The modelling Implications of IFRS17

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Introduction

Overview:

- Not an in depth investigation on the legislation
- Plenty of better experts out there
- Principles rather than rules based Standard, so a lot is still open to interpretation
- Views on what will be required in practice from a modelling perspective
- Two separate takes on the requirements:
  - One from a platform and model developer
  - One from a Life Company modelling team manager
- Basic knowledge of IFRS17 assumed, but we'll re-cap
- The Opinions expressed here are those of the two presenters and not those of their respective employers.

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View of a platform and model developer

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What we will cover

How IFRS 17 modelled calculations differ from Solvency II

- Overview
- Best Estimate reserves
- Risk Margin
- SCR
- Profit releases

Additional work required

- Initial setup calibration
- Future re-calibration

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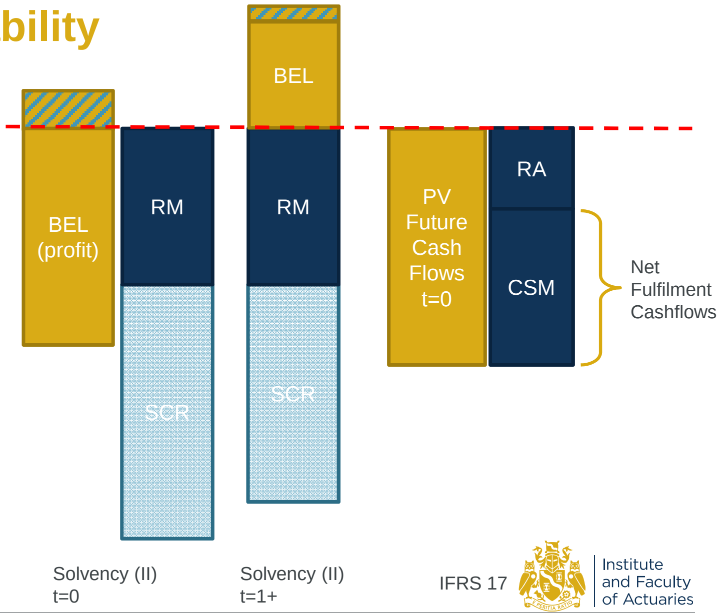
Overview - IFRS 17 Liability

Relative to Solvency II

- Similar BEL:
  - Still Best Estimate of Future Liability Cashflows
  - Different expenses / overheads
  - Different contract boundaries
  - Different discount rate
  - More contracts count / in scope for SII
- Risk Adjustment close to Risk Margin:
  - No prescribed method
  - But mandatory disclosure of confidence level
  - Portfolio level
- Contractual Service Margin - no equivalent:
  - Reserve to exactly zeroise day 1 tranche profits
  - Fixed run off – Earned premium
  - Doesn't offset future losses
  - Like Australian Margin on Services or USGAAP
- SCR - No equivalent Capital Requirement
- No Asset value requirement
- Profit & Loss account – profit releases



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Best Estimate Liability Calculation – IFRS 17

Differences to Solvency II

Unbiased, probability-weighted estimate of future liability cashflows, within contract boundaries
- Direct 'fulfilment' cashflows only (BE + Risk Adjustment)
- Different 'Best Estimate' basis?

Expenses
- Non-directly attributable overhead expenses stripped out

Discount Rates
- Top down or bottom up approach
  - Bottom up – Risk free yield curve + Illiquidity premium (appropriate to liabs)
  - Top down – Expected return on reference portfolio
  - Adjusted for duration mis-matches, expected credit losses, unexpected losses
- SII, more prescribed adjusted risk free rate

Policy groupings?
- Contracts that provide coverage for similar risks and are managed together (for CSM)
- Finer policy split : Contracts (Product group), Profit/loss-making/other, Cohort (annual)
- Different split to SII?
- Less Insurance Business (e.g. 105% of Units death cover)

