



EU COST ACTION IS1304  
STRUCTURED EXPERT JUDGEMENT  
SPECIAL INTEREST GROUP: **(RE)INSURANCE**

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# LANDSCAPE (VAST & LIBELLOUS GENERALISATIONS)

- Unlike what the outside world may think, we are **not** analytical decision makers in (re)insurance.
- Models are mainly a **post-bind administrative burden** rather than a **pre-bind decision making aid**.
- We **make judgements all the time**, often with millions of dollars changing hands, in fractions of a minute.
- Given this – that we **have** to make decisions in data-poor environments at speed – it was obvious to me that the Cooke Classical Model provided the **best, simplest and most intuitive** method by which to improve those judgements.

# ACTIVITY

Meetings in London/Lloyd's:

- 2014, August.
- 2016, January.
- 2017, March.

Published in:

- *The Actuary* (2016).
- *The Journal Of Terrorism & Cyber Insurance* (Vol 1, No 1).
- *InsuranceLinked.com* (2016).

Presented at:

- *ARPC-OECD Global Terrorism Risk Insurance* conference.
- **3 meetings.**
- **2 elicitations.**
- **1 study** published in multiple insurance industry locations.
- **1 follow-up study** yet to be analysed.
- **1 book chapter** to be written.
- **1 scientific paper** (fully technical/quantitative) yet to be written.

# PARTICIPATION & COSTS

SEJ personnel needed:

- Myself (Raveem Ismail), Willy Aspinall & Christoph Werner.

Participation by experts:

- Lloyd's of London: underwriters, brokers, actuaries, modellers, insurtech.

Cost:

- Intra-UK travel for Willy and Christoph.
- Lunch and venue kindly provided by Lighthill Risk Network (Dickie Whitaker) and SCOR (Phil Holt).



*There are **no hard facts, just endless opinions**. Every day, the news media **deliver forecasts** without reporting, or even asking, **how good the forecasters really are**. Every day, corporations and governments **pay for forecasts** that may be **prescient or worthless** or something in between. And every day, **all of us** - leaders of nations, corporate executives, investors, and voters - **make critical decisions on the basis of forecasts whose quality is unknown**.*

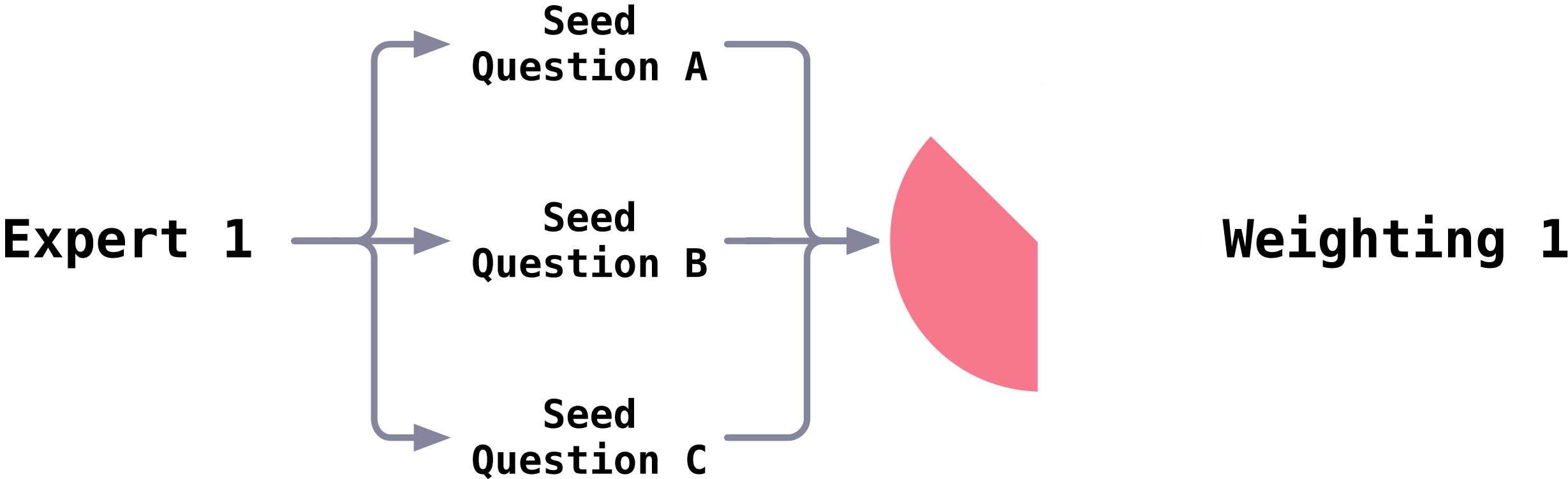
Superforecasting: The Art & Science Of Prediction.

