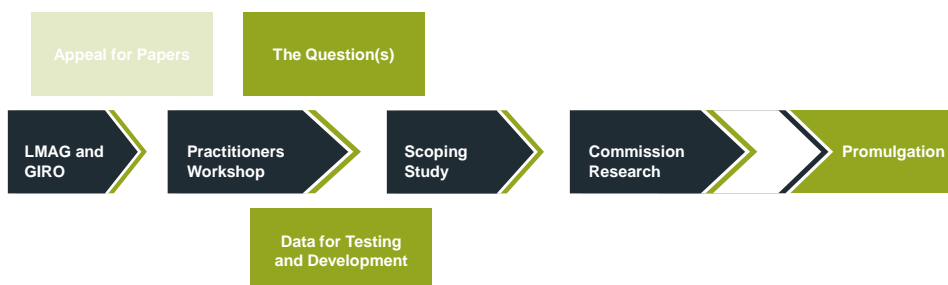


Thomas A. Edison

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GIROC Research Workstream



Previous successful *Thought Leadership* projects have followed a similar structure, including:

- *Mortality Research Steering Committee*
- *Discount Rates Steering Committee*

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What do we want from you?

- Think about this:
 - this is our future
 - some of us have longer “to go”
 - a complex, interesting challenge
- Think about what you might give:
 - Practitioners Workshop?
 - framing the question(s)?
 - defining / finding the data?
 - commissioning the research?
 - being on the steering group?
 - sharing the glory?



Derek Newton, Houston Texans

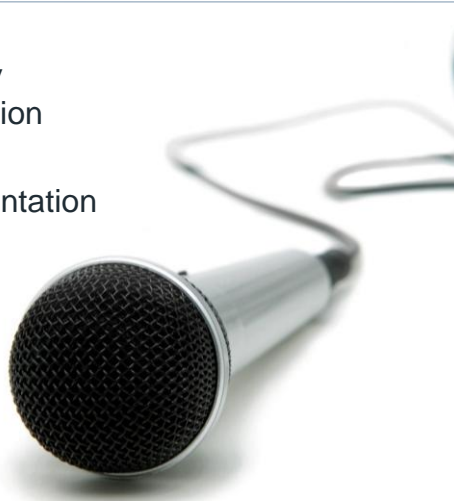
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