


**The Actuarial Profession**  
making financial sense of the future

Current Issues in General Insurance  
Susan Dreksler, Mat Wheatley



## SII Technical Provisions

What actuaries are doing differently

10 May 2012

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### Objectives for today's session

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- “I have learnt something today”
- “I could do with thinking more about that”

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## Agenda

1. Introduction
2. Binary events
3. Consistency
4. Validation
5. Process
6. Communication

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## The working party

### Members

Susan Dreksler  
 Ayuk Akoh-Arrey  
 Jeff Coucherne  
 Laurence Dunkling  
 Basit Junaid  
 Jerome Kirk  
 Shane O'Dea  
 Jonathan Piper  
 Meera Shah  
 Gemma Shaw  
 David Storman  
 Seema Thaper  
 Lucy Thomas  
 Mat Wheatley  
 Matthew Wilson

### Objectives

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

### Current work, future plans

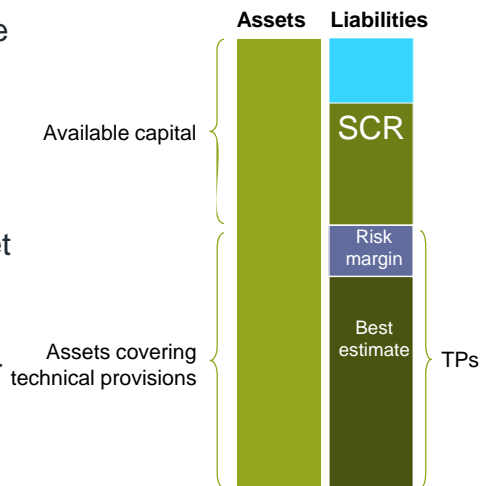
- Presentations: Reserving seminar, GIRO
- Paper

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## Why care?

- The Technical Provisions are a key part of the Solvency Balance sheet
- ...and a key input into the SCR calculation
- The Solvency Balance Sheet is a key determinant of the (re)insurer's freedom to act
- You don't want to upset your regulator!



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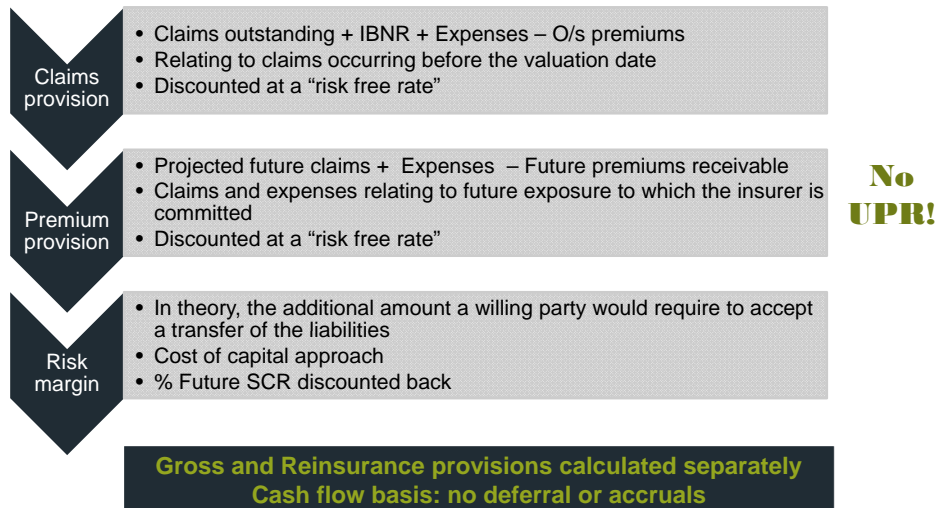
## The requirements

In brief....

