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Expert Judgement

Sessional Meeting
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London

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Solvency and Capital Management Working Party

Agenda

- Introduction and background
- Framework
- Process – using a worked example
- Validation
- Conclusion
- Discussion

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Introduction and background

Background

- Expert judgement is nothing new
- …but it is becoming an increasing area of focus for regulators, particularly with Solvency II
- Challenging area for many insurers
- Approach needs to be proportionate

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Solvency II

Level 1	No specific references to expert judgement in the level 1 text
Level 2	“based on the expertise of persons with the relevant knowledge, experience and understanding of the risks inherent in the insurance or reinsurance business” (Article 2)
Level 3	Materiality (Guideline 16) Governance (Guideline 17) Communication and uncertainty (Guideline 18) Documentation (Guideline 19) Validation (Guideline 20)

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Expert judgement versus judgement

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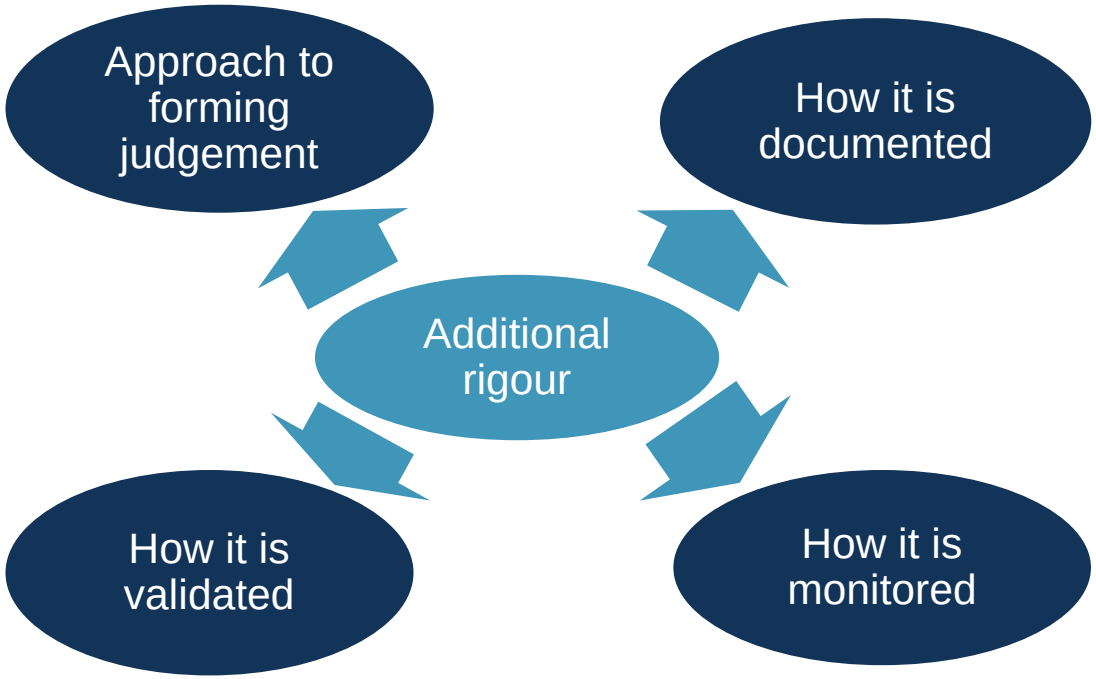
Implications and scope

- So what is the consequence of something being considered expert judgement rather than judgement?