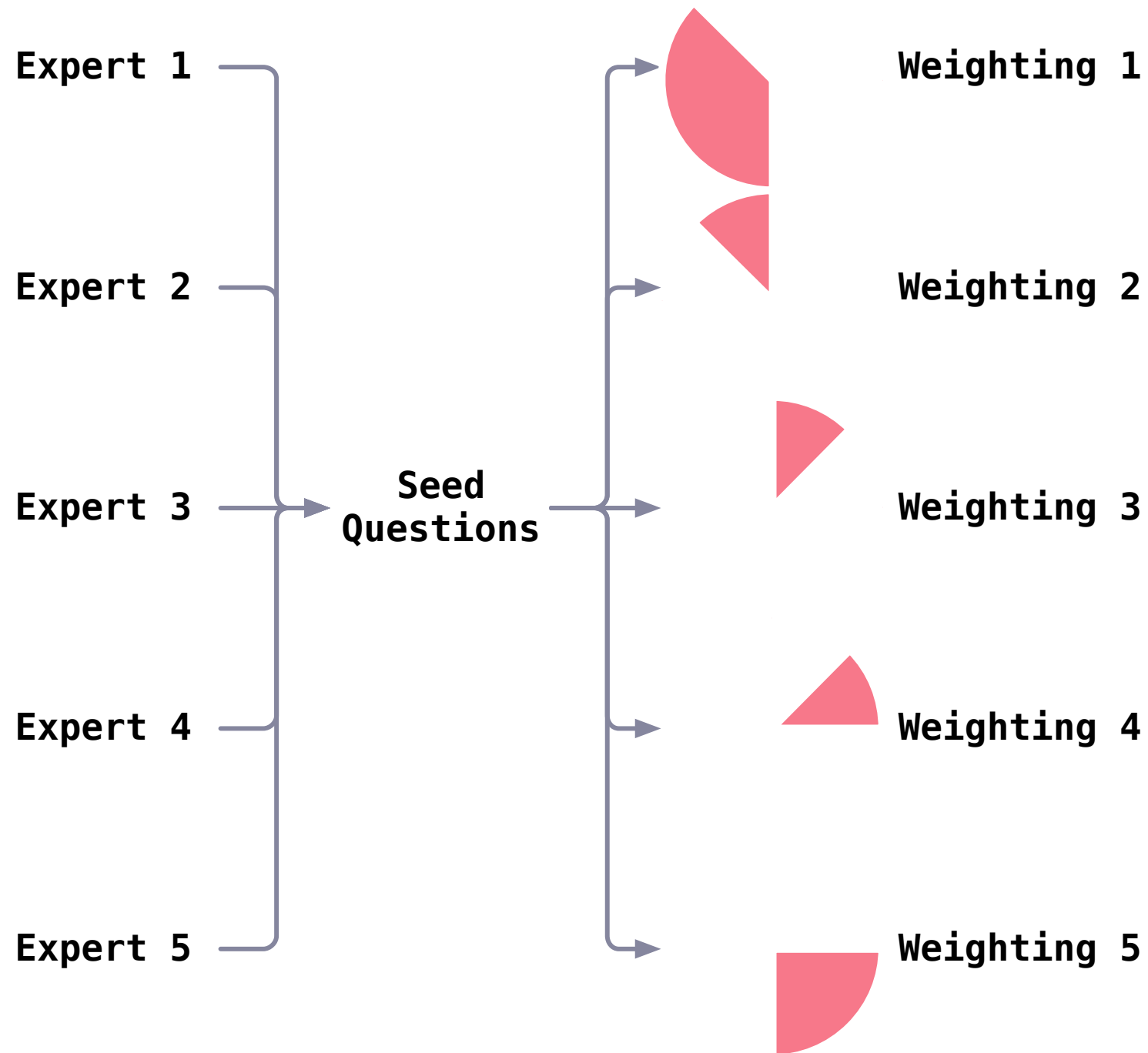
Tetlock & Gardner, 2015, Crown Publishers.

