Exposure Draft

Exposure Draft – Addition of New Subsection 3270 to the Practice-Specific Standards for Pension Plans – Disclosure for Stochastic Models Used for the Purposes of Certification of Pension Plan Funding Requirements

Actuarial Standards Board

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360 Albert Street, Suite 1740, Ottawa ON K1R 7X7 613.236.8196 613.233.4552 secretariat@asb-cna.ca **www.asb-cna.ca**

Actuarial Standards Board
Conseil des normes actuarielles

Memorandum

To: All Fellows, Affiliates, Associates, and Correspondents of the Canadian Institute of Actuaries and other interested parties

From: Conrad Ferguson, Chair
Actuarial Standards Board

Todd Saulnier, Chair
Designated Group

Date: June 14, 2018

Subject: **Exposure Draft – Addition of New Subsection 3270 to the Practice-Specific Standards for Pension Plans – Disclosure for Stochastic Models Used for the Purposes of Certification of Pension Plan Funding Requirements**

Comment Deadline: **September 30, 2018**

Introduction

This exposure draft (ED), adding new subsection 3270 to the practice-specific standards for pension plans to enhance the disclosures of model inputs and outputs for pension stochastic models used to certify pension plan funding requirements, was approved for distribution by the Actuarial Standards Board (ASB) on June 5, 2018.

Background

The ASB created a designated group (DG) initially with a mandate to develop a new subsection to the Standards of Practice with regard to the calibration of stochastic funding models (SFMs) used to certify pension plan funding requirements. The designated group includes Steven Chen, Ken Choi, Brendan George, Jocelyn Guérin, Neil Lamb, Devin Lui, Mario Marchand (vice-chair), Todd Saulnier (Chair), and Daniella Vega.

A notice of intent on this new subsection was issued on June 6, 2016. A summary of the comments received and the DG's position was presented in Session 10 – ASB Update (Pension) – of the 2017 CIA Annual Meeting (you must log in to view materials from the session).

The main changes the DG made in its deliberations following the feedback are the following:

- As a first step, limit the scope of the new subsection 3270 to the inclusion of new provisions to enhance the disclosure of model inputs and outputs for pension stochastic models used for funding requirements. The disclosures are meant to:
    - Assist the users of the report or work product in understanding the assumptions and methods used in the model and the distribution of outcomes from the model; and
    - Enable another actuary to assess whether the assumptions and methods used in the model and the distribution of outcomes from the model are reasonable.
- Jointly with the Committee on Pension Plan Financial Reporting (PPFRC), consideration will be given as to whether an educational note should be prepared, and the potential scope of such an educational note, to provide guidance on models or disclosures to actuaries using stochastic models to certify pension plan funding requirements.

Timeline

It is the responsibility of the ASB to make final decisions regarding the new standards of practice. It is anticipated that the ASB would adopt final standards with an effective date on or after January 2019. Early implementation would likely be permitted.

Your Feedback

The ASB solicits feedback on this ED from members of the CIA and other stakeholders. Comments on the proposed additions are invited **by September 30, 2018**. Please send them, preferably in an electronic format, to Todd Saulnier at Todd.Saulnier@mercer.com, with a copy to Chris Fievoli at chris.fievoli@cia-ica.ca. No other forums for the receipt of comments are currently contemplated.

Due Process

The ASB's Policy on Due Process for the Adoption of Standards of Practice was followed in the development of this ED.

CF, TS

3270 Disclosure for Stochastic Models used for the Purposes of Certification of Pension Plan Funding Requirements

Purposes

.01 For a going concern valuation using stochastic models for the purposes of certification of pension plan funding requirements, the disclosure of model inputs and outputs are meant to

- Assist the users of the report or work product to understand the assumptions and methods used in the model and the distribution of outcomes from the model; and
- Enable another actuary to assess whether the assumptions and methods used in the model and the distribution of outcomes from the model are reasonable.

