

# MEMORANDUM

**To:** All Pension Actuaries

**From:** Steven W. Easson, Chair  
Standards and Guidance Council

Jared Mickall, Chair  
Committee on Pension Plan Financial Reporting

**Date:** November 13, 2019

**Subject:** **Educational Note Supplement: Guidance for Assumptions for Hypothetical Wind-Up and Solvency Valuations Update – Effective September 30, 2019, and Applicable to Valuations with Effective Dates Between September 30, 2019 and December 30, 2019**

*Document 219122*

The Committee on Pension Plan Financial Reporting (PPFRC) conducted its quarterly review of group annuity pricing conditions as at September 30, 2019. It determined that a revision to its previous guidance regarding assumptions for hypothetical wind-up and solvency valuations is appropriate for non-indexed annuities, while no revision to its previous guidance for annuities fully indexed to increases in the Consumer Price Index is warranted for valuations with effective dates on or after September 30, 2019 (but no later than December 30, 2019).

Additional information is contained in this educational note supplement. The guidance contained in this educational note supplement is consistent with the [preliminary communication](#) dated October 28, 2019.

## **Due process**

The *Policy on Due Process for the Approval of Guidance Material Other than Standards of Practice and Research Documents* was followed in the development of these revisions.

## **Contact information**

Questions should be addressed to Jared Mickall, Chair of the PPFRC, at [jared.mickall@mercer.com](mailto:jared.mickall@mercer.com).

SWE, JM

## Validity of March 18, 2019 educational note

The most recent annual guidance from the Committee on Pension Plan Financial Reporting (PPFRC) concluded that for valuations with effective dates on or after December 31, 2018 (but no later than December 30, 2019), 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 a spread determined based on the duration of the liabilities. For estimating the cost of purchasing a group annuity where pensions are fully indexed to the rate of change in the Consumer Price Index (CPI), the spread would be determined as the unadjusted yield on Government of Canada real-return long-term bonds (CANSIM series V39057). The discount rates are to be used in conjunction with the 2014 Canadian Pensioners' Mortality Table (CPM2014) combined with mortality improvement scale CPM Improvement Scale B (CPM-B) and if applicable, would be adjusted to reflect adjustments for sub- or super-standard mortality (CPM2014Proj). This guidance was based on hypothetical quotes provided by insurance companies on illustrative blocks of business, supplemented by data from certain actuarial consulting firms on actual group annuity purchases and bona fide quotations.

Except as noted below, actuaries would continue to reference the March 18, 2019 [educational note](#) for guidance with respect to the selection of assumptions for hypothetical wind-up and solvency valuations with effective dates between December 31, 2018 and December 30, 2019.

## Non-indexed annuity proxy

### Previous quarterly guidance

The most recent quarterly and annual guidance from the PPFRC concluded that for valuations with effective dates on or after June 30, 2019 (but no later than December 30, 2019), an appropriate discount rate for estimating the cost of purchasing a non-indexed group annuity would be determined using CANSIM series V39062 increased arithmetically by between 100 to 110 basis points (bps).

This guidance was based on hypothetical quotes as at June 30, 2019, supplemented by group annuity data for the second quarter of 2019.

### Analysis

The PPFRC obtained hypothetical quotes as at September 30, 2019, from six of the seven insurance companies who provided hypothetical quotes as at June 30, 2019, on the same illustrative blocks of business used to develop the previous guidance and group annuity data. The durations of the three central illustrative blocks are as follows:

Duration	Low	Medium	High
Duration at September 30, 2019	8.7	11.3	13.9

For the purpose of this guidance, the durations of the illustrative blocks shown above were determined using the discount rate guidance for the illustrative block with medium duration (as

described below) of 2.81% which is equal to the CANSIM V39062 yield of 1.51% at September 30, 2019, plus 130 bps. The mortality assumptions as described in the annual note were also used. Note that the durations of the three illustrative blocks will change over time as discount rates change. The hypothetical quotations at June 30, 2019 and September 30, 2019 may be summarized as follows:

<b>Average of the Three Most Competitive Hypothetical Quotes (Using CPM2014Proj Mortality Tables)</b>						
	<b>June 30, 2019</b>			<b>September 30, 2019</b>		
	<b>Low duration</b>	<b>Medium duration</b>	<b>High duration</b>	<b>Low duration</b>	<b>Medium duration</b>	<b>High duration</b>
<b>Discount rate</b>	2.68%	2.78%	2.82%	2.72%	2.77%	2.75%
<b>Spread over CANSIM V39062</b>	+ 102 bps	+ 112 bps	+ 116 bps	+ 121 bps	+ 126 bps	+ 124 bps

The spread over CANSIM V39062 based on the average of the three most competitive hypothetical quotes increased over all durations, since the previous quarter. In addition, the average spreads for actual purchases and bona fide quotations during the quarter were generally more favourable than the averages quoted above at all durations, though there were limited data at the low and high durations.