Contract boundaries
- Similar boundaries at 'right to re-assess the risk / premium'
- Policy vs. portfolio level

No great challenge to model
Same liability models

- Re-run on different bases – More runs
- Slight code changes (Expense calcs)
- Re-grouped data / reporting split

No need for a new solution
or database approach

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Risk Adjustment + CSM vs. Risk Margin

Relative to Solvency II

Solvency II – Risk Margin

- Amount above BEL required by another insurer to take on the liabilities
- Cost of Capital (of holding the SCR), prescribed approach. NPV of a 6% cost of holding non-hedgeable solvency capital

IFRS 17 – Risk Adjustment

- The same or easier calculation than RM? Compensate for uncertainty in timing / amount of cashflows
- Basis not prescribed
- Mandatory disclosure of 'confidence interval'
- No equivalent to SCR to work from
- Can be calculated at a portfolio level

IFRS 17 – Contractual Service Margin

- Calculated at inception of business
- By 'Tranche'
- BEL / Pricing basis at inception (inc. disc rate)
- Unwound at inception discount rate
- Adjusted on future long term basis changes

Additional approach required?

- Methodology to match pricing? Combine?
- The same or easier calculation than RM?
- 'confidence interval' approach?

Big initial project?

Basis data for all in-force business?

Optional approximations on limited past information, (multi-tranche):

- Can a full retrospective approach be applied?
- If Possible -> Full Retrospective approach
- If Impractical ->Modified Retrospective OR Fair Value approach

And on any long term basis changes?

But no new systems or system changes?

Alternative external module?

Release of Contractual Service Margin Over time

Create a fixed £ amount CSM for each tranche as at inception. Using 'Locked in Basis'

Lots of (historic) data requirements

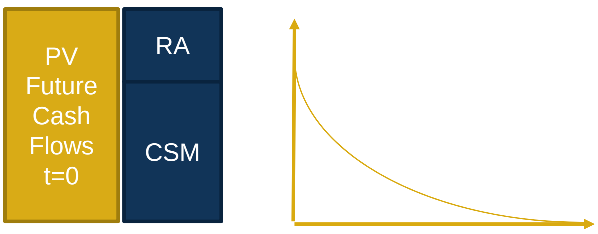
- Original pricing bases (or approximation)
- Information to be able to decide Tranche split
- Store each CSM result by Tranche as a model assumption?

Fixed Run off over time

- Coded into cashflow model?
- Choose relevant driver for each tranche
- Use actual driver experience for profit run off
- Extra reporting requirement, profit release, expected cashflows
- Only at a Tranche level? Difficult to split by policy

New calculation for New Business written over the year

Can only split up at a tranche level



More about data manipulation?

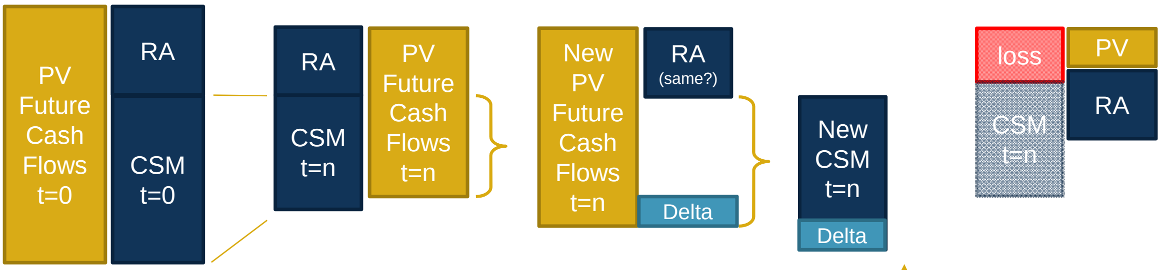
- Use existing cashflow models and BEL calcs. or a separate module?
- Small coding changes to:
  - Collect profit drivers
  - Report Profit releases

