Memorandum

To: All Fellows, Affiliates, Associates, and Correspondents of the Canadian Institute of Actuaries and Other Interested Parties

From: James K. Christie, Chair
Actuarial Standards Board

Conrad Ferguson, Chair
Designated Group

Date: December 4, 2014

Subject: **Initial Communication of a Promulgation of the Mortality Table Referenced in the Standards of Practice for Pension Plans (Subsection 3530)**

Comment Deadline: **February 15, 2015**

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INTRODUCTION

According to subsection 3530 of the Standards of Practice:

Demographic Assumptions

.01 *Except for situations specifically noted below, the* <u>actuary</u> *should assume:*

- *Separate mortality rates for male and female members; and*

- *Mortality rates in accordance with a mortality table promulgated from time to time by the Actuarial Standards Board for the purpose of these calculations.*

The Actuarial Standards Board (ASB) proposes to promulgate the use of the mortality rates underlying the 2014 Canadian Pensioner Mortality Table (CPM2014) combined with the mortality improvement scale CPM Improvement Scale B (CPM-B) for calculations, effective August 1, 2015. Use of mortality improvement scale CPM-B1D2014 is acceptable as an interim measure for calculations up to and including December 31, 2016.

The process being used to implement this is described in section E of the ASB's Policy on Due Process for the Adoption of Standards of Practice.

EXECUTIVE SUMMARY

The [Final Report – Canadian Pensioners' Mortality, published in February 2014](#) by the Pension Experience Subcommittee of the Research Committee, clearly establishes the need for a change in the mortality basis and projection scale for pension commuted value calculations. It also introduces information on the differences in mortality experience for different pension plan member cohorts.

In arriving at its recommendations, the designated group (DG) concluded that the public interest would be best served through a process that is not overly complex for members and regulators to understand and regulate. This is consistent with the use of one mortality basis and projection scale for all pension plans subject to the Standard of Practice.

The DG recognizes that for some plans with higher mortality experience this may increase the disparity that currently exists between commuted value payouts and the funding liabilities for individual plan members, thereby potentially affecting remaining plan members. However, for many plans the effect of the mortality basis on this disparity is very small compared to other factors, most notably differences in the funding versus solvency or wind-up discount rates. As noted above, the DG believes that narrowing the range of practice for commuted value calculations is an important consideration to meet the public interest. The DG did not consider the mortality impact to be material enough when reviewed in aggregate with all other factors to warrant a more complex process that could include a mortality assumption that varies by plan.

SCOPE

Commuted values on termination of plan membership are primarily intended to provide for portability of pension assets from a defined benefit pension plan to another form of registered retirement savings program. Once transferred, there is no guarantee that the proceeds so transferred will ultimately produce the same result as the originating pension plan would have. In effect, the commuted value basis covers a very broad range of pension plans with widely differing demographic profiles.

The commuted value standard is also used by regulators as the prescribed basis for solvency and wind-up valuations. In these instances commuted values are intended to reflect an equivalent value of the benefit guarantee understood to be provided by defined benefit pension plans under current legislation. This is plan-specific and could impact required pension funding requirements under existing legislation.

The focus of the DG was on a mortality assumption for the commuted value standard that provides a fair value to individuals or their beneficiaries upon a voluntary decision to commute their benefits from their pension plan or, in the case of a lump sum payout on death of the member prior to retirement, using a basis that can be broadly and easily applied on a consistent basis for all pension plans and their members. The recommendation is a minimum standard for commuted values in the situations mentioned above. Commuted values in excess of those produced by the minimum standard are acceptable under the current standard where the basis is prescribed by the plan document or legislation or where the administrator has the authority to recommend use of another basis.

The scope does not include making recommendations for solvency or wind-up valuations even though a link exists through pension legislation and actuarial standards for wind-up or hypothetical wind-up valuations.

RATIONALE

The Standards of Practice require the promulgation from time to time by the ASB of a mortality table for commuted value calculations.

