



Society of Actuaries in Ireland

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# How are insurers getting most value from their capital modelling?

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Tom Durkin

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# Four areas of focus for today

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**1.** Eight qualities

**2.** Value and model use

**3.** Business planning

**4.** Your team

# 1. Eight qualities



# Eight qualities of effective capital modelling

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Answers key  
business  
questions

Clear  
communication

Well-managed  
model change

Firm-wide  
view of risk

Responsive

Resilience

Clear vision  
and ownership

Anticipating  
future  
change

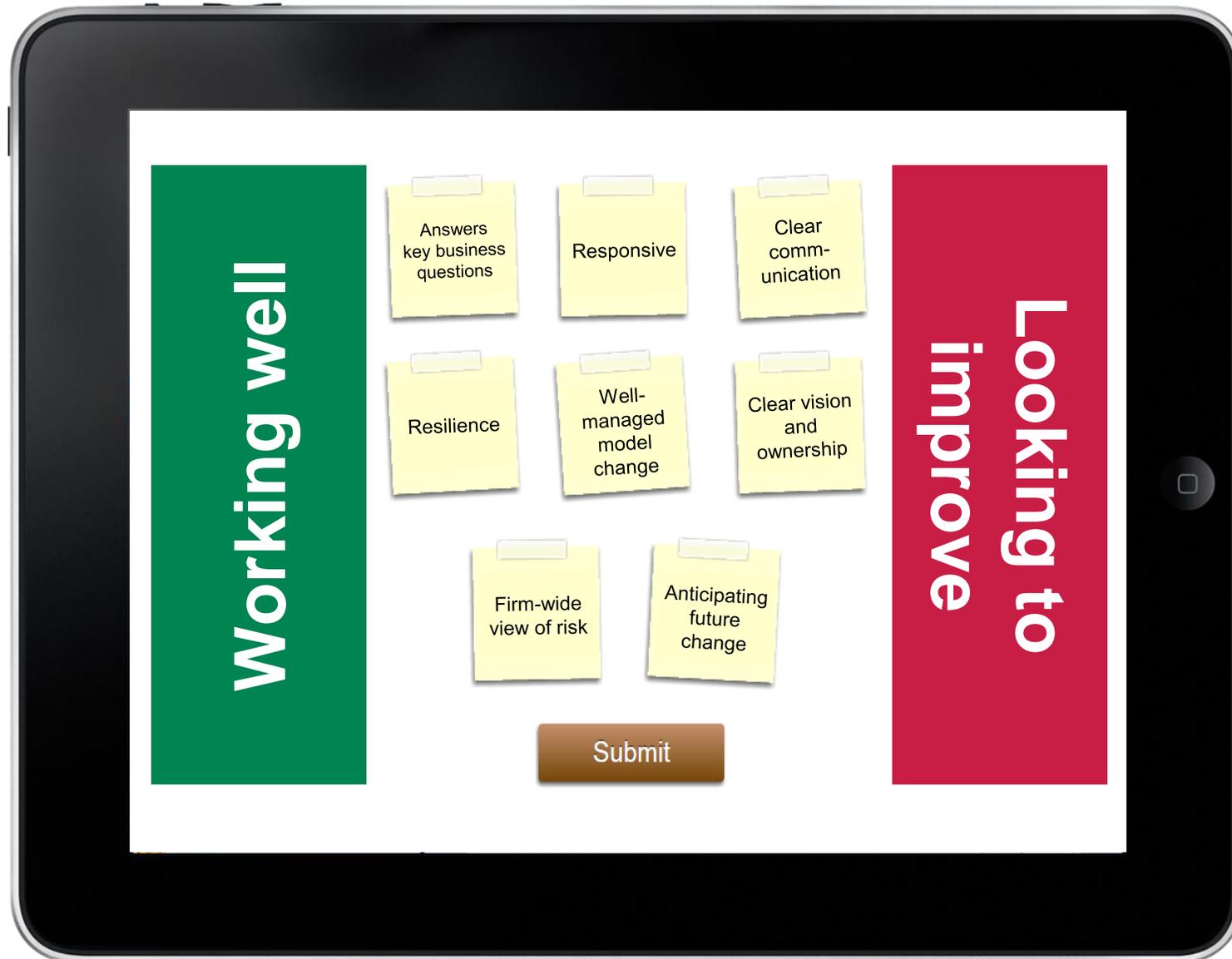


# How do you rate your firm against the eight qualities?



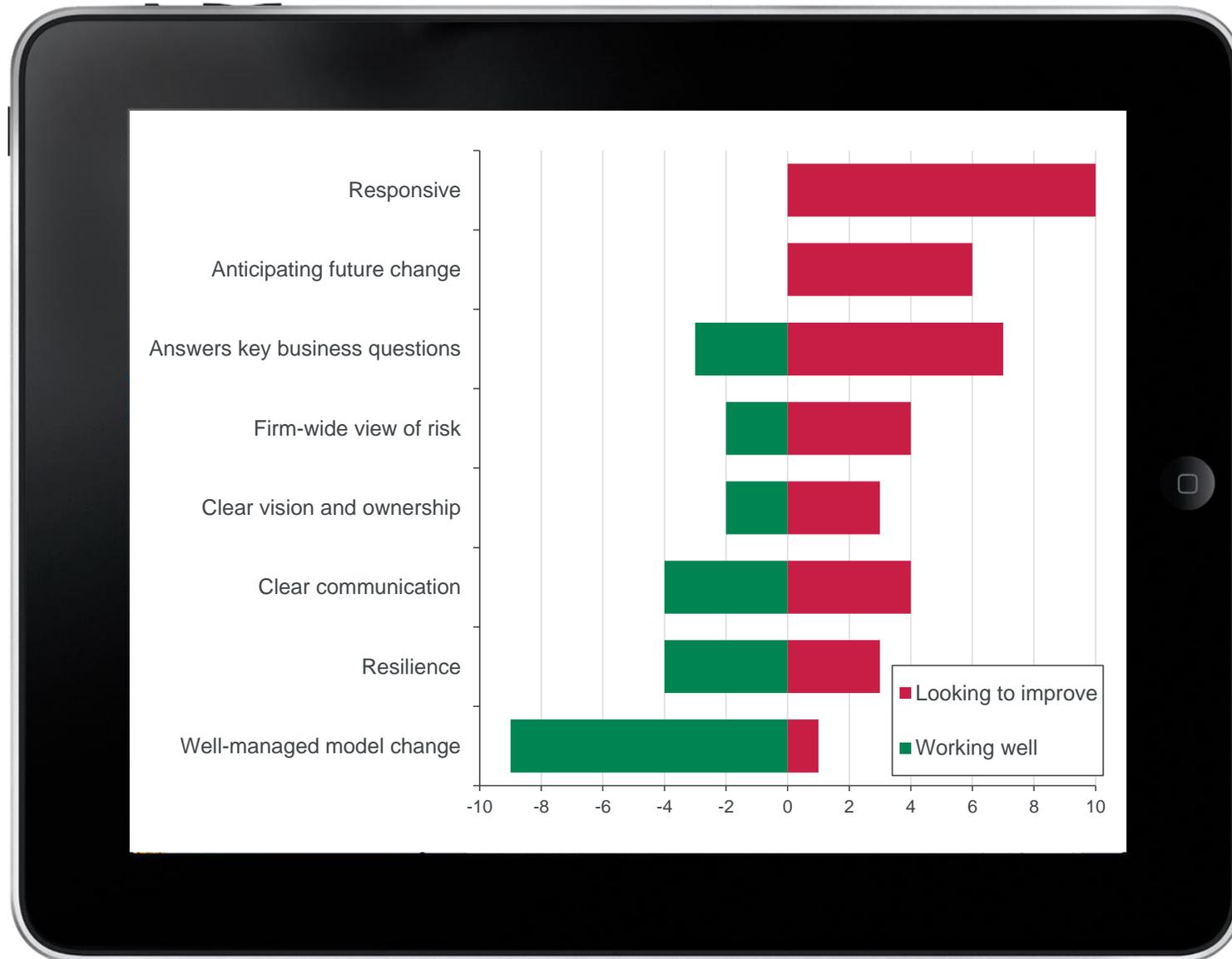


# Board or committee workshop





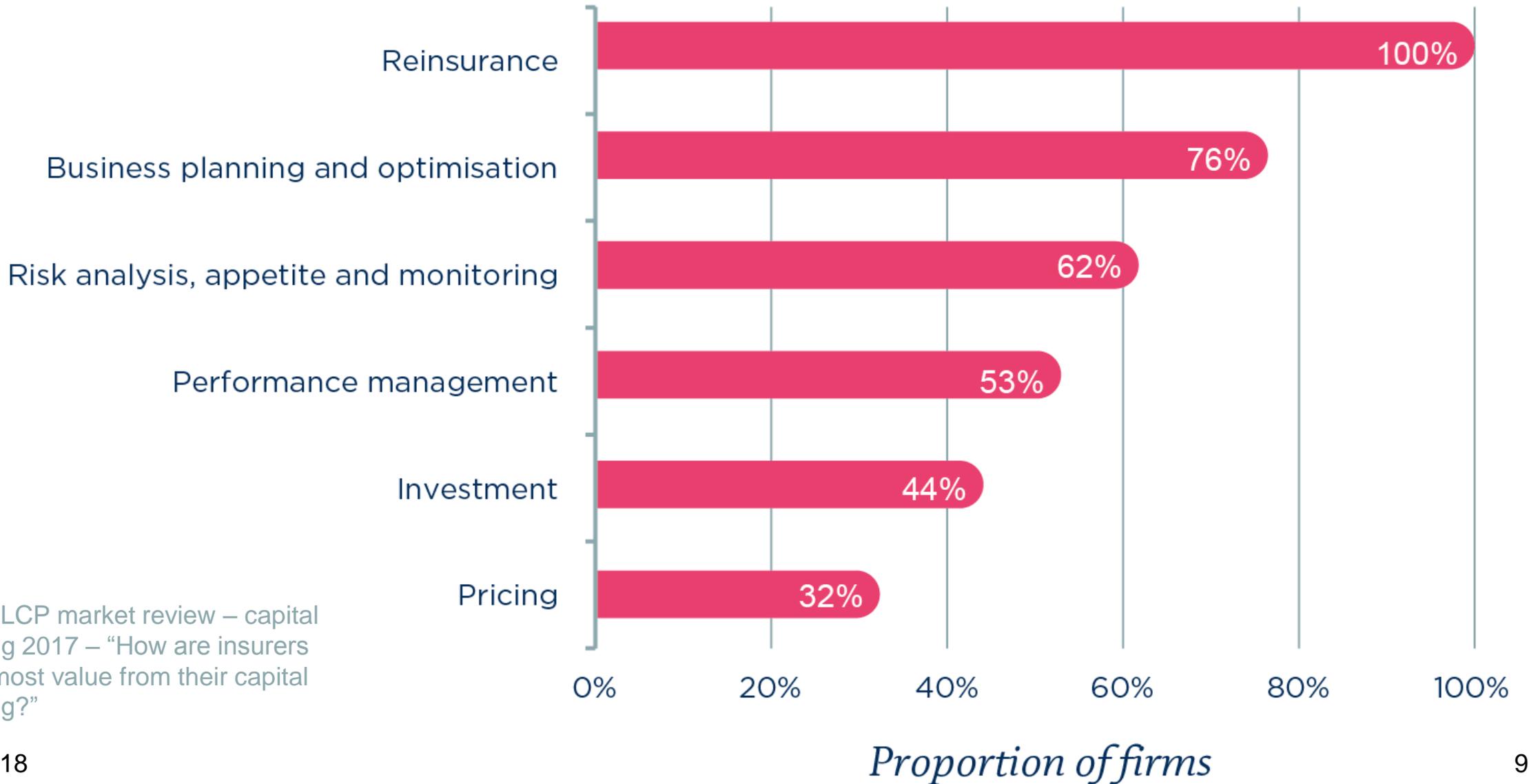
# Board or committee workshop



## 2. Value and model use



# Model uses (in addition to capital setting)





# Conflicting (and often strongly held) views

*“Modelling is a critical part of business planning”*

**Vs**

*“It’s too circular to be useful”*

*“It’s useful for supporting pricing and/or investment decisions”*