**We put investor capital at risk in exchange for premium.**

Decision-making should ideally arise from **objective** criteria: exhaustive data / sound physical principles.

Yet we often **have to act** in **data-poor environments**, where we rely heavily on **expert judgement**.

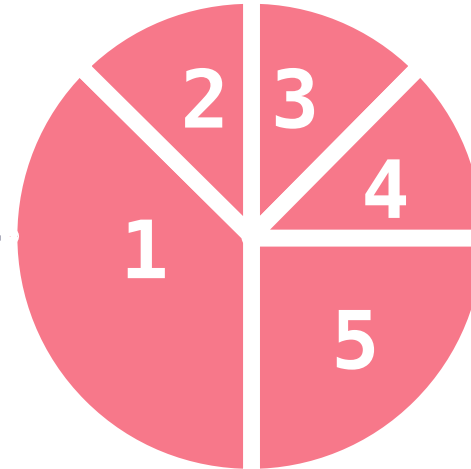




**Target  
question**



**Weighted  
Experts**



**Weighted  
Judgement**



SEJ method: Cooke's Classical Model.

Two metrics requested from experts, within the range of possible values:

- **A 5% to 95% confidence interval.**
- **A central median value.**



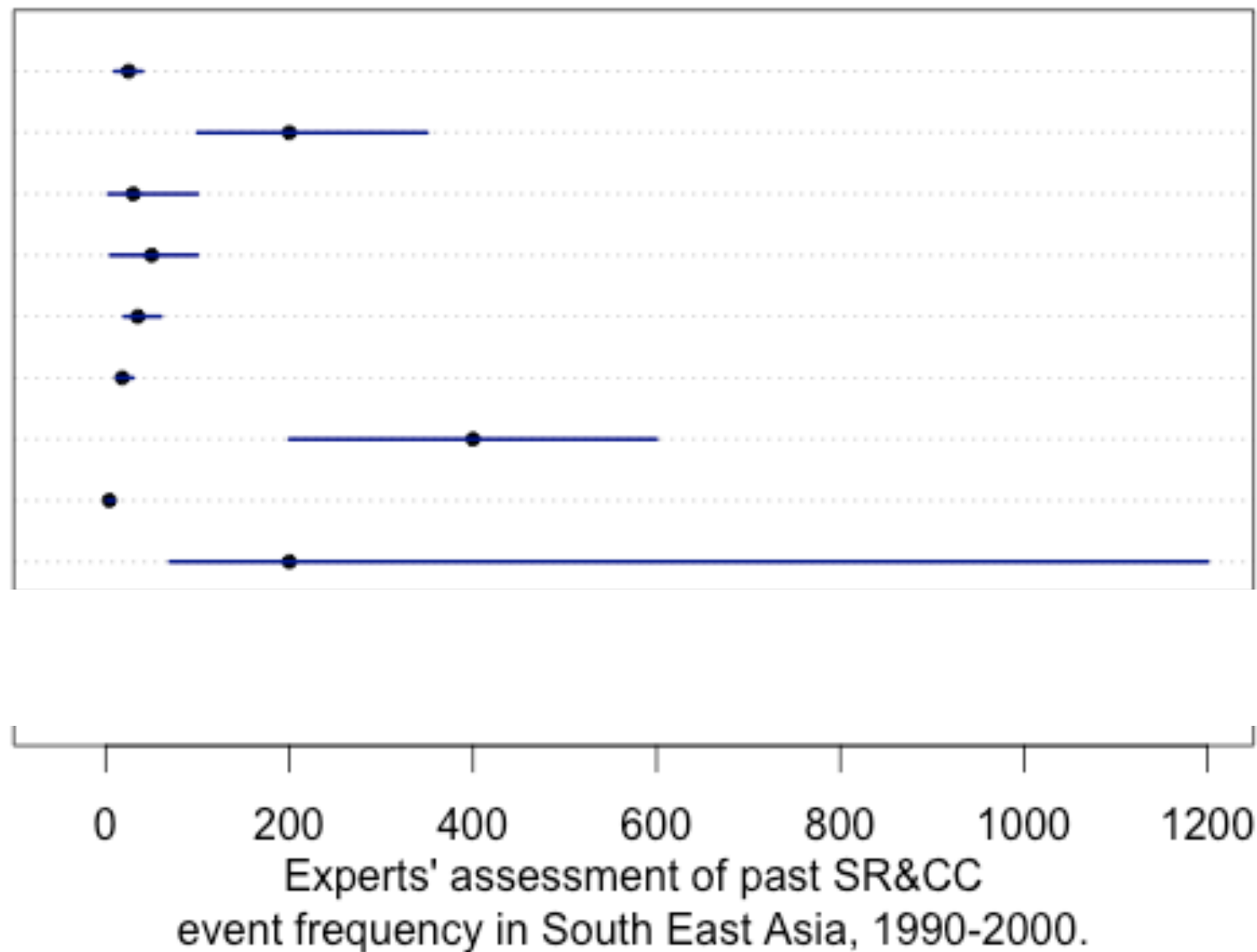
These provide a measure of:



















