Canadian Institute of Actuaries
Institut canadien des actuaires

Educational Note

Guidance for 2005 on Assumptions for Wind-Up and Hypothetical Wind-Up Valuations with Effective Dates Between December 31, 2004 and December 30, 2005

Document 205020

EDUCATIONAL NOTE

Educational Notes do not constitute standards of practice. They are intended to assist actuaries in applying standards of practice in respect of specific matters. Responsibility for the manner of application of standards in specific circumstances remains that of the practitioner.

GUIDANCE FOR 2005 ON ASSUMPTIONS FOR WIND-UP AND HYPOTHETICAL WIND-UP VALUATIONS WITH EFFECTIVE DATES BETWEEN DECEMBER 31, 2004 AND DECEMBER 30, 2005

COMMITTEE ON PENSION PLAN FINANCIAL REPORTING

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MEMORANDUM

TO: All Fellows, Associates, Affiliates and Correspondents of the Canadian Institute of Actuaries

FROM: Serge Charbonneau, Chairperson
Committee on Pension Plan Financial Reporting

DATE: April 6, 2005

SUBJECT: **Guidance for 2005 on Assumptions for Wind-up and Hypothetical Wind-up Valuations**

The Committee on Pension Plan Financial Reporting (PPFRC) has developed the attached guidance for 2005 on assumptions for wind-up and hypothetical wind-up valuations.

In accordance with the Institute's policy for Due Process, this guidance has been approved by the PPFRC, and has received final approval for distribution by the Practice Standards Council, as designated educational material.

Section 1220 of the current Standards of Practice prescribes that "the actuary should be familiar with relevant educational notes and other designated educational material." It further explains that "a practice which the notes describe for a situation is not necessarily the only accepted practice for that situation and is not necessarily accepted actuarial practice for a different situation."

Questions should be addressed to me at my CIA online directory address.

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GUIDANCE FOR 2005 ON ASSUMPTIONS FOR WIND-UP AND HYPOTHETICAL WIND-UP VALUATIONS WITH EFFECTIVE DATES BETWEEN DECEMBER 31, 2004 AND DECEMBER 30, 2005

Under Standard of Practice 3720.01, the assumptions used for a wind-up valuation (and hence a hypothetical wind-up and solvency valuation) should:

- "*in respect of benefit entitlements that are expected to be settled by purchase of annuities, reflect single premium annuity rates, and*
- *in respect of benefit entitlements that are expected to be settled by lump sum transfer, reflect the recommendations respecting capitalized values.*"

This document has been prepared by the Committee on Pension Plan Financial Reporting (PPFRC) and is intended to provide actuaries with guidance in selecting appropriate assumptions for these two methods of settlement for hypothetical wind-up valuations and solvency valuations with effective dates between December 31, 2004 and December 30, 2005.

Please note that this Educational Note does not address the question of which group of active members should be valued using the annuity purchase assumption as opposed to the commuted value assumption; this question depends on the requirements of the applicable legislation.

Benefits Assumed to be Settled by Lump Sum Transfer

For all valuations, Standard of Practice 3740.05 applies. In particular, for a hypothetical wind-up valuation, or a solvency valuation "*the actuary should assume that the wind-up date, the calculation date and the settlement date are coincident.*" Accordingly, for a valuation with an effective date on and after February 1, 2005, the wind-up liabilities for benefits expected to be settled through the payment of a lump sum transfer should be determined in accordance with the Standard of Practice for Determining Pension Commuted Values (the New CV Standard). For a valuation with an effective date prior to February 1, 2005, the wind-up liabilities for benefits expected to be settled through the payment of a lump sum transfer should be determined in accordance with the Recommendations for the Computation of Transfer Values From Registered Pension Plans (the Old CV Recommendations).

However, under Standard of Practice 3740.10, "*the actuary may reflect subsequent events in the valuation provided that doing so either increases the liabilities or reduces the assets of the plan.*" For the vast majority of plans, lump sum transfer values determined under the New CV Standard as of December 31, 2004 will be greater than the lump sum transfer values determined under the Old CV Recommendations, based on December 2004 bond yields. Accordingly, subject to regulatory and legislative constraints, in most situations, it would be permissible to determine the lump sum transfer values in accordance with the New CV Standard for valuations with effective dates prior to February 1, 2005.

Finally, PPFRC would like to draw the attention of actuaries to the fact that for members in Québec, applicable regulations have not been updated by February 1, 2005, so for a relatively short transition period, lump sum transfer values paid after February 1, 2005 usually must be determined in accordance with the Old CV Recommendations, although it may be possible to pay values in accordance with the New CV standard, depending on the plan provisions.

Benefits Assumed to be Settled by Purchase of Immediate Non-Indexed Annuities

Data

The PPFRC has compiled information from insurance companies active in the group annuity market with respect to group annuities sold during 2004. After reviewing the information provided, there were 43 group annuities sold by these insurance companies during 2004 which the PPFRC believes are representative of the competitive group annuity market. The total premiums for the 43 group annuities were approximately $286 million, covering a total of 3,011 lives, reflecting an average premium of approximately $95,000 per member. There were considerably more data compared to previous years' analyses.

Methodology

The insurance companies were asked to determine the effective annual interest rate underlying each annuity purchase based on the sex-distinct UP94 Mortality Table, including mortality improvements projected to 2015 using Scale AA (UP94@2015). The PPFRC compared these interest rates to the unadjusted CANSIM B113867 rates, which are the weekly series of the weighted average yields on Government of Canada bonds of 10 years and over to maturity. The CANSIM rates were taken at the dates nearest the actual annuity purchase dates.

