



Analysis

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In this issue

This issue of *Analysis* outlines the revisions to the actuarial *Standard of Practice for Determining Pension Commuted Values*, and more importantly, how these changes affect plan sponsors.

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With an effective date of February 1, 2005, the Canadian Institute of Actuaries (CIA) recently approved the adoption of a revised actuarial *Standard of Practice for Determining Pension Commuted Values*.

Given the title, you would be correct to assume that the standard will churn the waters around determining commuted values. However, the revised standard reaches deeper than that, and has implications for all registered DB pension plans.

Implications for plan sponsors

The revised standard will impact plan sponsors in a number of ways. The standard:

- Will be used to calculate commuted values for members who terminate membership in the plan on or after the date the standard becomes effective in their province of employment. (See sidebar *Members employed in Ontario, Québec and New Brunswick* for more detail on the standard's effective date in these provinces.)
- Will be used to determine solvency liabilities for plans where an actuarial valuation is prepared on or after the effective date.

- Uses new mortality tables that are more representative of prospective mortality.
- Continues to use a two-tier interest assumption system; however, both the initial rate and the ultimate rate are now variable and will reflect the prevailing yields on medium and/or long-term bonds.
- Will have significant administrative implications.

How was the revised standard adopted?

While a new standard has been the subject of great debate over the past several years, it appeared that a final version was agreed upon earlier this year. However, several aspects of the standard were challenged. This caused the Board of the CIA to suspend the effective date (originally proposed for September 1, 2004) and to invite comments regarding the proposal. Following a review of the submissions, the Board, at its meeting on June 15th, unanimously confirmed adoption of the revised standard, with a delay in the effective date, now set for February 1, 2005. The revised standard is intended to better reflect current conditions in which pension plans operate.

Details on the changes

► *Effect on commuted values*

The standard will be used to calculate commuted values for members who terminate membership in the plan on or after the date the standard becomes effective in their province of employment.

To illustrate the effect on commuted values, we calculated factors for a typical plan for each of the years shown below. A few points on these factors:

- The factors are for an employee who terminates membership in the plan at age 40 with a deferred partially-indexed pension payable from age 65.
- The factors show the new commuted value as a percentage of the old.
- The factors reflect the changes in both the interest rate formula and the mortality assumption.

December of:	New commuted value as a percentage of the old commuted value
1993	70%
1994	50%
1995	59%
1996	73%
1997	90%
1998	102%
1999	86%
2000	107%
2001	108%
2002	97%
2003	104%

Interest rates were much higher earlier in the period and, therefore, these factors suggest that when interest rates are high, the new standard will produce much lower commuted values than the current 1993 standard. However, when interest rates are low, the effect of the change is less predictable, and less significant.

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Members employed in Ontario, Québec and New Brunswick

The standard automatically becomes effective on February 1, 2005 in all provinces except Ontario, Québec and New Brunswick. In those three provinces, an amendment to the regulations will be required in order to adopt the new rules. The Canadian Association of Pension Supervisory Authorities (CAPSA) supports the new standard, and representatives of the three provinces will be recommending to their governments to change the regulations before February 1, 2005. However, if the regulations are not amended in time, national employers may have to differentiate between employees in different locations.

Members' commuted values at different termination ages will be affected by the changes as well, as shown in the table below. Again, the factors show the new commuted value as a percentage of the old and are based on the month of June 2004. These factors include changes in both the interest rate formula and the mortality assumption.

Age at termination	New commuted value as a percentage of the old commuted value
30	98%
40	103%
50	108%
60	112%

► *Effect on actuarial valuations*

The standard will be used to determine solvency liabilities for plans where an actuarial valuation is prepared on or after the effective date.

With changes to the way commuted values are calculated, the new standard could affect sponsor contributions to plans that have a solvency deficiency since commuted values are used in determining liabilities. Legislation requires that plan assets be tested against liabilities calculated on a solvency basis to ensure that any solvency deficiency is funded within the next five years, thus protecting member and retiree benefits on plan wind-up.

