The Actuarial Profession

making financial sense of the future

Society of Actuaries in Ireland Discussion Session

Susan Dreksler and Jerome Kirk : GIROC SII TP Working Group

Solvency II TPs – What will Actuaries be doing differently?

10 September 2012

What we would like to discuss today

Introduction – Susan Dreksler

Topics for discussion

- Premium provisions – Susan Dreksler
- Validation – Jerome Kirk
- Binary events – Susan Dreksler
- Reinsurance – Jerome Kirk (if we get time)

Introduction – Susan Dreksler

Documentation

Segmentation

Guidance

Data

Expenses

Lapses

Premium Provisions

Contract Boundaries

“What is changing?”

IFRS

Cashflows

Actuarial Function

Expected counterparty default

Discounting

Reinsurance

“Best estimate”

Binary Events

Validation

Risk Margins

The working party

Members

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Objectives

- Education/raising awareness
- Helpful insight, suggested approaches including examples
- ...but NOT guidance

Current work, future plans

- Presentations: GIRO
- Sessional Paper: Early 2013

Premium provision – Susan Dreksler

Premium Provision

The basics

- An estimate of gross and net cashflows corresponding to the future exposure period of existing business
- Discounted best estimate cashflows for:
  - Premiums
  - Claim indemnity costs
  - Expenses:
    - allocated and unallocated claims expenses
    - commission & administration costs

Premium Provision – Practical Issues

Claims liability

- Underwriting vs accident year
  - impacts the exposure coverage
- Which loss ratio?
  - Plan/last year’s/pricing/something else?
- Cashflow projection: payment patterns
  - Reinsurance

Premium Provision – Practical Issues

Data, granularity and allocation issues

- Differences in terminology, data and high-level adjustments
- New data providers
  - process challenges
  - division of responsibilities for assumptions and validation
- Granularity issues
- Investment management costs: *Is it consistent to allow for full investment management costs when only crediting risk free rates of return?*

Premium Provision – Practical Issues

And the old favourites:

- Contract Boundaries: dealing with them in an appropriate and proportional way
- Unearned Premium Reserves: how much focus did these really get before?
- Consistency with your capital model: ensuring these exposures aren't double counted (or missed…)
- Reinsurance: ensuring correspondence between the benefits and cost, understanding the reinsurance creditor amounts on the balance sheet

Validation – Jerome Kirk

Validation – the challenge

Required to validate data underlying TPs

- Reconciliations and reliance on third parties
  - especially auditors and finance functions

Required to back-test and validate methods/models

- demonstrate the applicability, relevance and appropriateness of methods and results
- assumptions underlying the calculations are regularly compared against experience
- encourage understanding of how cashflows may emerge and possible flaws in the calculation process

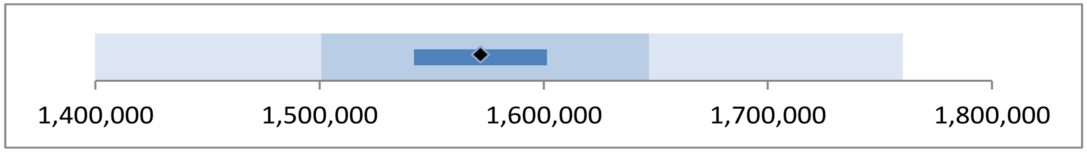
Validation – current status

- Validation is already standard actuarial practice
  - Included in both TAS D & M
- Examples in proposed guidance are already common approaches
  - Percentiles, analysis of residuals and AIC/BIC
  - Ratios: Settled / Reported and Paid / Incurred
  - Use of development patterns graphs
  - Parallel testing, experience investigations
- Is this a documentation issue?

Validation – practical issues

What can you do differently?

- Bootstrapping methods can support the assessment of the back testing results
  - Allows for granular (LoB/Year) and aggregate tests (LoB)
  - Predicted (distributional) vs. Actual (one observation)



  - But there are caveats
    - not perfect: require more validation itself, does not cover model risk
    - works well for gross but not necessarily net (or R/I recoveries)
    - normally invovles shifting mean of resulting distribution to replicate BE

Validation - discussion

Possible points for discussion

- Does validation need to be improved?
- If so, is it the “new” requirements of Solvency II?
- Is this just a documentation issue?
- Should there be standard validation for common methods?
- Governance: who is validating TPs - the actuarial function?
- Are independent reviews the solution?
- How often should validation take place?
  - for every aspect of the calculations?