Key categories of expert judgement

- Methodology
- Assumptions (Inc. parameters)
- Approximations

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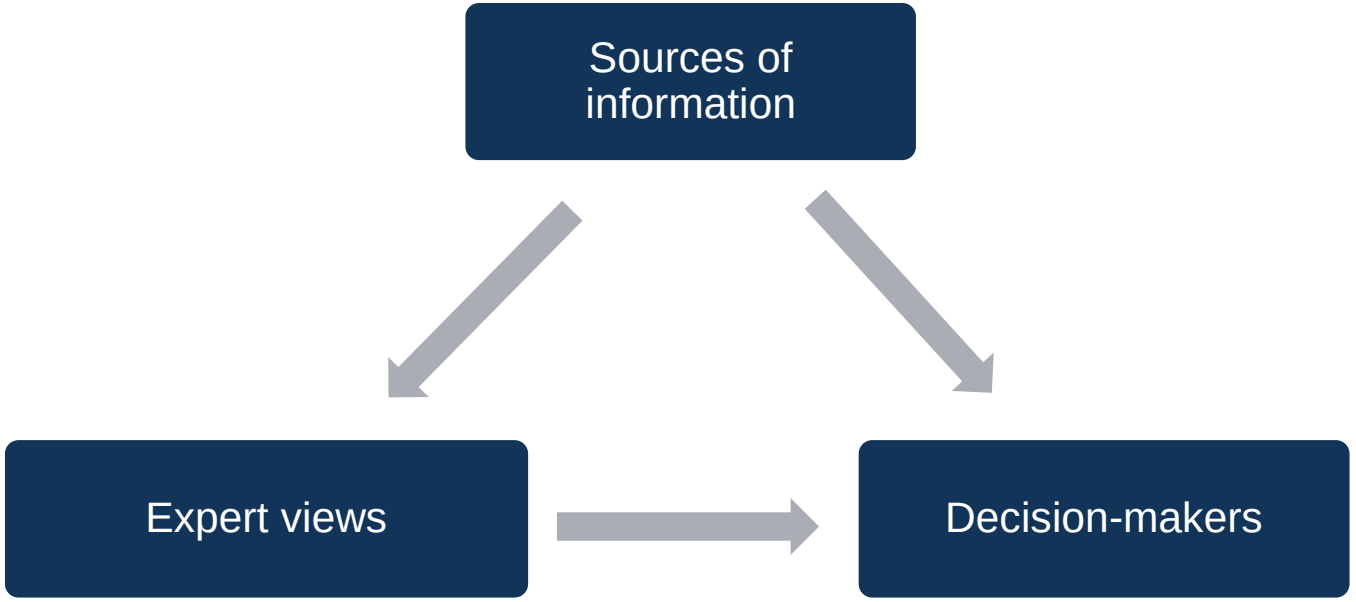
Formation of judgement



- Good process is essential, and needs to be tailored and proportionate in line with materiality
- In certain circumstances, the experts may also be the decision-makers

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Framework

Framework

- Expert judgement policy
- Governance structure
- Strong process
- Documentation
- Appropriate validation