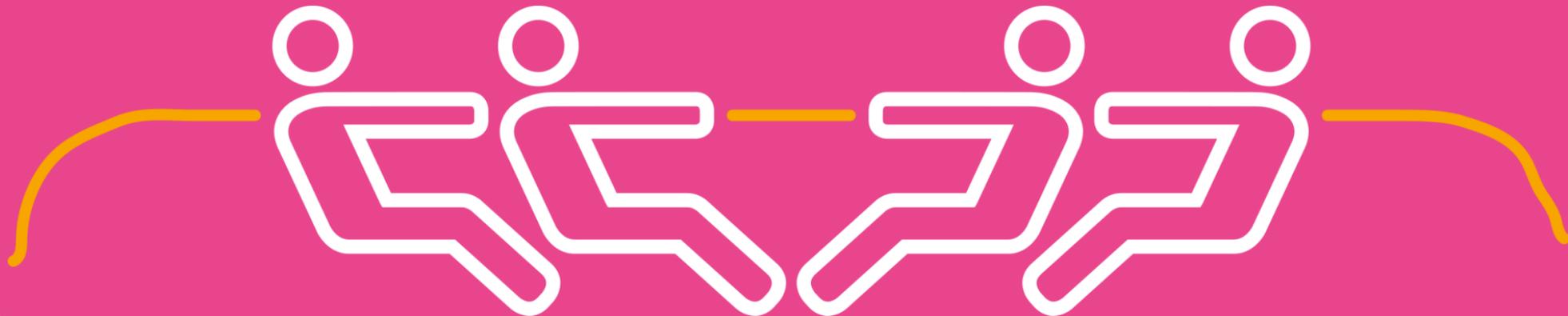
**Vs**

*“This is better left to more specialised models”*

*“It provides a helpful input to remuneration”*

**Vs**

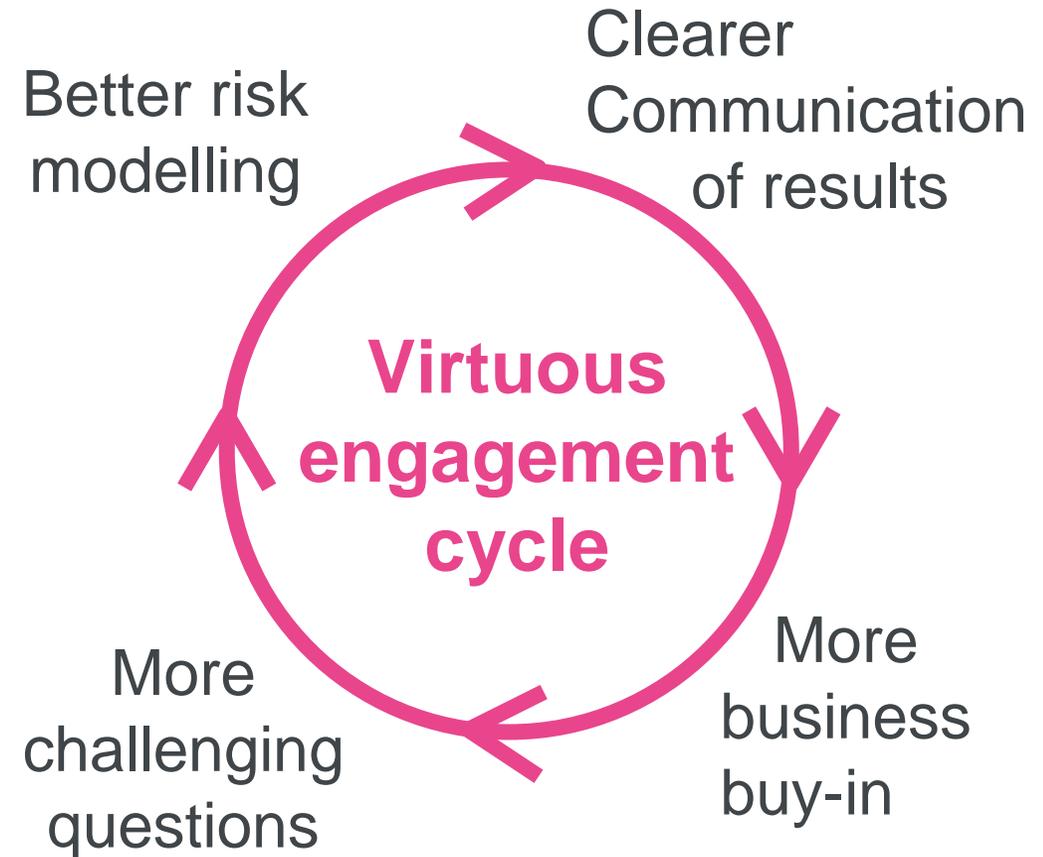
*“That’s not appropriate .. and can be dangerous!”*





# Virtuous engagement cycle

*“There was a little bit of interest ... then lots of interest ... then there was a steady pull on the model by the business as they realised the model CAN do something and they wanted it”*





# Business understanding of model limitations

**Confirmation bias**

**Link to model uses**

**Results used out of context**

*“The business understands it’s ‘just a model’, but this is mentioned most when the model disagrees with preconceptions”*