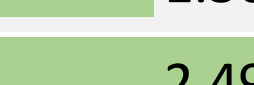









**“Calibration”**                      How *accurate* the expert is.

**“Information”**                      How *tightly* the expert gauges his/her own uncertainty.

## Seed Question 11.

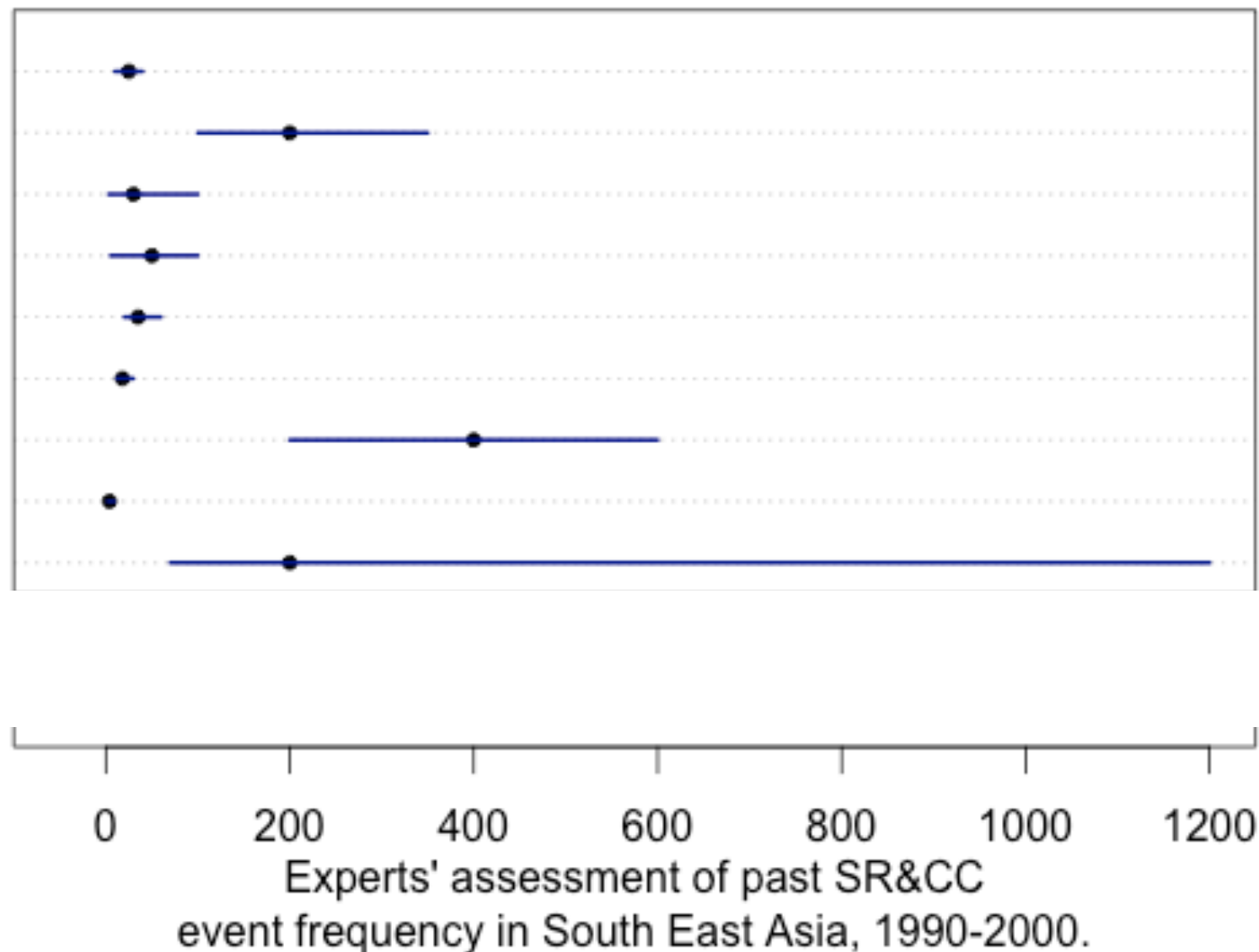
Expert 1  
Expert 2  
Expert 3  
Expert 4  
Expert 5  
Expert 6  
Expert 7  
Expert 8  
Expert 9



| Expert                                  | Calibration   | Information   | Equal weights   | Performance weights   |
|---|---|---|---|---|
| <b>1</b>                                |  0.2295   |  1.864   |  0.1111          |  <b>0.428</b>  |
| 2                                       | <0.0001   |  1.783   |  0.1111          | <0.0001   |
| 3                                       | 0.002   |  2.04    |  0.1111          | 0.0041  |
| <b>4</b>                                |  0.2274   |  1.665   |  0.1111          |  <b>0.3785</b> |
| 5                                       | 0.0002  |  2.153   |  0.1111          | 0.0006  |
| 6                                       | <0.0001   |  3.01    |  0.1111          | 0.0002  |
| 7                                       | <0.0001   |  1.505   |  0.1111          | <0.0001   |
| 8                                       | <0.0001   |  2.495   |  0.1111          | <0.0001   |
| 9                                       | 0.0001  |  0.734  |  0.1111         | <0.0001   |
| Equal-weighted combination              |  0.6286 |  0.869 |  0.4242        |   |
| <b>Performance-weighted combination</b> |  0.5173 |  1.701 |  <b>0.7561</b> |   |

## Seed Question 11.

Expert 1  
Expert 2  
Expert 3  
Expert 4  
Expert 5  
Expert 6  
Expert 7  
Expert 8  
Expert 9