Model Inputs

.02 The actuary reporting on the results of a going concern valuation using stochastic models for the purposes of certification of pension plan funding requirements (e.g., under the New Brunswick Shared Risk Plans Regulation) should disclose the following assumptions:

- Risk management goals, funding policy, deficit recovery plan and funding excess utilization plan or such other policies that require contingent calculations, reflected in the stochastic analysis;
- Number of scenarios and time period over which the scenarios are forecast;
- Projected experience decrement assumptions and whether or not these are deterministic or stochastic. If the latter, the volatility for the decrements and a description of the model used to simulate scenarios;
- Future valuations decrement assumptions, if applicable;
- Assumptions for the new entrants into the plan, including population growth assumption and new entrants profiles;
- Methodology for wage increases, if relevant;
- Frequency of valuations over the projection period;
- Fees
    - Administration fees (including actuarial, audit, legal, etc.);

- Investment management fees, to the extent they are not already reflected in the return assumptions;

- Confirmation of how the discount rate used in valuing the liabilities is affected by the economic scenario. For example, if the discount rate is linked to long-term corporate bond yields, confirmation that the discount rate is adjusted to be consistent with the forecasted scenario and a description of how that adjustment is made;
- Rationale for any variance in the equity risk premium and any relationships among the equity risk premium, inflation, bond yields, or other economic variables;
- For each economic variable, the long-term expected value, standard deviation and the correlation matrix used in the economic scenario generator;
- For the federal bond yield curve, the initial yield at one-year, 10-year and 30-year terms;
- The initial credit spreads for provincial and investment grade corporate bonds at the one-year, 10-year and 30-year terms; and
- The rationale for any trend in bond yields (including any assumption of normalization of the yield curve). [Effective Month XX, 201X]

.03 For each of the methods and assumptions listed above, the actuary should indicate material changes and reasons for changes relative to the previous valuation. [Effective Month XX, 201X]

Model Outputs

.04 To assist users of the report to understand the model outputs and assess their reasonableness, the following summary of forecasted economic variables should be disclosed as a minimum:

- For inflation and all asset class returns (and wage increases if they incorporate a stochastic component different than inflation):
  - Mean of the annualized compounded value over the entire period;
  - Average annual standard deviation;
  - Correlation matrix; and
  - For at least every other year over the first 10 years and at least every five years thereafter the following distribution information:
    - Percentiles 5%, 25%, 50%, 75%, 95%, mean, and standard deviation;
- For the federal bond yield curve, the mean yield at the end of the projection period of the yield at the one-year, 10-year, and 30-year terms;
- The mean credit spread for provincial and investment-grade corporate bonds at the end of the projection period at the one-year, 10-year, and 30-year terms; and
- If liabilities are linked to bond yields, also indicate initial value and mean of the discount rate and applicable reference yields at the end of the projection period. [Effective Month XX, 201X]

.05 The following average forecasted future key demographic summary statistics for the liabilities should be disclosed at a minimum of every other year for the first 10 years and every five years thereafter:

- Total number of active participants and their average age, average service, and average projected salary, if relevant; and
- Mean total liability and active/inactive liability split. [Effective Month XX, 201X]

.06 The actuary should provide the following statistics for the projected liability, projected assets, projected funded status, and any other key output from the model upon which the actuary expresses an opinion (e.g., open group funded ratio):

- Percentiles 5%, 25%, 50%, 75%, 95%;
- Mean;
- Volatility;
- The average of those values that are below the 5th percentile of the range of values produced by the entire set of modelled scenarios or above the 95th percentile, according to which side of the distribution should be considered unfavorable. As an example, values below the 5th percentile should be expected to be used for value of assets and funded status, whereas values above the 95th percentile should be expected to be used for liabilities; and
- The corresponding average for the values below the 2.5th or above the 97.5th percentile.

These statistics should be provided as a minimum for every other year for the first 10 years and every five years thereafter. [Effective Month XX, 201X]

Disclosure Presentation

.07 The actuary may describe forecasted results graphically or in table format to present the forecasted distribution of these results over the forecasted time horizon**.**