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23 February 2009

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The Director  
Board for Actuarial Standards  
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Dear Sir

**Response to “Modelling: Consultation Paper”**

This letter sets out Punter Southall’s comments on the above consultation paper. Punter Southall provides a full range of actuarial advice, pensions consultancy and pensions administration services. Our clients are primarily large and medium sized occupational pension schemes and their employers.

Our response to the consultation is set out below, and comprises some general comments together with responses to the specific questions raised.

**General comments**

Whilst we support the BAS’s overall aims in establishing a generic modelling standard, our reading of the consultation is that the standard has the potential to become too prescriptive to be practicable. It appears that it would cover any actuarial work from a large mixed insurance office to a very small pension scheme. The consequences of this, i.e. the cost benefit of applying the standard, need to be considered. To a certain extent, this may be contained within the definition of ‘materiality’ but it should be noted that ‘materiality’ may not mean the same for an individual beneficiary as for the pension scheme that provides the benefit.

More generally, we question whether the proposals outlined in the paper would have prevented the recent modelling ‘failures’ for which actuaries have faced criticism in recent years, in particular the underestimation of mortality improvements and market volatility.

To take mortality as an example: it is unlikely that a modelling standard would have given us better insight into the increased rate of improvement in longevity. Mortality improvements were already built into the standard tables, as they were identified through continuous study. What appear to have been missed were the improvements in improvements, which only became clear when further data became available that was inconsistent with past data. Further, the impact was masked because of a change in the way in which the tables were used (previously ‘prudence’ meant tending towards heavier mortality), and because of high real interest rates (which reduced the impact of future improvements on liabilities). In any data-based model prepared at that time, the likelihood of low real interest rates and improving mortality would have been one possible outcome amongst many; other possible outcomes could have been, for example, falling markets and high mortality (e.g. an AIDS epidemic).

We would also ask whether the Equitable Life situation would have been prevented, or at least its impact reduced, had a modelling standard been in place. Whilst we are not experts in the insurance market, our understanding of the Equitable Life issue is that this was not so much a model failure but rather the fact that the solution adopted to address their problems was deemed to be illegal.

It is important to identify how any new standards might have changed the implied 'mistakes' of the past. Our view is that some of the proposals in respect of a modelling standard would only have added time, and hence more cost, to actuarial work, with no real benefit to either the users or the beneficiaries. Arguably the only ones to gain are actuaries.

We would prefer that any modelling standard is outcome-focused, paying consideration to the user of the work and those individuals or organisations on whom the work impacts (including taking public interest considerations into account). From a pensions perspective, the user is most likely to be either a scheme's trustees or its sponsoring employer. However, if we consider the beneficiary, any actuarial model is likely to be a relatively unimportant means of protection. At a first level protection comes from the scheme's sponsor and, if that fails, from the PPF. Any standard that does not analyse the value to beneficiaries in cost-benefit terms will not serve to aid them in any significant way. In particular, most actuaries are not trained in evaluating the strength of scheme sponsors. It is important that any model of future funding levels (carried out in line with the modelling standard) should not imply any false sense of security if sponsor covenant is excluded from the model.

These comments underlie our responses to the specific questions raised in the consultation.

## Questions

**Question 1: Will the proposed purpose of the modelling TAS as set out in paragraph 2.9 help to ensure that users of actuarial information can place a high degree of reliance on its relevance, transparency of assumptions, completeness and comprehensibility?**

The proposed purpose of the modelling TAS is consistent with this aim. However, it seems to us that these principles would be sufficient to act as a standard in their own right, and further elaboration is not necessarily needed (and indeed could prove over-prescriptive).

**Question 2: Will the definition of a model given in paragraph 2.13 encompass the full range of models that contribute to actuarial information?**

We would expect any significant model that is used by actuaries to undertake complex calculations would be captured by this definition. However, it is unclear what would be excluded. For example, would an in-house annuity calculator fall within the scope of the standard? Similarly, would the calculation of a cash equivalent transfer value ('CETV') for a pension scheme member fall within the proposed definition of a model? If we were required to follow the standard for each and every CETV calculation, even where no change had been made to the underlying model, then the amount of work involved would increase significantly. However, we question whether this would add any value for the trustees of the pension scheme, the sponsoring employer or the scheme beneficiaries.

