

Comment #12 – 2/26/15 – 3:46 p.m.

Dear Members of the Actuarial Standards Board,

My comments on the Second Exposure Draft on the Modeling ASOP are below. Italics generally indicate recommended relevant changes in verbiage.

Item #1 – Section 2.8

I recommend the section which defines model should read “Model – A *simplified* representation of relationships among a set of variables, entities, and events using statistics, finance, economic, mathematical, scientific *or other intellectual disciplines*’ concepts and equations. Models are used to help *understand or* explain a system, to study the effects of different components, and *to predict outcomes or distributions of outcomes*. Models can be used to *influence* decisions. A model consists of (1) a specification, (2) an implementation, and (3) one or more model runs.”

Reasons:

- Models do not fully represent the actual relationships, but are simplified representations of them. If models actually represented the relationships, they would be completely accurate and address all relationships, so the word “simplified” should be included in describing a model. Oxford dictionary defines the type of model being referenced in the ASOP as “A simplified description, especially a mathematical one, of a system or process, to assist calculations and predictions.”
- There are other disciplines’ concepts and equations which can be used in models, such as a form of logic from philosophy, instructions based on a programming language, or grammar from linguistics.
- “Explain” implies communication between two or more individuals with one knowing and the other(s) learning. “Understand” adds the possibility of a singular entity improving comprehension of a system without ne. For these reasons, I suggest “understand or” be added.
- Models actually are used to predict outcomes and the distribution of outcomes. Useful models accurately predict real results or the distribution of real results. So, I recommend “derive estimates” be changed to “predict outcomes or the distribution of outcomes”.
- Models provide information which can be used in the decision making process. They can influence decisions, but they do not always guide them. Other influences which were not part of the model may guide some decisions, such as public opinion or personal beliefs. So I believe “influence” should replace “guide”. Alternatively “influence or guide” could replace “guide”.

Item #2 – Section 2.12

I recommend section 2.12 be re-written to read as follows: “Parameters – Mathematical, financial, economic, scientific, or statistical input to models that can be varied *and are used to generate model output*. Examples include expected values and coefficients of variables in mathematics distributions or regression formulas.”

Reason:

Just because a parameter is varied does not always mean the output of the model will be different. Sometimes models are used to determine if a tested parameter changes the model output. An example is the control group in a medical experiment. Testing a subset of the population is the model used to predict how the medical procedure or substance will affect the population for which it is intended. If there is no difference in the model outputs for the two groups the test concludes the medical procedure or substance is ineffective.

Item #3 – Section 3.1.1

Section 3.1.1, seems to require so much that it would make requirement of full application of the guidance in the ASOP unenforceable. The terms “rely heavily” and “material financial effect” are too vague when applied within an individual actuary’s professional judgment. I would suggest the following wording for the first paragraph: “Full application of the guidance in this ASOP is required when, based on the actuary’s *reasonable* professional judgment, intended users of the model will rely on the results of the model to make decisions which are *financially material to the Principal*. For example, corporate financial planning, ratemaking, and reserving models would typically require full application of the guidance. In assessing materiality, the actuary should be guided by ASOP No. 1, *Introductory Actuarial Standard of Practice*, section 2.6.”

Item #4 – Section 3.1.3

Section 3.1.3 currently would allow someone not subject to any professional code of conduct to (falsely) confirm the ASOP has been followed, the actuary could rely on that confirmation and enforcement of the guidance becomes impossible. I would suggest the following wording for 3.1.3: “When the actuary is part of a modeling team, the actuary should confirm or may reasonably rely on *another person or persons* who have confirmed that the applicable guidance from this ASOP has been followed, *provided any person relied upon is subject to an enforceable professional code of conduct, which would forbid them to knowingly misrepresent their confirmation.*”

Item #5 – Section 3.3.1

The separation of intended application and project objective is helpful in understanding section 3.3.1. In section 3.3.1.a.(2) the period ending in the middle of the section, makes the grammar confusing. I would suggest 3.3.1.a.(2) read as follows: “checking formulas, logic, and table references; and” then add a sentence between 3.3.1.a.(3) and 3.3.1.b., which reads: “The degree of reconciliation, checking and testing will depend on the intended application; the project objective for which the model is being used; the context and nature of the model; the operating environment and controls related to the model; the available resources; the anticipated impact on the model results of a change in what is being validated; and the whether there have been any changes to the model or the model environment.”

Disclaimer

The recommendations and comments above are based my personal and professional opinions and do not necessarily represent the opinions of my current or past employers or clients.

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