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Models models everywhere

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Introduction

- Models are everywhere
- Eliminating all model risk is not possible
- But successfully managing model risk is possible



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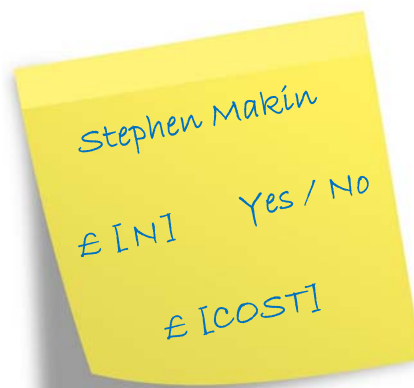
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Some science...



Inputs?

- Merlot, 2007, Uruguay
- Yield <1kg per vine
- French oak aged for 12 months
- Contains sulphites



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What do we mean by model risk?

*the possibility that [**a model**]
causes you to not meet your goal*



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Familiar model risk events



Federal Reserve Seeks a Rescue for Long-Term Capital Management
- Wall Street Journal

J.P.Morgan

'London whale' traders charged in US over \$6.2bn loss
- BBC



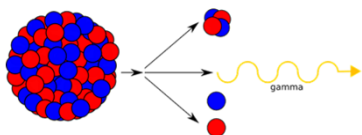
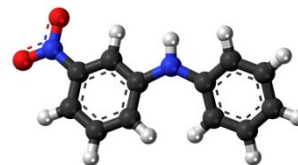
The error that could subvert George Osborne's austerity programme
- The Guardian



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What is a model?



u	c	t	g	H
d	s	b	γ	
e	μ	τ	Z	
ν_e	ν_μ	ν_τ	W	



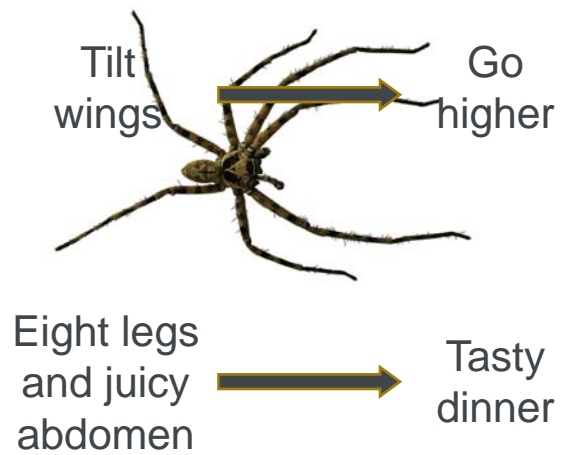
...a simplified description of reality



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Models in nature

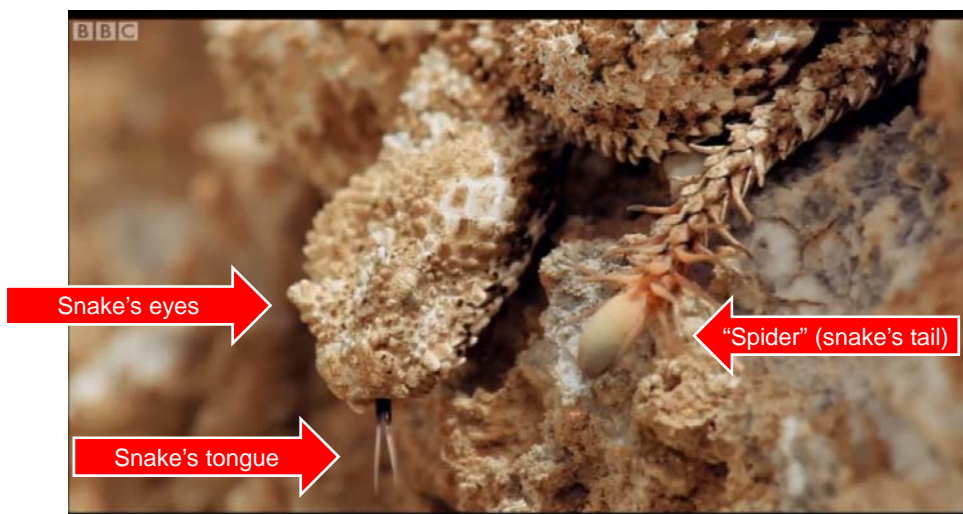


Let's watch...

