



November 21, 2017

FISCAL AND TAX POLICY

The Fiscal Implications of Canadians' Working Longer

by

William B.P. Robson, Colin Busby and Aaron Jacobs

- Demographic change is squeezing the budgets of Canadian governments – increasing the costs of public programs as the population ages, and eroding the tax base as the number of traditional working-age people flatlines.
- If Canadians stayed in the workforce longer – and improvements in health and longevity suggest many will be willing and able to do so – their contributions to output and taxes would mitigate the fiscal squeeze.
- Provincial governments, which face the tougher demographic cost squeeze because they are the main deliverers of healthcare, would particularly benefit from policies, such as higher ages for receipt of old age security, that encourage later retirement.

In the next few decades, Canadian governments will face a fiscal squeeze: rising demand for public services on one side and slower growth of government revenues on the other. The reasons are largely demographic. Age-sensitive programs, primarily publicly funded healthcare for an older population, are pushing spending up. At the same time, a decline in the share of the population that is of traditional working age is dampening growth in the economy and tax base.

A series of C.D. Howe Institute reports (most recently, Robson, Busby and Jacobs 2014) have quantified this squeeze, showing how the claim of demographically sensitive spending will rise relative to gross domestic product (GDP). Canadian governments – in particular the provinces, especially those in eastern Canada – will be under relentless fiscal pressure.

The authors thank Alexandre Laurin, Livio Di Matteo, members of the C. D. Howe Institute's Fiscal and Tax Competitiveness Council, and anonymous reviewers for comments on an earlier draft. The authors retain responsibility for any errors and the views expressed.

Those projections involve many assumptions about trends in program spending per person and work effort by the future population. In this E-Brief, we highlight one possibility that could improve the outlook: that Canadians currently working remain in paid employment longer than their predecessors, thereby generating additional tax revenues.

To preview our results, the key message of earlier projections – that demographically sensitive spending on the one hand and slowing economic growth on the other will stress government budgets over time – does not change. Demographically driven changes in spending and revenue imply, other things equal, an increase in Canada’s aggregate tax rate – the share of gross domestic product (GDP) governments collect – of more than one-quarter over the next 50 years. The present value of the unfunded liability for age-related social spending – that is, the value of the imaginary provident fund we would need to finance them without such tax hikes – amounts to \$4.5 trillion.

Longer working life would, however, mitigate this fiscal pressure. If the standard retirement age went from 65 to 67, the required tax increase would fall below one-quarter, and the size of the implicit liability – the provident fund that would avoid the tax hike – falls to \$3.9 trillion. If the standard age of retirement went to 69, the tax hike falls closer to one-fifth and the implicit liability falls to \$3.3 trillion.

Governments have a number of policy tools that can promote longer working life – or at least not discourage it. Since the provinces have the most severe fiscal exposure to demographic change, they should be particularly motivated to mitigate it, including through regulatory changes and modifications of tax and transfer policies to make longer work more attractive. The federal government must lead the way, however: later normal age for receipt of Old Age Security (OAS) and changes to tax provisions affecting retirement saving and income will be critical to alleviating the pressure of aging on government budgets.

