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## Mighty Mouse: An Open-Source Hero

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Lloyds Banking Group



13 November 2018

### Agenda

- What is Mighty Mouse?
- Open-source model design
- New insights
- The future

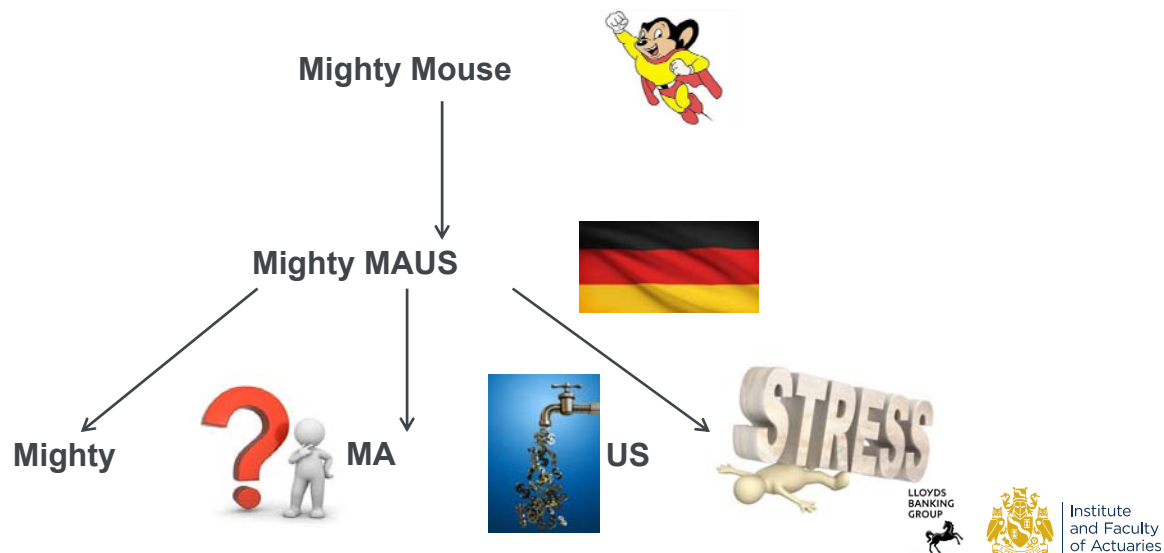


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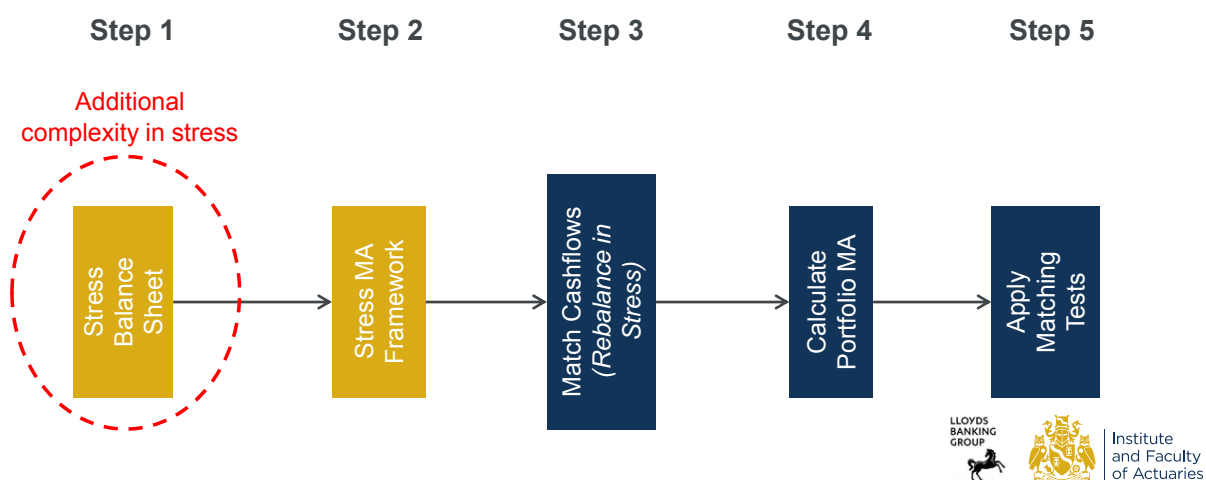
## What Is Mighty Mouse?



