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From: Dimitry Mindlin, President, *CDI Advisors LLC*

To: Members of the Pension Committee of the American Academy of Actuaries

Subject: Selecting Investment Return Assumptions Based on Anticipated Future Experience

I would like to thank the Pension Committee of the American Academy of Actuaries for the opportunity to provide comments on the exposure draft of practice note "Selecting Investment Return Assumptions Based on Anticipated Future Experience."

Overall, I believe that the practice note has several problems and a significant room for improvement.

The issue of investment return assumptions for pension actuaries has been controversial for quite some time. The primary reasons for this controversy are the lack of clarity in many actuarial publications and their reluctance to incorporate the common language of finance.[1]

This practice note continues this unfortunate trend. The draft's terminology is often ambiguous and its language lacks clarity. While the draft contains a number of useful observations, other observations are often confusing and occasionally incorrect.

These comments concentrate on "big picture" issues rather than on various technicalities. I would like to encourage the committee members to review my comments letter to the 2012 ASOP 27 revision. Most comments in that letter remain relevant to this day.

- *Focus on Investment Portfolios*

Discount rates – investment return assumptions – are measurements of portfolio returns. Discounting procedures always assume investing in a (hypothetical) portfolio of return-generating assets. However, the practice note discusses *portfolio returns* without discussing *portfolios*, which makes little sense. It should be made clear that, in addition to the pension plan's actual investment portfolio, actuaries may have to consider various hypothetical portfolios that are relevant to the plan. These hypothetical portfolios include, but are not limited to, various portfolios with fixed "riskless" return, matching portfolios of Treasury bonds, matching portfolios of municipal bonds, matching portfolios of bonds with "averaged" yields, and annuity contracts. A relevant portfolio is specified first; its return(s) and related discount rate(s) are specified next.[2]

[1] Here, I am not talking about incorporating the principles of "financial economics" (FE) that some economists and actuaries have promoted in recent years. FE is a misguided attempt to apply the principles of financial economics beyond the scope of their applicability. See The "Financial Economics" Debate for more details.

[2] The reasons for the relevance of these hypothetical portfolios to the plan are outside of the scope of this paper.

- *Focus on Actuarial Business*

Investment return assumptions need a proper context. The perspective of the professional that performs calculations and the purpose of the calculations are vitally important. In particular, the fact that the practice note is written for pension actuaries should play an important role in the selection of appropriate investment return assumptions.

Traditionally, pension actuaries calculate present values of pension commitments and the contributions required *to fund* (not necessarily *to price*) these commitments. Yet the practice note is virtually silent about traditional actuarial work. At the same time, the practice note deals with terminal wealth forecasting, performance analysis and other topics that are outside of the traditional areas of expertise of pension actuaries.

The numerical example in Exhibit 2 is highly emblematic in this respect. The example illustrates the problem of forecasting the *future* values of today's $1 over two years. While this example could be useful, a much more useful would be a similar example that deals with $1 in two years, its *present* values, and related discount rates. This example would be much closer to what most pension actuaries do every day.

In addition, this example would clearly demonstrate the stochastic nature of present values and the utility of this concept. This example would also illustrate the fact that present values can be calculated without discount rates. A discount rate is a choice, not a necessity.

In reality, traditional pension actuaries have to deal with portfolios of risky assets selected by their clients. The investment return assumptions actuaries select are driven by the properties of these portfolios. Yet, as was discussed in the previous section, the practice note provides little help in this respect, even though useful methodologies and tools are readily available. In particular, the practice note presents the definitions of arithmetic and geometric means for sequences of returns, not return distributions. The reasons for this limitation elude this author.

- *Discount Rate Selection Is Driven by the Objective of Calculation*

This key principle is inexplicably missing in the practice note, even though the note contains a reference to the paper that discusses this principle in detail.[3] As it stands now, the practice note offers answers to unspecified questions and solutions to unspecified problems. The main result of this approach is abundant confusion.

- *The Relationship between Arithmetic and Geometric Returns*

The relationship between arithmetic and geometric returns has been analyzed in numerous publications. One particular paper, On the Relationship between Arithmetic and Geometric Returns, contains a useful summary of several formulas that connect arithmetic and geometric returns. Moreover, this paper has been the standard source of information for some of the largest actuarial firms. The practice note,

[3] See Present Values, Investment Returns and Discount Rates, *CDI Advisors Research*, 2013.

however, contains no reference to this paper. "The most common approximation" presented by the practice note is arguably the worst approximation among reviewed in the paper. Better approximations are not presented in the practice note.

One of the most important qualities of a good practice note is clarity. This draft lacks clarity as well as other vital qualities. This author believes that the current draft contains several major "imperfections" that should be corrected.

Thank you for your attention to these comments. Feel free to contact me if you have any questions and/or comments. I would be happy to assist the committee in the development of this practice note and related issues.

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