Historically, few plans were affected by this solvency test during the periods of higher interest rates. In the current environment of low interest rates, it is possible that solvency liabilities would increase marginally under the new basis, although it is difficult to generalize about the likely impact, as the outcome will be influenced by the age and sex distribution of the active members and the relative size of the liabilities for retirees versus non-retired members. Calculation of solvency liabilities for all members who are expected to receive a lump-sum settlement on plan wind-up will be affected.

► *Effect of mortality rates*

The standard uses new mortality tables that are more representative of prospective mortality.

As mortality has continued to improve over the years, there has been a growing consensus in the actuarial profession that the 1983 Group Annuity Mortality (GAM) table (used to represent mortality, and hence, longevity) is no longer appropriate.

The new standard prescribes a mortality table that is described as UP-94@2015. It is based on the mortality of uninsured pensioners in 1994, but includes projected mortality improvements up to 2015. For example, the life expectancy of males aged 65 increases by 14% after switching to the new table. The corresponding increase for females is only 1% because the 1983 GAM table took a very cautious approach due to a lack of data, while the new table is based on more reliable data.

All solvency valuations conducted under the new standard will be required to use the new mortality table. The impact of the mortality change alone will be greatest for plans with a high proportion of males, but the increase in liabilities will likely be less than 5%.

► *Effect on interest assumption*

The standard continues to use a two-tier interest assumption; however, the initial rate and the ultimate rate are now variable and will reflect the prevailing yields on medium and/or long-term bonds.

Under the 1993 standard, there is an initial rate that applies for the first 15 years, and an ultimate rate that applies thereafter. The initial rate is struck each month by a formula that reflects the prevailing yields on long-term bonds. The ultimate rate is fixed at 6% per annum for non-indexed pensions.

Under the revised standard, the initial rate will apply for only ten years, and the ultimate rate will apply thereafter. The significant difference is that both rates will be variable (i.e., both will be subject to change each month). The formula used to determine the initial rate will reflect the prevailing yields on medium-term bonds, while the formula used for the ultimate rate will reflect the prevailing yields on medium and long-term bonds.

Implications of this change will include:

- Commuted values will be different from those produced by the 1993 standard. In addition, the change to the interest assumption will mean the direction and magnitude of the commuted value change will vary depending on market interest rates.
- Using two variable rates, instead of one, will produce more volatility (i.e., the new commuted values will change more from month to month) and will create significant complexities for many current administration systems.

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► **Effect on administration**

The standard will have administrative implications as well.

Pension plan administration is typically handled by plan sponsors in one of three ways:

- The plan is administered in-house.
- The plan is administered by a third party.
- The plan administration is fully outsourced.

In all three cases, the administrator will need to change procedures to reflect the new standard. Two common approaches for determining commuted values are:

- Through a computer administration system.
- Through factor tables.

In the first case, it is likely that significant modifications will be required to handle the new standard, while maintaining the ability to determine values under the current standard. Likewise, if the system relies on data feeds (e.g., through the Internet), to automatically supply the underlying interest rates, these feeds will have to be augmented to include

the new rates. Note that Eckler Partners has developed specialized Web services (delivered via the Internet) which can be used to automatically deliver all the rates required under Canadian legislation.

For the latter case (i.e., calculation of factors via tables), the solution will likely mean a change in the administrative procedure. Under the 1993 standard, one set of factors was required for each initial interest rate, so all reasonable possibilities could be covered by about 33 sets of factors (i.e., one for each interest rate from 4% to 12%, in increments of 0.25%).

The new standard uses two variable interest rates. To cover the same interest rate range in the new standard, the number of sets of factors would be 33 times 33, or 1,089. This means that tables are no longer a practical alternative. Eckler Partners does provide some alternative approaches: provision of custom software to generate these factors on an *as-required basis*, or a subscription service that can provide custom factors via a password-protected Internet site.

Note that other pension related systems, for example, online Web calculators, may also be affected by the introduction of the new standard.



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