An example of models in the animal kingdom...



Model risk revealed

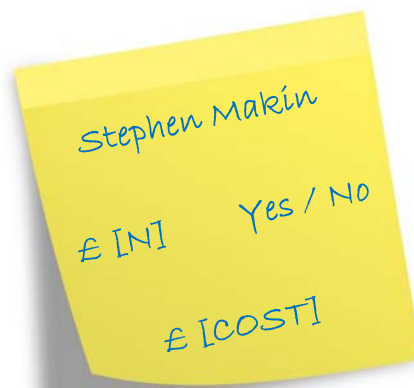


Back to our experiment...



Inputs?

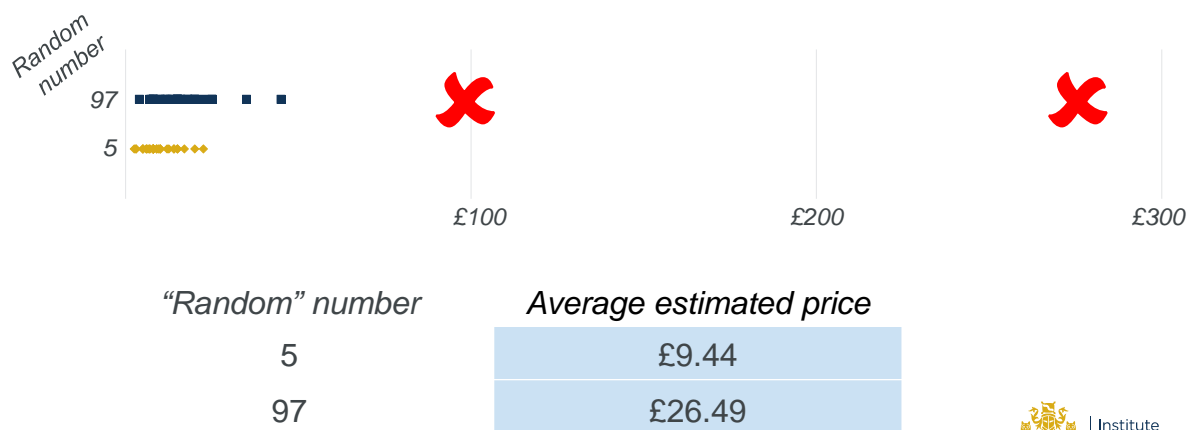
- Merlot, 2007, Uruguay
- Yield <1kg per vine
- French oak aged for 12 months
- Contains sulphites



