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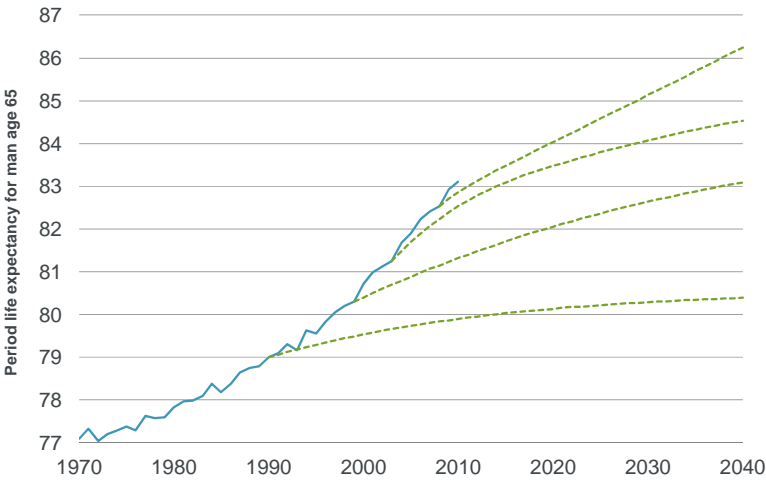
Extreme trend reversal, model risk and other challenges in modelling future improvements

Andrew Gaches, Hymans Robertson

02 July 2013



How well have we predicted trends?



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What should we be able to do?

- Use a model appropriate to the purpose
- Reflect the evidence
- Understand the uncertainty (and risks)
- Communicate the uncertainty (and risks)
- ...in order to give best advice
- ...and avoid looking stupid!



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Key assumptions set in CMI proj'n model

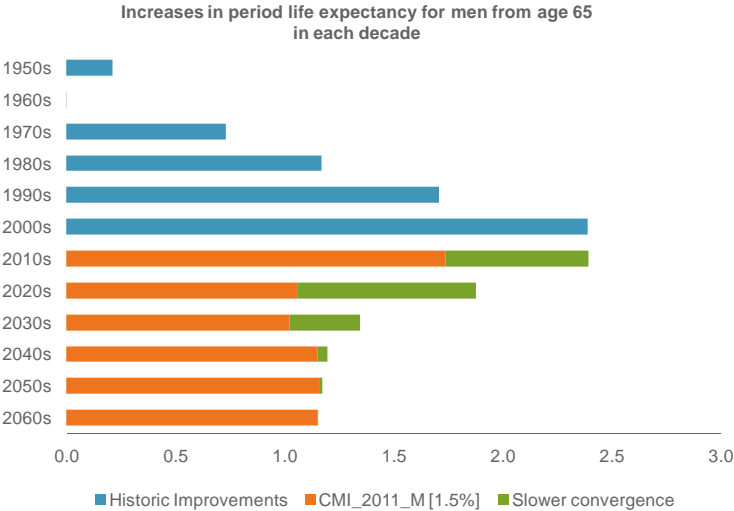
Assumption	How uncertain?	How important?	How stupid could we look?
Long term rates	●	● – or is it?	●
High ages rates	●	● – or is it?	●
Initial rates	● – or is it?	●	●
Convergence			



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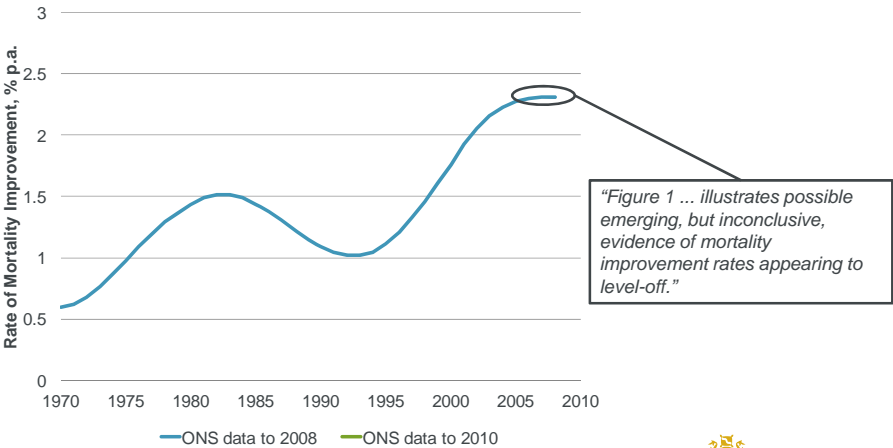
Convergence



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What's the rationale for "rapid trend reversal"?