It is also unclear how the proposals would apply to models that are developed by actuaries for non-actuaries to use, for example it is common for a CETV program to be written by actuaries but used by an administration team.

**Question 3: Do respondents have any comments on the proposals in section 3, especially those in paragraphs 3.15, 3.22 and 3.27?**

Paragraph 3.15: This proposal is sound in principle, but we believe it is over-prescriptive. Detailed documentation of a model may simply increase costs without any real benefit to either the users of actuarial information or beneficiaries.

Paragraph 3.22: We strongly agree that the development and use of models should be proportionate to the scope of the actuarial information that has been commissioned.

Paragraph 3.27: We do not believe that this contains anything new as compared to current practice and that actuaries already apply judgement in this way, so compliance with this principle should already be happening.

**Question 4: Do respondents have any views on the definition of materiality that is proposed in paragraph 3.5?**

We have no view on this definition. .

**Question 5: Should the modelling TAS include principles concerning the need for documentation as discussed in paragraphs 3.9 to 3.18?**

Principles concerning the need for documentation are sound in theory but we believe that there is a danger of over-prescription which, in some cases, risks adding little or no value for users of actuarial information or beneficiaries whilst adding (possibly significantly) to the costs of the exercise.

There is also a risk of overlap with the reporting TAS, particularly in relation to the documentation of models for users of actuarial information.

**Question 6: Do respondents have any comments on the proposals concerning relevance and parsimony that are presented in section 4, especially those in paragraphs 4.12 and 4.17?**

We support the idea behind paragraph 4.12 but believe that this could be a difficult area in practice. As the paper itself acknowledges, it is often difficult to determine in advance what the significant factors are going to be.

We agree with the proposal in paragraph 4.17, although would welcome an additional comment in relation to the need for proportionality in increasing model complexity.

**Question 7: Do respondents have any comments on the proposals concerning inputs and outputs that are presented in section 5, especially those in paragraphs 5.17, 5.28, 5.29, 5.35, 5.42 and 5.51?**

Paragraph 5.17: Actuaries should already deal with incomplete or inaccurate data in this way. It is, however, unclear whether the treatment of such data should be included in internal or external documentation, or both.

Paragraph 5.28 and 5.29: We have no comment on these proposals, as data is rarely grouped for the purposes of pensions models.

Paragraph 5.35: We have no view on this proposal.

Paragraph 5.42: For the vast majority of tasks this requirement seems unnecessary and in any case it should only be followed where the benefits of doing so are proportionate to the costs involved.

Paragraph 5.51: We have no view on this proposal.

**Question 8: Should the modelling TAS include:**

- (a) any requirements relating to the disclosure of known or suspected shortcomings in data, over and above those expected to be included in the reporting TAS?**

Our view is firstly that only material data shortcomings need to be disclosed, and secondly that any requirements relating to the disclosure of data issues should be dealt with in the reporting TAS only. Covering such requirements in both TASs creates a compliance burden and is likely to increase the work involved for no benefit to users of actuarial information.

- (b) requirements to provide an estimate of the effects of any data shortcomings, and that any compensating adjustments should avoid bias?**

It is not clear to us how the effects of any data shortcomings could be estimated; even if estimation were possible, it would only seem sensible to do so if the shortcomings might be material. Further, it may not always be appropriate for compensation adjustments to avoid bias, for example in a PPF S179 valuation, the actuary is required to assess the pension scheme's liabilities prudently, and this would include making estimates of any incomplete data in a prudent manner.

**Question 9: Should the modelling TAS include a requirement that, if data is grouped, the effects of the grouping should be quantified?**

We have no view on this proposal, as this is very rarely relevant for pension scheme calculations.

**Question 10: Do respondents agree that best estimates (and other similar estimates) should be independent of the use to which they will be put?**

Yes.

**Question 11: Do respondents have any views on:**

- (a) **whether biased estimates such as those concerning prudence depend on context?**

We agree that prudence depends on context.

- (b) **the practicality or otherwise of requiring that the equivalent best estimate be presented alongside every prudent estimate, and the benefits to users of actuarial information of doing so?**

In the majority of cases this is likely to be very impractical and create a disproportionate amount of work. It should be left to the individual actuary's judgement as to whether the inclusion of this information is necessary.

