

Longevity trends – beyond gender

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Introduction

Typically, as actuaries, we have simply used gender as a differentiating factor for longevity improvements (and the interim cohort didn't even go that far). Implicitly, by using the CMI Mortality Projections Model, we also assume that the correct starting point for longevity improvements is the mortality experience for England & Wales.,

In this talk, we show that:

Members of defined benefit pension schemes have experienced different improvements to the population as a whole

We can identify groups of members who have experienced different improvements to each other

As 'food for thought' we also set out six 'alternative futures' that produce life expectancies that are much higher or lower than the standard projections typically used for pension scheme valuations.

DB pensioners are different

With help from NAPF, we were able to assemble a large, quality-checked dataset of around 2.5m lives and 1m deaths, to ensure our results would be credible and reliable.

Looking at individual scheme data, we found that longevity experience over 2000-2010 could have led to up to a 5% divergence in liabilities between two schemes.

We and NAPF wanted to see if we could find out what was driving these differences, by grouping together pensioners within our data who had similar characteristics. Because we wanted to use information that was freely available to most pension schemes, we used pension amount and deprivation (a measure of the availability of resources in a given area) for males, and just deprivation for females.

The types of pensioner

Our analysis suggested that there were three separate groups for men and two for women; we characterised these as "Hard-pressed", "Making do" and "Comfortable" for men – for women we combined "Making do" and "Comfortable" to make a single group.

We found that the change in life expectancy over 2000 to 2010 was 2.5 years for "Hard-pressed" men, but only 1.9 years for "Comfortable" men, implying that the life expectancy gap between socio-economic groups had reduced somewhat over the period. For women, "Hard-pressed" had increased by 2.0 years and "Making-do / Comfortable" by 1.6 years.

We analysed the patterns of increase in mortality for each group, and replaced the 'standard' projections in the CMI model with a group-specific set of improvements, without changing the long-term rate or pattern of convergence. We found that a typical scheme's liabilities increased by 0.5% for the "Comfortable" group compared to the standard CMI model starting point, 1.5% for the

“Making do” group and 2.0% for the “Hard-pressed” group. For women, liabilities for the “Comfortable / Making-do” group increased by 1.0% and “Hard-pressed” by 0.5%.

Alternative futures

To illustrate the uncertainty in longevity projection, we came up with 6 scenarios that cover some very different longevity outcomes; from “Back to the Fifties” which assumes that life expectancy might fall significantly over time (leading to a reduction of 10-15% in liabilities), to “Extended Youth” which assumes that the most recent decade’s improvement continue into the future (around a 10% increase in liabilities).

The other scenarios are “Health Cascade”, “Improvement Decline”, “Cancer Revolution” and “Challenging Times”. More details of these scenarios are in the slides and in our release documents which can be found at:

Longevity Model:

http://www.napf.co.uk/~media/Policy/Documents/0414_Longevity_model_Nov14_2.pdf

Technical Report:

<http://www.clubvita.co.uk/SiteCollectionDocuments/NAPF%20Technical%20Report.pdf>

We don’t suggest that any of these scenarios are better than others, or even place outer boundaries on what we might experience in the future. Their purpose is to support more informed discussions between the key stakeholders managing pension schemes.

We and NAPF hope to make this research part of the conversation on longevity improvements; to that end, NAPF have proposed three questions for trustees and pension managers to ask their advisers:

1. What starting point is being used for the longevity trend assumption?
2. If we were to use the longevity groups set out in the NAPF research report, what would be the impact on scheme liabilities?
3. How would our funding and investment strategies change if longevity trends developed in line with one of the scenarios set out in the NAPF research report (e.g. ‘cancer revolution’) or another plausible scenario?