- Article 76: "The value of technical provisions shall correspond to the **current amount** insurance and reinsurance undertakings would have to pay if they were to **transfer their insurance and reinsurance obligations immediately to another insurance or reinsurance undertaking**"
- Article 77(1): "The value of the technical provisions shall be equal to the sum of a **best estimate and a risk margin...**"
- Article 77(2): "The calculation of the best estimate shall be based upon **up-to-date and credible information** and **realistic assumptions** and be performed using **adequate, applicable and relevant actuarial and statistical methods.**"

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## The calculation: its constituent parts



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## Areas impacted by the Solvency II requirements



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## Binary events

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## Binary Events

### What is a Binary Event ?





- Context: SII Technical Provisions are the sum of a best estimate and a risk margin
- A best estimate is the average of all possible scenarios
- This differs from the GAAP/IFRS requirement to reserve for the “reasonably foreseeable”
- The binary events loading essentially covers the “gap” between reserves based solely on historical data and “all possible scenarios”
- Need to allow for both beneficial and detrimental outcomes: hence the term “binary”
- Essential to tailor to each insurance entity

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## Binary Events

### What is a binary event: Examples

Not just		Also
Health	<ul style="list-style-type: none"> <li>Nanotechnology</li> <li>Aspartame</li> <li>Electro magnetic fields</li> <li>GM crops</li> <li>Nuclear waste</li> </ul> 	<ul style="list-style-type: none"> <li>Big freeze</li> <li>Minor earthquakes</li> <li>Higher than expected inflation</li> <li>Ogden changes (if not already allowed for)</li> <li>Economic downturn</li> <li>Cat loadings (possibly)</li> <li>Anything not already allowed for in your "best estimate" that could happen</li> <li>Binary events: Both the bad stuff and potentially favourable outcomes</li> </ul>
Events	<ul style="list-style-type: none"> <li>Meteor strike</li> <li>Mega Volcanoes</li> </ul> 	
Social Environmental	<ul style="list-style-type: none"> <li>Global warming</li> <li>Polluters</li> </ul> 	
Legislative/ Political	<ul style="list-style-type: none"> <li>"Step change" in court rulings</li> <li>"the greater good" e.g. asbestos, US Healthcare</li> </ul>	
Other	<ul style="list-style-type: none"> <li>Contract wording</li> <li>etc</li> </ul> 	

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## Binary Events

### Guidance

- 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
- QIS 5 – may implicitly allow for all possible scenarios, e.g. by use of chain ladder
- Concern from firms over limitations of guidance

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## Binary Events

### How are firms calculating a loading?

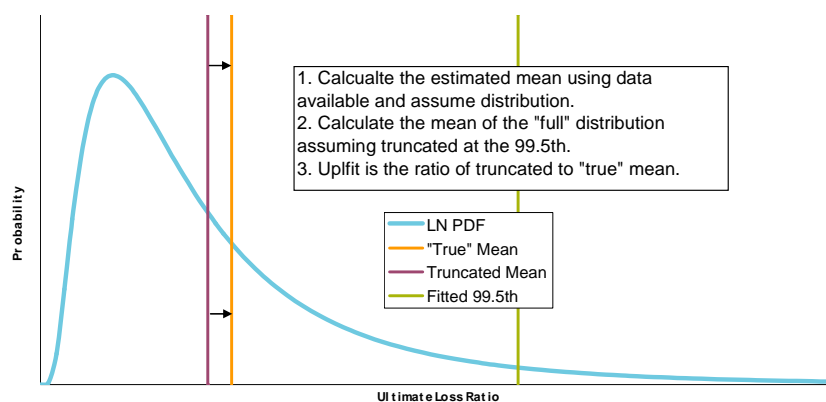
- Methods still being developed
- No consensus
- Assessing probability and severity of representative scenarios
- Truncated distributions
- Apply as percentage load

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## Binary events Truncated distribution approach

- Need a distribution of reserves or ultimates (could be based on market data)
  - and then make ONE key assumption (the truncation point)



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## Binary events Thoughts

- Truncated distribution alone has lots of drawbacks:
  - Needs a lot of data
  - Very subjective, in particular the selection of the cut-off point
  - Tricky maths
  - Spurious accuracy?
- Judgement will be key
- Loadings should vary by class

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## Binary events Possible approach

