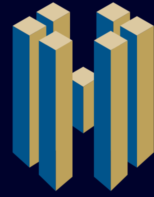

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COMMENTARY
NO. 514

Retiring Employees, Unretired Debt: The Surprising Hidden Cost of Federal Employee Pensions

The liability unfunded federal government employee pension obligations imposes on Canadian taxpayers stood at $246 billion at the end of the 2016/17 fiscal year – $96 billion worse than reported. More transparent reporting of these plans' costs and risks would foster reforms that would better fund these pensions and protect Canadian taxpayers.

William B.P. Robson and Alexandre Laurin

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The Study In Brief

Ottawa provides its employees with defined-benefit pensions that promise relatively generous benefits to a large current and former workforce. Being largely unfunded, these plans require future taxpayer support. They also create taxpayer risk because the economic value of the benefits they will provide can fluctuate by tens of billions of dollars annually. Current accounting practices understate this burden and the risks these plans create for taxpayers and, potentially, for the employees themselves.

Official figures on the current cost of these plans and their accumulated obligations are based on notional interest rates that are too high for this kind of commitment. Since pension promises are guaranteed by taxpayers and indexed to inflation, the appropriate rate for discounting the value of future payments should be the yield on federal-government real-return bonds (RRB), which for years has been much lower than the assumed rate in official figures.

Correcting this distortion would produce a fair-value estimate of $245.9 billion for Ottawa's unfunded pension liability at the end of 2016/17 – around $27,000 per family of four and $96 billion higher than the reported number. Because the unfunded pension liability is part of Ottawa's debt, applying this fair-value adjustment raises the net public debt from the $631.9 billion reported at the end 2016/17 to an adjusted $727.9 billion.

Recent federal pension reforms raised participants' share of the funding costs for these plans: for the main Public Service Plan, the reforms aimed at a 50:50 split between contributions from participants and contributions from the government as employer. Still, using notional interest rates that are higher than the appropriate ones means that the reported costs of these plans – and, therefore, the contribution rates that determine participants' shares – are too low. Even the higher employee contributions anticipated by the reforms would leave the taxpayers' true share far above 50 percent. A fair-value approach to the current service cost would ensure that participants and taxpayers share equally the actual cost of accruing benefits.

Even 50:50 sharing of federal pensions' actual costs as they accrue would leave taxpayers exposed to fluctuations in the value of previously earned benefits. Ottawa could protect taxpayers from this risk by capping employer contributions at a fixed share of pensionable pay.

To relieve taxpayers of their current sole responsibility for risks in the federal plans, Ottawa would need to switch to a different type of plan with benefits based not only on salary and years of service but also on the plans' funded status. Such plans, already common in much of the provincial public sector, have a variety of labels – shared-risk and target-benefit are two common ones. Their common feature is that when things do not go as expected, the plan sponsor and the employees share the costs and benefits of the new reality.

More economically meaningful reporting of the plans' benefit values and their cost to taxpayers would foster improvements in Canada's retirement saving and income system generally. And it would foster reforms that would provide federal employees with better-funded pensions and taxpayers with protection against risks too few know they face.

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Defined-benefit pension plans are under chronic pressure everywhere. Plans that promise specific future benefits, regardless of economic conditions, often fail.

Even plans that share some risks with their participants – as do many in Canada's broader public sector covering education, healthcare and municipal workers – are finding it hard to navigate an environment of rising life expectancy and low returns on high-quality assets. For the federal government, the largest Canadian employer that still runs pure defined-benefit plans, the commitment to pay relatively generous benefits to a large current and former workforce imposes taxpayer obligations running into the hundreds of billions of dollars.

What is worse, misleading accounting understates the burden and risks these plans create for Canadian taxpayers. Economically meaningful measurement of assets and liabilities requires valuing assets at what an unrelated party would be willing to pay to acquire them, and valuing liabilities at what an unrelated party would want in exchange for accepting them. Pension accounting in the public sector typically does not use this "fair value" approach: the federal government in particular presents a misleadingly rosy picture of the situation of its plans.

Changes to the presentation of Ottawa's pension liabilities may be coming. In the latest Public Accounts of Canada (Canada 2017), Ottawa revealed that it is reviewing its accounting practices with respect to its employee pension plans. Meanwhile, pension discount rates are a lively topic in other jurisdictions and are under review by the Public Sector Accounting Board, which establishes public-sector accounting practices. And with good reason. This *Commentary* documents that more meaningful discount rates would indeed demonstrate that liabilities in federal employee plans are much larger than reported, and so is the annual cost of accruing benefits.