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Anchors influence judgement

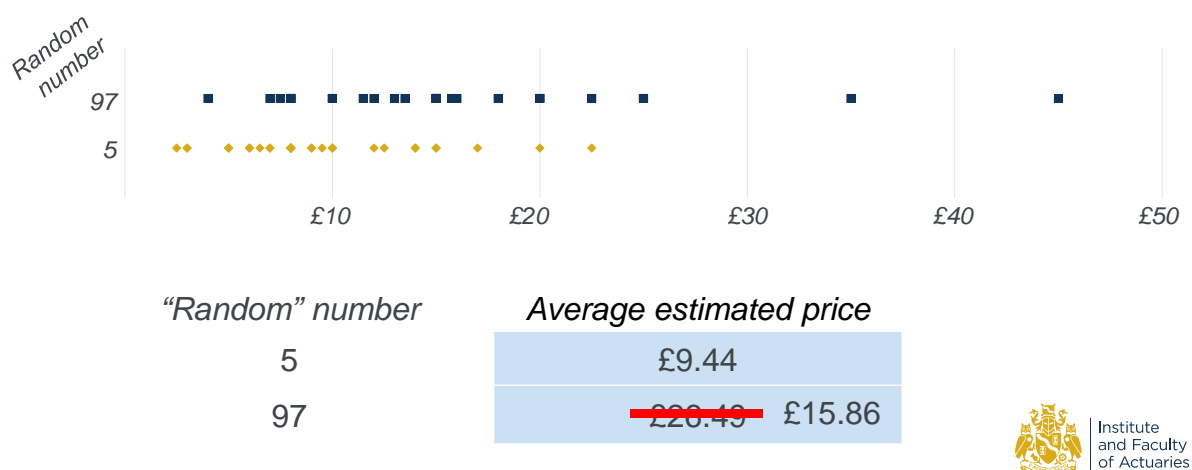


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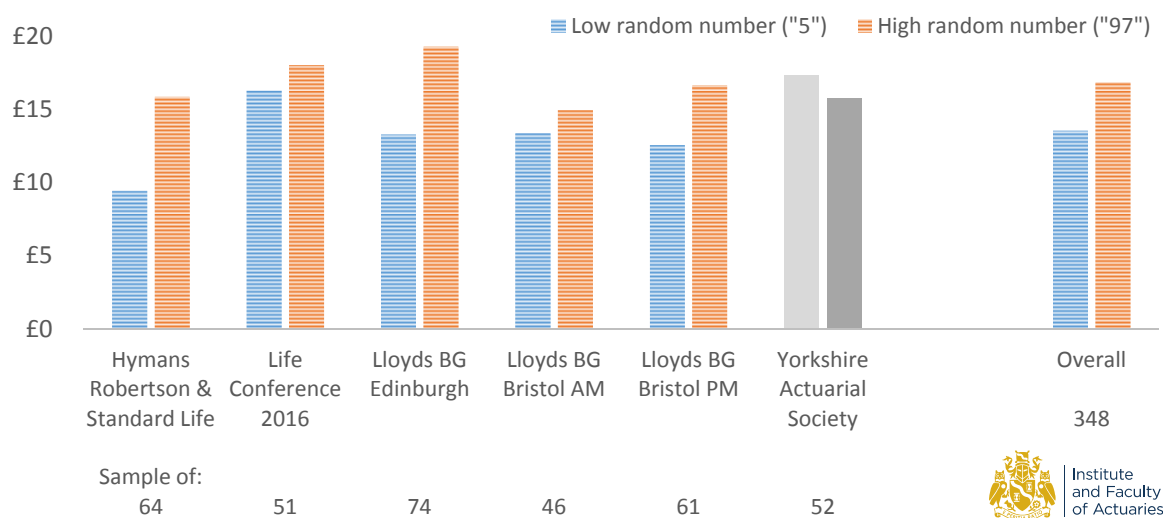
Anchors influence judgement



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Anchors influence judgement



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Anchors influence judgement

Random
number

00 – 19	\$8.64	\$9.55
20 – 39	\$14.45	\$10.64
40 – 59	\$12.55	\$12.45
60 – 79	\$15.45	\$13.27
80 – 99	\$27.91	\$20.64



Source: "Coherent arbitrariness": stable demand curves without stable preferences; Ariely, et al



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What else creates model risk?



*confirmation
bias*



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What else creates model risk?



group think



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*How can we identify, assess, measure
and manage model risk?*



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Classifying model risk

Implementation



Use



Knowledge



Decision



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Identify and assess model risk



Model inventory
owner, purpose
users & purpose(s)
key risks & controls
History
Significance
Approximations, Limitations
Triggers



