Canadian Institute of Actuaries
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Educational Note Supplement

Guidance for Assumptions for Hypothetical Wind-Up and Solvency Valuations with Effective Dates between December 31, 2012, and December 30, 2013

Document 213010

Memorandum

To: All Pension Actuaries

From: Gavin Benjamin, Chair
Committee on Pension Plan Financial Reporting

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Subject: **Educational Note Supplement: Guidance for Assumptions for Hypothetical Wind-Up and Solvency Valuations with Effective Dates between December 31, 2012, and December 30, 2013**

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INTRODUCTION

The purpose of this memorandum is to provide preliminary guidance from the Committee on Pension Plan Financial Reporting (PPFRC) for estimating the cost of purchasing group annuities for purposes of hypothetical wind-up and solvency valuations with effective dates of December 31, 2012, and later (but no later than December 30, 2013). Since this guidance may have an effect on valuations currently in preparation with an effective date of December 31, 2012, or later, the guidance is being released on an expedited basis in advance of formal approval by the Practice Council of a planned educational note.

BACKGROUND: PREVIOUS GUIDANCE

An educational note was published in May 2012 on assumptions for hypothetical wind-up and solvency valuations with effective dates between December 31, 2011, and December 30, 2012. Over the course of 2012, the PPFRC reviewed its guidance on the cost of purchasing group annuities on a quarterly basis. The most recent update to the guidance was contained in an educational note supplement issued on December 4, 2012, and was effective as of September 30, 2012. That guidance concluded that for valuations with effective dates on and after September 30, 2012, an appropriate discount rate for estimating the cost of purchasing a non-indexed group annuity would be determined as the unadjusted average yield on Government of Canada (GoC) marketable bonds with maturities over 10 years (CANSIM series V39062) increased arithmetically by 70 basis points (bps), in conjunction with the UP94 generational mortality tables. That guidance applied to both immediate and deferred pensions and also applied regardless of the overall size of a group annuity purchase.

METHODOLOGY

This guidance is partially based on quotes provided by eight insurance companies on illustrative group annuity business using pricing conditions at December 31, 2012. These data were collected on the same basis as the illustrative quotes as of December 31, 2011 (as described in the May 2012 educational note), and the methodology used is consistent with the methodology adopted as of each quarter end in 2012. The illustrative quote information was supplemented with data on the pricing of actual group annuity purchases during the fourth quarter of 2012 provided by certain actuarial consulting firms.

ANALYSIS

The results of the illustrative non-indexed quotations at December 31, 2012, based on the UP94 generational mortality tables, are summarized below and compared to the previous illustrative quote information provided by the insurers as at September 30, 2012.

AVERAGE OF THE THREE MOST COMPETITIVE QUOTES (USING UP94 GENERATIONAL MORTALITY TABLES)				
	Large Purchase		**Small Purchase**	
	30/09/2012	**31/12/2012**	**30/09/2012**	**31/12/2012**
Retirees • Discount rate • Spread over CANSIM V39062	2.86% + 0.64%	2.86% + 0.60%	2.94% + 0.72%	3.01% + 0.75%
Deferred vesteds • Discount rate • Spread over CANSIM V39062	3.21% + 0.9[illegible]%	3.14% + 0.88%	3.23% + 1.01%	3.24% + 0.98%
Combined • Discount rate • Spread over CANSIM V39062	2.95% + 0.73%	2.92% + 0.66%	3.14% + 0.92%	3.15% + 0.89%

If considered in isolation, over the three-month period ending December 31, 2012, the illustrative quotes may indicate a slight decrease in the spread of the discount rates over the unadjusted average yield on GoC marketable bonds with maturities over 10 years (CANSIM V39062), in conjunction with the UP94 generational mortality tables.

The actual group annuity purchase data obtained by the PPFRC for the fourth quarter of 2012 were also considered. In particular, the data on the actual purchases of non-indexed annuities during the months of November and December 2012 that were available to the PPFRC produced an average spread of approximately 75 bps above the prevailing unadjusted yield on GoC long-term bonds (CANSIM series V39062).

While the illustrative quotes do indicate differences in the pricing for immediate and deferred annuities, some of the insurers provide their quotes on the basis that the immediate and deferred annuities are comingled in the same purchase. As such, the illustrative quotes are also shown above on a combined basis. It is recommended that this information be interpreted with caution as the actual weighting between retirees and deferred annuitants can vary by annuity purchase. In particular, the illustrative group for the small annuity purchase includes a high portion of deferred annuitants. (Information on the characteristics of the illustrative quotes can be found in the May 2012 educational note.) As a result, and based on both the illustrative quotes and the actual group annuity data, the PPFRC has concluded that it would not be appropriate at this time to differentiate the guidance on pricing of group annuities for large and small annuity purchases, and immediate and deferred annuities.

