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
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

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
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

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?
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

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
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

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…
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”?  

Knowledge Transfer – To Whom?

- homo actuatoris (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?
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

Graph of the Methods Used to Quantify Uncertainty: 2007 - 2011

Methods and Models in Use

Ultimate Methods

- Mack Bootstrap: 16%
- ODP Bootstrap: 40%
- Parametric*: 32%
- Other: 12%

One Year Methods

- Actuary in a box: 64%
- Risk emergence / recognition patterns: 16%
- Other: 20%

*Lognormal used for all parametric models
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

GIROC Research Workstream

Appeal for Papers  The Question(s)  LMA and Giro  Practitioners Workshop  Scoping Study  Commission Research  Promulgation  Data for Testing and Development

Previous successful Thought Leadership projects have followed a similar structure, including:
- Mortality Research Steering Committee
- Discount Rates Steering Committee
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?

Questions or comments?

Expressions of individual views by members of The Actuarial Profession and its staff are encouraged.

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