

Research Project #9: Actuarial Costing Research
Research Paper: Actuarial Costing Research
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Summary

The purpose of this research project is to provide the Commission with information on the cost implications of a number of potential changes to the regulations governing actuarial valuations in Ontario. It is not the purpose of the research project to consider the desirability of such changes but only to provide factual input. The potential changes tested were intended to represent a range of possibilities rather than a particular direction; indeed many of them are inconsistent with each other.

The key parameters considered include funding targets, amortization periods for surpluses and deficits, liability definitions and calculations.

The project assesses the impact of varying these parameters on the funded status of the plans and the level and volatility of plan contributions.

The project also provides some commentary on the impact of plan maturity.

The methodology employed has been to undertake costings for a number of sample pension plans. The report presents the results of these costings and presents a number of observations which are developed throughout the Observations section of the report. The population of plans included is relatively small so care should be taken when extrapolating these results to other plans.

Project Methodology

A number of actuarial firms were approached to prepare projections of costs for sample plans (based on the given scenarios) drawn from their client bases.

- They were asked to prepare costs which showed the impact of changes on funded ratios and employer contribution levels.
- Precautions were taken to ensure that client identities were not made known outside the firm that was reporting on them.
- It was assumed that there would be no change in investment policy over the projection period as a result of changes in the economic conditions or funded status

Results for ten plans are shown in this report. Calculations were undertaken for the ten pension plans which were selected from a larger number for which preliminary calculations were done.

Valuations were projected for each year to 2015 for the ten plans under five different economic scenarios and for seven variations on the current regulations. More than 3,500 valuation runs were required to produce the results that follow.

Observations

This report presents the results of calculations of the project, including the impact of a number of possible changes to Ontario funding regulations on the funded status of and employer minimum contributions to a sample selection of pension plans. The report also shows the cost and impact on members if certain changes were made to the benefit requirements of the Ontario pension legislation.

The report provides a number of “Observations” derived from the calculations. These observations are based on projections for a limited number of plans and care should be taken when extending them to other plans.

The first three observations apply under the current rules. In brief, under stable economic conditions (i.e. no noticeable volatility of returns) the current funding rules appear to maintain the funded ratios close to the 100% mark (i.e. full funding on a solvency basis). However, it should be noted that the price of stability in the funded status is volatility in the employer minimum contributions.

The fourth observation deals with the impact of extending the amortization period for payments in respect of solvency deficiencies. The result indicates minor impact both in terms of funded ratios and employer minimum contributions. But, as would be expected, the trend is to lower funded ratios as the amortization period lengthens.

The projections show little or no change in the funded status of the pension plans if the requirement to file a going concern valuation is eliminated. They also show virtually no change in minimum employer contributions for about half of the plans. For the remainder of the plans, the projections show an increase in employer minimum contributions during the period examined. This is perhaps not the result one would expect, but is attributed to factors. One is that the going concern normal cost was used as a proxy for the cost (on a solvency basis) of the benefits accruing in the year following the valuation period. The second factor is the change in methods of amortization.

When the elimination of the going concern valuation is combined with setting the solvency funding hurdle at 120% of the solvency liability there is a substantial increase in employer minimum contributions. The typical impact is a doubling of the level of these contributions. This is accompanied by an average increase in the funded ratio of nine percentage points; that is to say from an average of 100% to an average of 109%.

It should be noted that an increase in contributions of, say, 1% of pensionable payroll will have an impact on the funded ratio that is dependent on the relative size of the payroll and the market value of the plan assets. That is to say that the larger the payroll, the greater the impact a 1% contribution will have on the plan assets. Conversely, to increase in the funded ratio by a specific number of points will require a greater percentage contribution when the payroll is smaller relative to the market value. For a

number of the plans studied the pensionable payroll was in the range of 40 to 60% of the plan assets. The data available was not sufficient to analyze the impact of ratios outside this range.

Eliminating the solvency valuation reduced the employer minimum contribution by (order of magnitude) 10 to 20%, but there were a small number of exceptions which gave rise to greater reductions. When the elimination of solvency valuations was combined with ½% decrease in the going concern discount rate, the average impact was an increase in contribution of (order of magnitude) 10 to 30%. Again, there were exceptions.