GUIDANCE FOR NON-INDEXED PENSIONS

Based on the analysis described above, the PPFRC has concluded that, for valuations with effective dates on and after December 31, 2012, but no later than December 30, 2013, an appropriate discount rate for estimating the cost of purchasing a non-indexed group annuity would be determined as the unadjusted yield on GoC long-term bonds (CANSIM series V39062) increased arithmetically by 70 bps, in conjunction with the UP94 generational mortality tables. This guidance applies to both immediate and deferred pensions and also applies regardless of the overall size of a group annuity purchase.

Example

As at December 31, 2012, the unadjusted CANSIM V39062 rate was 2.26%. This rate would form the basis for developing an appropriate underlying discount rate for valuations of non-indexed group annuities with effective dates of December 31, 2012. Prior to rounding, an applicable underlying discount rate would then be determined as 2.26% + 0.70% = 2.96%.

GUIDANCE FOR INDEXED PENSIONS

As in prior years, data regarding the pricing of actual annuities indexed to the Consumer Price Index (CPI) are extremely limited. In most cases, the contributing insurers did provide illustrative quote data for the sample blocks on a CPI-indexed basis. It may be noted that the premiums for the illustrative quotes on this and prior occasions are substantially higher than the guidance provided by prior educational notes.

The PPFRC is conducting further research regarding the pricing of indexed annuities. The analysis includes confirmation as to whether the insurers would be willing to actually transact on the basis reflected in the illustrative annuity quotes. This research may result in the revision of future guidance for estimating the cost of purchasing indexed annuities.

Accordingly, an acceptable proxy for estimating the cost of purchasing a group annuity where pensions are fully indexed to the rate of change in the CPI would be the unadjusted yield on GoC real-return long-term bonds (CANSIM series V39057) in conjunction with the UP94 generational mortality tables. This guidance applies to both immediate and deferred pensions and also applies regardless of the overall size of a group annuity purchase.

In situations where pensions are partially indexed, indexed to a measure other than the CPI or contain a deferred component, the actuary would make appropriate provisions for such situations consistent with the guidance provided in the May 2012 educational note and other relevant educational notes.

ACTUAL ANNUITY PRICING

The purpose of this educational note supplement is to provide actuaries with guidance related to the establishment of assumptions for hypothetical wind-up and solvency valuations. It is worth noting that the pricing for an actual group annuity purchase depends on many factors, with the result that the actual price may differ from the guidance provided herein. Some of the factors that may affect pricing of a particular purchase include, but are not limited to:

- The duration of the pensions being purchased;
- The proportion of deferred vested members included in the group being purchased;
- The average pension amount for the pensions being purchased;
- The mortality experience anticipated by the insurance companies bidding on the purchase; and
- Competitive pressures in the group annuity market at the time of the purchase.

ADDITIONAL COMMENTS

The PPFRC is preparing its annual educational note on this topic reflecting the above analysis.

The PPFRC intends to continue monitoring group annuity pricing on a quarterly basis. Actuaries may use the spreads indicated above for valuations with effective dates on and after December 31, 2012, up to December 30, 2013, pending any future guidance or other evidence of change in annuity pricing.

The PPFRC is reviewing several aspects of group annuity purchase pricing which may result in future revisions to its guidance. In particular:

- **Duration**: the PPFRC has observed that the duration of obligations being purchased may have had a significant effect on annuity pricing during 2011 and 2012. The differential in the hypothetical annuity quotes between deferred vested and retired members may be related to differences in the duration of the obligations of each group. Future guidance may better reflect the effect of the duration of the obligations being valued.
- **Indexed annuities**: the PPFRC's review includes confirmation that the insurers would be willing to actually transact on the basis reflected in the illustrative annuity quotes for indexed pensions provided to the PPFRC and the relationship between indexed annuity premiums and yields on GoC real-return long-term bonds.
- **Underlying basis**: currently, the annuity guidance is expressed as a spread over yields on GoC long-term bonds in conjunction with the UP94 generational mortality tables, irrespective of the basis used by insurers when submitting quotes. The PPFRC is exploring whether other bases may be more appropriate to provide more stability in the resulting spread.
- **Alternative settlement methods:** on December 14, 2012, the CIA published a draft educational note on alternative settlement methods for hypothetical wind-up and solvency valuations, which may also result in future guidance for plans affected by capacity constraints within the Canadian group annuity purchase market.

It may be noted that the spreads versus GoC long-term bonds for group annuity pricing have been volatile during the past three to four years. Actuaries may wish to be mindful of this volatility when communicating advice related to future hypothetical wind-up and solvency valuations.

The PPFRC would like to express its gratitude to BMO Insurance, The Co-operators, Desjardins Financial Security, Great-West Life, Industrial Alliance, Manulife, Standard Life, and Sun Life Financial for providing the committee with the data required to issue this guidance.