

The Director
Board of Actuarial Standards
5th Floor, Aldwych House
71-91 Aldwych
London
WC2B 4HN

Johann DuToit

Tel. 020 7426 1834
Fax 020 7426 1898
jdutoit@genre.com

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Dear Sir

Feedback on the BAS Actuarial Mortality Assumptions Discussion Paper

Gen Re LifeHealth specialises in pricing and assuming mortality risk, in particular life insurance risk, and the BAS discussion paper is very relevant to us. We have read the paper with great interest and would like to feed back our comments.

The paper starts by looking at the audience that would be affected by standards. The audience for a pension scheme actuary is different from the audience for a life insurance actuary and the level of technical detail that can be digested is very different. BAS should therefore be conscious of imposing standards in one area that may not be helpful in the other.

BAS could potentially set minimum standards that actuaries should adhere to for:

1. Disclosure of mortality assumptions,
2. Mortality assumptions to be used in the determination of liabilities, and / or
3. Mortality assumptions used in pricing (e.g. the gender directive).

It is our understanding that this paper addresses the first two points, but BAS should be conscious of the impact that standards could have on pricing.

A) Responses to questions raised in the paper

2 BACKGROUND

The BAS would welcome respondents' views on the significance of the effects described in paragraphs 2.7 to 2.27.

Section 2 discusses the effect on companies if the mortality assumptions are set too high.

Insurance regulation in the UK has shown that where the mortality assumptions for valuation purposes are set too high, insurance companies will take advantage of regulatory arbitrage e.g. by ceding the risk offshore through reinsurance to a less onerous environment.

With regards to pricing, the cost of capital required to support the insurance and annuities markets is a key determinant of the price to consumers and BAS should be careful not to impose minimum standards that impose a significant capital burden. As well as affecting price directly this may also affect supply as capital is reallocated to product lines where returns are higher.

3 CONCEPTS

The BAS would welcome respondents' views on

- ***Appropriate methods of communicating the extent and impact of the inherent uncertainty involved in mortality assumptions;***

Sensitivity analyses and scenario testing are the techniques that meet the requirements of all audiences, irrespective of their technical knowledge of mortality. It also sits well with the tendency towards greater risk awareness and risk management under Solvency II.

- ***Whether the use of separate assumptions for base mortality and future changes in mortality, not taking the form of margins in other assumptions, would be desirable;***

Using separate base mortality assumptions and future changes is common practice in the insurance / reinsurance market.

- ***Appropriate methods of communicating the significance of assumptions, both in absolute terms and relative to that of other assumptions.***

Paragraph 3.5 discusses the significance of a change in mortality for a 45 year old and an 80 year old. We would like to point out that a 40% change in the mortality of a 45 year old would also be very significant for a life insurer; just as a 40% change in the mortality of an 80 year old is very significant for a pension fund.

The points raised in paragraphs 3.40 to 3.45 appear to more aimed at longevity risk, than insurance risk. We believe effective communication in an insurance environment can be achieved through sensitivity analyses and scenario testing.

The BAS would like to know whether respondents foresee any practical difficulties in communicating the assumptions about subsequent changes in mortality rates underlying life expectancy statistics. It also seeks views on and suggestions for summary statistics for changes in mortality, as discussed in paragraphs 3.55 to 3.58.

The expectation of life summary statistic is not a very useful way to show the effect of assumptions in a term assurance environment, while annual rates of change for specific ages are more useful, but cumbersome due to different rates by age and year.

The BAS would welcome views on the use of benchmarks, as discussed in paragraphs 3.59 to 3.61, and whether the development of standard benchmarks for future changes in mortality should be encouraged.

Benchmarks are a tool that is frequently used by analysts such as Standard & Poor's. It would bring a set of assumptions closer to real life and would make it easier to gauge the level of conservatism in a set of assumptions.

4 STANDARDS

The BAS would welcome any general comments that respondents may have on the various possibilities for standards, and in particular whether they agree that

- There should be some standards for mortality assumptions, as argued in paragraphs 4.15 to 4.16***

Standards for the disclosure of mortality assumptions are appropriate. This could be presented as guidance on matters that should be taken into account when producing a report e.g. for the valuation of liabilities when determining profit.

- That reporting standards would play a significant role in increasing the transparency of mortality assumptions and their comprehensibility to users of actuarial information, as argued in paragraphs 4.17 to 4.19.***

We see the benefit of reporting standards mainly for pension fund trustees. Life insurers mostly report to a relatively more informed audience (e.g. boards, auditors and regulators) and disclosure around mortality assumptions are naturally more comprehensive.

The BAS would also welcome any general comments that respondents may have on how to assess the likely impact of possible BAS standards for mortality assumptions.

We can foresee problems with the imposing of limits on assumptions. We feel that the problems raised in the paper with regards to different limits that would apply to lives from different countries and rated lives, makes this recommendation too difficult to implement. However, it would be possible to set limits within which very little disclosure is required, but the requirement for disclosure increases if the limits are breached (see comments in Section 5).

5 BASE MORTALITY

BAS welcomes respondents' views on the desirability or otherwise of using the most recent applicable published tables, taking into account both the communication problems and the practicality of setting a limit on the tables to be used.