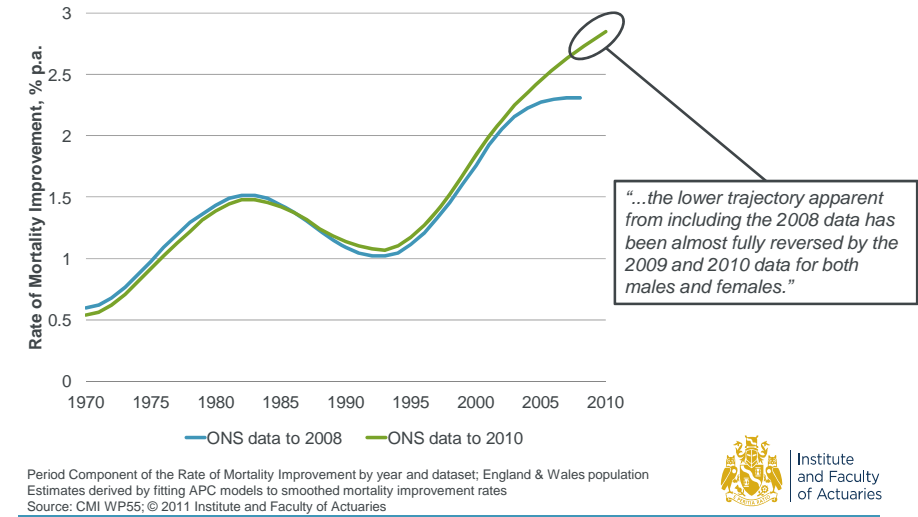
Period Component of the Rate of Mortality Improvement by year and dataset; England & Wales population
Estimates derived by fitting APC models to smoothed mortality improvement rates
Source: CMI WP41; © 2009 Institute of Actuaries and Faculty of Actuaries



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What’s the rationale for “rapid trend reversal”?



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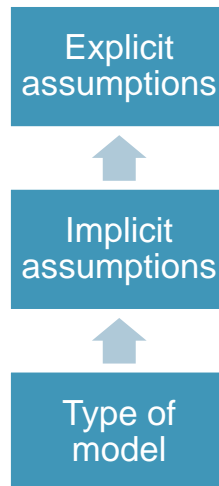
Key assumptions set in CMI proj’n model

Assumption	How uncertain?	How important?	How stupid could we look?
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Initial rates	● – or is it?	●	●
Convergence	●	●	●

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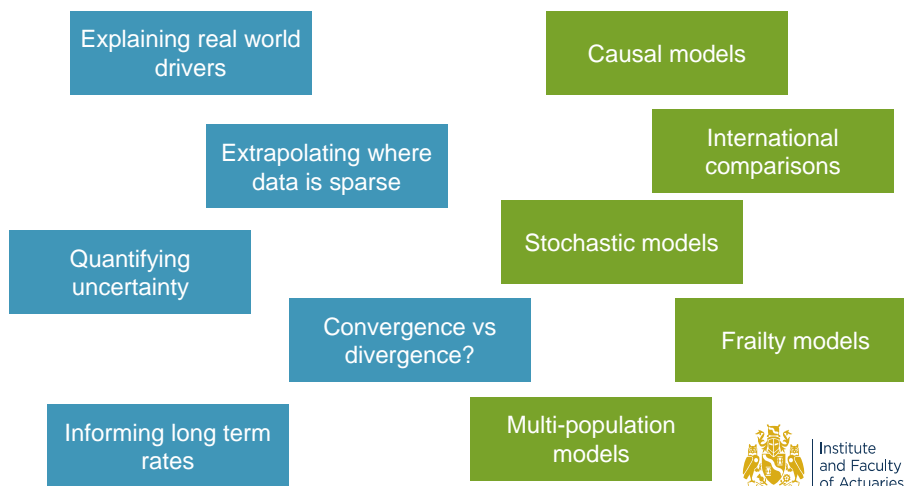
Different levels of model risk



Getting the full picture



Other questions and other models



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Final thoughts

- Use different models for different purposes
- Understand limitations and assumptions
 - Explicit assumptions
 - Implicit assumptions
 - Limitations of model framework
- Use a range of perspectives
- Communicate the risks
- Challenge ourselves now... ...to avoid future problems



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Questions

Comments

Expressions of individual views by members of the Institute and Faculty of Actuaries and its staff are encouraged.

The views expressed in this presentation are those of the presenter.