In addition, this *Commentary* demonstrates the cost volatility of federal plans and the risks that Canadian taxpayers, consciously or not, run in backing them. Moving to a shared-risk model – in which potential changes to contributions and benefits are shared between federal employees and taxpayers – would produce more durable and affordable pensions.

The Value of Ottawa's Pension Promises

The federal government sponsors a number of pension plans for its employees. Some are for Crown corporations: although large by private-sector standards, they are relatively minor in Ottawa's financial picture. More material because of their relative size are the plans for members of parliament, judges, the public service, the Canadian Forces, and the Royal Canadian Mounted Police.

Remarkably, none of the federal plans were funded until 2000. Although Ottawa reported estimates of its pension obligations, which are part of the government's debt, it held no assets to back them. Since 2000, government and employee contributions to the public service, Canadian Forces and RCMP plans have flowed to the Public Sector Pension Investment Board, which has been accumulating and managing investments to set against pension entitlements that have accrued since 2000. So the financial statements in Ottawa's Public Accounts now show some pension assets in respect of these plans as well as much larger liabilities. However, the values reported in the federal government's statement of financial position

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for those pension assets and liabilities – and the difference between them: Ottawa's unfunded pension liability – do not reflect fair value, and are therefore not economically meaningful measures.

The Reported Numbers

The 2016/17 Public Accounts reported a $296.8 billion accumulated obligation for Ottawa's defined-benefit plans as at March 31, 2017. After allowing for recorded assets of $136.6 billion and an "unrecognized net actuarial loss" of $10.3 billion, the balance – an unfunded liability that is part of Ottawa's accumulated deficit – was $149.9 billion (Table 1, first column).

The reported unfunded liability is a significant amount: $149.9 billion is about one-fifth of the federal government's reported net debt at that time, and about $16,000 per Canadian family of four. Yet, the reported number is misleading in several ways and understates the economic value of these commitments.

One problem is that the assets figure is smoothed: the government's accounting only recognizes gains and losses smaller than a threshold amount in a given year, and defers recognition of gains and losses outside that range over a number of years. Because asset valuations have been strong lately, their smoothed value of $136.6 billion lags behind the estimated $145.6 billion market value – the amount an unrelated party would be willing to pay for them (Table 1, second column).

Calculating the Fair Value of Federal Pension Liabilities

A more important and chronic problem is the understatement of liabilities. Showing the value of future obligations in a financial statement requires discounting them to estimate their present value – the amount an unrelated party would demand in exchange for taking them on. The best way to do this for annuity payments is to use market yields on securities that resemble the pension promises (Box 1).

Table 1: Financial Position of Federal Pension Plans, March 31, 2017

	Public Accounts	Fair Value
	($ billions)	
Assets[a]	136.6	146.2
Liabilities[b]	296.8	392.1
Unrecognized net actuarial loss	−10.3	
Balance	***149.9***	***245.9***

Notes: Number may not add up due to rounding.
a Includes investments and contributions receivable for past service.
b Fair value estimated using methodology found in text.

Sources: Canada (2017); authors' calculations.

Suppose Canadians who are not in federal-employee pension plans want retirement income similar to that of those who are – or, as taxpayers, want income to cover the taxes unfunded federal pensions will eventually oblige them to pay. Those Canadians would need assets resembling the promises in federal pensions, backed by taxpayers and indexed to inflation. Such an asset does exist: the federal government's real return bond (RRB). The RRB yield determines the size of the nest egg that Canadians wanting that retirement income would need. At the end of March 2017, RRBs yielded 0.7 percent.

However, the federal government does not use the RRB yield in valuing its pension obligations. Rather, it uses two notional interest rates. One, related to pre-2000 obligations, is an average of past and expected yields on 20-year federal bonds – currently 1.7 percent in real (inflation-adjusted) terms: one percentage point above the RRB yield. The other notional rate, related to benefits earned since 2000, is an assumed return on investments – currently 3.7 percent in real terms: three percentage points above the RRB yield. These arbitrary formulas and assumptions produce estimates that understate the value of federal pension promises and, correspondingly, their cost to taxpayers.

Box 1: Using bond yields to value pension promises

As noted, "fair value" reflects that things are worth the price that willing parties would pay to buy them or accept to sell them in an arm's-length transaction. Whether market prices are "correct" or not, they unambiguously reveal the price at which transactions occurred. For that reason, they have major advantages over assumptions based on history and/or wishful thinking.

