

DATE: August 1, 2008
TO: ASB Comments
FROM: Dimitry Mindlin
SUBJECT: ASOP 27

Thank you for the invitation to comment on ASOP 27 (called the ASOP throughout this piece). The ASOP has become rather controversial in recent years, as a number of practitioners have criticized it for being outdated and inadequate. While not all of the ASOP's criticisms have merits, I believe the ASOP contains substantial room for improvement.

Before I address the questions presented in the Request for Comments (RFC), I would like to make a few general observations. Any meaningful change in the ASOP may have profound implications for the actuarial profession and beyond. Other practitioners and governing bodies (e.g. NASRA, GASB) pay close attention to any changes to this particular actuarial standard. Needless to say, it is essential that the standard-setters follow a deliberate and methodical process in the development of the ASOP. The attitude "first, do not harm" should be one of the process' guiding principles.

The ASOP has become another battleground in the debate between so-called "traditionalists" and "financial economists." I believe this debate will be settled in the marketplace of ideas when a generalized version of pension actuarial science that encompasses both conventional practices and the "financial economics" approach becomes widely accepted. For the time being, I would like to encourage the standard-setters to refrain from taking sides in this debate and focus on pension actuarial science and its applications in actuarial practices.

Below are my responses to some of the questions posed in the RFC.

- 1. Under ASOP No. 27, an actuary selects an economic assumption by developing a "best-estimate range" and selecting a specific point within the best-estimate range. How do actuaries comply with the ASOP? What methodologies do they use to select a specific point within a "best-estimate range"? Is the "best-estimate range" approach the appropriate standard of practice? Does the ASOP inhibit the use of a more appropriate approach to selecting assumptions? Are there any specific changes that should be made to the ASOP to describe appropriate practice more accurately?*

The "best-estimate range" approach may be appropriate as one of several approaches to the problem of measuring pension commitments. It is inappropriate as the only standard of practice. Nor it is appropriate to *require* the actuary to select a single point in the interval. More on this in subsequent sections.

- 2. Under ASOP No. 35, an actuary selects a noneconomic assumption by considering the relevant "assumption universe" and selecting a specific assumption from the appropriate assumption universe. Should ASOP No. 27 incorporate the concept of an "assumption universe" with respect to economic assumptions?*

This question is somewhat premature. The standard-setters should determine the nature of economic assumptions first and then deal with the concept of “assumption universe.” For example, imagine that it has been determined that the economic assumptions should include a full set of forward-looking capital market assumptions (expected return, risk, and correlation matrix for all asset classes under consideration). Then the meaning of the concept of “assumption universe” may not be perfectly clear, so the question may become moot.

3. *Currently, the selection of an economic assumption that is not within the “best estimate range” is considered a deviation from the guidance in ASOP No. 27. Should the ASOP permit an actuary to select an economic assumption that lies outside the best-estimate range (for example, to include a margin for conservatism, or to calculate a range of values instead of a single measurement of plan obligations)? If so, what specific guidance should ASOP No. 27 provide with respect to the selection of such economic assumptions?*

The ASOP should not only permit an actuary to select an economic assumption that lies outside the “best estimate range,” but also permit the use of approaches other than the “best estimate range.” In any case, the actuary should disclose the methodology and assumptions utilized in the determination of the assumptions.

4. *Currently, the guidance in ASOP No. 27 does not include the asset valuation method or the difference between the market value and actuarial value of a plan’s assets among the considerations in selecting an investment return assumption. Is it appropriate for an actuary to consider either of those factors when selecting an investment return assumption? Should the ASOP advise actuaries to consider those factors?*

No. Asset valuation methods serve entirely different purposes.

5. *Have there been any specific changes in actuarial science or practice since the original adoption of ASOP No. 27 that conflict with the guidance in the ASOP? Should the ASOP accommodate any such practices? If so, what specific guidance should ASOP No. 27 provide with respect to such practices?*

This is arguably the most important question in the RFC that requires a more detailed answer. It is hard to claim that there have been some “*specific changes in actuarial science or practice since the original adoption of ASOP No. 27 that conflict with the guidance in the ASOP*” because the relationship between the ASOP and pension actuarial science has *always* been debatable.

The ASOP requires the actuary to select a single point as the investment return assumption (a.k.a. the rate of interest) via the “best estimate range” procedure. This assumption is subsequently employed to produce deterministic present values of pension commitments. While a multitude of deterministic models should certainly be allowed under the ASOP, the *necessity* of utilizing deterministic models has no basis in pension actuarial science.

Actuarial publications have been perfectly clear about this matter for decades. Winklevoss [1977], for example, wrote the following:

*“Although it is common to find [the interest] assumption set at a constant compound rate, this is a special case of the more general assumption that would allow the rate of interest to vary over time.”*¹

Trowbridge [1989] has a section named “The Rate of Interest as a Random Variable” that contains the following:

*“Of great importance to the actuary is the rate of interest (or more generally, the rate of investment return). ... Historically, actuaries have used deterministic models in their treatment of the time value of money, but not because they were unaware of interest rate variation. ... The difficulty has not been the lack of concern, but rather a lack of knowledge as to the complexities of interest rate variation. ... The development of computers has opened up a range of techniques whereby interest rate variation can be modeled. It appears that this is a direction in which actuarial interest and knowledge may be expected to grow.”*²

Stochastic rates of investment return lead to stochastic present values, which are well-represented in actuarial and financial literature. For example, Chapter 10 in Kellison [1991] is called “Stochastic Approaches to Interest.” Among other things, the chapter recognizes the stochastic nature of present values and presents the calculations of the variance of the present value of an annuity-immediate.³ Bowers [1997] also deals with stochastic present values (although the source of randomness there is population decrements).⁴ It should be mentioned that Kellison [1991] and Bowers [1997] are classic textbooks that are still on the suggested reading list for actuarial exams.