The [Final Report on Canadian Pensioners' Mortality](#) shows significant variances between actual and expected pensioner mortality experience relative to the current promulgated table (i.e., mortality rates underlying the UP-94 table with generational projection using mortality projection scale AA). In addition, the report underlines the continued improvements in life expectancy at levels much stronger than those anticipated by the previously used Scale AA.

Under Canadian pension legislation, plan members who terminate employment prior to retirement are entitled to receive the commuted value of their promised benefits under their pension plans. Also, minimum lump sum death benefits prior to retirement are payable under pension legislation on the same basis. Pension regulators rely on the CIA Standards of Practice to provide a basis for the calculation of a fair transfer value for plan members and their beneficiaries, where applicable.

Clearly, the evidence shows that a change in the mortality basis is required at this time. However, the selection of a recommended table or tables requires consideration of many factors.

The DG, in making its recommendations, focused on a reasonable balance between producing a fair value to terminating members and potential impact of the mortality basis change on remaining plan members, practical considerations related to constraining actuarial practice to a reasonable range, and the administrative ease of application of the promulgated table or tables.

The DG recognizes that life expectancy can be affected by many factors, including socio-economic conditions of a particular cohort, smoker versus non-smoker, single versus married, and so on. Members of some pension plans may experience generally higher or lower mortality rates than members of other pension plans. Furthermore, particular cohorts of members in the same plan may have a better or worse mortality experience than expected because some subsets of the membership may be more likely to be affected by one or more of the factors above. Developing information at this level of detail is beyond the scope of promulgating a reasonable mortality basis for commuted value calculations. Furthermore incorporation of all these factors in a series of promulgated tables or adjustments could lead to an unacceptably wide range of actuarial practice and make supervision of pension plans unnecessarily complex to a point where the public interest may very well not be properly served.

Applying an out of date mortality table and ignoring, for example, evidence of continued improvement in life expectancy would not meet the public interest, as the commuted value payout could be understated relative to the benefit intended by pension legislation or pension plans.

Ultimately, consideration of whether plan-specific adjustments should be allowed in the commuted value basis is one of balancing uniformity and ease of application against

other impacts on certain pension plans caused by the selection of a uniform basis. On this point the DG felt that the potential variance in results from the application of one mortality table was not sufficiently material to merit introducing added complexity to the commuted value calculation process by recommending more than one table depending on different circumstances. Furthermore, other remedies could be considered if required for purposes of solvency funding or actual wind-up calculations that are outside the scope of this recommendation.

The DG concluded that the public interest would be better served by one recommendation for voluntary or contingent commuted value payouts applicable to all pension plans. In arriving at its recommendation, the DG conducted the analysis summarized below. Further comments on the rationale behind the recommendations are provided with the recommendation below.

ANALYSIS

The goal of the analysis was to estimate the materiality associated with alternative mortality bases and assist the DG in making its recommendations.

The DG focused its analysis on assessing the impact on commuted values of the use of:

- Different mortality tables;

- Different mortality loadings;

- Gender impact;

- The impact of one year of projection scale change; and

- The impact of a small discount rate change.

Intuitively, an impact on a commuted value of less than 5% would seem reasonable (roughly equivalent to the effect of 0.125% change in discount rate on an annuity certain factor with a duration of 40 years). While 5% may seem high to some, one must recognize the fact that ignoring individual health risk factors is by far more significant in most circumstances. Members, who take a commuted value transfer, get a value based on an average life expectancy that is highly unlikely to be their own. We have to be careful not to give the appearance of precision by developing complex rules when absolute precision is not the objective. Furthermore, assuming that such precision could be achieved, the required effort does not appear to be warranted by the purpose of the calculation.

Annuity factor calculations were completed based on May 2014 discount rates (2.9% for 10 years, 4.3% thereafter for non-indexed pensions, and 1.5% for 10 years, 2.0% thereafter for fully indexed pensions) using the following variations:

- Ages 30, 40, and 50;

- Mortality rates for the three published CPM tables (i.e., CPM 2014Priv, CPM2014, and CPM2014 Publ);

- Adjustment of mortality rates for each table were considered, ranging from 80% to 120% of standard mortality rates;

- Male, female and 50/50 male/female;

- Life and 60% joint life annuities both indexed to the consumer price index (CPI) and non-indexed;

- Change of 0.05% in the discount rate (1/20th of 1%);

- Impact of the use of the 2015 two-dimensional scale versus the 2014 two-dimensional projection scale; and

- Some of the annuity factors were calculated with and without a projection scale.

