MERCER WEBCAST
UNDERSTANDING THE LATEST TRENDS IN LIFE EXPECTANCY AND WHAT IT MEANS FOR PENSION SCHEMES

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TODAY’S SPEAKERS

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Mortality Assumptions – A Foundation of Pension Plan Management

Practical Implications

Funding

Hedging Profile

Lump Sum Payments

Review of Risk Transfer Options

Accounting

And in the long-term... Risk of running out of money
**SETTING MORTALITY ASSUMPTIONS**

<table>
<thead>
<tr>
<th>BASELINE</th>
<th>FUTURE IMPROVEMENTS</th>
<th>PRUDENCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Life expectancy today</td>
<td>How things <em>may</em> change</td>
<td>Additional margin</td>
</tr>
<tr>
<td>Can be measured</td>
<td>More uncertain and subjective</td>
<td>Explicit or implicit</td>
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Recent Updates: Baseline Mortality “S3” Mortality Tables

Updated for 2009 – 2016 data

Impact likely low if scheme specific analysis considered
Recent Updates: Future Improvements
“CMI_2018” Projection Model

Update to include 2018 data

Changes to model parameters

Headline changes in life expectancy:

- Male: 2.4% at 65
- Female: 2.1% at 65

But actual impact may be lower depending on parameters.
THE ROLE OF THE REINSURER

GEOGRAPHICAL VIEWS

Cancer Cure Impact

Life insurance

Longevity

PRODUCT DIVERSIFICATION

LONGEVITY ANALYTICS AND EXPERTISE

SUPPORTING INSURERS

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HOW WE SET ASSUMPTIONS

PREDICTING LONGEVITY IS DIFFICULT...

A LOT OF UNCERTAINTY

DATA CHOICE

Causes of death
Socio-economics
Volatility
What others are doing

MODEL CHOICE

Medical advances
Trends
Scheme features
Emerging risks
HOW WE SET ASSUMPTIONS

**Base mortality**

- Set by analysing a number of data sets:
  - Internal pension scheme data
  - Third party pension scheme data
  - Population and global data
  - Socio-economic data
- Bespoke modelling that allows for mortality to vary by age, sex, income, location and socio-economic status
- Focus on pension scheme age analysis
- Scheme-specific adjustments made depending on outcome of experience and profile

**Future improvements**

- Set using population data
- Bespoke model adjusted to control for changes in smoking prevalence in the population
- Short term trends are extrapolated and cohort effects assumed to continue based on credibility of experience to date
- Long-term trend based on the long-term rates of improvement expected across a number of countries
- Population improvements compared to experience observed in specific pensioner subsets of the population

**Dependants**

- Future dependants are a material risk and form an important part of our modelling; we need to estimate the probability of having a spouse upon a member’s death and their likely age
- Look at tracing and member communication exercise data and experience data, analysing the similar factors to the base mortality.
Mortality improvements by male/female and year (England and Wales)
Technical Note
All liabilities in this section are a Reference Liability based on an example portfolio and certain conditions. Outcomes for different scheme profiles, benefit structures and financial assumptions will differ. Effects are also sensitive to the date from which the baseline mortality is projected.
DEVELOPMENT OF RECENT CMI MODELS

REFERENCE LIABILITY

CMI_2016

S-Kappa = 7.5
S-Kappa = 7

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Development of Recent CMI Models

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POSSIBLE IMPACTS OF 2019

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POSSIBLE IMPACTS OF 2019
EXAMPLE 1 – NO IMPROVEMENT 2018->2019

Comparisons assume no changes to the formulation of the CMI model other than the reflection of 2019 data.

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POSSIBLE IMPACTS OF 2019
EXAMPLE 2 – 5% IMPROVEMENT 2018 -> 2019

Comparisons assume no changes to the formulation of the CMI model other than the reflection of 2019 data.

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2019 SO FAR ... 
"BREAKEVEN" EXPECTATION

Expected deaths*: 226,000

* Based on reported deaths, from weekly data from the Office for National Statistics
2019 SO FAR ...
EVIDENCE TO DATE

Expected deaths*: 226,000
Actual deaths*: 216,053

* Based on reported deaths, from weekly data from the Office for National Statistics
2019 SO FAR ...
WHAT WE WOULD NEED FOR NIL IMPACT

Expected deaths*: 226,000
Actual deaths*: 216,053

Liability impact only flat if deaths are higher for remainder of year.

Potential deaths over remainder of 2019

* Based on reported deaths, from weekly data from the Office for National Statistics
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Possible Impacts of 2019

No further improvements in 2019
POSSIBLE IMPACTS OF 2019

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Continuation of trend
No further improvements
POSSIBLE IMPACTS OF 2019

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Liabilities could *increase by around 2%* under S-Kappa=7 … *A good time to hedge longevity?*

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WHAT DOES IT MEAN FOR PENSION SCHEMES?

LEARNINGS

- Mortality table updates can make liabilities go up as well as down!
- Annual volatility is significant - consider impact before adopting parameters

PRACTICAL CONSIDERATIONS

- Get the basics right – scheme specific adjustments to base table
- Consider your scheme compared to general population
- Consider drivers behind future changes and how this interacts with other risks

SHOULD LONGEVITY RISK BE HEDGED?
QUESTIONS?

Please type your questions in the Q&A section of the toolbar and we will do our best to answer as many questions as we have time for.

To submit a question while in full screen mode, use the Q&A button on the floating panel, at the top of your screen.

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