Binary events – Susan Dreksler

Binary Events – the challenge

What is a Binary Event ?

- Definition from Groupe Consultatif (2008)
- Best estimate is the average of all possible scenarios
- Some weight has to be given to losses with low probability but high cost – we call these Binary Events
- Examples
  - New type of latent claim
  - Legislation affecting claims retrospectively
  - High inflation environment

Binary Events - background

Guidance

- QIS 5 – may implicitly allow for all possible scenarios,

  e.g. by use of chain ladder
- Directive & EIOPA – best estimate is a weighted average of all possible scenarios, but a proportionate application is required.
- Lloyd's – suggested method based on comparison of means of full and truncated distributions, states method sensitive to assumptions and difficult to validate
- Concern from firms over limitations of guidance

Binary events
Sue's (rather crude) definition

The difference between

a true best estimate

and

what you've got

Not necessarily just high severity, low probability events

Binary Events – current approaches

How are firms calculating a loading?

- Methods still being developed
  - No consensus
- Assessing probability and severity of representative scenarios
- Truncated distributions
- Apply as percentage load
  - Lloyd's guidance refers to indicative range 2%-5%
  - some using zero uplift as existing methods allow for range of outcomes

Binary Events - discussion

Possible points for discussion

- Should this be a capital issue rather than addressed by a small percentage uplift on Technical Provisions?
- Risk of manipulation: Could the Binary Events load be used as a contingency margin?
- Should binary events be allowed for in IFRS/GAAP reserves?
- Is the UK focus on Binary events consistent with the rest of the EU?
- Will there be consensus on methods?
- Is validation feasible?

Reinsurance

Reinsurance – the challenge

- Solvency II requires a separate calculation for gross and reinsurance Technical Provisions
- The reinsurance cashflows should have regard for the gross cashflows but also allow for:
  - possible settlement delays
  - possible disputes
  - possible defaults - which could be dependent on:
    - timing of payments
    - size of losses underlying losses
  - and especially so for large losses and binary events
- And then further considerations of items such as PPOs and profit commissions or premium adjustments etc etc

Reinsurance – current approaches

- How to calculate reinsurance separately?

  Net to Gross Ratios

- How to estimate reinsurance cashflows?

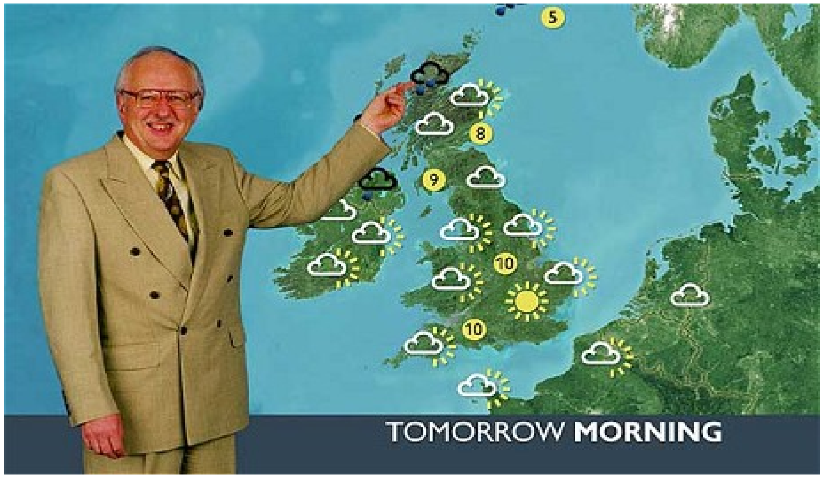
  Lag or stretch the gross pattern

- How to allow for bad debt?

  Use a simple percentage

Reinsurance – the question

If you are not using a stochastic cashflow method….



…..how good will the numbers be?

Reinsurance
Over to you...

Questions and comments?

The views expressed in this presentation are those of the working group. However, some questions are designed to deliberately generate discussion.