Lots more runs at initial setup

Lots more data needed

Release of Contractual Service Margin Over time

Extra projects to re-calculate residual CSM on long term BE basis changes



Actual profit driver experience used for actual CSM profit release in a given period

Re-calculate PV fulfillment cashflows, by Tranche at valuation date

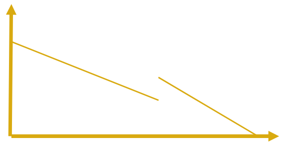
Remaining / current CSM changes to compensate for change in PV future profit from net fulfilment cashflows

- Offset remaining existing CSM fund
- Re-calculate driver from new basis, and new future run off
- No negative CRMs, so losses need to be reported immediately
- Store (past) losses, as need to be offset against future profits from any future basis change

Effect of change in discount rate reported separately to unwinding (more modelling)

Store new CSMs as new assumptions?

Change to run off assumptions?



- Many additional runs required
- New data requirements
- Additional data items stored going forward

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IFRS 17 - Profit & Loss Account

Reporting on an Earned Premium Basis

All insurance contract revenue and expenses must be recognised in the P&L account

Proportion of premiums required to meet future expected liabilities

- Not counted as income, but as a deposit for future claims and expenses

Proportion of premiums paid relating to profit

- Released over the life of the contract using a Profit Driver basis

Additional impact of changes in long term discount rate may also be reported

- Any changes from the original discount rate assumed at point of sale
- Must be reported separately from effect of unwinding of discount rate

Some coding changes as above for data out

- Changes/additions to reporting Process
- And data requirements pulled through

Closer to RBS requirements?

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A Life Company implementing IFRS 17

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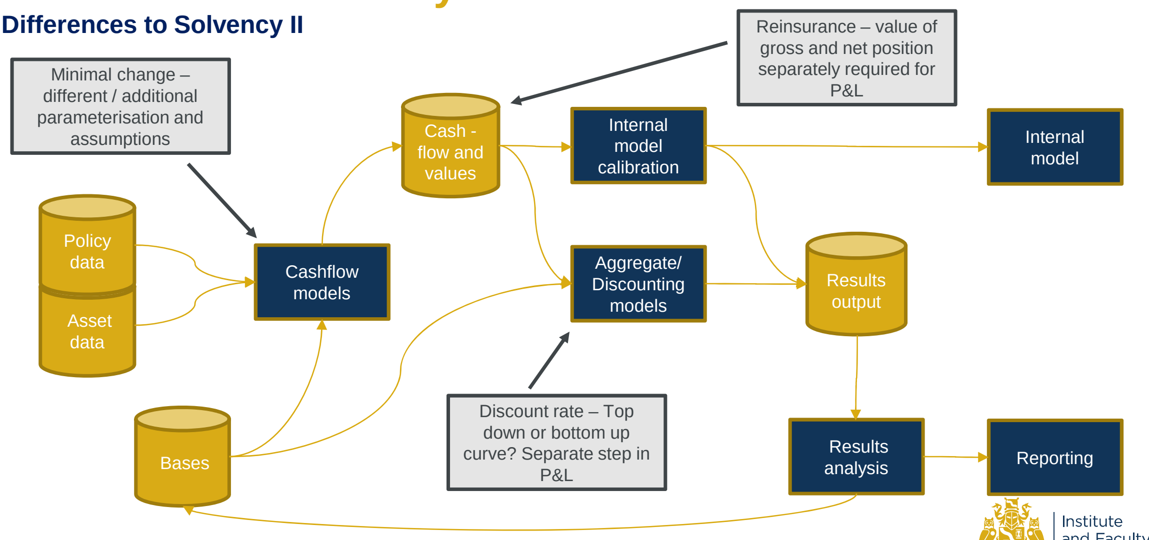
Best Estimate Liability Calculation – IFRS 17

