Is it too easy to criticise capital models? Or do we not criticise them enough?
It’s much easier to criticise models than to build them
Introduction

• The aim of this talk isn’t to give you anything new you can immediately take away and use when you get back to your offices.

• Instead, we’ll will explore two arguments,
  – either that across internal teams, external support, and regulators we have too much focus on criticising capital models,
  – or that we are too accepting of these models, which should rely be criticised more robustly.

• Finally, we’ll look to pull that together and identify what “good” criticism looks like
It's too easy to criticise capital models
The case

• That across internal teams, external support, and regulators we have too much focus on criticising capital models
  – The criticism isn’t grounded in the reality of our current level of abilities, the purpose and the values of these models.
  – The criticism isn’t holistic, and hence doesn’t drive a rounded response to model weaknesses
  – The current approach to criticism isn’t benefiting the end users of the models
  – The criticism inhibits innovation
  – The criticism inhibits use
What is a capital model?

• Any model is an abstracted view of reality
  – A capital model is a particularly complex model. That means to keep the results transparent it needs to be a particularly simplified view of reality.

• The 1 in 200 question we have been asked to answer with capital models is very hard. Arguably unanswerable.
  – Criticism generally does not acknowledge this
  – **Misleads** senior management on the state of the art
The process of criticism

• Model development and continuous improvement is a balance of three equally important questions:
  – Does it give the right answer?
  – Can we use it?
  – Can we deliver it?
• Model criticism comes in silos. Most focuses on the first of the three points

• This builds up an unrealistic representation of what can be achieved, and leads senior stakeholders to a false lack of confidence
The impact of criticism

• Criticism is often one-sided.
  – This will lead to models which are overly complex

• Criticism is often linking back to established market practice
  – This actively inhibits innovation and development
  – Encourages a herd mentality
  – And leads to market wide systemic risks
Using the model

• Regulations require us to “use” the models.
  – There is a danger of putting all of our eggs in one basket.

• Use doesn’t mean belief
  – a good team can extract information from the model to support decision making
  – even if that information is it’s just too difficult to know what the impact of this decision will be

• But addressing/avoiding criticism means building a model we don’t believe
  – And then making decisions off it
We don’t criticise them enough
The case

- That capital models are not generally subjected to the level of robust criticism needed for their complexity and importance
  - The numbers, stupid
  - The need to identify implicit biases
  - The need to drive improvements
  - Because we wouldn’t protect other models
What is a model?

- Something which facilitates decision making
  - Something we can ask questions of
  - Something which gives us meaningful answers

- So the numbers need to be robust
- But a capital model is hugely complex, and expert judgement led
  - Failure to challenge leaves it as dominated by a single or small number of views, and inherently anchored to their biases
Using the model

• The 1 in 200 question we have been asked to answer with capital models is very hard. Arguably unanswerable.
  – So need challenge to provide a robust view

• Successful use requires a multi-disciplinary team. Capital model teams have a strong commitment to their current approach.
  – Criticism enables wider involvement

• Use doesn’t mean belief
  – But we need a good understanding of where the model may be misleading
Model developments

- ICA introduced in 2004
  - Are the models noticeably different now?
  - Is that because we got it right back in 2004?

- No answers imply that we should develop the models further to meet the business needs

- The drive to improve will only come through criticism of the models
Comparison to other models

• Reserving – significant challenge

• Accounting models – significant challenge

• Pricing models – variable, but not immune to challenge

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Squaring the circle
What do we want criticism to do

- Criticism is necessary, but the wrong criticism can be hurtful

- The five key points of good model criticism
  - Drive robustness of the model
  - Identify poorly understood biases
  - Understand where the model may let us down
  - Don’t inhibit innovation
  - Don’t inhibit use
Some criticism key concepts

• Focus on use
• Reality is the best criticism of the model
  – In normal circumstances
• Focus on areas under-performing, not areas which are abnormal
• Alternatives are much more useful than criticism

• Criticising a model well is just as hard as building a model
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.