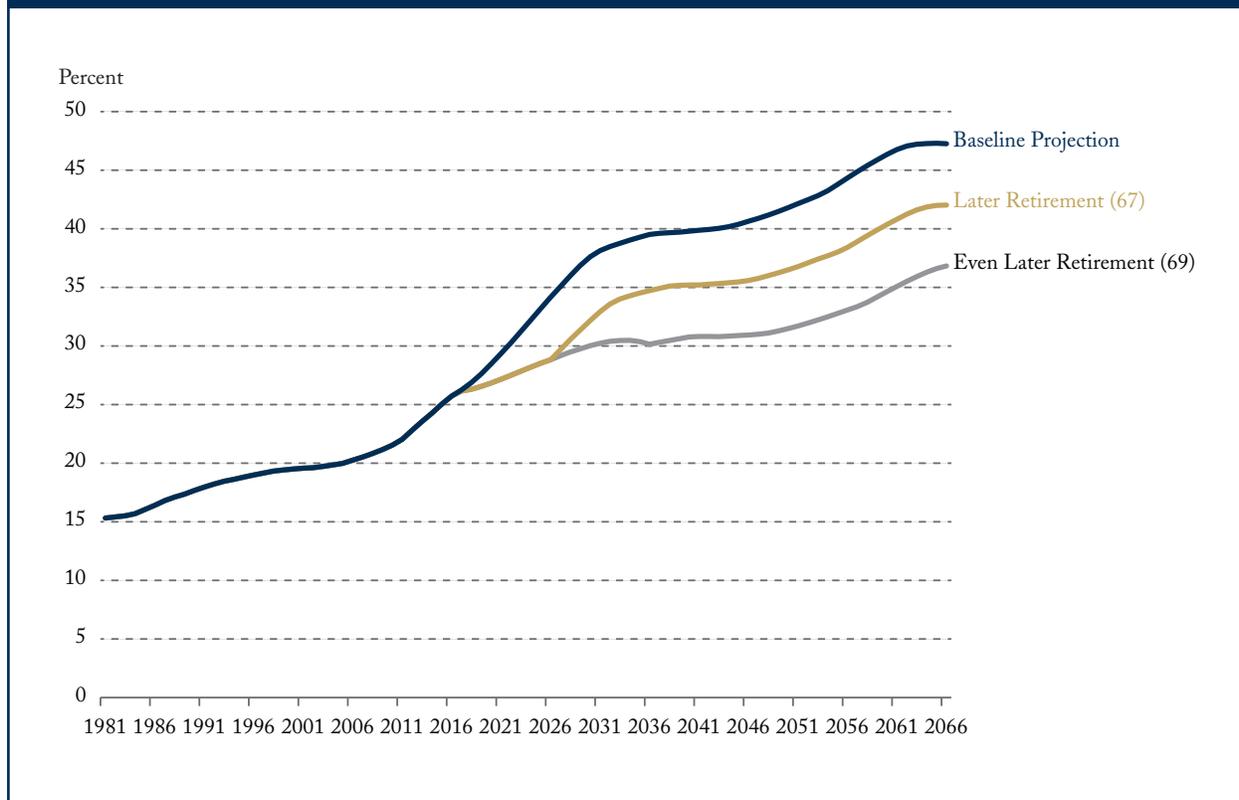
Canadians are Living and Working Longer

In the past 50 years, the life expectancy of Canadians has risen by about a decade. Statistics Canada anticipates further increases of about four years over the next 50. Whereas declines in mortality among most age groups contributed to past gains in life expectancy, more of the gains in the future will likely be among older Canadians. Of particular interest in considering the impact of labour-force trends on output and government budgets is life expectancy after age 65 – the age when people have traditionally been judged to be finished with work.

The federal Office of the Chief Actuary notes that life expectancy at age 65 in 1966 was 13.6 years for men and 16.9 years for women (OCA 2017, 68). By 2016, its life-expectancy estimate at 65 had increased to 21.3 years for men and 23.7 years for women (OCA 2017, 70). Looking ahead, the Chief Actuary predicts life expectancy in 2030 at 22.2 years beyond age 65 for men and 24.5 years for women. By 2060, the estimates are 23.9 years for men and 26.1 years for women. Since the relatively numerous babyboomers are swelling the numbers of Canadians passing the age of 65, these longevity increases mean a rapidly rising proportion of the population is past the traditional age of retirement (the “Baseline Projection” in Figure 1). There now are more Canadians over 65 than under 15 for the first time in the country’s history (Statistics Canada 2017).