Pension experts increasingly accept discounting liabilities at rates reflecting the nature of a plan's obligations, rather than using assumed returns on plan assets (see for example, Andonov, Bauer, and Cremers 2016). Currently, federal plans are pure defined-benefit plans, promising payments unrelated to funded status. This unconditional promise justifies using the equally unconditional RRB as a comparator. If participants bore some risk that insufficient funding might impair their benefits, a higher discount rate, reflecting that risk, would be appropriate.

For Ottawa's pensions, which are partially unfunded, it is clearly inappropriate to use assumed returns on assets that do not exist. The challenge other Canadians would face in achieving the same retirement income, or hedging their taxes to cover unfunded federal pensions, also makes clear why discounting at the RRB yield produces a sensible result. Suppose federal employees received a buyout offer to forgo their pension benefits in return for a cash payment calculated using the Public Accounts' higher discount rates. They would be foolish to accept: the nest egg needed to replace the pension would be larger than the offer.

While the Public Accounts do provide a market value for the assets, they do not provide all the information needed to calculate federal pension liabilities at the current 0.7 percent RRB rate. We can, however, use them for an estimate. As Box 2 details, the gap between the real discount rates used in the Public Accounts and the 0.7 percent actual yield on the RRB translates into a $392.1 billion pension obligation (Table 1, second column): $95.3 billion more than the $296.8 billion reported in the Public Accounts.

The final step toward a fair-value estimate of Ottawa's pension obligation is removing the "unrecognized net actuarial loss" (Table 1, first column). This loss figure represents changes in asset and liability values that, thanks to smoothing and amortization, have yet to show up in the Public Accounts.[1] Fair value accounting recognizes all changes in the value of assets and liabilities right away, so this figure has no counterpart in a fair-value measure (Table 1, second column).

The net result is an unfunded pension liability of $245.9 billion at the end of 2016/17 – around $27,000 per family of four and $96 billion higher than the reported number. Because the unfunded pension liability is part of Ottawa's debt, the fair-value adjustment also raises the net public debt by the same $96 billion: from the $631.9 billion reported at the end 2016/17 to an adjusted $727.9 billion.

1 For a discussion of why smoothing is no longer standard accounting practice and speculation about governments abandoning it, see Beauchamp 2014.

Box 2: Discount-Rate Sensitivity of Estimated Federal Pension-Plan Obligations

Although the Public Accounts separate the totally unfunded pension obligations accrued before the 2000 reforms and the "funded" obligations accrued since then, they do not provide separate estimates of the obligations' sensitivities to different interest rates. The Public Accounts show the effect of a one-percentage-point change in the discount rate for the funded obligations. But for the unfunded obligations, they show only the effect of a change in one component of the composite discount rate – future bond yields – not the effect of a change in the full discount rate.

In Robson and Laurin (2014), we referred to the 2011/12 Public Accounts for a sensitivity estimate to a change in the discount rate that year upon the unfunded obligations. (Since the duration of the unfunded obligations, which were earned longer ago, is much shorter than that of the funded obligations, using separate sensitivity estimates for each one is better than using a combined figure.) We used the ratio of that 2011/12 figure to the sensitivity of the 2012/13 funded obligations to come up with a sensitivity estimate for the 2012/13 unfunded obligations. We applied the same method in subsequent updates (Robson and Laurin 2015, 2016) to estimate the sensitivity for the unfunded obligations in those years. To estimate the sensitivity for the 2016/17 unfunded obligations, we used the same method with our 2015/16 sensitivity suggestion as an input (see Table A). This method suggests that a one-percentage-point lower discount rate increases the liability in the funded portions of the plans by $26.1 billion, and on the (larger) unfunded portion of the plans by $16.1 billion.

