

# Intelligence MEMOS



From: Stuart Landon and Constance Smith  
To: Canada's Pension Regulators  
Date: February 4, 2019  
Re: **DISCOUNT RATES MATTER AND HERE'S WHY**

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Our new C.D. Howe Institute [Commentary](#) examines how the choice of a pension plan discount rate affects the tradeoff between the risk of holding insufficient assets to pay promised benefits and the cost of acquiring more assets.

The choice of discount rate can have a dramatic effect on the value of a plan's liabilities and, therefore, the assets needed to meet plan obligations. When assessing the performance of different discount rate rules, it is crucial to recognize the unpredictable nature of pension plan assets and obligations.

In a fantasy world of no uncertainty and where the discount rate is equal to the rate of return on pension plan assets, the value of a fully funded plan's projected liabilities equals the value of actual future plan benefit payments.

Such a plan will, as a result, be able to pay the pension benefits promised and have no excess assets. However, in a realistic world of uncertainty, the expected pension payouts, projected at the time when contributions are made, may differ significantly from actual future pension payments due to, for example, unanticipated inflation when pension benefits are indexed. Furthermore, asset returns are unpredictable and often volatile, so yields on plan assets may differ greatly from expected returns.

As a consequence, the assets accumulated by the plan can differ markedly from the assets required to meet actual future payments.

A key innovation of our analysis is that, through the use of simulation methods, we observe the performance of a wide range of discount rates under equivalent movements in plan obligations and asset returns. We analyze six discount rate types, or rules, and assess each rule's success in meeting the competing objectives of minimizing the accumulation of excess assets and ensuring a high probability that future benefit obligations are met. The choice of a discount-rate rule depends on the relative importance attached to these two factors.

If approximately equal weight is given to achieving these two objectives, the best performing rules are a 10-year moving average of the high-quality corporate bond yield and an inflation forecast supplemented by a constant real interest rate. Both of these rules yield average discount rates below the expected rate of return on assets, but higher than the riskless rate of interest.

Our results indicate there is considerable risk associated with choosing a relatively high pension plan discount rate, such as the expected return on plan assets. However, many pension plan sponsors in Canada prefer this rate, which they argue keeps their pension plans affordable. Current employers and employees have an incentive to keep the discount rate high in order to reduce current contributions, but a higher rate increases the probability that the plan will have insufficient assets to meet obligations.

This suggests there is a need for prudent regulation of pension plan discount rates. Public-sector pension plans receive little guidance on the choice of discount rate and, in practice, many such plans use a rate higher than our best performing rules.

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