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Measuring model risk



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Managing model risk

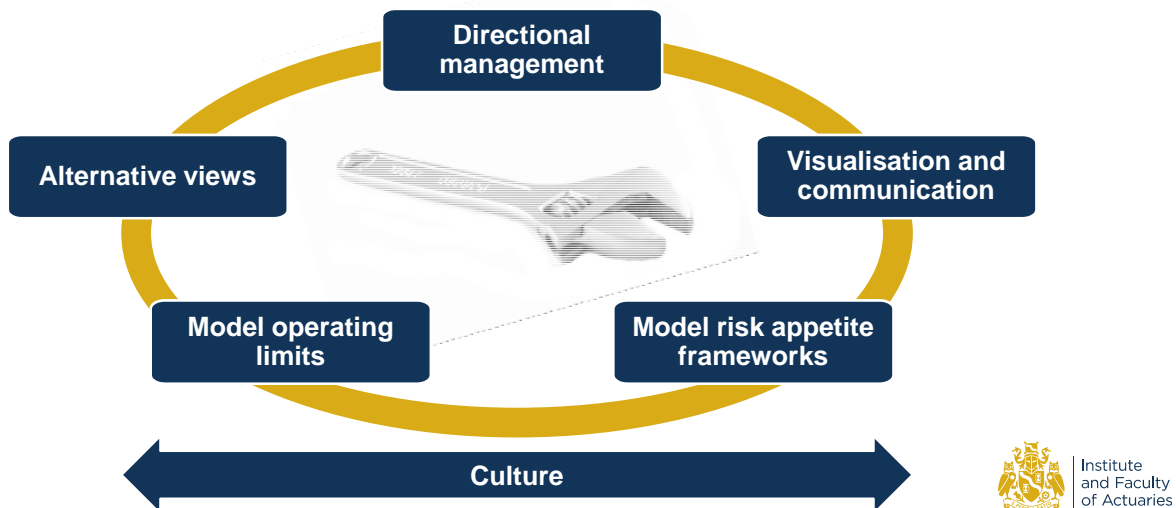


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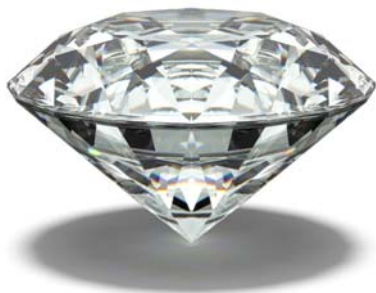
Some simple tools to help



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Directional management



“Better a diamond with a flaw than a pebble without”

Voltaire

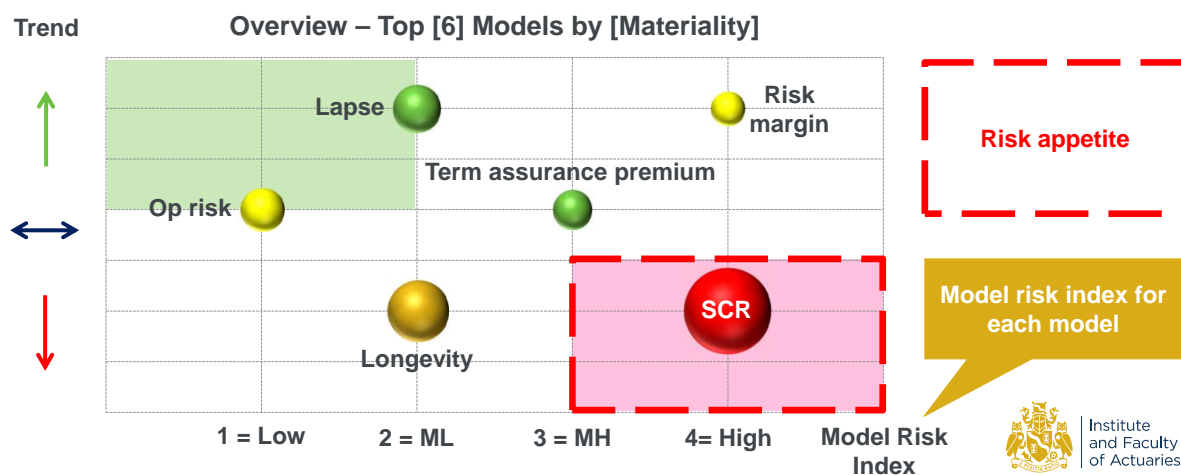


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Visualisation and communication



Model operating limits



Alternative views



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Conclusions

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- Eliminating all model risk is not possible
- But successfully managing model risk is possible



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Questions

Comments

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What else might influence our judgement in modelling?



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