Differences to Solvency II



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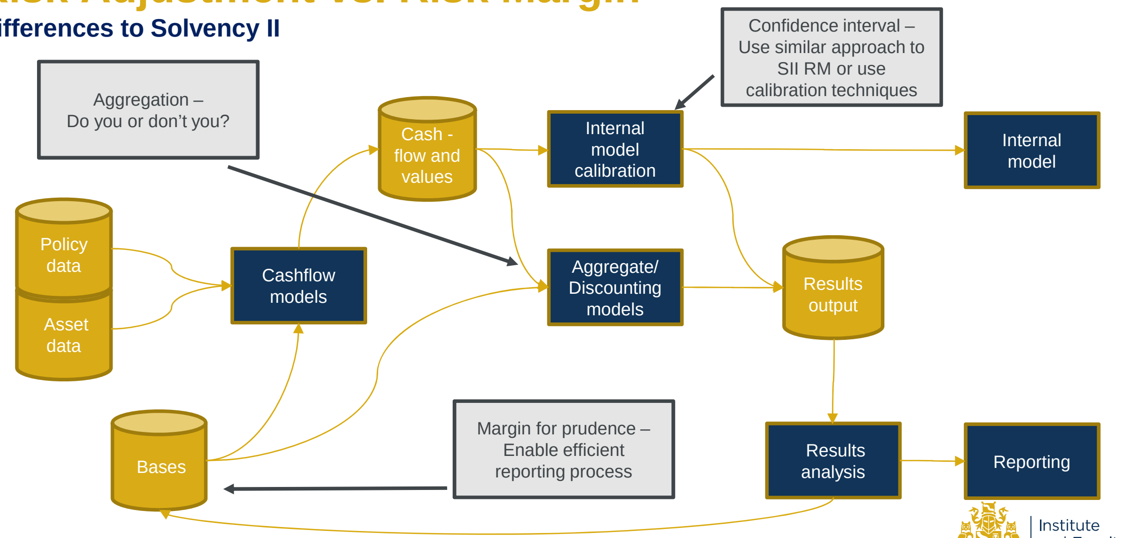
Risk Adjustment vs. Risk Margin

Differences to Solvency II



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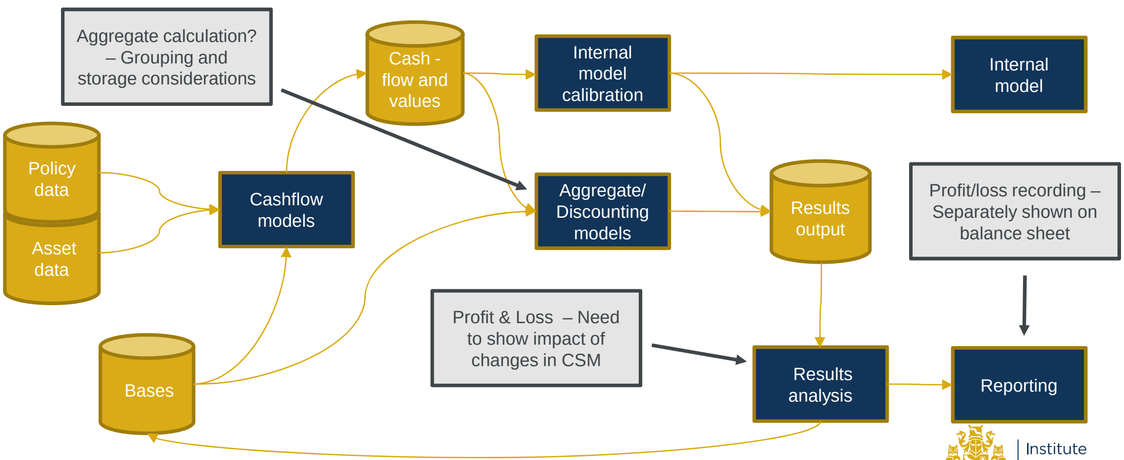
Contractual Services Margin– IFRS 17

Differences to Solvency II



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Reporting timelines IFRS17

Process Efficiency

Assumptions setting → Data → Best Estimate Liabilities → Risk Adjustment → CSM → Opening balance sheet → Profit and Loss → Publication

Day -10 · Day 0 · Day 5 · Day 10 · Day 15 · Day 20 · Day 25?