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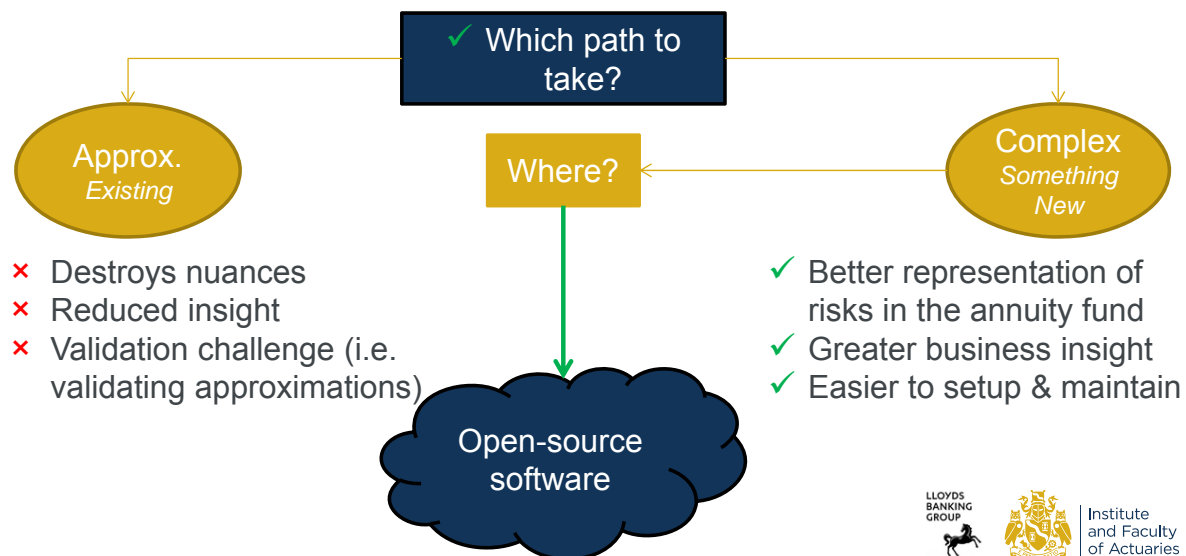
## What Problem Does Mighty Mouse Solve?



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## What's the Solution?



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## Why Open Source?

- Stranger danger?



- What can it do?



- What's out there?



- How can we trust it?

please tell me you've done this before.



there's always a first.

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## Essential R Toolkit

- Maths & statistics
- Large datasets
- Parallel & cloud computing
- Visualisation & interfaces



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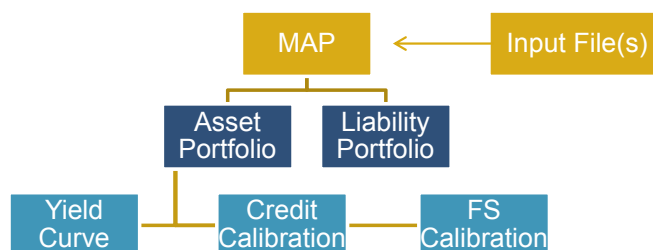
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## Designing Large Projects in R



- Object-oriented programming in R: 'R6'



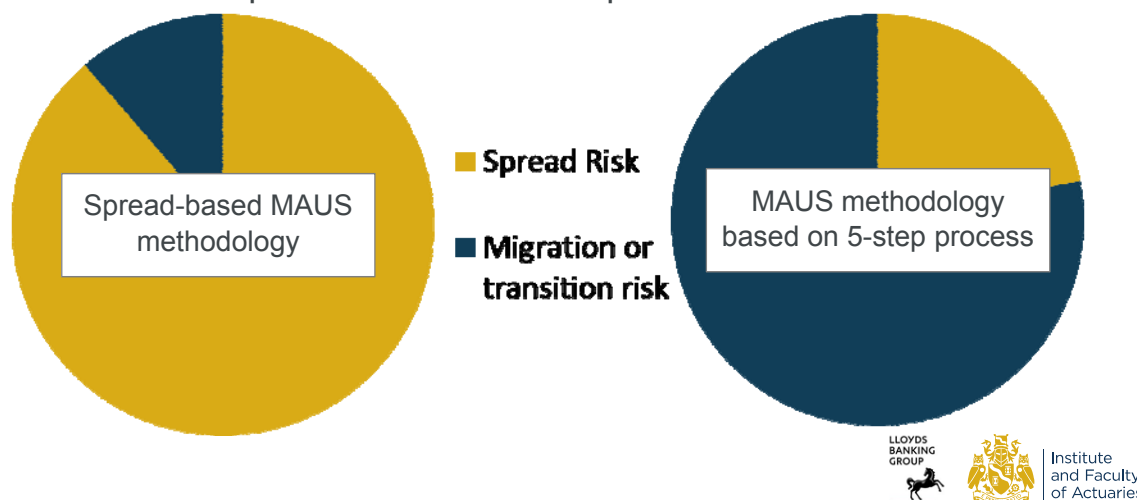
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## Mousy Insight #1

Proportion of credit risk capital attributable to...