# 3. Business planning



# Challenging aspects of supporting business planning?

## Business challenges

Aligning  
conflicting  
views  
35%

Late  
changes  
52%

Agreeing risk  
measures  
4%

Communicating  
uncertainty  
26%

Explaining  
counterintuitive  
results  
35%

Business not  
engaged  
22%

## Operational challenges

Tight  
timelines  
70%

Modelling  
changes to risk  
profile  
4%

Poor quality  
data  
26%

Long model run  
times  
22%

Managing  
version control  
4%

Co-ordinating  
with other  
departments  
22%

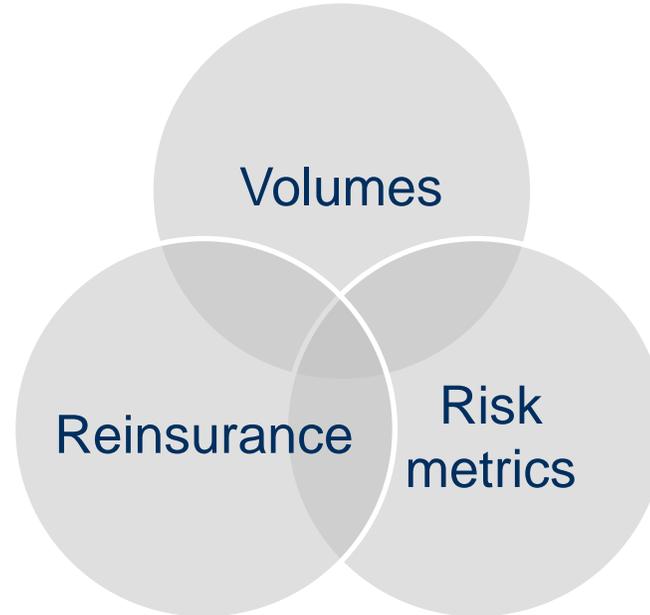
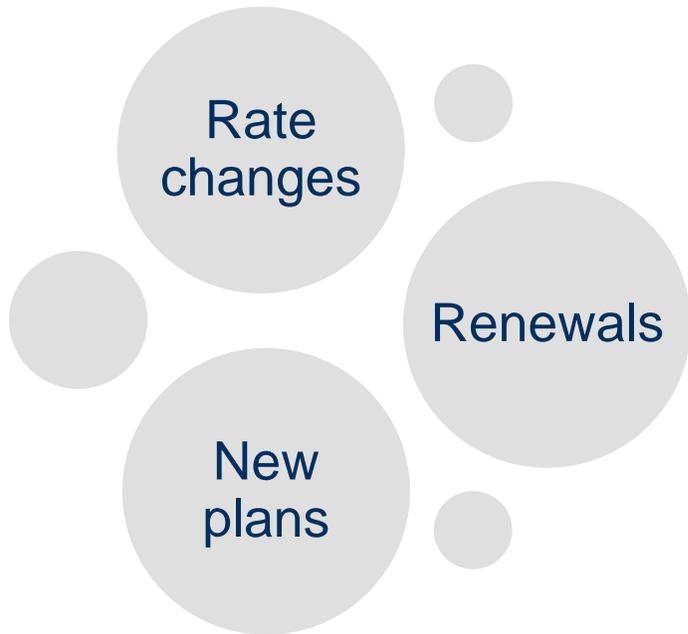