Limiting disclosure to the most recently published tables has advantages and disadvantages:

- It makes comparability between companies easier
- The "Actual / Expected" will be of the order of 100%. When using older tables such as the "80" or "92" series, the "Actual / Expected" is often of the order of 40% to 60% and it is difficult to assess the level of conservatism in the assumptions when the Expected table is out of date (mortality today is compared against expected death rates of 20 years ago).
- Companies that uses USGAAP reporting are locked into the original pricing bases, unless they decide to loss recognise and hence cannot change to the most recent tables.
- When moving between different Expected tables, the contribution of mortality to the "Analysis of Change" is affected.

With regards to limits that can be set on Expected tables, we don't believe a "one size fits all" limit would be helpful. However, we do believe the following approach could be used: Limited disclosure is required if the mortality assumptions fall within a "band of reasonableness" e.g. say between 90% and 110% of the most recent Expected tables. The further the mortality assumptions fall outside the "band of reasonableness", the more disclosure is required. The result is that more abnormal assumptions require more explanation, while assumptions that seem intuitively reasonable require little disclosure.

Views would also be welcomed on any of the possible requirements for reporting on assumptions about base mortality, criteria that assumptions should meet, or limits that should be observed when setting assumptions. The BAS is particularly interested in

- **Any practical problems that might arise in complying with them**

We are concerned that the amount of disclosure required may become too onerous – especially on a block of business where the Expected table and mortality assumptions are intuitively reasonable.

Mortality improves annually, while a base table is fixed in time. Setting limits as a proportion of a base table, would mean that the limits become outdated after a few years due to mortality improvements. Regular reviews would be required to re-evaluate the appropriateness of the base table and the limits.

Consideration should be given to whether the most appropriate Expected table is smoker differentiated or an aggregate table.

- **Whether they would further the BAS's aim of increasing the transparency of assumptions and their comprehensibility to users of actuarial information.**

We believe the main beneficiaries of greater disclosure are pension fund trustees, since other stakeholders such as boards, regulators and auditors are already privy to much of the information.

6 FUTURE CHANGES IN MORTALITY

The BAS would like to know whether respondents agree that there is no objective basis for differentiating the future changes in mortality likely to be experienced by a particular small group of lives from those likely to be experienced by the population as a whole. If respondents disagree, the BAS would be interested in examples to the contrary, together with supporting evidence.

We disagree with BAS's view. The paper does not touch on the different levels of mortality improvements experienced by non-smokers (and in the extreme, never-smokers) and smokers. It is widely accepted that a significant part of recently observed mortality improvement results from the change in smoking prevalence within the underlying population. Models we have developed suggest that there may be a significant difference between the rate of improvement of non-smokers and smokers. The smoker population is significantly smaller than the non-smoker population and can be objectively identified in the application process. It is not unreasonable to expect future experience for these two groups to remain

very different. The insurance industry has not quantified the different levels of experience yet, but is moving in that direction.

Views would also be welcomed on any of the possible requirements for reporting on assumptions about future changes in mortality, criteria that assumptions should meet, or limits that should be observed when setting assumptions. The BAS is particularly interested in

- ***Any practical problems that might arise in complying with them***

There is currently great concern in the actuarial profession about the great variety of projected results that can be obtained by using subtly different projection methods or data. The projection methodology is still in the development stage and is likely to change significantly over the next few years. It, therefore, does not make sense to set a standard in such an environment.

However, we do believe there is merit in setting a standard with regards to the minimum underpin that should be used for longevity business (and possibly a maximum ceiling that should be used for insurance business).

- ***Whether they would further the BAS's aim of increasing the transparency of assumptions and their comprehensibility to users of actuarial information.***

The main concern about future mortality changes is that improvements at older ages are understated and longevity contracts are therefore under reserved. We believe a minimum underpin would go a long way to meeting those concerns.

B) Additional comments not specifically addressed in the paper

B.i) Gender Directive

The EU Gender Directive (Council Directive 2004/113/EC) specifies the circumstances under which different insurance premiums may be charged for men and women. The UK government has amended the Sex Discrimination Act 1975 with effect from 6 April 2008 to permit different premiums by sex for insurance, based on relevant published and regularly updated data.

The Gender Directive is mainly concerned with the premiums available to the final customer, while the BAS paper discusses mortality assumptions disclosed in actuarial reports. However, there may be occasions when disclosure reports need to comply with the acceptable sex differentials based on recent published data.

B.ii) Mortality Assumptions versus Other Incidence Rates

The BAS paper focuses solely on the setting of standards for mortality assumptions. However, there are strong parallels between the assumptions used for life insurance and the assumptions for other insurance products such as critical illness, private medical insurance and income protection. It therefore seems sensible to set standards for mortality that would also be transferable to other products at a later stage.

B.iii) The Effect of Underwriting on Mortality Assumptions

Paragraph 3.3 refers to the effect of lifestyle factors on mortality assumptions, but neglects to mention the significant effect that underwriting has on mortality assumptions. The effect of underwriting can be seen in the early durations of insurance contracts, as well as in impaired life annuities.

A suitable insured lives table should also have a select period that reflects the level of underwriting that policyholders have gone through.

I trust you will find our comments helpful in your future work.

Yours sincerely

Johann DuToit
Financial Reporting Actuary