Assumptions setting → Data → Best Estimate Liabilities → SCR → Risk Margin → Opening balance sheet → Profit and Loss Attribution → QRTs

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Numeric Example

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Annuity contracts – with worked example

Comparing IFRS4, IFRS17 & SII bases

Modelling of IFRS 17 Discount rate

- Top down or bottom up approach
- Business group definition
- Illiquidity of liabilities, underlying reference assets and asset transition

Modelling of IFRS 17 Risk Adjustment

- Choice of approach, disclose percentile
- Offset by Day 1 CSM, but different behavior in later years
- In this example assumed SII approach with 2% CoC

CSM

- Using annuity payments as the Profit Driver

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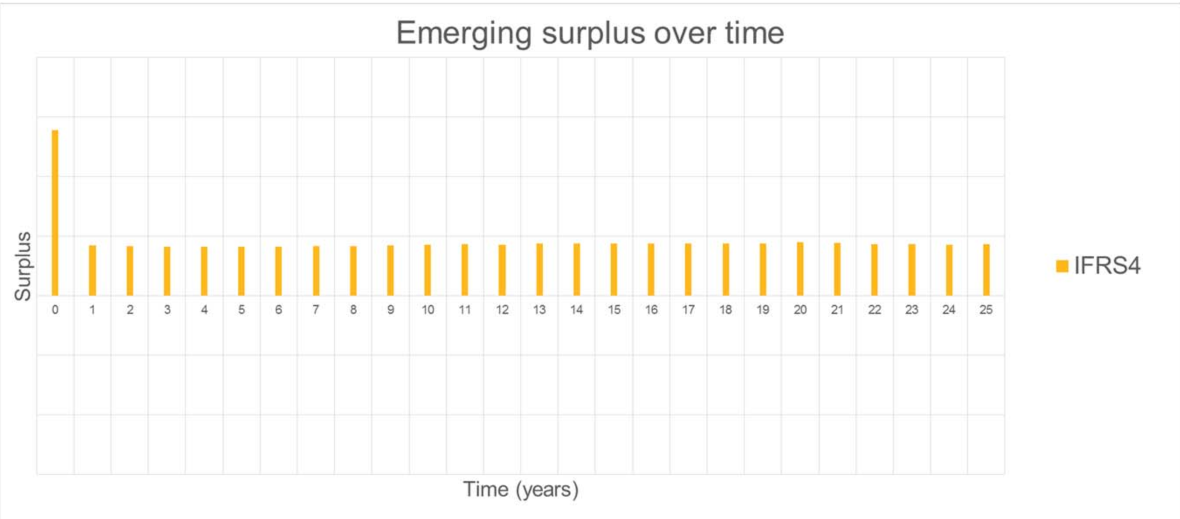
Non-profit annuity projections

Example: Emerging profit/surplus Under IFRS4, IFRS17, SII (net of SCR)