A summary of the key results of this analysis are as follows:

- In jurisdictions that require the use of unisex rates, males almost always will get a higher value than if sex-distinct rates were used (plans with near 100% male members are the exception).

- Male mortality rates show greater improvements than female mortality rates, which reduces somewhat the effect of the regulatory requirements to use unisex rates, where it applies.

- A 0.05% change in discount rate has a 1.4% to 2.4% impact on annuity factors depending on age. Market rates can vary by more than that on a month–to-month basis and it can be argued that some tolerance under current standards is already deemed acceptable.

- At ages 30, 40, and 50, the absolute difference between male- or female-only factors versus 50/50 male/female factors is of the order of 1.9% to 3.5% for a life non-indexed pension and 2.5% to 4.4 % for a life indexed pension. The smaller differences are in relation to male rates under the CPM2014Publ table. This suggests regulators who require the use of unisex rates are comfortable with a variation of that order of magnitude.

- Moving from the 2014 to the 2015 projection scale has an impact of 0.1% to 0.2%, meaning that it could take several years before the impact of a two-dimensional scale versus a one-dimensional scale would be equivalent to a 0.05% change in the discount rate.

- Use of 100% of mortality rates for CPM2014Priv versus 100% of the corresponding rates under the CPM2014Publ for a single life pension range from about 3% to 4% lower for males (the differences are less for female single life pensions and for both male and female for joint life pensions).

- Factors using 90% of mortality rates for a particular table are about 4% to 5% higher than using 110% of mortality rates for the same table. This means that using standard rates implies about a +/-2.5% tolerance factor relative to plans who may have mortality experience within +/- 10% of standard mortality rates.

- Factors using 115% of CPM2014Priv mortality rates produce the following differences when compared to factors calculated using standard CPM2014 mortality rates:

Age	Male, Single Not Indexed	Female, Single Not Indexed	Male, JLLS50% Not Indexed	Female, JLLS50% Not Indexed
30	-4.7%	-3.6%	-3.7%	-3.2%
40	-4.9%	-3.8%	-3.9%	-3.4%
50	-5.1%	-3.9%	-4.0%	-3.5%

The above seems to suggest that a difference owing to individual pension plan circumstances of the order of 2.5% to 5% could be deemed reasonable in the search for a uniform basis to apply to all pension plans.

The need to change the projection scale annually for purposes of commuted value determination does not appear essential in the short term.

The above factors were considered in arriving at our recommendations.

RECOMMENDATION

The DG recommends the following table and projection scale:

- CPM2014; and

- CPM Improvement Scale B (CPM-B) with the use of the CPM Improvement Scale B1-2014 (CPM-B1D2014) as an acceptable interim measure for calculations up to December 31, 2016.

This recommendation was made considering that:

- Unisex rates are the standard under some pension legislations;

- Individual health risk factors are not considered;

- The complexities involved in developing a standard that would allow for variations in commuted value calculations on member termination depending on plan circumstances and still produce a consistent result in all similar circumstances do not seem to be warranted (115% of CPM2014Priv produces a difference in commuted value factors of less than 5.1% at the ages tested);

- A member can always choose a deferred pension rather than the commuted value;

- In plans with higher mortality experience, any disparity caused by commuted value payouts or required solvency valuations is often driven by factors and rules that have a more significant impact than the mortality basis;

- In plans where members generally have a longer life expectancy, the plan administrator could adopt a mortality basis with longer life expectancy for funding and commuted value payouts; and

- In the DG's opinion, the public interest is better served by one basis applied uniformly to all pension plan members in Canada, than with a series of complex rules potentially leading to a wide range of practice that is not easily regulated.