The PPFRC has been monitoring the spreads for groups with durations higher than 13.9 and has recently observed that these spreads may be less than the spreads indicated at the high duration block. The PPFRC will continue to monitor the spreads for groups with durations higher than 13.9.

Based on the above information, the PPFRC concluded that a revision to the guidance is appropriate. In establishing the guidance, the PPFRC gave consideration to the hypothetical quotes and to the data collected on actual annuity purchases and bona fide quotations.

### **Guidance for non-indexed pensions**

The PPFRC concluded that effective September 30, 2019, the cost of purchasing non-indexed annuities would be estimated based on the process outlined in the annual note for 2019, and the following table to determine the appropriate spread above unadjusted CANSIM V39062:

<b>Illustrative block</b>	<b>Duration based on 2.81% discount rate</b>	<b>Spread above unadjusted CANSIM V39062</b>
Low duration	8.7	+ 120 bps
Medium duration	11.3	+ 130 bps
High duration	13.9	+ 130 bps

### **CPI-indexed annuity proxy**

#### **Previous guidance**

The most recent guidance from the PPFRC concluded that for valuations with effective dates on or after June 30, 2019 (but no later than December 30, 2019), an appropriate discount rate 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 CANSIM series V39057 reduced arithmetically by 70 bps.

### Analysis

A subset of the contributing insurers also provided hypothetical quotes for the illustrative blocks on a CPI-indexed basis as of September 30, 2019, of which at least three indicated they may be willing to transact on their hypothetical quotes at the three durations. The hypothetical quotations as at June 30, 2019 and September 30, 2019, for the medium-duration illustrative block where insurers indicated that they may be willing to transact on their hypothetical quotes may be summarized as follows:

<b>Average of the Most Competitive Hypothetical Quotes (Using CPM2014Proj Mortality Tables)</b>		
	<b>June 30, 2019</b>	<b>September 30, 2019</b>
<b>Number of hypothetical quotes in the average</b>	3	3
<b>Discount rate</b>	- 0.33%	- 0.49%
<b>Spread over CANSIM V39057</b>	- 67 bps	- 77 bps

Based on the average of the three hypothetical quotes, the spreads below the unadjusted yield on CANSIM V39057 for the medium-duration illustrative block increased during the quarter. Similar to the previous quarter, the absolute value of the spread on the low and high duration blocks were both higher than for the medium duration block. In addition, significant variation between the hypothetical quotes was observed.

The PPFRC was provided with limited quantitative data on actual fully or partially indexed annuity data for the third quarter of 2019.

### Guidance for fully CPI-indexed pensions

Based on the pricing received, the PPFRC has concluded there is insufficient data to warrant a revision to the previous guidance. An appropriate 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 estimated based on the process outlined in the annual note, and using an interest rate equal to the unadjusted yield on CANSIM series V39057 (0.28% as at September 30, 2019) reduced arithmetically by 70 bps.

### Actual annuity pricing

This educational note supplement provides actuaries with guidance related to establishing assumptions for hypothetical wind-up and solvency valuations. The pricing for an actual group annuity purchase depends on many factors as outlined in the annual note, with the result that the actual price may differ from the guidance provided herein. Spreads versus GoC long-term bonds for group annuity pricing can be volatile, which actuaries may wish to be mindful of when communicating advice related to future hypothetical wind-up and solvency valuations.

**Retroactive application**

If an actuary has already prepared a funding valuation report with an effective date on or after September 30, 2019, before the publication of this guidance, the actuary would consider paragraphs 1710.36 through 1710.43 of the *Standards of Practice* to determine whether it is necessary to withdraw or amend the report.

**Additional comments**

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 September 30, 2019, up to December 30, 2019, pending any future guidance or other evidence of change in annuity pricing.

## Appendix A – summary and links for historical guidance

The following is a summary of the historical guidance issued by the PFFRC. The summary is provided for reference, and actuaries are directed to refer to the respective published educational note or educational note supplement.