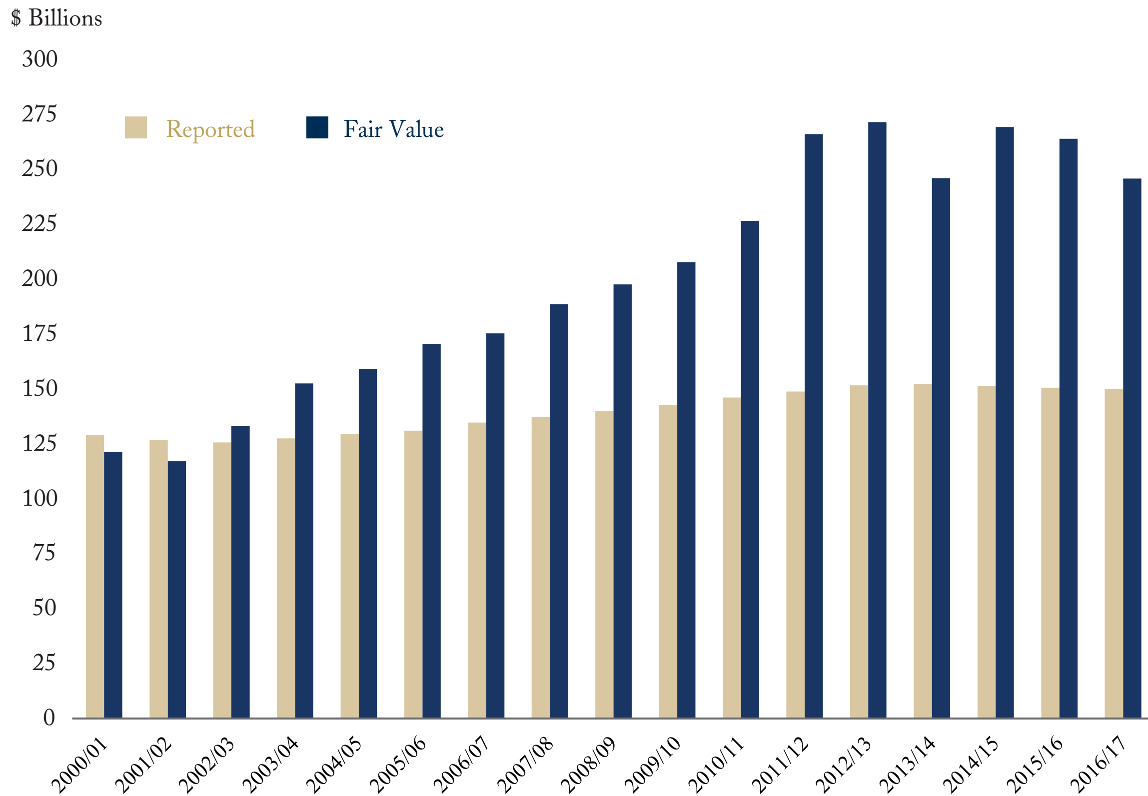
The actual difference between the discount rates used in the unfunded and the funded portions of the plans is one and three percentage points, respectively. Multiplying these percentages by the appropriate sensitivities results in the $95.3 billion upward adjustment in plan liabilities shown in Tables 1 and 2. Because the effect of differences in the discount rate is not linear, this adjustment is conservative. Indeed, the sensitivities in the Public Accounts show that while lowering the discount rate on the funded parts of the plans increases their liability by $26.1 billion, raising it lowers the liability by only $20 billion. This adjustment more than compensates for any exaggeration in our estimate of the sensitivity of unfunded obligations to a one-percentage-point change in the discount rate. For that reason, a fair-value estimate of pension liabilities based on more complete information would be higher than our estimate.

Table A: Estimates of the Sensitivity of Pension Obligations to a Decrease in the Discount Rate ($ billions)

	Funded	Unfunded	Total
2015/16 sensitivity to a one-percentage-point decrease in the discount rate of "funded" obligations and to a less than one-percentage-point decrease (undisclosed value) for "unfunded" obligations (Canada, Receiver General for Canada 2015/16, p. 2.28)	23.9	9.6	33.5
2015/16 sensitivity breakdown for full one-percentage-point discount rate change (calculated in Robson and Laurin 2015)	23.9	20.1	44.0
2016/17 sensitivity to a one-percentage-point decrease in the discount rate of "funded" obligations and to a decrease of less than one-percentage-point (undisclosed value) for "unfunded" obligations (Canada, Receiver General for Canada 2016/17, p. 2.31)	26.1	7.7	33.8
Calculated2016/17 sensitivity to a one-percentage-point decrease in the discount rate, deducted using the 2015/16 ratio of unfunded sensitivities as a guide	26.1	16.1	42.2

Sources: Canada, Receiver General for Canada, various years; authors' calculations.

Figure 1: Net Federal Pension Obligation, Reported versus Fair-Value Estimate, fiscal years 2000/01–2016/17



Note: Starting in 2013/14, obligations include some pension plans of consolidated Crown corporations and other entities.

Sources: Canada, Receiver General for Canada (various years); authors' calculations.

The Growth, Volatility and Significance of Federal Pension Obligations

The size of the federal government's unfunded pension liability is startling. So are its swings over time. The salary base and years of service that determine pension payments have affected its growth, as has the move to partially fund the plans after 2000. In addition, the gap between the reported and the fair-value numbers has fluctuated with economic conditions (Figure 1).[2]

2 The 2015 Public Accounts reclassified pension figures for consolidated Crown corporations and other entities to include them with other federal pensions. The 2015 report restated the figures for 2014 only, so the figures before 2014 are not exactly comparable. The net impact of the change was small (the new presentation reduced the reported net pension liability by about $0.8 billion) and does not materially affect our calculations of the plans' fair value.