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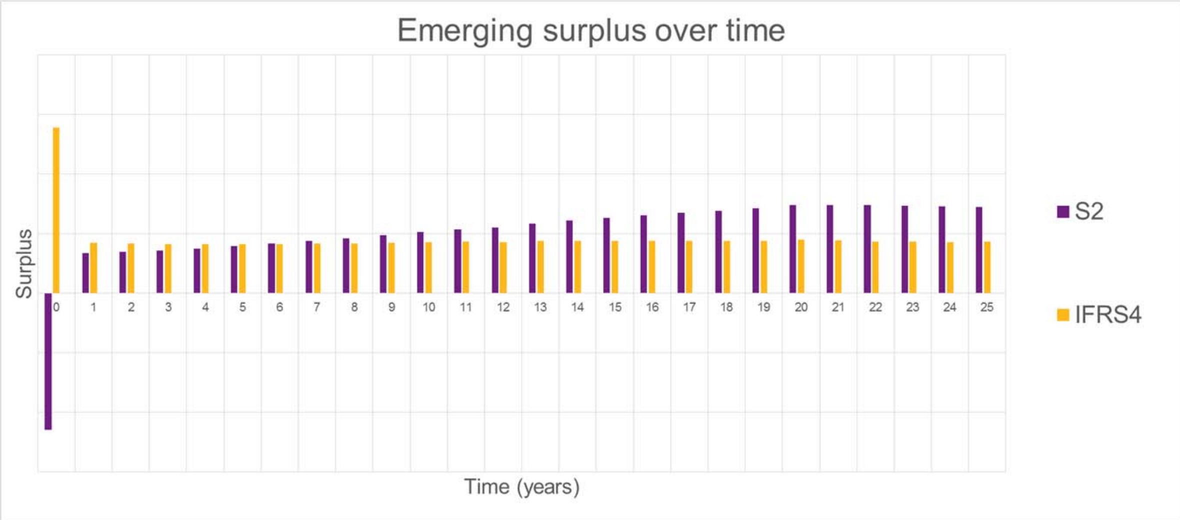
Non-profit annuity projections

Example: Emerging profit/surplus Under IFRS4, IFRS17, SII (net of SCR)



Non-profit annuity projections

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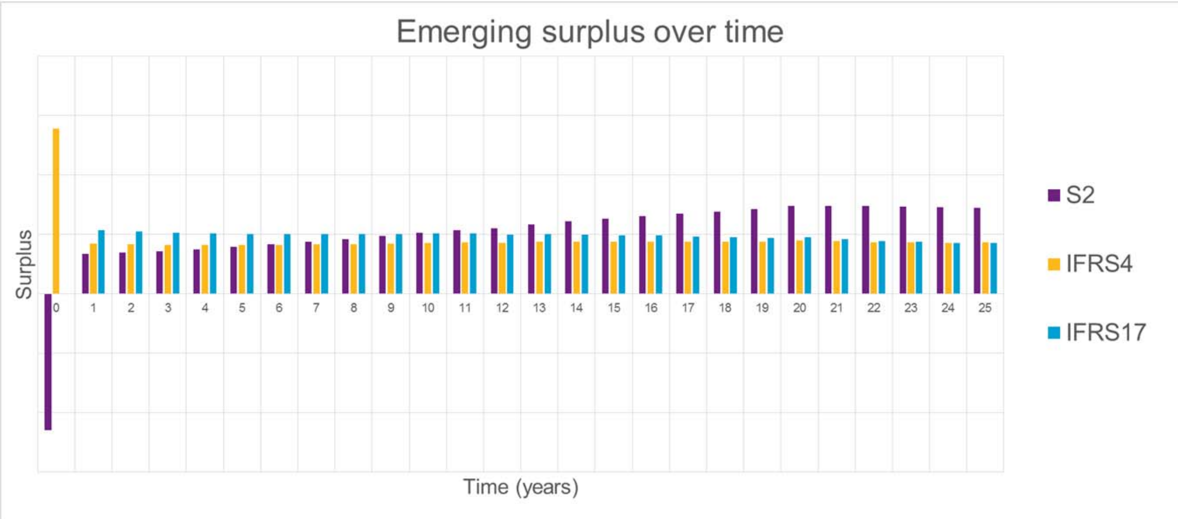
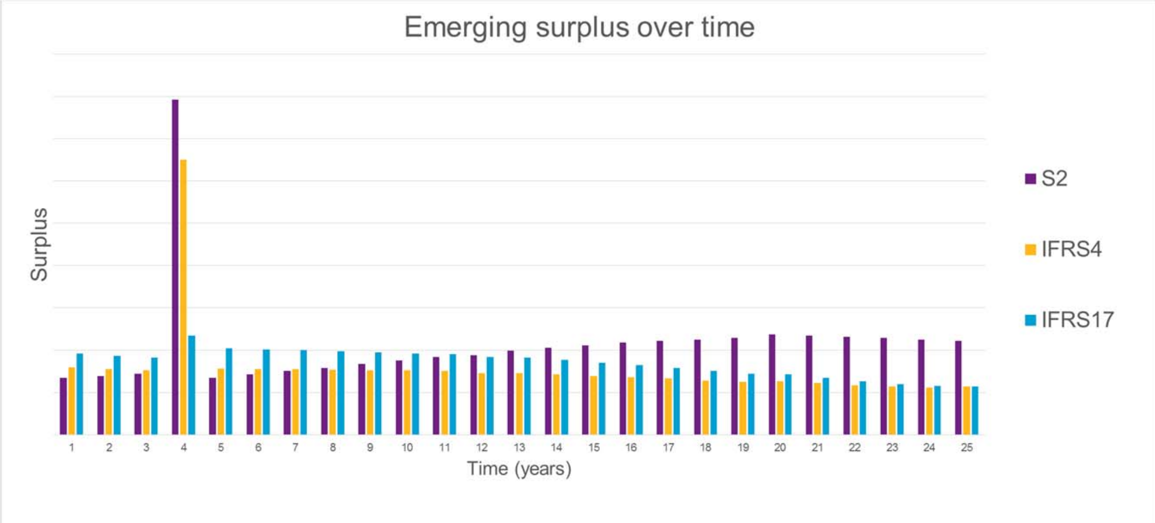