- Truncated distribution where the data is available
- Scenario approach: workshops – what might we be exposed to
- Consistency with risk logs, reverse stress testing, etc
- Documentation and justification is key
- Relativities area obvious area to challenge

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## Technical Provisions Binary Events

### What we've heard

- Lloyd's guidance refers to indicative range 2%-5%
- Comments from firms that analysis is producing lower uplifts
- Some firms using zero uplift as existing methods allow for range of outcomes

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## Technical Provisions Binary Events

### Other considerations

- Could the Binary Events load be used as a contingency margin?
- Transparency limits this risk
- Isn't this something that should be allowed for in the capital model?
- Is this a UK issue?
- Should be a consensus over time

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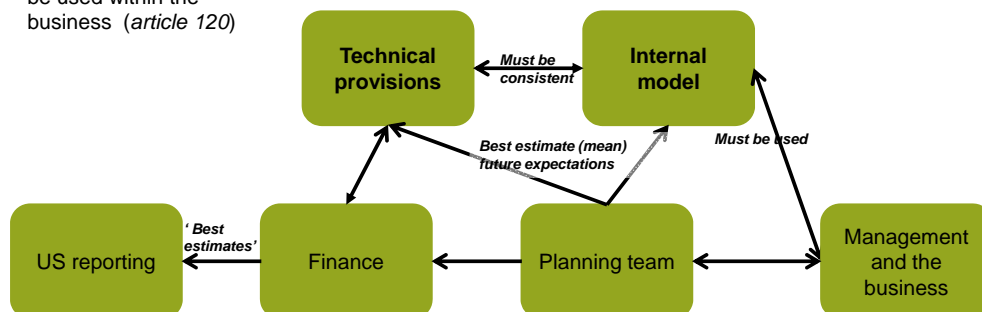
## Consistency

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## Consistency with internal model

- The technical provisions must be consistent with the internal model (*article 121*).
- The internal model must be used within the business (*article 120*)

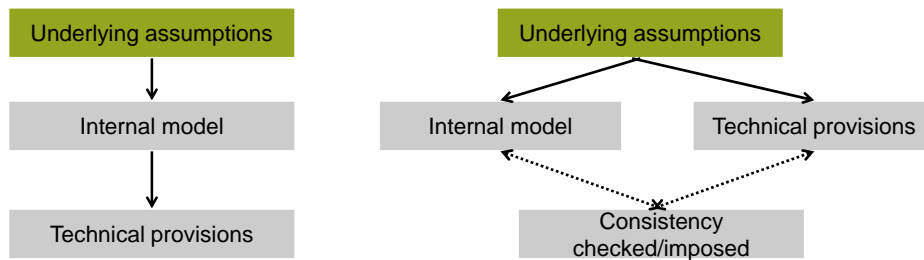


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## Consistency with the internal model

- One of the areas where the interaction between the technical provisions calculation and the rest of the business is particularly critical is the assumptions around future business profitability and the associated reinsurance recoveries (ie the estimation of net premium provisions).
- Two common approaches are shown below (simplified)

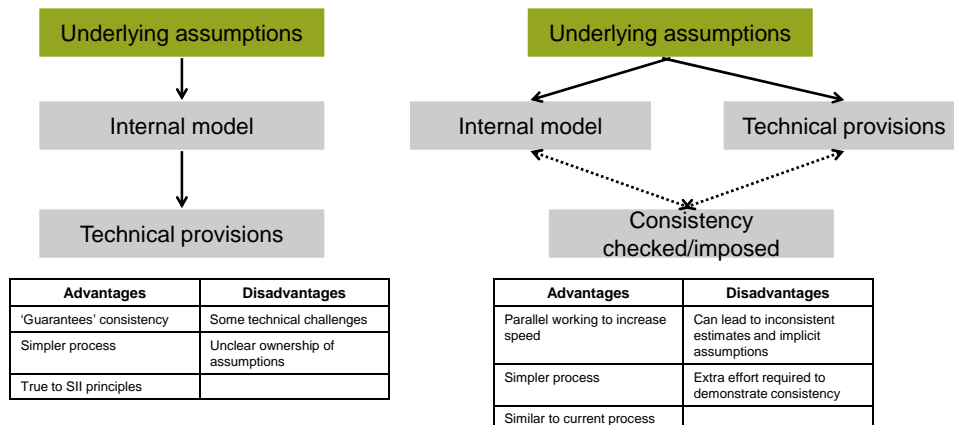


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## Consistency with the internal model