Table 2: Fair-Value Adjustments to Federal Pension Reporting, 2000/01–2016/17

	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17
	($ billions except where otherwise indicated)																
Assets as Reported	2.8	5.9	8.9	13.4	18.3	24.9	31.6	38.7	37.2	44.9	53.5	62.0	71.7	84.3	110.8	121.7	135.9
Assets at Fair Value	2.5	5.6	8.1	14.2	19.4	27.6	35.0	38.9	33.8	46.3	58.0	64.5	76.1	93.7	122.0	126.6	145.6
Obligation as Reported	124.0	125.9	134.3	142.4	145.3	155.8	168.3	178.6	190.3	201.4	213.3	230.8	242.7	247.4	272.5	283.7	296.8
Effective Discount Rate Used in Public Accounts (%)	3.52	3.54	3.47	3.49	3.52	3.31	3.34	3.37	3.15	3.19	3.23	3.12	2.6/3.9	2.6/3.9	2.2/3.8	1.9/3.8	1.7/3.7
Real Return Bond Yield (%)	3.51	3.68	3.05	2.39	2.03	1.58	1.76	1.60	1.81	1.56	1.15	0.51	0.49	0.91	0.19	0.49	0.68
Sensitivity of Liabilities to 1% Lower Discount Rate	18.6	18.6	17.5	22.6	22.7	24.9	27.0	28.1	31.1	32.6	34.6	38.4	20.7/18.1	19.9/19.3	19.0/22.5	20.1/23.9	16.1/26.1
Obligation at Fair Value	124.3	123.2	141.7	167.3	179.1	198.8	210.9	228.3	232.1	254.5	285.2	331.1	348.2	338.7	391.9	391.1	392.1
Unrecognized Actuarial Gain/Loss	8.3	7.3	0.7	-0.9	3.1	0.7	-1.3	-1.7	-12.6	-13.2	-13.2	-19.4	-18.9	-9.4	-9.7	-10.8	-10.3

Notes:

- For the first time in 2012/13, the Public Accounts show a separation between “funded” and “unfunded” benefit obligation sensitivities to discount-rate changes; see Box 2 for further methodological details.
- Starting in 2013/14, bligations include some pension plans of consolidated Crown corporations and other entities.

Sources: Canada, Receiver General for Canada; Canada, Office of the Chief Actuary; Bank of Canada; and authors’ calculations.

Tracking the Unfunded Liability over Time

The gap was small 15 years ago, when the RRB yield was close to the notional interest rates used in the Public Accounts. It grew as RRB yields declined faster than the downward revisions in the notional interest rates used in valuing the pension liabilities (Table 2 shows the key numbers for each year). Some year-to-year swings were very large: a deterioration exceeding $39 billion in 2011/12 when the RRB yield plunged; an improvement close to $25 billion in 2013/14 when it rebounded; a deterioration close to $25 billion in 2014/15; and another rebound of $18 billion – a product of buoyant equity prices and a dip in the RRB yield – in the latest year.

Anything that affects Ottawa's net worth – its accumulated deficit – year to year must have a counterpart in Ottawa's annual statement of operations. The federal budgetary surplus or deficit, which gets most of the attention, is the main contributor to annual changes in net worth. In addition, the government records certain gains and losses related to financial instruments, pensions and other employee future benefits "below the line" in the accumulated deficit. Although splitting the statement of operations this way complicates a proper assessment, the key principle is that readers of the financial statements should be able to relate changes in the accumulated deficit to the annual balances in the statement of operations.

Adjusting the federal government's statement of operations in line with the fair-value approach to its pension balance sheet shows a history of federal finances that is quite different from the official one. The more economically meaningful measure reduces or eliminates the surpluses the government reported from 2001/02 to 2007/08 and worsens the deficits reported over the next five years. It reveals that, rather than the small deterioration in net worth (a small deficit) Ottawa reported in 2013/14, the federal government enjoyed a large improvement (surplus) that year, but that the tiny deficit reported the following year was actually a much larger one. Furthermore, the impact of fair-value pension accounting on the 2015/16 annual balance was relatively small – though it did turn a reported deficit into a surplus – but its impact on the 2016/17 annual balance was large, more than eliminating the reported $15.9 billion deficit.