Educational Note/ Supplement	Mortality table <sup>1</sup>	Non-indexed Immediate and Deferred <i>Duration<sup>2</sup>: Spread relative to unadjusted CANSIM V39062</i>			Fully CPI-Indexed <i>Spread relative to unadjusted CANSIM V39057</i>
		Low duration	Medium duration	High duration	All durations
Sep 30, 2019	CPM2014Proj	8.7: + 120 bps	11.3: + 130 bps	13.9: + 130 bps	- 70 bps
<a href="#">Jun 30, 2019</a>	CPM2014Proj	8.7: + 100 bps	11.4: + 110 bps	14.0: + 110 bps	- 70 bps
<a href="#">Mar 31, 2019</a>	CPM2014Proj	8.6: + 100 bps	11.2: + 110 bps	13.8: + 110 bps	- 70 bps
<a href="#">Dec 31, 2018</a>	CPM2014Proj	8.5: + 100 bps	11.0: + 110 bps	13.4: + 110 bps	- 70 bps
<a href="#">Sep 30, 2018</a>	CPM2014Proj	8.4: + 80 bps	10.9: + 90 bps	13.3: + 90 bps	- 80 bps
<a href="#">June 30, 2018</a>	CPM2014Proj	8.5: + 80 bps	11.1: + 90 bps	13.5: + 90 bps	- 70 bps
<a href="#">Mar 31, 2018</a>	CPM2014Proj	8.5: + 70 bps	11.1: + 80 bps	13.6: + 90 bps	- 70 bps
<a href="#">Dec 31, 2017</a>	CPM2014Proj	8.6: + 70 bps	11.1: + 80 bps	13.6: + 90 bps	- 70 bps
<a href="#">Sep 30, 2017</a>	CPM2014Proj	8.5: + 60 bps	11.1: + 70 bps	13.5: + 80 bps	- 70 bps
<a href="#">Jun 30, 2017</a>	CPM2014Proj	8.6: + 60 bps	11.2: + 80 bps	13.8: + 90 bps	- 70 bps
<a href="#">Mar 31, 2017</a>	CPM2014Proj	8.5: + 70 bps	11.0: + 100 bps	13.5: + 110 bps	- 60 bps
<a href="#">Dec 31, 2016</a>	CPM2014Proj	8.5: + 70 bps	11.0: + 90 bps	13.5: + 100 bps	- 60 bps
<a href="#">Sep 30, 2016</a>	CPM2014Proj	8.7: + 80 bps	11.4: + 110 bps	14.0: + 120 bps	- 70 bps
<a href="#">Jun 30, 2016</a>	CPM2014Proj	8.6: + 90 bps	11.3: + 120 bps	13.8: + 130 bps	- 70 bps
<a href="#">Mar 31, 2016</a>	CPM2014Proj	8.5: + 90 bps	11.1: + 120 bps	13.6: + 130 bps	- 70 bps
<a href="#">Dec 31, 2015</a>	CPM2014Proj	8.5: + 60 bps	11.1: + 100 bps	13.6: + 110 bps	- 70 bps
<a href="#">Sep 30, 2015</a>	CPM2014Proj	8.4: + 80 bps	11.0: + 110 bps	13.4: + 120 bps	- 70 bps
<a href="#">Jun 30, 2015</a>	UP94Proj	8.3: - 20 bps	10.9: + 30 bps	13.6: + 60 bps	- 120 bps
<a href="#">Mar 31, 2015</a>	UP94Proj	8.5: + 0 bps	11.3: + 30 bps	14.0: + 60 bps	- 120 bps
<a href="#">Dec 31, 2014</a>	UP94Proj	8.2: + 0 bps	10.9: + 30 bps	13.5: + 60 bps	- 120 bps
<a href="#">Sep 30, 2014</a>	UP94Proj	8.1: + 0 bps	10.6: + 30 bps	13.2: + 50 bps	- 120 bps
<a href="#">Jun 30, 2014</a>	UP94Proj	8.0: + 0 bps	10.5: + 40 bps	12.9: + 60 bps	- 110 bps
<a href="#">Mar 31, 2014</a>	UP94Proj	7.7: + 50 bps	10.1: + 80 bps	12.3: + 100 bps	- 100 bps
<a href="#">Dec 31, 2013</a>	UP94Proj	7.6: + 50 bps	9.9: + 70 bps	12.1: + 80 bps	- 110 bps
<a href="#">Sep 30, 2013</a>	UP94Proj	7.6: + 60 bps	9.9: + 80 bps	12.2: + 90 bps	- 100 bps
<a href="#">Jun 30, 2013</a>	UP94Proj	7.8: + 40 bps	10.2: + 60 bps	12.5: + 70 bps	- 120 bps

<sup>1</sup> "CPM2014Proj": 2014 Canadian Pensioners' Mortality Table (CPM2014), combined with mortality improvement scale CPM Improvement Scale B (CPM-B) with no adjustments for sub- or super-standard mortality; "UP94Proj": UP94 mortality table, combined with mortality improvement scale AA on fully generational basis.

<sup>2</sup> Duration is to be determined for the portion of the liabilities assumed to be settled through the purchase of annuities, based on the medium duration discount rate.