The DG accepts the fact that in some circumstances arguments could be made for a shorter or longer life expectancy given the characteristics of a particular plan member cohort. However, attempting to respond to all possibilities in one standard while still

producing reasonable and consistent results across plans, member cohorts, and regions would give rise to complexities and a potential range of practice that, in the view of the DG, would far outweigh the potential benefits of perceived improved precision in the calculation of commuted values.

The actuary is reminded that paragraph 3550.04 specifies that values that are greater than those produced by the standard are in accordance with the standard, provided that the plan document or applicable legislation requires a different basis or an administrator has the authority to impose a different basis.

Finally, the DG recognizes that there is a potential disjoint between the amounts that members or their beneficiaries could get from a commuted value transfer and the impact this may have the on the minimum funding basis under pension standards or regulations and resulting benefits of remaining plan members, particularly under fixed contribution defined benefit arrangements.

The DG's view is that the size of this disjoint owing specifically to the mortality basis is relatively small in the vast majority of individual pension plan circumstances and does not warrant additional consideration within the scope of this exercise. Other factors—such as differences in discount rates for commuted values versus the plan's funding basis, solvency funding rules under existing legislation and regulations and the regulatory requirement to pay the full commuted value amount within five years of termination regardless of the funding level of the plan (or the funding arrangement)—are much more material in creating this disjoint in benefits paid to terminating members versus those to remaining plan members. Addressing these issues is outside the scope of this exercise.

We expect that many plan administrators will be able to immediately implement a two-dimensional mortality improvement projection scale. For those that require additional time to implement the necessary changes to their systems and processes, the one-dimensional improvement scale may be used as an interim measure for calculations up to and including December 31, 2016. The Pension Experience Subcommittee indicated that use of the one-dimensional scale reasonably approximates the effect of CPM-B for calculation dates to December 31, 2015. The DG's view was that it was reasonable to extend this to December 31, 2016 to allow plan administrators sufficient time to implement the two-dimensional scale.

The impact on annuity factors due to the recommended change in mortality basis from UP-94 with generational projection using scale AA to CPM2014 with mortality improvement scale CPM-B is illustrated at ages 30, 40, and 50 using the May 2014 discount rates (2.9% for 10 years, 4.3% thereafter for non-indexed pensions).

Age	Male, Single Not Indexed	Female, Single Not Indexed	Male, JLLS50% Not Indexed	Female, JLLS50% Not Indexed
30	4.8%	7.2%	4.2%	5.4%
40	5.7%	7.2%	4.8%	5.5%
50	6.9%	7.3%	5.5%	5.7%

PROMULGATION

The CPM2014 mortality table combined with projection scale CPM-B for calculations starting on August 1, 2015 is recommended for use for pension commuted value calculations. A calculation using scale CPM-B1D2014 is an acceptable interim measure for calculations up to and including December 31, 2016.

CRITERIA FOR THE ADOPTION OF STANDARDS OF PRACTICE

The proposed mortality table meets the criteria set out in section B of the ASB's Policy on Due Process for the Adoption of Standards of Practice:

1. It advances the public interest through the use of a mortality basis that is aligned with current mortality experience for Canadian pensioners and provides a fair and consistent assessment of life expectancy for a wide range of pension plan member cohorts.

2. The actuary will continue to apply professional judgment within a reasonable range, as was the case previously. Although the use of the table is prescribed, there continues to be circumstances where an actuary should or may use judgment.

3. Compliance with the promulgated table is practical for actuaries as the underlying elements (mortality rates and projection scale) are similar in structure as those currently in use.

4. The promulgated table is considered to be unambiguous.

PROPOSED EFFECTIVE DATE

It is proposed that the promulgated table would be used for pension commuted value calculations on or after August 1, 2015, and that early implementation would not be permitted.

FUTURE TIMING

The intended date for the final communication of the promulgated table is May 1, 2015.

COMMENTS

Comments on the proposed changes are invited by February 15, 2015. Please send them to Chris Fievoli at chris.fievoli@cia-ica.ca with a copy to Conrad Ferguson at cferguson@morneaushepell.com. No other specific forums for submitting comments are planned.

JKC, CF