- Both approaches have strengths and weaknesses



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## Consistency – over to you

- List which others areas/items need to be consistent, and between what functions.
- And what happens if there are inconsistencies?

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## Consistency with the internal model – How consistent?

How consistent is consistent enough?

How will you deal with disagreements

How to measure consistency?

By impact on technical provisions

By impact on SCR

By impact on use test

Output consistency versus input

ESGs will likely cause inconsistencies

How much effort is required/expected to demonstrate consistency?

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## Validation

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## What do we mean by validation of the technical provisions?

### How the industry's thinking has developed

- Initial concerns regarding Solvency II requirements focussed on justification and documentation of the methods and assumptions.
- The focus then shifted to how much validation is required for the additional Solvency II approaches/assumptions
- Some insurers are now starting to think about the over-arching governance and independence challenges.



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## Validation of the technical provisions

- **From the latest Level II:**
- Insurance and reinsurance undertakings shall **validate** the calculation of technical provisions..... at least once a year
- .....Insurance and reinsurance undertakings are able to **explain** and **justify** each of these assumptions..... insurance and reinsurance undertakings establish and maintain a written explanation of the methodology used to set the assumptions used.
- .....monitor, **justify** and **document** the changes of assumptions from one period to another. ....
- **Speech by Julian Adams (19 April 2012):**
- “ .....we will be making use of outside parties .....in **the review of technical provisions** .....Whilst not technically part of the internal model requirements, we believe that it would not be possible for us to approve a model without being satisfied as to the accuracy of the underlying balance sheet.....we will be expecting a form of external review to be carried out on the technical provisions of all internal model firms prior to our approval of their model”

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## Validation – how high is the bar?

Validation under Solvency II has often interpreted as enforcement of what was already best-practice.

Will this be the regulators' interpretation?

We have seen:

More focus on independent validation / assurance

Little change in structure / governance

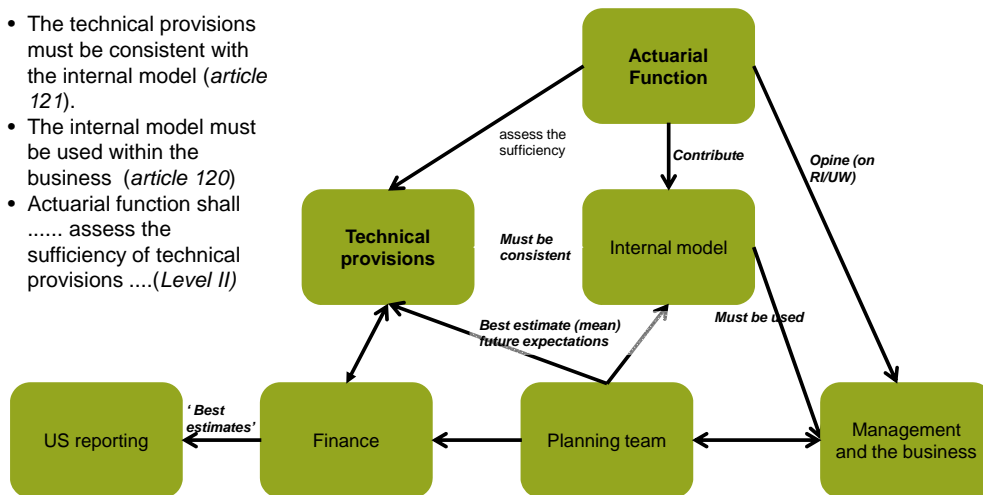
Is this enough?