# A framework for business planning

**Reassessing the environment**

**Iterative analysis**

**Final review**



- Strategy to achieve plan
- Risk profile
- Profitability
- Communicating options

**May**

**Jun**

**Jul**

**Aug**

**Sept**

**Oct**



# Helping everyone stay on track

				Risk Measures				
	Reported	Premium £m	Profit £m	Capital £m	1 in 10 loss £m	Probability of loss (%)	Top Cat Scenarios £m	Model run
<b>Risk appetite</b>				<b>750</b>	<b>50</b>	<b>20%</b>	<b>310</b>	
<b>Baseline results</b>	<b>Board 22 May</b>	<b>987</b>	<b>55</b>	<b>690</b>	<b>25</b>	<b>18.0%</b>	<b>253</b>	<b>v17.3</b>
Updated PPO risk parameters	Risk committee 26 May	-	+2	+25	+5	+1.2%	+23	v17.3.1
Increased motor volumes	UW committee 27 May	+30	+5	+5	-2	-0.8%	-	v17.3.2
<b>Latest results</b>	<b>Rerun 28 May</b>	<b>1017</b>	<b>62</b>	<b>720</b>	<b>28</b>	<b>18.4%</b>	<b>276</b>	<b>v17.4</b>
<b>Risk headroom</b>				<b>30</b>	<b>22</b>	<b>1.6%</b>	<b>34</b>	
Option 1 - Reduce reinsurance		+101	+5	+25	+5	-0.3%	+20	v17.4.0.1
Option 2 - New product launch		+50	+4	+5	+8	+1.0%	+30	v17.4.0.2
Option 3 - Both		+151	+9	+26	+11	+0.8%	+50	v17.4.0.3