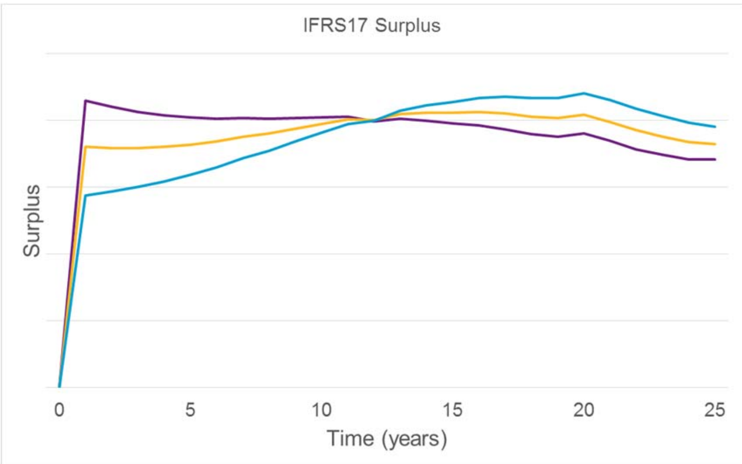
Non-profit annuity projections

Example: Positive mortality experience variance (+10%) in year 4



Sensitivity in assumptions

Example of the impact of the choice of discount rate



IFRS 17 discount rates:

- + 79bps
- + 122bps
- + 165bps

All with respect to the swaps less credit risk rate.

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Conclusions

From a standing start with a complete Solvency II system…

Existing modelling systems can be re-used
- Limited coding changes required
- Mostly around new runs, bases and data setup

'Hard to find' Extra Data requirements
- Original policy information and bases by tranche
- CSM stored by tranche for life of policies

Some additional reporting requirements
- Extra information for P&L

Significant extra effort to produce (beyond current SII requirements)
- Big initial CSM by tranche creation exercise
- Lots more model runs (new bases?)
- Another big exercise on any basis changes

Yet more need for an Enterprise/workflow solution to remove the automatable parts of the process?

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Questions

Comments

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