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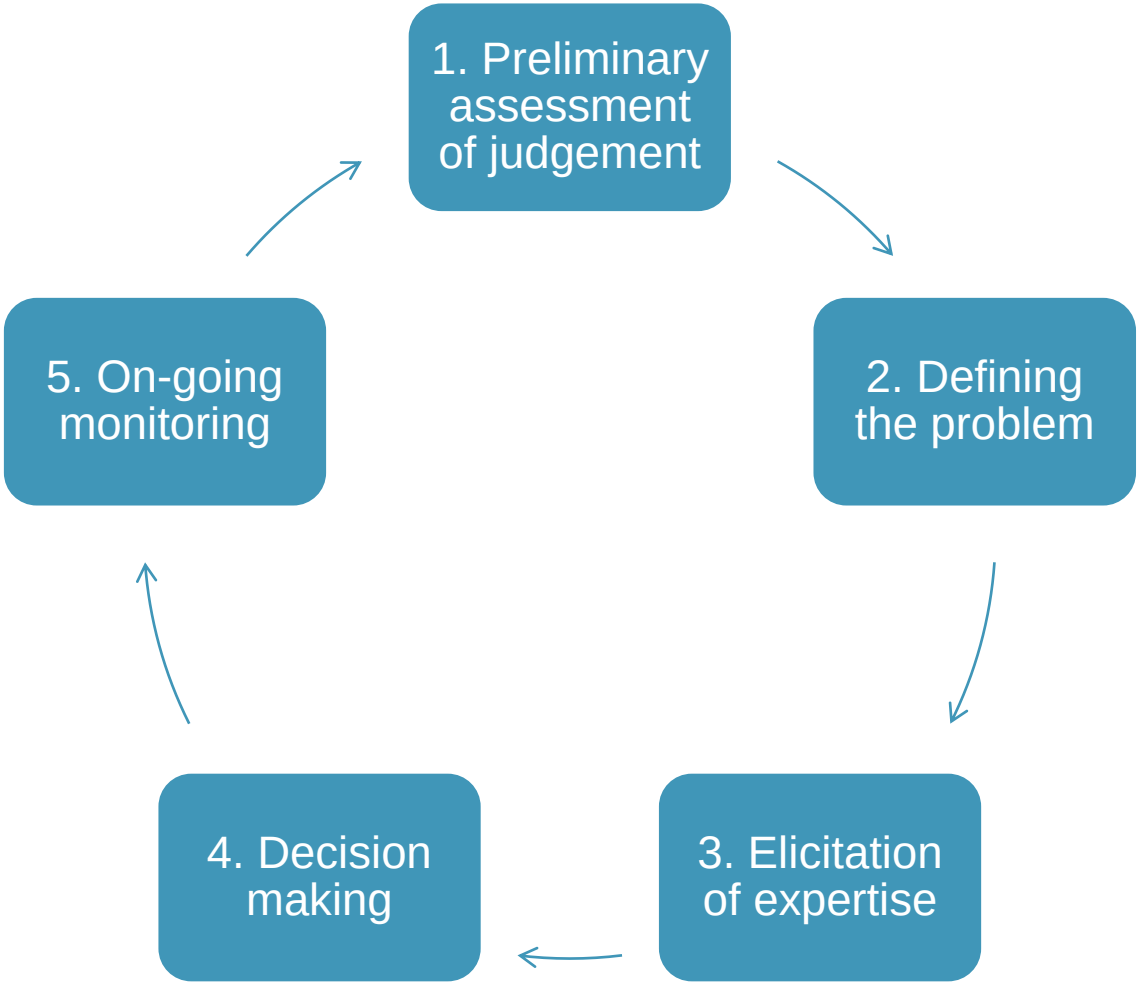
Process

Process overview



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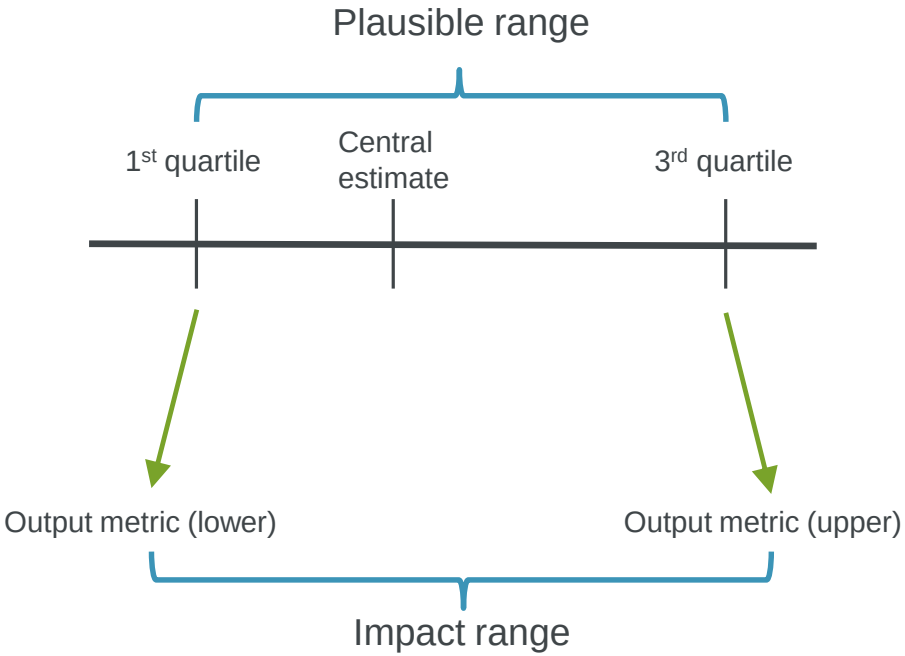
Some useful concepts