Results and Conclusions

The data revealed that the average spread between the interest rate underlying each annuity purchase and the unadjusted CANSIM B113867 rate at the same date was 0.45%, if each annuity is weighted in accordance with the total premium.

Based on the results of this survey, the PPFRC observes that assuming mortality in accordance with the UP94@2015 Table, together with a flat solvency valuation discount rate equal to the unadjusted CANSIM B113867 rate, plus 0.45% would appear to be appropriate for the valuation of immediate non-indexed group annuities.

As at December 29, 2004, the CANSIM B113867 rate was 4.86%. The CANSIM B114022 rate is the equivalent daily rate. As at December 31, 2004, the CANSIM B114022 rate was 4.77%. The PPFRC believes that, in developing an appropriate underlying interest rate for valuing immediate non-indexed group annuities for valuations with effective dates of December 31, 2004/January 1, 2005, this 4.77% rate would be appropriate. Prior to rounding, an applicable underlying interest rate would then be determined as 4.77% + 0.45% = 5.22%. Therefore, the data indicate that an appropriate basis for valuing immediate non-indexed group annuities for valuations with effective dates of December 31, 2004/January 1, 2005 for most plans will include an interest rate of 5.25% per year together with mortality in accordance with the UP94@2015 Table.

Each actuary should use discretion in determining whether to round the interest rate obtained above to a multiple of 25 basis points and, if so, whether to round up or down.

Comparison to Previous Year

Last year's data revealed an average interest rate spread very close to zero, assuming mortality in accordance with the 1983 Group Annuity Mortality Table (GAM83). The equivalent interest rate adjustment for moving from GAM83 to UP94@2015 varies depending on the demographics of the population. However, on average, the interest rate adjustment is expected to be approximately 0.45%. Therefore, the PPFRC believes that the data compiled this year are consistent with the data compiled last year.

Differentiating by Size

Similar to last year's survey, the data show little correlation between either the average premium per member or the total premium and the spread between the interest rate underlying each annuity purchase and the unadjusted CANSIM B113867 rate at the same date, although, we note that the correlation to total premium is clearly more evident than to average premium per member.

Benefits Assumed to be Settled by Purchase of Deferred Non-Indexed Annuities

Of the 43 group annuities included in the data used by PPFRC, 21 included some portion of deferred annuitants. The total premium in respect of the deferred annuitants was approximately $26 million.

The data revealed that the average spread between the interest rate underlying each annuity purchase and the unadjusted CANSIM B113867 rate at the same date was 0.20% if each annuity is weighted in accordance with the total premium.

Based on the results of this survey, the PPFRC observes that assuming mortality in accordance with the UP94@2015 Table together with a flat solvency valuation discount rate equal to the unadjusted CANSIM B113867 rate, plus 0.20% would appear to be appropriate for the valuation of deferred non-indexed group annuities.

The PPFRC notes that this is the first year that reliable information was available with respect to the basis underlying deferred annuities. In addition, the total premiums of $26 million do not represent a large sample size. Therefore, actuaries should use caution in applying this guidance to particular situations.

Indexed Pensions

The PPFRC did not receive any data with respect to the purchase of annuities where benefits are automatically indexed in accordance with increases in some external index (e.g., CPI). Accordingly, the PPFRC is not able to provide any direct guidance on the appropriate basis to be used to value such annuities. The PPFRC does, however, believe that actuaries would be expected to take into consideration the fact that indexed pensions would likely be backed by assets with yields correlated to inflation. The most common of these assets are Government of Canada real return bonds. Therefore, while non-indexed annuities may be backed by provincial bonds and/or mortgages which provide higher yields than Government of Canada bonds, such assets may not be available for indexed annuities.

Large Plans

Due to capacity constraints within the Canadian group annuity market, it is unlikely that large plans would be able to purchase annuities upon plan wind-up. While the capacity of the group annuity market is not clearly known, the PPFRC believes that annuity purchases exceeding approximately $500 million may have difficulty in effecting a purchase.

In such situations, it is hard to predict how the benefits of members in receipt of a pension would be settled. However, the PPFRC believes that the principles underlying the determination of annuity purchases for smaller plans would continue to apply. In particular, the underlying philosophy used by insurance companies in pricing group annuities, being that assets with characteristics similar to the liabilities are used to "immunize" the purchase, should be applied.

Wind-up Expenses

Unless the actuary is satisfied that the expenses of wind-up are not to be charged to the pension fund, the actuary would be expected to make an assumption regarding these expenses and the assumption would be explicit. Expenses normally include such items as fees related to preparation of the actuarial wind-up report, fees imposed by a pension supervisory authority, legal fees, commissions to buy annuities, administration, custodial and investment management expenses.

Assistance of Insurance Company Representatives

The PPFRC would like to express its gratitude to Desjardins, Industrial Alliance, Standard Life and Sun Life for providing us with data. The data were considerably more reliable than that used in prior years and this information has been extremely helpful in enabling us to develop this guidance.

Note: The PPFRC acknowledges, with thanks, the help of its sub-committee comprising Stephen Butterfield, Lorne Cohen, and Jeff Kissack, for undertaking the annuity survey and preparing this document.