Federal Pension-Related Risks Borne by Canadian Taxpayers

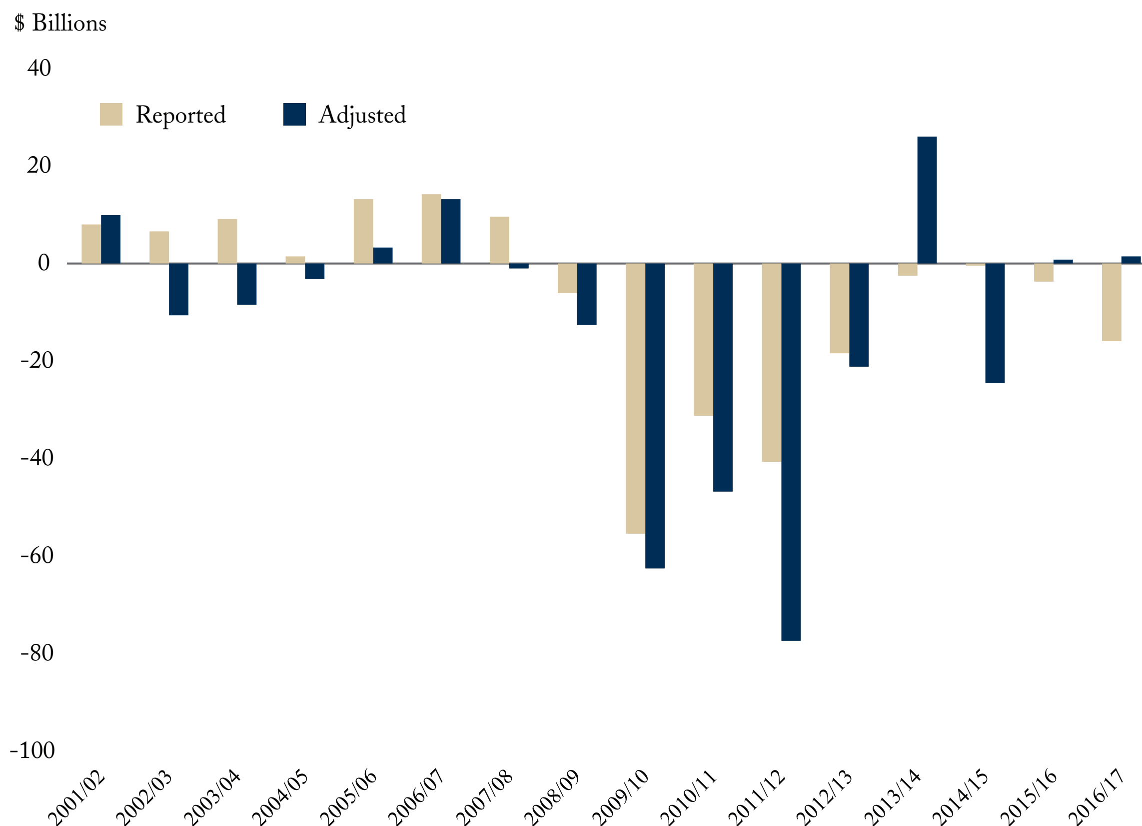
Critics of fair-value accounting for defined-benefit pensions think that the swings in net worth and the volatile annual balances it reveals are problems. We disagree: in our view, these swings and volatility convey vital information.

Defined-benefit plans that promise benefits irrespective of the plan's financial condition make the plan sponsors – taxpayers in the case of public-sector plans – bear all the risks of changes in longevity, fluctuations in investment returns and so on. Such sponsors – taxpayers in this instance – should understand the risks they are bearing. One prudent response to this kind of risk is to mitigate exposure by holding assets that match the obligations. To pursue the earlier point about taxpayers hedging their obligations, Ottawa could have accumulated a nest egg of RRB-like assets, such as currency-hedged investments in the US government's Treasury Inflation-Protected Securities.

A person concerned about Ottawa's overall financial position and net debt might ask why Canada would be better off if federal pension obligations were backed largely or entirely by a stock of RRBs much larger than currently exists. The unfunded pension liability would be less – perhaps it would be zero – but achieving a smaller pension liability and issuing a correspondingly larger stock of other debt might look like a meaningless shuffling of the balance sheet.

One answer is that Ottawa's pension plans would likely have evolved differently if funding

Figure 2: Federal Budgetary Balance, Reported versus Adjusted with Fair-Value Pension Accounting, 2001/02–2016/17



Note: Starting in 2013/14, reported figures include some pension plans of consolidated Crown corporations and other entities.