**Question 12: Do respondents have any views on the practicality or otherwise of requiring the use of a range in conjunction with every single point estimate?**

Similar comments to those in response to question 11 apply. Further, showing ranges can be misleading, since they can lead the user to believe that actual values will always be within the given range.

**Question 13: Do respondents have any comments on the proposals concerning the fitness for purpose of models that are presented in section 6, especially those in paragraphs 6.8, 6.12, 6.20, 6.28 and 6.33?**

Paragraph 6.8: This principle is too prescriptive. Whilst it is appropriate and necessary for models to be checked, this level of detailed prescription is unnecessary. Would it mean that, for example, detailed checks would need to be carried out each time a CETV was calculated using the same program (where the program had been subject to detailed checking when written)?

Paragraph 6.12: We have no view on this proposal.

Paragraph 6.20: As with the proposal in paragraph 6.8, we believe that this is too prescriptive.

Paragraph 6.28: This requirement seems too prescriptive and unnecessary. Would it mean that, for example, every single item of data used in a pension scheme valuation would need to be defined and explained?

Paragraph 6.33: Again, there is a danger of too much prescription in this requirement. Whilst it would be appropriate to explain the removal of any material outliers, this is not the case for the removal of immaterial values.

**Question 14: Are there any types of model that cannot be implemented in such a way that they exhibit reproducibility?**

We have no comment in response to this question.

**Question 15: Should the modelling TAS include a principle concerning back testing?**

**(a) Are there any models for which back testing is impossible?**

In some cases back testing is likely to be irrelevant, for example an in-house annuity calculator. In other situations back testing will be impractical (e.g. due to a lack of availability of sufficient historic data) and disproportionate.

**(b) Are there any practical difficulties that might arise if back testing were to be a requirement?**

We do not believe that back testing should be a requirement because it is too prescriptive.

**Question 16: Would it be desirable and practical for users of external models to document the judgements they make, the checks that they perform and other relevant matters, and include explanations of the inputs, outputs and limitations in the same way as they would for models that they themselves have developed? Respondents who believe that this would not be practical should suggest alternative ways in which the objective set out in paragraph 2.9 could be met by users of external models.**

Some sense checking of external models may be beneficial. However, in some situations, for example the use of an external economic scenario generator, it may not be appropriate or possible to carry out detailed checking because the model is outside the core area of expertise, hence the reason for using an external model.

**Question 17: Do respondents agree that requirements for robustness and reasonableness would not be enforceable and could have undesirable consequences?**

Yes

**Question 18: Do respondents have any comments on the proposals concerning the limitations of models that are presented in section 7, especially those in paragraphs 7.29 and 7.41?**

Paragraph 7.29: In some models, sensitivity tests are a valuable part of the modelling process, but there are other situations (again, our CETV example), where sensitivity tests are less appropriate and even a requirement to document why sensitivity tests have not been performed would be onerous and add little value. The modelling TAS needs to recognise this.

Paragraph 7.41: In many situations, the inclusion of this information would be beneficial and it is important to make users of actuarial information aware of the limitations of that work.

**Question 19: Does the discussion in paragraphs 7.7 to 7.24 include all the major sources of limitations in models?**

The modelling TAS should also address user error.

More emphasis should be placed on modelling error and in particular the difficulties surrounding the estimation of extremely rare “tail” events such as the economic developments we have experienced over recent months.

**Question 20: Do respondents have any comments on the advantages and disadvantages of the options set out in paragraphs 7.38 to 7.42?**

We agree that the first option would not achieve the objectives of the modelling TAS.

The second option is likely to be too prescriptive, as might be the third option in some situations. However, of the three options given, the third is our preference.

More generally, it may be more appropriate to include this material in the reporting TAS rather than the modelling TAS.

**Question 21: Should the modelling TAS identify specific types of limitation that should be explained in actuarial information?**

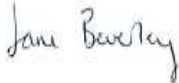
No, as this would be too prescriptive.

**Question 22: Are there any matters not covered in this consultation paper that should be addressed in the BAS's modelling TAS?**

We are not aware of any additional issues that should be addressed in the modelling standard.

We hope you find these comments useful in developing the modelling TAS.

Yours faithfully



Jane Beverley  
**Principal and Head of Research**