## Seed Question 11.

Expert 1

Expert 2

Expert 3

Expert 4

Expert 5

Expert 6

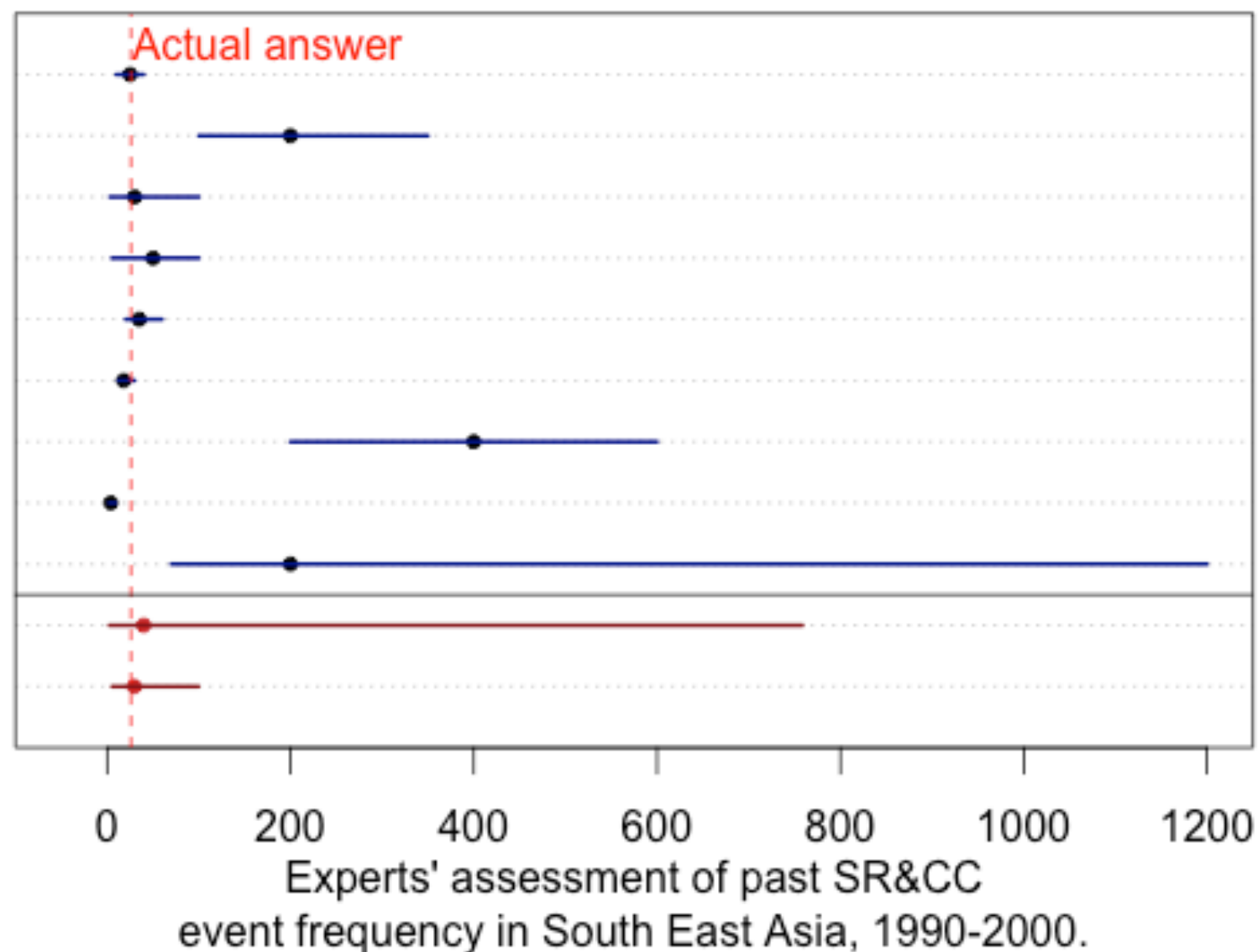
Expert 7

Expert 8

Expert 9

Equal-weighted combination

Performance-weighted combination



## Target Question 7.

Expert 1

Expert 2

Expert 3

Expert 4

Expert 5

Expert 6

Expert 7

Expert 8

Expert 9

Equal-weighted combination

Performance-weighted combination