- Plausible range



- Uncertainty total impact

Σ (Impact range) = Uncertainty total impact

- Regions of expert judgement

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An example

- Situation:
  - New life insurance company (ABC Life)
  - Intends to sell bulk annuity business only
  - Needs to establish mortality assumptions

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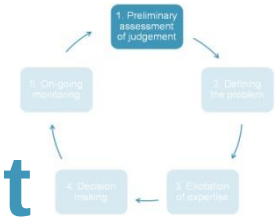

Preliminary assessment of judgement

Identify judgement	Mortality improvements
Assess whether in the scope of the EJ process	Key risk so inside expert judgement process

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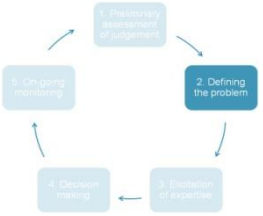

Defining the problem

Defining the problem	What will death rates be in future years? a. base mortality tables **b. annual improvement rates**
Terminology	Defined as the percentage reduction in mortality rate for one year to the next for a given age. Represented in a table showing improvement rate, age and calendar year
Articulate what the EJ relates to and why it is needed	**Area of judgement:** Assumptions **Metrics of interest:** IFRS profit, MCEV profit, statutory balance sheet, Solvency II balance sheet and capital requirements, ICA, internal economic capital forecasts

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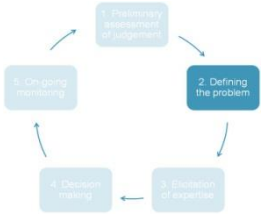

Defining the problem

High level understanding of the firm's exposure	Financial losses are incurred when fewer lives die than expected
Areas where judgement may need to be broken down	Pricing teams may require more granular assumptions than the financial reporting teams
Trigger of expert judgement	New product launch

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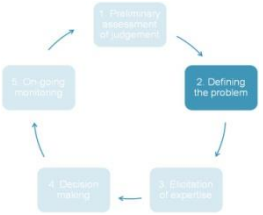

Defining the problem

Previous work and drivers to change	New assumption so no previous judgements to review
Prepare an initial estimate of the plausible range	A model is required to project future mortality improvements. There are a number of options (CMI, 2013) • The "92" Series and Interim Cohort projections • Adjusted interim cohort projections • ONS National Population Projections • P-spline projections • Lee-carter projections • **The CMI Mortality Projections Model**

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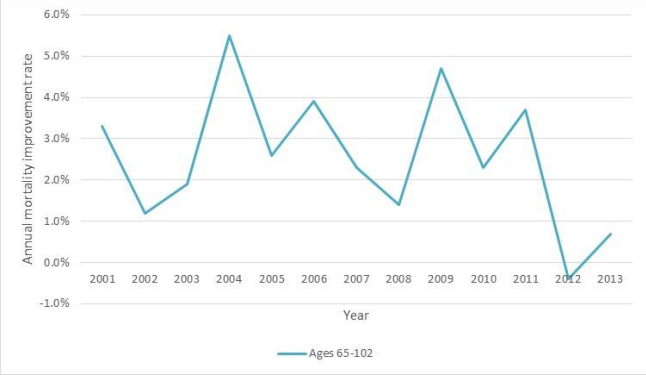
Defining the problem