Sources: Canada, Receiver General for Canada (various years); authors' calculations as described in text and explained in Laurin and Robson 2009.

them had required cash contributions from actual debt issues rather than bookkeeping entries. Historically, issuing market debt, i.e., auctions in which investors put up cash, required special parliamentary authorization. Interest payments to those investors also require cash. Market debt attracts more attention from rating agencies than non-market debt, and gets included in international comparisons that typically overlook non-market debt. The transparency and exposure to capital markets of funding its plans with bond issues would have almost certainly led the federal government to modify its employment practices, better controlling the generosity of its compensation and/or hiring fewer employees.

To summarize, the federal government has not fully funded its plans and invested in assets with cash flows that match its future payment obligations. The assets it does hold are quite different from its liabilties, and most of its pension obligations are matched by nothing. Smoothing and arbitrary assumptions hide the resulting risk.

The adjusted budget balances in Figure 2 represent changes in exposure that the vast majority of Canadian taxpayers and voters knew nothing about. They should have known. It would have

been and remains straightforward for the federal government to provide the necessary information as part of, or as a supplement to, the Public Accounts.

If Canadians had known about their exposure, they might have agreed to take on this growing and unpredictable obligation. Or they might not have. They might instead have insisted on fuller funding and/or matching of assets to liabilities to reduce their future burden and risks. And Canadians who do not work for the federal government would have had reservations about the cost of these plans and the difference between the obligations and risks they bear as backstoppers of these plans, especially when compared to their own retirement saving and income opportunities.

Recent and Potential Reforms

The previous federal government made some changes to contain the growth of the federal pension liability. Notably, the 2012 *Jobs and Growth Act* raised the normal retirement age and other thresholds from age 60 to 65 for people who joined the Public Service plan on or after January 1, 2013. At the same time, the government announced a 50:50 target for sharing the plan's contributions between the government and employees. The *Jobs and Growth Act* initiated gradual increases in the employees' share of contributions to the Public Service plan so they would amount to half the plan's reported current service cost by the end of 2017. As well, it initiated increases in employees' contributions to the Canadian Forces and the RCMP plans, which will reach about 45 percent of those plans' reported costs by 2018.

Meanwhile, the current government announced in the fall of 2017 that it will review its accounting practices for how it records its employee pension plans in the Public Accounts, including how it determines the discount rates used to value pension liabilities (Canada 2017), stating:

> It is important that the Government's process for determining discount rates be sound and supported by observable and relevant data. While we have concluded that the assumptions underlying the Government's significant estimates are within a reasonable range, historically, certain discount rates have been at the high end of the acceptable range when compared with market trends. Using a higher discount rate yields a lower estimate for long-term liabilities (Canada 2017, p. 2.43).

The Public Sector Accounting Board is actively reviewing the appropriateness of smoothing and amortizing changes in asset and liability values and posted a consultation paper on discount rates in December 2017 (PSAB 2017). In the United States, the failures of municipal government pension plans and the shakiness of many state pension plans are hot topics, with many observers citing aggressive discount rates and the resulting misleadingly positive pictures of these plans' financial position as a major problem. Ottawa should update its approach in this area prior to the release of the 2018 Public Accounts.

Reflecting the Fair-Value Pension Promise in Federal Employees' Contributions

It is reasonable to infer from past reactions to criticism of these plans that enthusiasm for changes in Ottawa is weak. Among the criticisms in the federal Auditor General's 2014 report on federal pension plans was that the Treasury Board Secretariat, after five years of work, had not yet completed drafting a funding policy – which ought to discuss such key issues as the risk tolerance of the sponsor and intergenerational fairness. The Auditor General also noted that Canadians must consult up to eight separate documents to gather pertinent information on these plans. The report called for improvements in reporting to provide a clearer picture "of the methodology, the assumptions, and the discount rates used to assess the liabilities, as well as the interest charges related to public sector pension plans" (OAG 2014, p.22).

That criticism is as pertinent now as ever – arguably more so. As we have just detailed,

the reported current costs of these plans – and, therefore, the total contribution rate that determines employer and employee shares – are too low (Laurin and Robson 2017, pp.5-6, elaborate on this point). With current RRB yields, even the higher employee contributions anticipated by the reforms would leave the taxpayers' true share far above the legislated 50 percent target of the Public Service plan's current service cost. A fair-value approach to the current service cost can ensure that participants and taxpayers equally share the cost of accruing benefits.

