



23 February 2009

Louise Pryor
Board for Actuarial Standards
5th Floor, Aldwych House
71 - 91 Aldwych
London, WC2B 4HN

Subject: Consultation paper: modelling

Dear Ms Pryor

Mercer Limited is a global leader for HR and related financial advice and services. In the UK, our client base includes employers and trustees providing occupational pension schemes to employees in all sectors of industry; we provide pensions advice and services to companies in the FTSE100 but we also have a large proportion of clients that are employers classed as "Small to Medium sized Enterprises", or trustees of pension schemes with sponsoring employers in this class.

We welcome the opportunity to respond to the consultation document published by the Board for Actuarial Standards (BAS) on modelling.

As our business involves advising companies and trustees on pension arrangements, we will comment from this perspective.

We summarise our main comments as follows:

- The consultation paper appears to concentrate on models which are complex, formal, and computer-based in nature, although the definition in 2.13 does not entirely tally with this. The use of "models" in actuarial work is very wide-ranging. We appreciate the difficulties in defining a single standard which will suit both these types of models and the simpler, one-off, sometimes manual calculations, but believe some more work is required to achieve this.
- There is considerable focus on the intermediate stages of the modelling process as well as on the output reaching the end user. The consultation acknowledges that sometimes documentation will be prepared for the developer, rather than the recipient, of the actuarial information, but the principles do not appear to differentiate. If the expectation is that documentation will always be shared with the recipient of the actuarial information





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produced, then we believe that many of the description and documentation requirements are too prescriptive, impractical and too onerous, particularly for the intermediate stages of modelling work and for some of the occasions when judgements are being employed.

- We support the proportionality concepts covered in the paper. In principle, it seems possible that the use of proportionality will mean the proposed TAS does not create the difficulties we identify in the first two bullet points. However, we believe that several of the other proposals in the consultation document will conflict with the principles of proportionality outlined.

The appendix to this letter sets out our answers to the questions asked in the document.

We would be happy to meet with you to discuss any of the points raised or answer any questions you have on our response.

Yours faithfully

[By email]

Alison Pollock



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Appendix

Generic modelling consultation – responses to questions

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?

These principles are helpful as aspirations for the use of models in actuarial work but some of the criteria can only be truly assessed with hindsight (particularly a) and c)). Even then, different users and different actuaries might apply judgement in different ways in assessing whether a model has “sufficiently represented” certain aspects of the real world. This limits the practical usefulness of the proposed purpose of the TAS as set out in paragraph 2.9. In particular, models sometimes deliberately do not attempt to represent the ‘real’ world and will normally be developed only to include aspects of the problem that are relevant and material to the actuarial information being developed.

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

This definition seems appropriate but is very wide-ranging. If it is to be adopted, the resulting standard must be sufficiently flexible to avoid its requirements becoming disproportionate in some cases.

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

On 3.15 a requirement to provide explanation at a detail level appropriate for a technically competent user and at the same time to be clear and unambiguous for the intended reader (who may not be technically competent) is not practical.

On 3.22, this proportionality principle is important and we agree with its inclusion. However (as will be clear from our comments elsewhere in this response) we believe that documentation should also be explicitly brought within scope (for example by amending the proposed principle to begin “The development, documentation and use of models...”).



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As the document stands, the paragraphs on proportionality are well written and sensible, but we believe that several later aspects of the consultation document are in conflict with it. Examples would be the documentation requirements, particularly for intermediate stages of the modelling process and for the reasoning and judgements applied.

On 3.27, the requirement (in the middle sentence) to document the reasoning behind judgements will not always be practical and will often be disproportionate. The requirement (in the final sentence) to reconsider a judgement after a period of time has elapsed is not particularly helpful. Not all 'judgements' are time dependent and, where they are, the assessment of what is an appropriate period of time itself requires judgement (and documentation). However, we agree that the appropriateness of the model itself should be reconsidered from time to time and the general principle articulated in 3.27 seems reasonable.

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

This definition is too wide ranging, mainly in its repeated use of the phrase "could influence". On the documentation point this will potentially bring any data item, assumption etc. into scope and this is then too impractical and in conflict with the proportionality aim mentioned earlier.

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

No; the principle in 3.15 (amended) is sufficient. In general we are concerned that there will be cases where the documentation requirements being proposed are too prescriptive and too onerous.

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?

Paragraphs 4.7 draws out the important practical point that at the time a model is built and used, it is not possible to know whether all relevant and significant factors will turn out to have been incorporated. But the principle in 4.12 does not make any allowance for this; and seems to require the benefit of hindsight. This principle is neither practical nor appropriate.



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Paragraph 4.9 refers to the infinite number of factors which are omitted from a model, and refers to these as just as much assumptions as those included. The requirement in 4.8 to judge, and document the reasoning behind the judgement, whether a factor is material is not practical nor proportionate.

In paragraph 4.17 it is not practical to demonstrate that increased complexity would make a material difference to outputs or limitations of a model.

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, 5.35, 5.42 and 5.51?

The principle in 5.17 seems reasonable but it is not clear why this should be in the modelling TAS as opposed to the data TAS.

An equivalent comment applies to 5.29, but in relation to the reporting TAS as this reflects the content of the actuarial information.

The data grouping principles, particularly in 5.29, could give rise to disproportionate work.

We believe the principle in paragraph 5.35 should make it more clear that it reflects the sensible comment in 5.34 that “consistency is therefore not desirable in all circumstances.”

5.51 seems reasonable in principle but we are not comfortable with it being an explicit principle in the TAS. This would be overly prescriptive and not sufficiently flexible. Where assumptions have a clear evidence base then the principle might be proportionate, but where such a basis does not exist (for example, for most future events) then the resulting judgement of what a best estimate is, is likely to be partly subjective.



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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?**

No. These should be covered in the Data and/or Reporting TAS.

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

No. This would not be proportionate and may not be helpful to users.

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

We agree that the requirement described in 5.30 is excessive and should not be included.

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

Yes in principle but see comments above on 5.51.

11. Do respondents have any views on:

- a. Whether biased estimates such as those concerning prudence depend on context?**

Yes, they may depend on context.

- b. The practicality of 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?**

We have significant concerns about the practicality and proportionality of such a requirement.



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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?

We agree with 5.80's sentiment on the use of ranges and agree that it would be impractical and could be disproportionate to require the use of ranges and point estimates in conjunction with each other.

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?

Although we agree that model output must be checked each time it is produced, the requirement in 6.8 for a set of checks to be applied to the model each time it is used is excessive. It would be reasonable to carry out checks initially and periodically, for a given purpose of the model. The documentation requirements described here are overly prescriptive and conflict with the proportionality aims described earlier.

Since the document includes 'errors' amongst 'outliers', and not just extreme observations, in 6.33 it seems disproportionate to have to always explain to the user of the actuarial information the implications of the removal of outliers.

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

We expect not.

15. Should the modelling TAS include a principle concerning back testing?

No. Back testing is not universally relevant and should not be mandated. It might be disproportionate for one-off, simple or small models. If modelling new or recent scenarios it might not be possible or meaningful.

a. Are there any models for which back testing is impossible?

Yes.



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

Yes – see above.

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.

No comments.

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

Yes.

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?

In 7.29, the requirement to document reasons for not carrying out sensitivity tests could be overly prescriptive and be disproportionate.

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

No comment.

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

Given the options provided we would prefer the third as outlined in 7.41.



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

No. We agree with the comment in 7.43 because the limitations will vary from case to case and a prescriptive approach will have practical difficulties.

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

The consultation paper seems comprehensive. We would prefer TASs to be kept concise.