Appendix 3

Comments on "Actuarial Central Estimate"

During this standard's development, the "actuarial central estimate" concept and definition elicited the most comments of any of the topics covered. The subcommittee believes that the issues raised by this topic are worthy of expanded discussion. The following is meant to provide additional clarity to these key concepts.

This appendix is organized by first providing a background as to the originally proposed wording regarding the actuarial central estimate, followed by a summary of comments received on the actuarial central estimate proposal and subcommittee responses.

Background

The term "actuarial central estimate" was originally created by the subcommittee due to a desire to have a "default" intended measure for the unpaid claim estimate.

The standard requires that the actuary identify (and disclose) the intended measure. The subcommittee had debated whether or not to require disclosure of the estimate's intended measure in all cases, or to allow for a default intended measure.[1] If a default did exist, the subcommittee felt that it needed to allow for many of the traditional actuarial estimation methods. But many traditional actuarial methods do not explicitly define the intended measure that results from their application. Implicitly, they attempt to produce a central estimate[2] of some sort with regard to the distribution of possible outcomes, but the resulting intended measure does not have a well-defined statistical definition. Hence, if the standard were to include a default intended measure, the subcommittee believed that it would have to create a new term and a corresponding definition.

As to the definition of the term, it is generally agreed that most traditional actuarial methods are meant to produce some measure of central tendency. But what measure? There are several different measures of central tendency, including (for example) mean, median, mode, and truncated mean. The subcommittee believed that "mean" best represented the central tendency measure implicitly underlying most traditional actuarial methods, even if such traditional methods are not statistical in nature. (For further discussion, this will be referred to as a "conceptual mean" rather than a "statistical mean.")

Next, the subcommittee considered the issue of whether this conceptual mean is intended to

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1 Note that several accounting frameworks use the term "measurement objective" for this concept, rather than "intended measure."

2 Note that "central estimate" does not imply a midpoint. One respondent suggested using the words "medium or intermediate" estimate to avoid any incorrect interpretation that a "central estimate" must be a midpoint.

incorporate the entire range of all possible outcomes. In some lines of business, the subcommittee felt that this would be problematic due to the potential for doomsday and/or systemic shocks in the tail of the distribution. For example, it is doubtful whether any actuarial estimate (stochastic or deterministic) in 1999 considered the liability for Y2K events to the extent they were forecasted at that time. Many of those Y2K-event liability estimates proved to be overly pessimistic, and most financial statement preparers did not incorporate such estimates in their financial statements prior to January 1, 2000. Similarly, estimates of future mass torts that have yet to be identified (for example, "the next asbestos") are generally viewed as not reliably estimable. Hence, the subcommittee felt that requiring that the entire range of all possible outcomes be considered in the estimation of the mean is unrealistic.

In looking for other approaches for dealing with this situation, the subcommittee looked at developments in other parts of the world. The subcommittee found that the term "central estimate" was being used in various locations to describe the intended measure of traditional methods.[3][4] Initial drafts of this standard also used the same term, but it was eventually decided that the phrase "central estimate" was too generic, with risk of confusion and misinterpretation due to common meanings of the term "central." The subcommittee felt that a new term needed to be developed that conveyed the same concepts but without the same risk of misinterpretation. This led to the term "Actuarial Central Estimate," which was designed to be non-generic, and hence capable of being defined solely by this standard.

As a result of the deliberations discussed above, the subcommittee had developed a rudimentary definition ("conceptual mean," excluding remote or speculative outcomes) and a name for a default intended measure consistent with the desired default. The resulting paragraph in the first exposure draft was as follows:

2.1   *Actuarial Central Estimate—An estimate that represents a mean excluding remote or speculative outcomes that, in the actuary's professional judgment, is neither optimistic nor pessimistic. An actuarial central estimate may or may not be the result of the use of a probability distribution or a statistical analysis. This definition is intended to clarify the concept rather than assign a precise statistical measure, as commonly used actuarial methods typically do not result in a statistical mean.*

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3 "'Central Estimate': an estimate that contains no deliberate or conscious over or under estimation," from http://www.actuaries.org.nz/publications/PS4%20General%20Insurance.pdf#search=%22central%20estimate%20actuarial%22, September 5, 2006

4 As the recently modified AASB1023 now requires companies to disclose the central estimate of their liabilities (that is the 50% PoS or "best estimate" figure). INFORMATION FOR OBSERVERS, IASB Meeting: 19 April 2005, London, Topic: Insurance Contracts - Education session (Agenda item 3)