A collateral benefit of showing annually the cost of accruing benefits in the federal pension plans, using an interest rate reflecting the character of the pension promise, would be demonstrating the contrast between the generous retirement saving environment federal employees enjoy and the pinched one for Canadians who save in defined-contribution plans or RRSPs. For those Canadians, the federal *Income Tax Act* prohibits annual contributions greater than 18 percent of pay, up to a maximum of about $26,000. This limit is, in principle, supposed to equalize tax-deferred saving opportunities for people in defined-benefit plans and people in money-purchase arrangements, like RRSPs. But changes in longevity and returns on retirement-appropriate assets have rendered the ceiling utterly inadequate.

Currently, people saving in defined-contribution plans or RRSPs would need to save roughly 50 percent of their income annually, up to a maximum of more than $70,000, to amass retirement wealth equal to participants in a pension plan with comprehensive benefits like those typical in the public sector (Robson 2017). Furthermore, Canadians not employed by the federal government who want a similar retirement nest egg would need to save even more of their pre-tax earnings than these current service-cost estimates imply because most of those savings would be with post-tax income. Considering that these Canadians are also on the hook for the unfunded liability of federal employees' pension plans, the system is doubly unfair – more transparency about the value of federal pension entitlements could help us level the playing field.

More Equitable Sharing of Risks Related to Past Service

Even 50:50 sharing of the current service cost of federal pensions calculated with a more apt discount rate would leave taxpayers exposed: first, to fluctuations in the annual pension obligation costs as interest rates, experience and plan provisions change; and second, to potentially large and costly fluctuations in the value of previously earned benefits.

Change the Plans' Benefit Structure

Ottawa could shield taxpayers on both fronts by capping employer contributions at a fixed share of pensionable pay.[3] Plan participants would then need to pay both the balance of each year's current service cost and whatever was needed to cover changes in the value of previously earned benefits. But with so many participants in federal pension plans already retired or close to retirement, such a cap would have to be high and/or soft. The number of active members now and in the future whose contributions would swing up and down to cover the changes in the value of past benefits would be relatively small, so some kind of balance between protecting taxpayers and mitigating the impact on

3 Gros (2013) recommends such a change, noting that New Brunswick has set 18 percent of pensionable pay as the maximum combined contribution rate for its public-sector plans in the future.

contributors' take-home pay would be needed.

What about benefits, then? For one thing, it makes sense to lessen the overall pension liability over time by eliminating incentives for early retirement. Basing benefits on career-average earnings rather than final salary would also be desirable.[4] To relieve taxpayers of their current sole responsibility for risks in the federal plan, however, Ottawa would need to switch to a shared-risk, target-benefit model that calculates benefits with reference not only to salary and years of service but also to the plans' funded status. Allowing some level of benefit flexibility spreads some of the funding risks not only from taxpayers to plan participants, but also across all cohorts of members (Baldwin 2016). The broader public-sector plans many provinces established in the 1990s make future benefit accruals contingent on plan funding. The federal Liberal government's Bill C-27 contemplates something similar in the federally regulated sector by allowing for target-benefit pension plans. New Brunswick's new "shared-risk" pension regime also makes benefits already earned contingent on plan funding – a far more powerful tool in mature plans (Steele et al. 2014).

Meaningful Financial Reporting Is a Crucial First Step

As matters stand, the artificially low annual and accumulated costs for federal pensions reported in the Public Accounts are obstacles to reform. More meaningful fair-value numbers would better support the discussions that the federal government (as a sponsor), federal employees and Canadians, generally, need to have.

Public-sector accounting standards may require fair-value estimates before long. Some US municipalities have already defaulted on their obligations, and state governments may be next – developments that cast further doubt on the supposed virtues of unfunded government pensions. Ottawa can move ahead in any event, by providing the necessary information in the Public Accounts or simply by including fair-value numbers in its financial statements.

If it did provide the information, legislators, plan participants and taxpayers would see that Ottawa's unfunded pension liability is nearly $100 billion worse than stated. They would realize that federal employees cost taxpayers much more than reported. In addition, they would see how the net pension liability swings from year to year, sometimes wildly and far from predictably. Those insights would prepare the way for reforms that would slow the growth of a burden few taxpayers know they bear and would mitigate risks that few taxpayers know they carry.

4 Tying benefits to a person's purchasing power at the end of her or his career, rather than over her or his entire career, has two adverse effects: it creates opportunities for "spiking" – inflating earnings in a person's final years of work to push up the pension – and it redistributes wealth inside pension plans away from those with relatively flat career earnings profiles such as administrative staff, and toward those with steep earnings profiles, such as senior executives (Young 2012).

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