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## Where does the actuarial function fit in?

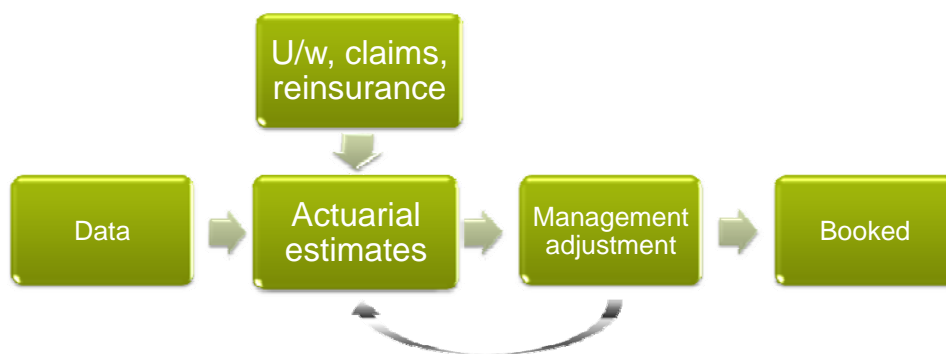
- The technical provisions must be consistent with the internal model (*article 121*).
- The internal model must be used within the business (*article 120*)
- Actuarial function shall ..... assess the sufficiency of technical provisions .... (*Level II*)



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## Process The old way

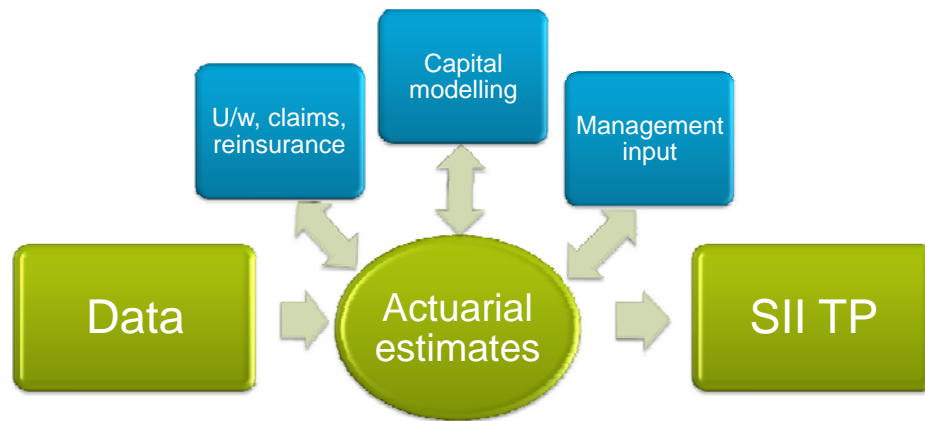


May will be a linear process with occasional feedback loops from management to the actuary  
The actuary may have limited involvement in management adjustments

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## Process – under Solvency II



**No longer a linear process  
The actuary will need to be involved throughout**

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## Communication

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## Communication

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- Communication is a two-way process
- Who do we need to communicate to?
- Why is that communication different from the pre-SII world?

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## Communication Exercise

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- With whom do we need to communicate?
- How will that communication be different from the pre-SII world?

## Communication Planning

### Stage 1: high level communication

- This should start now, if you haven't already
- General education of key changes to the TP under SII
- Consider the most effective methods of communication to get message across clearly
- Stakeholders - who needs to know?
- Highlight how it impacts them

### Stage 2: general principles

- More detailed description of suggested approaches to take
- Highlight pitfalls, issues, things to consider
- Tailor for main stakeholders/situations
- Consider wider audience (not in detail)
- Simple worked examples of key common concepts that can be used as additional tools for communication (depending on outputs of other workstreams)

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## Communication Planning

### Scope

- Who do we need to communicate to?
  - What information is needed for each?
  - What are the key issues for them?
  - What decisions will they make as a result?
- Any impact from introduction of Actuarial function?
- Form of communication: reports, meetings, etc
- Plans, timing
- Documentation