<u>Comments and Responses</u>

The comments from this standard's first exposure draft on "actuarial central estimate" and its later usage could generally be grouped into the following five categories:

- Concern with the use of the term "mean" in the "actuarial central estimate" definition, as doing so may imply statistical approaches and distributions regardless of the caveats of such in the proposed definition.
- Concern with the exclusion of "remote or speculative" outcomes in the "actuarial central estimate" definition, as doing so may lead to an estimate biased low (relative to a mean reflecting the entire distribution of possible outcomes).
- Desire for the default to allow for or possibly even promote conservatism.
- Desire that the standard promote statistical techniques.
- Preference for the term "best estimate" over "actuarial central estimate."

As a result of the comments that were received, the subcommittee decided to eliminate the concept of prescribing a default measure since opinions differed widely on what the default measure ought to be. It was felt that requiring the actuary to identify the intended measure in all circumstances allowed the actuary to describe the intended measure in the actuary's own words. However, the subcommittee felt that it was important to have terminology for the measure that results from traditional actuarial methods where the actuary is conceptually aiming for a mean estimate. The subcommittee therefore retained the term "actuarial central estimate," revised the definition and included it as an example of an intended measure in the non-exhaustive list that was provided in section 3.3(a)(1).

More detailed responses to the comments are shown below:

<u>*Comment:*</u>
Some commentators objected to the use of the term "mean" in the definition of "actuarial central estimate," as they believed that it was impossible to use the term without conveying an implied statistical approach.

<u>*Response:*</u>
The final definition replaced the term "mean" with "expected value." Additional clarification is provided in 3.3(a)(1), where it states that the "description [of actuarial central estimate] is intended to clarify the concept rather than assign a precise statistical measure, as commonly used actuarial methods typically do not result in a statistical mean."

Comment:
Some commentators had a concern with the exclusion of "remote or speculative" outcomes in the originally proposed "actuarial central estimate" definition, as they felt that this would lead to estimates that were biased low (relative to a statistical mean reflecting the entire distribution).

Response:
The subcommittee believes that nearly all methods currently in use for estimating unpaid claims, whether stochastic or deterministic, do not reflect all possible outcomes, nor should they necessarily do so. The major concern of the subcommittee in this area are those outcomes where reliable determination of the outcomes' contribution to a mean estimate are so problematic as to be speculative and which are not expected to be normal or recurring on a regular basis. Examples include the Y2K concerns prior to January 1, 2000, and estimates of future mass torts that have yet to be identified (for example, "the next asbestos"). This concern is also limited to those outcomes that could be material to an expected value estimate.

The exposure draft did not and the final standard does not require exclusion of such outcomes in the determination of the unpaid claim estimate, but the subcommittee believes that the actuary should consider whether truly all possible outcomes are included in the actuary's unpaid claim estimate (where the intended measure purports to reflect the entire distribution of possible outcomes). With regard to the "actuarial central estimate" definition, the subcommittee has eliminated the terms "speculative" and "remote," and has replaced them with wording that focused more directly on the concern that reliable estimates of such outcomes cannot be produced.

Comment:
Some commentators were concerned that the "actuarial central estimate" definition precluded the use of conservatism (described in some instances as a margin for adverse deviation) in the unpaid claim estimate intended measure.

Response:
This standard was meant to apply to work done in a variety of situations. In many of those situations, the purpose and/or use of the unpaid claim estimate will dictate whether a margin for adverse deviation is required, allowed or prohibited. The subcommittee does not believe it is the role of the actuary or ASB to dictate a certain singular treatment of margins for adverse deviation for all unpaid claim estimates. In fact, in certain instances the subcommittee believes that the treatment of such in the unpaid claim estimate is clearly not part of the role of the actuary.

The subcommittee also believes that the actuary should clearly disclose the basis of the unpaid claim estimate regarding all the items listed in section 3.3. Hence, in those instances where the unpaid claim estimate includes a margin for adverse deviation, the presence of such margin should be explicitly disclosed.

Comment:
Some of the commentators wanted the standard to advocate only certain techniques for calculating any unpaid claim estimate, regardless of the intended measure. In particular, these comments wanted the standard to dictate the use of stochastic models.

Response:
The subcommittee believes the choice of methodology should be determined by the actuary.