Those numbers make it all the more important to ask: Is the traditional definition of working age, ending at age 65, out of date? In fact, increasing longevity is strongly correlated with later retirement (Colie, Milligan, and Wise 2016). The actual age at which Canadians leave the workforce appears to have been rising over the last

Figure 1: Canadians Past Retirement Age Relative to the Working-Age Population



Source: Authors' calculations.

decade: Statistics Canada's Labour Force Survey showed the average age of retirement at 60.9 in 1998; the 2016 figure was 63.6.¹ Carrière and Galarneau (2011) show that 50-year-old workers in 2008 expected to work about 3.5 years longer, to about age 66, than their 1994 peers. Stronger labour force attachment and higher education levels among babyboomers than the previous generation, a narrowing gender gap and lower financial returns on pension assets all point toward individuals choosing to retire later in the coming decades (Hicks 2012).

As the number of older Canadians grows, the importance of their working decisions for the national economy grows as well. By 2036, our population projections, discussed below, show around one million Canadians at ages 65 and 66, and almost as many at ages 67 and 68. Increases in the propensity of these people to participate in the labour force would add appreciably to the stock of active workers.

Modelling the Effect of Later Retirement on Public Spending

Among the reasons to welcome a potential increment to the active workforce is that more workers generate more output and more tax revenue, mitigating the downward demographic pressure on government revenues. Such a

1 See Cansim Table 282-0051, accessed October 26th, 2017.

development would be all the more helpful because of the upward demographic pressure on government spending.

Certain government programs are straightforwardly sensitive to the population's age structure: healthcare; education; and seniors' benefits along with child/family benefits. Projecting the demographic impact on revenue and spending allows us to sketch a potential path for government finances if age-specific workforce participation stays the same, or if it changes as Canadians work longer.

Our demographic and fiscal projections over the next 50 years use methods that are straightforward to explain and replicate. We project each province and territory's population using the following middle-of-the-road assumptions: a fertility rate stable at its 2013 level; longevity rising in line with Statistics Canada's "medium" improvement scenario (Statistics Canada 2015); net inter-provincial migration falling to zero over 10 years and international in-migration continuing at a rate equivalent to the 2006-to-2016 average. The national projection is the sum of the provincial and territorial projections.²

Turning to the four major demographically sensitive categories of government programs, we take our population projections for the ages relevant to each and multiply them by various measures of service or transfer intensity and price/cost indexes to produce aggregate dollar figures (Box 1 provides more detail on these projections).

Baseline Scenario for the Traditional Working-Age Population

In our baseline projection, we assume that the current differences in labour-force participation across age groups will persist. Our approach sacrifices some detail for the sake of transparency: we hold constant the participation rate of working-age population groups 18-59, 60-64, 65-69 and 70-74 in each province at their 2016 values to generate a projection of total employment numbers going forward. To project output and incomes, we multiply this workforce by an index of output per worker. In our projections, this index increases by 0.93 percent annually, the rate recorded by the equivalent national measure from 1997 to 2016. These calculations provide our model with real GDP projections for each province, which we convert to nominal dollars by multiplying them by the Bank of Canada's target inflation rate of 2 percent. National numbers are the sum of provincial sub-totals.³

In this scenario, the share of national income devoted to financing healthcare doubles, from 7.3 percent to 14.8 percent, over the 50-year projection period. Less dramatically, the cost of financing seniors' benefits also rises, especially over the next two decades, hitting a peak roughly one-third above its current level (2.8 percent of GDP) in 2033. The cost of primary and secondary education also edges up over the projection period, from 4.4 percent to 6 percent of GDP, reflecting growth in the school-age population and the likelihood that costs in the education sector will continue to outpace general inflation. Although spending on children's and family

2 We do not use Statistics Canada's projections because we want provincial detail and a longer time horizon. Over the period covered by Statistics Canada's projections to 2038, our estimates of total national and provincial populations are quite similar, usually within 5 percent.