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## Communication Planning

### Scope - Areas to communicate:

- Change to overall approach
  - role to educate wider group of stakeholders
- Context:
  - Why they need to know about this
  - How this fits into the wider SII
- How the SII TPs differ from other reserves provisions
  - Impact of those differences e.g. Increased volatility
- What you need from them and when: plans

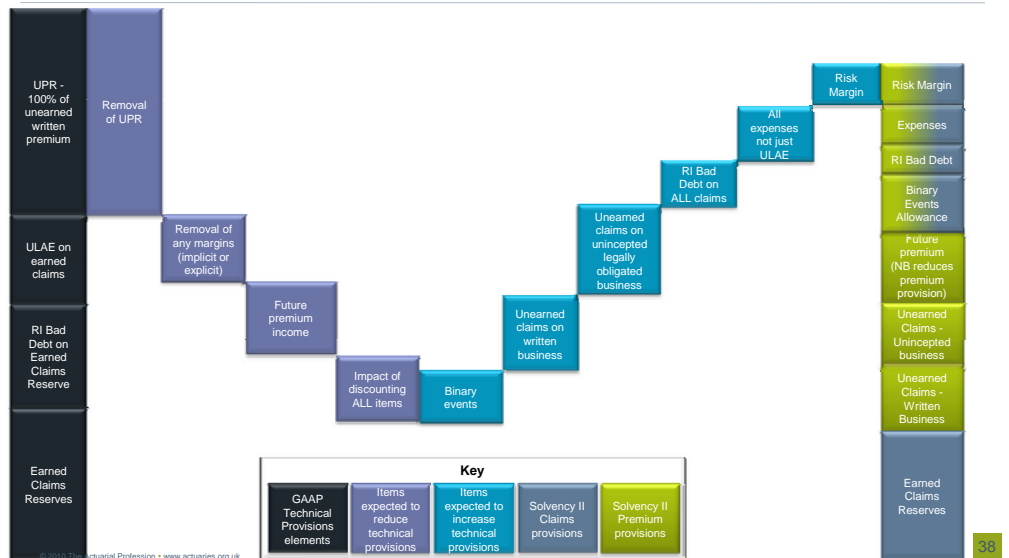
## Communications Next steps

### References to consider:

- SII requirements
- TAS-R, TAS-M, TAS-I
- Lloyds guidance on technical provisions under SII
- Existing reporting packs

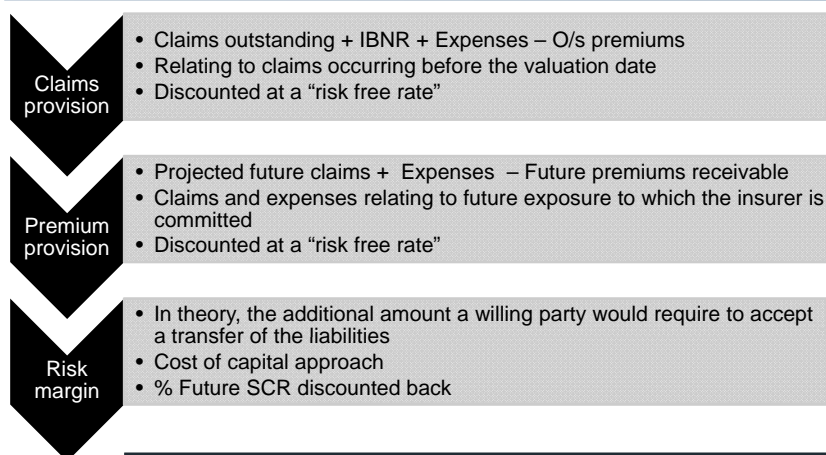
## Communication - Tools

### From GAAP/IFRS to Solvency II



## Communication - Tools

### The calculation: its constituent parts



**No UPR!**

**Gross and Reinsurance provisions calculated separately  
Cash flow basis: no deferral or accruals**

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## Questions or comments?

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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.