The tradition to use deterministic models may have come from multiple sources – regulations, the unavailability of computing power, the complexities of the subject and lack of demand in the marketplace. Pension actuarial science, however, is not one of these sources. Yet, a pension actuary who concludes that “the present value of the pension commitment has mean X and variance Y ” would probably be considered in violation of the guidance in the ASOP, as there is neither “best estimate range” nor single point investment return assumption.

This situation should change. The need for the analysis of stochastic present values is clear, and the ASOP should not impede the development of the actuarial profession. Moreover, the standard-setters should face the fact that if the analysis of stochastic present values is considered a violation of the ASOP, the need for this analysis will not go away. Other professionals will do this work. A recent research paper from *BNY*

¹ Winklevoss, H.E., *Pension Mathematics with Numerical Illustrations*, Irwin, 1977, page 26.

² Trowbridge, C.L., *Fundamental Concepts of Actuarial Science, Centennial Edition*, Actuarial Education and Research Fund, 1989, page 20.

³ Kellison, S.G. [1991], *The Theory of Interest*, (Second Edition – 1991); Irwin Professional Publishers, page 340.

⁴ Bowers, N.L. et. al.[1997], *Actuarial Mathematics*, (Second Edition), Society of Actuaries.

Mellon talks about “annual probabilistic valuations” for public pension plans.⁵ There is at least one investment consulting firm that performs such valuations for selected clients and utilizes the analysis of stochastic present values for asset allocation purposes.

The professional landscape for pension actuaries is changing rapidly. Retirement programs are currently shifting from DB to DC plans, and the need for actuarial expertise may be shifting in this direction as well. The analysis of DC retirement programs requires stochastic models, as deterministic models are simply incapable of providing the comprehensive solutions the marketplace requires.⁶ It may be prudent for the standard-setters to consider expanding the scope of the ASOP from DB plans to retirement programs in general and providing actuarial science based guidance to the practitioners working in various areas of the retirement system.

6. *Comments received by the ASB in response to an exposure draft of ASOP No. 4 supported the idea that pension standards should accommodate actuarial practice that incorporates the concepts of financial economics as well as traditional actuarial practice. Does the application of financial economics to the selection of economic assumptions conflict with the guidance in ASOP No. 27, and if so, in what specific ways does it conflict? Should ASOP No. 27 provide specific guidance with respect to financial economics and, if so, what should that guidance be?*

Yes, pension standards should accommodate not only financial economics, but also any other scientific field that is relevant to actuarial practices.

I suspect, however, that the real meaning of this question is related to what was formerly called “corporate pension finance” and now called “financial economics.”⁷ The answer to this question is “yes” as well. When the standard-setters conclude that “corporate pension finance” is a scientific field that follows common academic standards in determining its assumptions, language, conclusions, the scope of applicability, and relationships with other scientific fields, they should ensure that the ASOP accommodates this field.

I do not believe that the ASOP should provide specific guidance with respect to “financial economics.” Actuarial science based guidance should be able to encompass “corporate pension finance” and related fields.

7. *Is there a need for guidance concerning the selection of economic assumptions for purposes other than measuring pension obligations (for example, for measuring pension risk)? If so, in which specific areas is guidance needed? Should any such guidance be*

⁵ Wozniak, A.D., Austin, P.S. [2008]. U.S. Public Pensions at a Crossroad: Which Way Forward? *BNY Mellon Asset Management*, May, 2008.

⁶ See, for example, Milevsky, M.A. [2006]. *The Calculus of Retirement Income*, Cambridge University Press, 2006.

⁷ I use quote marks around the term “financial economics” to distinguish the term from financial economics in a broad sense, as presented, for example, in Panjer, H. et al. [1998]. *Financial Economics*, The Actuarial Foundation, 1998.

provided in ASOP No. 27 or in a separate ASOP? What specific guidance, if any, should ASOP No. 27 provide with respect to such practices?

Any guidance regarding the analysis of stochastic present values should include risk measurements. Therefore, there is no need for a separate ASOP.

8. *Are the disclosure requirements of ASOP No. 27 appropriate? Are there any specific disclosures that should be added to or removed from the ASOP? Is there additional information concerning economic assumptions that would be useful to another actuary who takes over or reviews a plan or to other users of an actuarial report?*

No comments.

9. *Are there any other areas of concern with respect to ASOP No. 27?*

Not this time.

10. *How might any of your comments apply to ASOP No. 35? Are there similar issues that apply to both ASOPs? Should the ASB review ASOP No. 35 at the same time it reviews ASOP No. 27?*

No comments.

Feel free to contact me if you have any questions.

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