# Tailoring it for your business

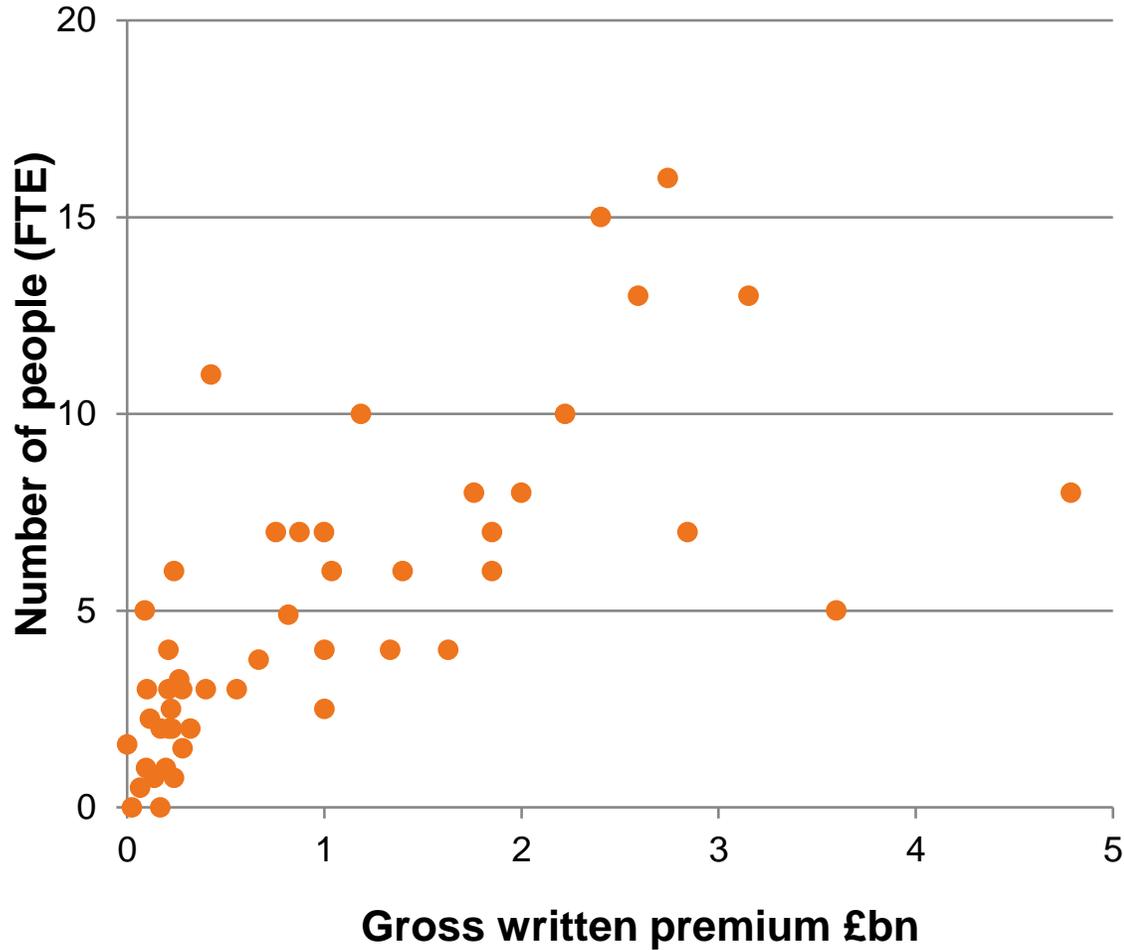


# 4. Your team

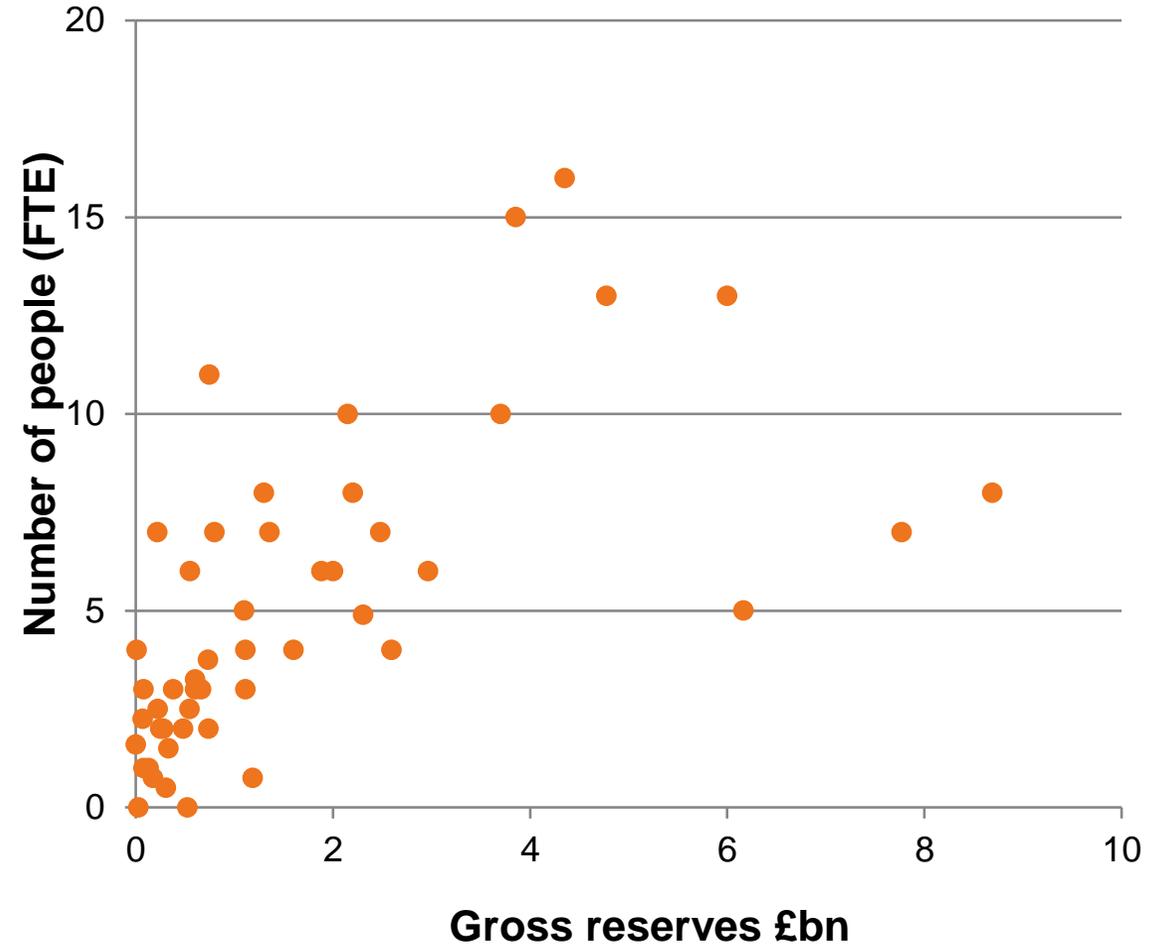


# Capital modelling team sizes

## Team size vs. premium



## Team size vs. reserves

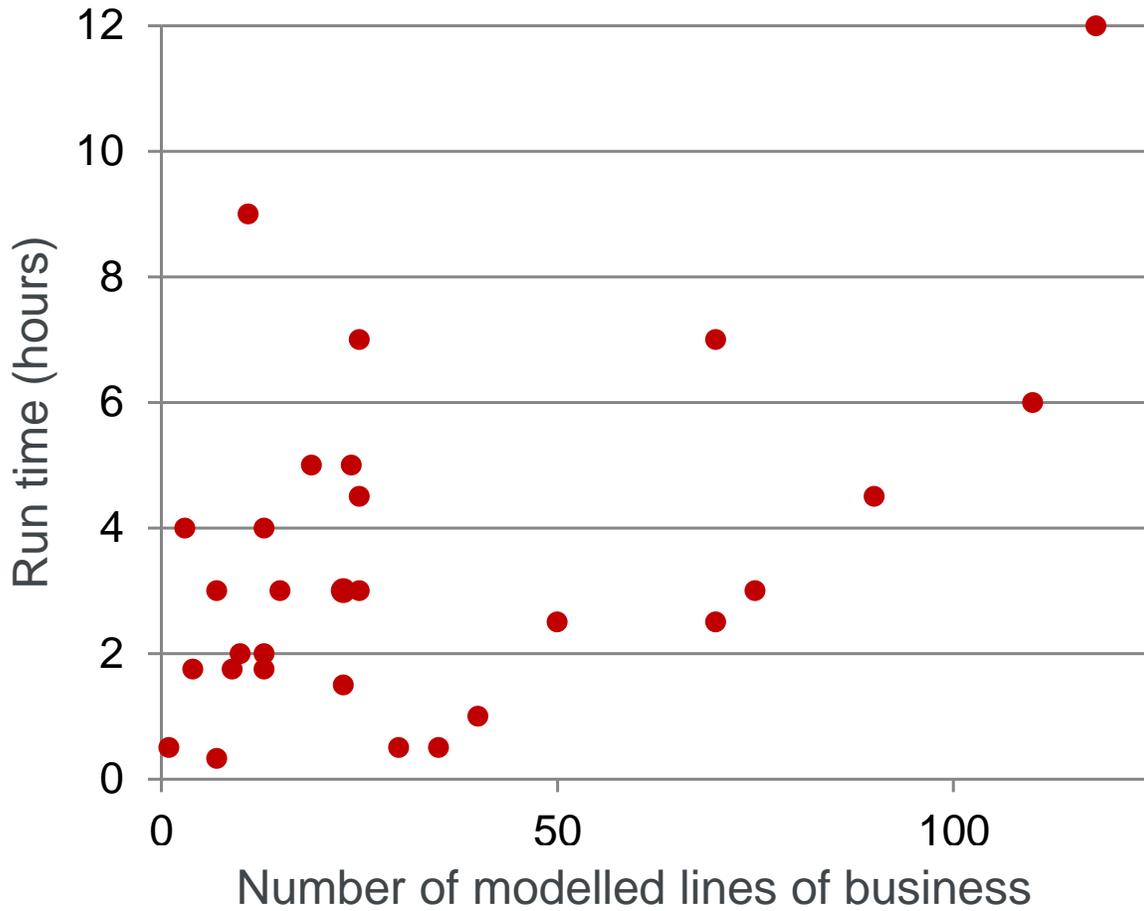


Source: LCP survey and discussions with 50 P&C insurers, 2017 and 2018

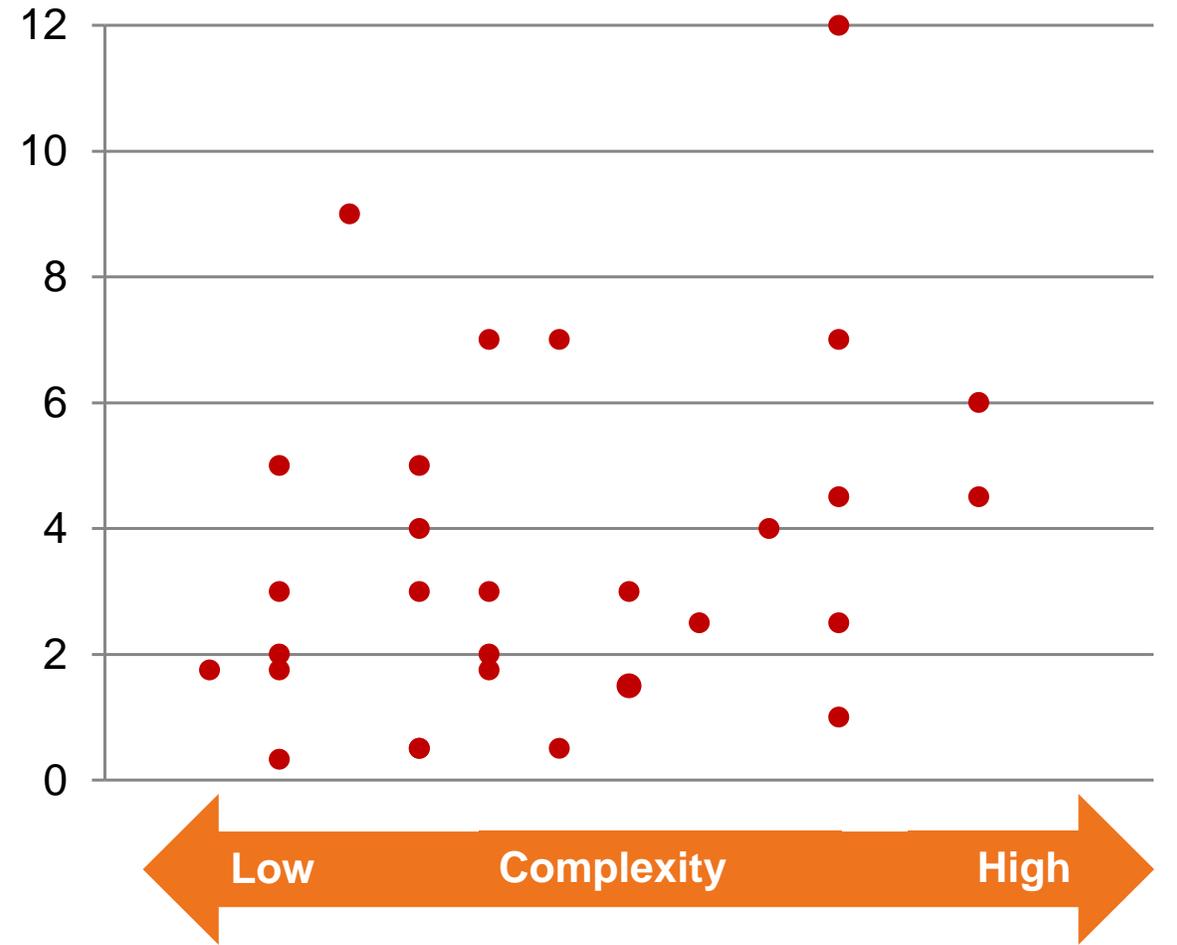


# Model run times

## Run time vs. lines of business



## Run time vs. business complexity



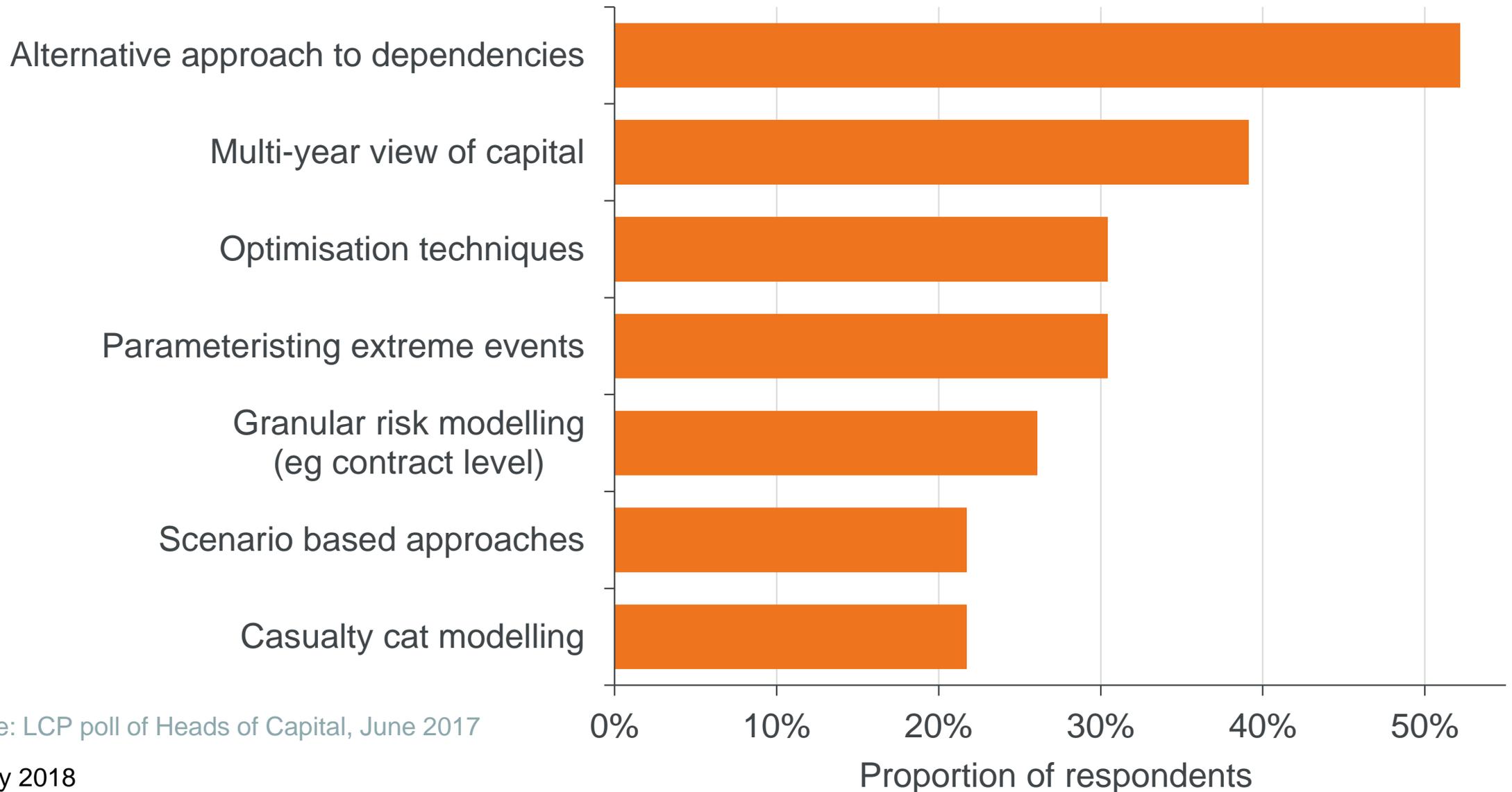
Source: LCP survey of 35 P&C insurers, 2016/17

18 May 2018

Four firms have a run time of between 18 and 48 hours. To improve readability, these are not shown on the above charts. They have between 3 and 200 lines of business and a range of business complexities.



# What would you research if you had a university team?



Source: LCP poll of Heads of Capital, June 2017

18 May 2018



# Where next?

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**1.** Eight qualities

**2.** Value and model use

**3.** Business planning

**4.** Your team



## More views from the market

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*“Yes the model adds value. However, once the catastrophe and reinsurance calculations have been done, there is a lot of regulatory baggage”*

*“Common structures provide a framework, like knowing where to look in a newspaper for the crossword and editorial”*



# Contact details

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# Disclaimer

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