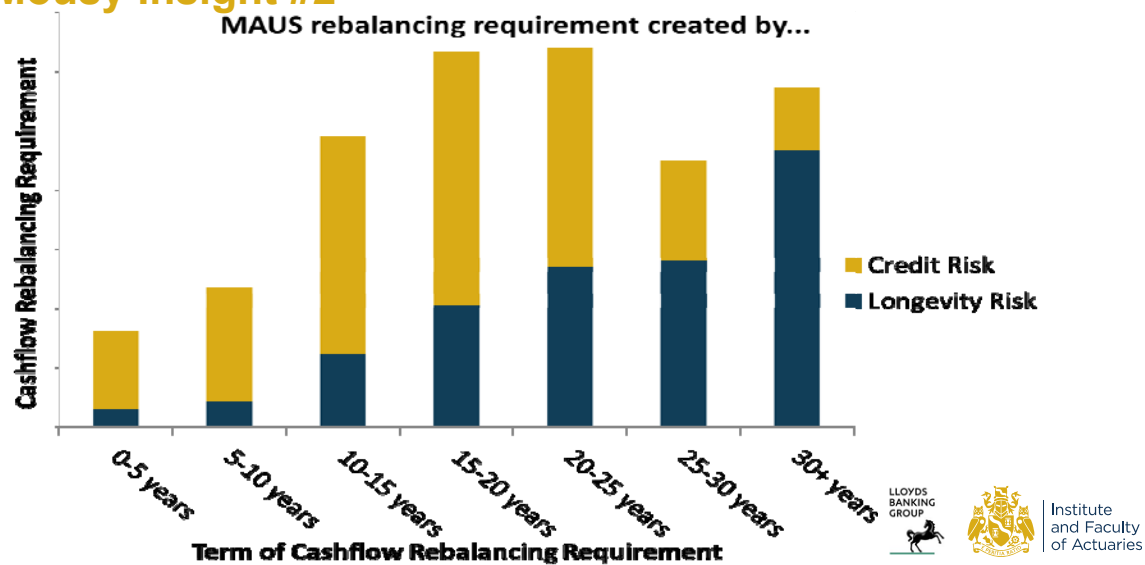


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## Mousy Insight #2

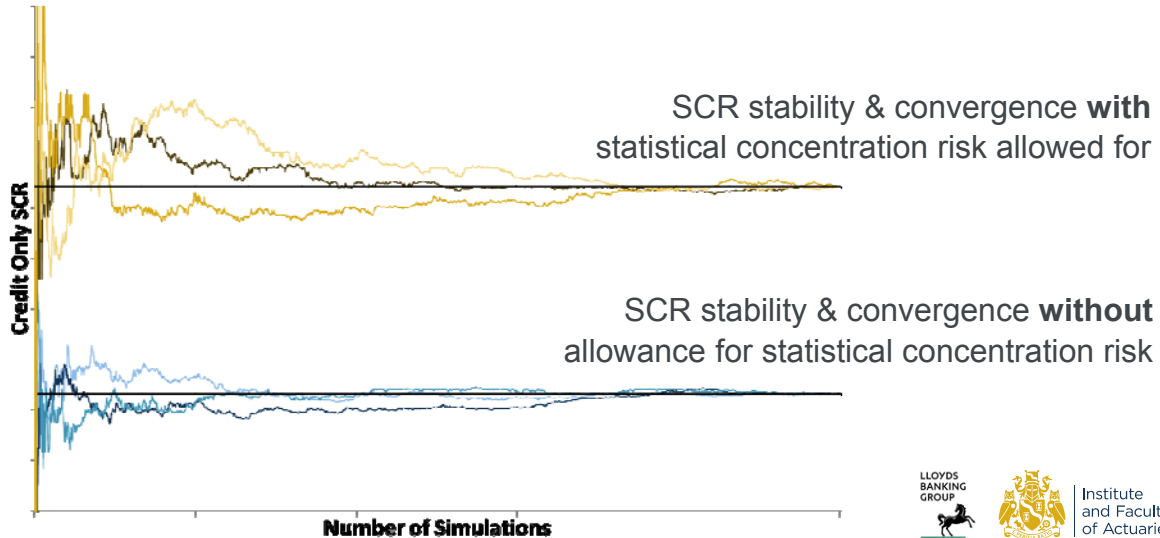
MAUS rebalancing requirement created by...



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### Mousy Insight #3



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### What Does this Mean for the Business?

A model is only as good as the action it enables...

- Changing the approach to cashflow matching in the MA portfolio
- Better risk management through an understanding of risk dynamics
- Further insights into the optimum credit portfolio

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## Living With Mighty MAUS

- Integrated Internal Model
- Extending functionality:
  - Extending methods to the non-MAP, projection through time, stress/sensitivity testing
- Controlling change:
  - Git, GitHub Enterprise
- Production, analysis, calibration



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## The Future

- Integrated Capital & Liquidity model
- Risk Margin
- Proxy modelling of the SCR & Working Capital
- MAP investment strategy



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# Questions

# Comments

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