

Board for Actuarial Standards Modelling: Consultation paper, November 2008 - Comments

Section 2: Purpose and scope

General observations on section 2:

The scope of what constitutes a model appears to be very wide ranging. This potentially brings almost all day to day actuarial work into the scope of these standards.

In particular, under the heading Compliance, the paper covers all models regardless of when they were first developed. This would create the requirement for all existing "models" to be reviewed and documentation updated or created. This may cover many models and prove a time consuming task.

For long established models, the recipients of the output are likely to be very familiar with the models and their output, for example claims reserving models. If significant time is spent on a review of such a model under the TAS requirements the business will probably see very little value in this compared to the resource that it diverts.

The section on Proportionality in Section 3 talks about weighing "the benefit the user would be expected to obtain from the models..." rather than the benefit from the additional document that stems from the TAS standards. In other words it appears to give no distinction between existing well established models and new models, but places the emphasis on the use of the models.

Section 3: General concepts and principles

No specific comments.

Section 4: Representing the real world

No specific comments.

Section 5: Model inputs and outputs

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

We believe that a requirement to provide an estimate of the effects of any shortcomings would be onerous, if not impossible, and not materially affect the quality of advice. Any "estimate" of the effects is likely to be arbitrary and therefore meaningless.

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

No, we believe an explanation of the grouping is sufficient. Requiring quantification would be onerous or impossible.

In order to quantify the impact of grouping, any analysis would need to be run on ungrouped data, if possible, which defeats the object of using grouped data, for example claims reserving grouped by accident year. If the analysis is not carried out on ungrouped data the quantification would be a broad estimate, perhaps based on judgement and hence less useful anyway.

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

Yes, best estimates are a function of the distribution of possible outcomes, not of the intended use.

11. Do respondents have any views on:

a) whether biased estimates such as those concerning prudence depend 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?

If the commissioned work is to produce a prudent estimate suitable for a specific purpose, and the definition of "prudent" is specified appropriately, a best estimate is superfluous.

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 believe it would be impractical to require a range for every point estimate, notably because the production of a range for an "aggregate" point estimate (e.g. the sum of classes in a reserving exercise) requires a significant set of assumptions about correlations and copulas. It may however be appropriate to require a range on certain material outputs.

We note that it is not clear whether ranges on point estimates refer to outputs from the model only or includes the inputs as well. Input assumptions will also be point estimates. For sensitivity testing certain inputs may be varied however it would be impractical to quote ranges on every point estimate input used in a model.

Section 6: Fit for purpose

13. Do respondents have any comments on the proposals concerning the fitness for purpose of models that are presented in section 6?

We consider the documentation requirements to be onerous. A "model" can be as simple as a set of calculations on a sheet of paper produced during a face-to-face meeting. Documentation requirements should be proportionate to the complexity of the model, the materiality of the outputs and the model "lifetime".

In addition, many models will in practice be self-documenting.

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

Yes, models which make use of third-party "black box" components which in turn use stochastic simulation (e.g. catastrophe models), although there may be workarounds (e.g. take a deterministic set of results as an input to the model).

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

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

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

Back testing as described is impossible for models which predict ultimate positions - you can only compare predictions of future development, not what actually occurred. Back testing is also impossible for models which give full statistical distributions - you can say that the current position (or the current prediction of the ultimate) is at the x th percentile of the back fitted distribution, but unless you have a statistically valid sample of comparisons from the back fitted model(s) you cannot usually tell whether that is a good or a poor prediction. If a model relies exclusively or mainly on expert judgement (e.g. to pick a benchmark) it cannot be back fitted.

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 purpose of the modelling TAS could be met by users of external models.

Yes, with the caveats above about proportionality of documentation, and an additional caveat about "value added" - if the extent of the actuarial "modelling" is to run data through a model without interpretation, such documentation would be onerous.

Section 7: Limitations of models

20. Do respondents have any comments on the advantages and disadvantages of the 3 options set out above?

Option 1 is appropriate to a view of an actuary as an independent professional expert, and may reduce the (unread) padding that is a feature of some current actuarial reports. The additional requirement in Option 3 could be seen as patronising to the recipient. Also, if a discussion of which models are appropriate for a particular problem is appropriate for a particular engagement, such a discussion should normally form part of the commissioning process, not part of the reporting process.