To: Board for Actuarial Standards

Actuarial Mortality Assumptions: Discussion Paper

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I am pleased to comment on a number of the questions posed in the discussion paper.

(2a) Paragraph 3.20 suggests that scenarios can be useful in illustrating risk and uncertainty. The Accounting Standard Board has a best practice statement for pension disclosures in firms' accounts, which suggests that firms disclose the way in which the value of their obligations would change if there was a different mortality assumption. This is essentially a "Stress test" and I believe that this is helpful. The ASB illustrate an example where firms would show the effect on their liabilities in the event of a mortality change equivalent to a one-year increase in the expectation of life. However, I suggest alternatives should be explored, such as the effect of the 10% reduction in all mortality rates.

I do not believe it is helpful to express the impact of uncertainty in terms of equivalent changes in discount rates. This seems to be bringing us back to the way in which, in the past, the actuaries have often offset one assumption against another, for example using a conservative assumption about investment returns while having a mortality assumption that, in itself, would understate the liability. I agree with the suggestion from the Pensions Regulator (in their February Discussion Paper) that offsetting is undesirable. I believe the mortality assumptions should be what they say on the tin. I would be very happy to see the effect on pension liabilities of a change in mortality and, separately, of a change in the discount rate.

I believe that the development of mortality fan charts, with associated confidence intervals, has been useful as an indicator of uncertainty. However, as paragraph 3.18 says, they do not allow for the uncertainty outside the scope of the models, which is quite difficult to understand. I would therefore be inclined to promote the use of stress tests.

(2b) I agree that there should be separate assumptions for base mortality and future changes. I agree that we should not take the form of margins in other assumptions. I believe that it is important for the assumptions to be set out in a transparent manner, enabling non-executives and non-actuaries to be able to challenge them. Using margins in other assumptions is a barrier to transparency and should be avoided.

I can see that there are some issues where actuaries make adjustments to standard tables. For example, if an age deduction from a table is used, the actuary should specify whether this is an adjustment to better reflect

current mortality, or is being used as an adjustment (or additional adjustment) to allow for future improvements.

(2c) I agree that it is important to understand the significance of assumptions, and to assess which are the most critical assumptions. However, I believe this should be done by illustrating the impact on the value of pension liabilities if there were to be a change in the mortality assumption. I do not believe it is appropriate to focus on what would be the change in discount rate that had the same effect. If you were issuing a paper on interest rate assumptions being used by actuaries, I do not think that you would suggest that the significance would appropriately be expressed by stating the change in mortality assumption that had the same effect. It is more appropriate to examine the impact on the value of liabilities of changes in mortality, investment and other assumptions separately.

(3a) In general, as regards communication, actuaries need to consider the context in which they are reporting, and the nature of the readership. There are clearly some differences.

However, in general, I favour the mortality assumptions being disclosed in terms of the equivalent expectation of life, both on a period basis and a cohort basis. The expectation of life is a very helpful indicator, summarising mortality rates in a way that can be comprehended by non-actuarial readers. Using expectation of life also simplifies comparisons between firms and over time. This is being recognised by the Financial Services Authority, which requires UK life insurers to indicate the expectation of life consistent with their annuitant mortality assumptions (which also have to be specified); and by the Accounting Standard Board, in its pensions reporting statement. There are naturally firm-specific factors which are relevant, and this does hinder comparisons to some extent. However, we will ordinarily expect the decision about what rate of future improvements in mortality was appropriate not to depend on scheme-specific factors (unless they could be identified and explained). If actuaries disclosed both the period and cohort life expectancies, I believe this would enable the reader to take a view about the appropriateness of the period mortality assumption and, separately, the rate of future improvements, as reflected in the difference between the period figure and the cohort figure.

The FSA require information about the expectation of life not only for those currently aged 65, but also those who will be aged 65 in 20 years' time. The ASB reporting statement has an illustration regarding the expectation of life of a scheme member reaching normal retirement age in 20 years' time. I believe that these are useful disclosures, and the cohort expectation of life should be adequate here.

However, I have a concern that several firms are reporting, in their accounts, the expectation of life for future retirees, but without indicating how far in the future this is. The reader does not know whether the future retirement is in 5 or 25 years' time, so this information is effectively meaningless. It is also inconsistent with the ASB reporting

statement. I believe that the BAS should be concerned about such a practice.

I understand that the reason why some firms do this is because the actuary does not make good use of two way mortality tables. It strikes me as clear that future mortality rates depend upon the age of the person and the year we are considering; and there are two-way mortality tables that take this into account explicitly. However, some actuaries take the approach that it is acceptable to consider the mortality rates for future retirees as the equivalent to using the mortality rates expected to apply in one future calendar year. This means that they are not in a position to indicate the expectation of life for someone retiring in, say, 2027, since that requires the mortality rate for a 65-year-old in 2027, for a 66 year-old in 2028, and so on.

The simplistic approach essentially involves offsetting. By choosing to use the mortality rates for one future calendar year, the actuary is over-stating mortality rates expected to apply in the near future, and under-stating those expected to apply in more distant years. This produces a less than transparent result, and it is less easy to comprehend and less open to challenge.

I appreciate that the BAS may well set standards for actuarial work which could not rule out the simplistic approach that I have described. Indeed, there might be some circumstances where such a simplistic approach was helpful (although I am not aware of them). Nevertheless, I believe that BAS should address this issue, since this simplistic approach is, on the face of it, leading some firms to disclose information in their accounts that is effectively meaningless, and inconsistent with the ASB reporting statement. I am sure that BAS would wish to see an improvement here, and the question is how to achieve this.

(3c) I can see that there some issues in developing benchmarks. However, I believe this is a matter that does need to be progressed. If I was a Director of a firm, and the pensions actuary reported the expectation of life at retirement age now and in 20 years' time, I would naturally think, do I have some figure to compare this with, which would help me in considering whether it was reasonable and whether I should challenge it. It could therefore be that, in practice, benchmarks will develop. The issue is whether BAS or some other body wishes to influence that development.

A starting point might be the expectation of life for the UK population (males and females separately). The period and cohort estimates of the expectation of life could well be a benchmark. It would be possible to show the low and high expectancy variants as well as the principal projection. There is clearly further work that could be done to look at sectors of the population, for example lives insured or members of occupational pension schemes, as reported with CMI data. Further sub-divisions within these sectors are obviously possible.

(4a) I agree that the comments in paragraph 4.15 are difficult to support.

(4b) I agree that standards have a role to play in increasing the transparency of assumptions and their comprehensibility to users of actuarial information.

(5b) I suggest you will need to take into account what type of report, with what purpose, and for what readership, is being prepared.

(6a) I agree that you are right to ask for evidence to the contrary.

7.2 Paragraphs 6.32 and 6.33 refer to smoothed actual changes. This smoothing is difficult, you need to think why smoothing is desirable. There may be benefit in retaining the data on actual experience as reported, i.e. do not discard the information this provides about the variability in mortality rates.

I believe there is more we can learn about past mortality trends, which will help us have a better understanding of the possible futures. In practice, I suggest that longitudinal surveys can be particularly helpful. An example is Khaw, K.-T. et al (2008), “Combined impact of health behaviours and morality in men and women: the EPIC-Norfolk Prospective population Study”, PLoS Med 5(1): e12. doi:10.1371/journal.pmed.0050012

This area is one where we are continuing to do further research, and I will be pleased to share our findings with you when they are available.