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Actuarial Standards Board
1850 M Street, NW, Suite 300
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Via email to comments@actuary.org

Re: Modeling (Third Exposure)

Members of the Actuarial Standards Board,

Thank you for the opportunity to comment on the third exposure draft of a proposed ASOP titled *Modeling*. I have organized my comments into two areas, Comments on Issues Requested by the Committee, and other comments on the Exposure Draft. All comments represent my views and not necessarily those of our employer.

COMMENTS ON ISSUES REQUESTED BY THE COMMITTEE

1. *Does the proposed standard provide sufficient and appropriate guidance to actuaries working with models? If not, what suggestions do you recommend for improving the guidance?*

   No. Because of the many different types of modeling work that is done by actuaries across many disciplines, ranging from P&C ratemaking models to life and annuity projection models, to predictive and statistical models, some of the guidance is unclear. It would be helpful to have a practice note or other similar document that defines for several type of models, typical meanings of the terms selecting, designing, building, modifying, developing, using, reviewing, and evaluating.

2. *Does the proposed standard provide sufficient and appropriate guidance to actuaries working with all types of models, including financial projection models, predictive models, and statistical models?*

The following items lack clarity.

- Section 1.2 on the scope allows for a simple model to be exempt, as well as models that do not have material financial impact or are not heavily relied upon by the user. In cases where a simple model is used for an assumption, but may be replaced by a predictive model, this seems to imply that the ASOP would apply, which could cause companies to avoid refining their assumptions in order to mitigate the amount of additional work required for documentation. Some commentary on whether this is intended, or perhaps on the amount of differentiation from the prior assumption that would be allowed without causing the "material financial impact" clause is appropriate. In cases where a predictive model is used for marketing purposes, and has a corresponding effect on the quantity of business sold, is this considered a material financial impact, or is that definition restricted to valuation of inforce business?
- The requirement for documentation of uncertainty in section 3.6.2.b also needs more specification, particularly for predictive and statistical models.

OTHER COMMENTS

I suggest the following revisions to the language to aid clarity.

- Section 2.6. Intended purpose. If the actuary's role includes designing, building, or developing the **model**, or if the actuary's role includes modifying, reviewing or evaluating the **model** *before being selected or used* in a specific project, *the planned uses* for the **model**, depending on the actuary's role at the time actuarial services are performed to meet the needs of the principal or the actuary.
- If the actuary's role includes selecting or using the **model** in a specific project or if the actuary's role includes modifying, reviewing or evaluating the **model** *when it is being selected or used* in a specific project, *the specific goal or question addressed*, depending on the actuary's role at the time actuarial services are performed to meet the needs of the principal or the actuary.
- Section 2.11. Parameters. A type of mathematical, financial, contractual, economic, scientific, or statistical **input** to **models**. Examples include pension plan provisions, expected values in mathematical distributions, and coefficients of variables in regression formulas, when the coefficients of regression analysis are being used to populate an assumption in a dependent model.
- Section 3.2.d. Add: Discussion of limitations should include commentary on as to where extrapolation will occur, as well as to where there is potentially high variability.

I suggest adding additional detail to help clarify the following items.

- Section 2. Add a definition for the term **Modeling team**.
- Section 3.4.7.a.1. Include commentary applicable to assumptions required in statistical models, which may be based on intuition related to the type of question being addressed, or specific to the dataset being used.
- Section 3.4.7.b. Note that adding margins are frequently not relevant to a statistical modeling project during the model fitting stage, and could lead to double counting.

Respectfully,

Eileen S. Burns, FSA, MAAA
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