Prepare an initial estimate of the plausible range

Historical data



Males - observed crude annual mortality improvement rates England & Wales population (CMI , 2014)

Benchmarking

Company reference	Male long term rate
A	1.75%
B	1.75%
C	1.90%
D	2.00%
E	2.00%
F	2.00%
G	2.00%
H	2.25%
I	2.25%
J	2.25%
K	2.25%

CMI model long term improvement rates for selected insurers (PRA returns)

Initial plausible range:

- 2% p.a. improvement rate as central estimate
- 1.5% and 2.5% chosen as the 25th and 75th percentiles

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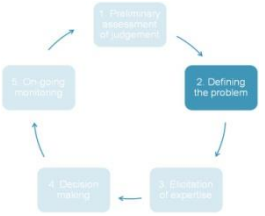

Defining the problem

Impact of plausible range

Assumed sample portfolio of 10,000 males aged 65 exactly being paid an annuity of £10,000 annually in advance

Scenario	Long term rate of improvement	Present value of annuities £m	Difference to best estimate £m	Difference as a percentage of best estimate
25th percentile	1.5%	1,671.5	-26.1	-1.54%
Central estimate	2.0%	1,697.6	-	0%
75th percentile	2.5%	1,724.9	+27.3	+1.60%

Assess the potential for reducing the plausible range

Further approaches could be used to reduce the plausible range:

- Performing further analysis on past population and industry mortality improvements to extrapolate the long term rates of improvement (10 days, using an internal actuary)
- The use of different data sources including socio-economic specific data (20 days, using an internal actuary)
- ...and others

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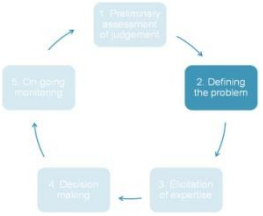

Defining the problem

Assess appetite for reducing the plausible range	Balance between A. Desire to reduce the plausible range; and B. Calendar time (time to market), staff time and cost Board decides to spend £50k and 60 person days
Prepare an overview of the need for expert judgement	Key assumption for ABC Life Board is comfortable with a 3 month timescale to conduct further analysis
Identify the personnel involved and their roles	• The internal actuary is to explore methods of improving the accuracy of the central estimate and reducing the plausible range • The external actuary is to provide… • The medical expert is to provide an expert opinion on…

Set out brief for experts. Clarify and finalise the brief.

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Elicitation of expertise

Decide an approach	I. In writing II. Individual interview III. Group interview – no decision makers IV. Group interview – with decision makers Other approaches viable
Elicit	Expert A: 1.75% p.a. Expert B: 2.00% p.a. Expert C: 2.50% p.a.
Consolidate	Elicitation manager consolidates information, highlights key areas of agreement and disagreement between experts

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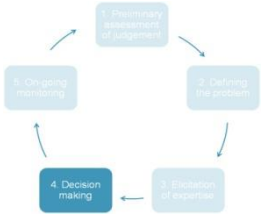

Decision making

Scrutiny and challenge	Further challenge by the decision makers Takes account of consistency with other judgements
Decision making	Need to avoid bias Clearly documented thought processes Capture in an expert judgement register Communication back to experts

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On-going monitoring

Review	Review in 1 year
Triggers for non-scheduled review	For example: • material error in the underlying data • significant additional data becomes available • significant change in industry practice • formal guidance from the regulator

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Validation

Role of validation and validation process

- Validation: required by Solvency II but wider applicability
- Judgement is hard to validate, but it can be done
- Key features of our process aid validation:
  - logical structure
  - clearly set out thought processes
- Validation tools can be used for expert judgement

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Conclusion

Conclusion

- Expert judgement is inherent in models
- Solvency II emphasises the need to have transparent, evidence-based judgements
- Need a strong framework to ensure application is easy to manage
- Need a robust and well-defined process that is tailored to the firm's needs
- A proportionate approach which has regard to the materiality of the decision is critical

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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 presenters.

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