3 Many refinements of this type of projection are possible – for example, anticipating future changes in labour-force participation rates by people of different ages and sexes, or making explicit assumptions about the average hours different participants in the labour force will work. Because the focus of this study is the impact of a change relative to a baseline projection, and such refinements would not significantly affect the size of that impact, we use a framework for the projections that is comparatively simple to implement, explain, and replicate.

Box 1: Projecting Demographically Sensitive Program Costs

We use similar projection methods – multiplying relevant populations by program-specific indexes of service or transfer intensity – for all the programs we examine.^a

For healthcare and education, we assume that service intensity – the volume of services delivered per person – will rise at the same rate as output per working-age person, at 0.93 percent annually. This is the rate recorded by the equivalent national measure from 1997 to 2016. This assumption is not entirely arbitrary: absent good quantitative assessments of output quality, measures of activity in unpriced services such as health and education tend to be driven by inputs. These activities are labour intensive: wages, which tend to rise with economy-wide productivity, are a key input.

Historically, service intensity has grown at annual rates above the 0.93 percent we assume – and faster than productivity growth. We prefer to link them in our main projection in order to ensure that upward or downward trends in the health and education spending shares of GDP are not a function of different assumptions about service intensity on the one hand and productivity growth on the other. Instead, these trends should reflect demographic change and cost inflation in government consumption compared to inflation elsewhere. For cost inflation in health and education, our general assumption is that prices will rise by 2.6 percent annually, the rate of the government consumption price index nationwide from 1997 to 2016, and 0.6 of a percentage point above overall inflation.

Our index of transfer intensity for seniors' benefits is derived from the Chief Actuary's spending projections on the OAS, the Guaranteed Income Supplement (GIS) and Allowances (2017). Because these programs are either directly geared to income or subject to tax, and the Chief Actuary's model assumes that incomes rise over time, projections for the seniors' transfer-intensity index tend to fall somewhat in real terms. On the other hand, our transfer-intensity index for child and family benefits remains the same over time: we assume that the real value of transfers per person in the relevant age group is constant.

Further notes on the projections for programs follow:

Healthcare: We project provincial spending for each sex in 20 age groups. Per-person healthcare expenditure in each of these groups grows according to the volume of services delivered (the index of service intensity) and the cost index mentioned above. Our base figures for these per-person numbers are the Canadian Institute of Health Information's (CIHI) 2014 figures, pro-rated to match recent actual totals.^b Since the last few years have seen lower increases in overall health spending, we project healthcare cost inflation at 1.3 percent for five years, followed by a return to the historical margin over economy-

a For more background on the methodology used and the terminology, see Robson (2002) and Drummond and Burleton (2010).

b We use CIHI's 2015 and 2016 spending forecasts by province and Statistics Canada's population data to compute per capita costs by age group, assuming that relative spending on each group will be similar to the most recent age-group breakdown available, from 2014.

Box 1: Continued

wide inflation noted above. Our use of a constant distribution of spending by age assumes that public healthcare spending on the boomer cohort will be similar to that spent on its parents' cohort. While this is open to debate, especially in the context of long-term healthcare reform (See Blomqvist and Busby 2014), the distribution of spending by age has not changed very much since such data were calculated in 1997 (Robson, Busby and Jacobs 2014) – and, as noted, our focus here is on the impact of changes in average age of retirement, so it is the difference between the scenarios, rather than the exact levels in any one of them, that are of interest.

Education: We calculate base-year provincial/local spending on education using data from Statistics Canada's Canadian Classification of Functions of Government series, broken out into elementary, secondary and post-secondary spending using the historical ratio from Statistics Canada's now-terminated Financial Management System. Provincial populations aged four to 17 and 18 to 24 drive provincial spending on elementary and secondary students respectively. We multiply these populations by our indexes of service intensity. The population under 17 drives the federal Canada Education Saving Grant, while the population aged 18 to 24 and service intensity drive federal grants to post-secondary students. We multiply these latter groups by an unchanging transfer-intensity index.

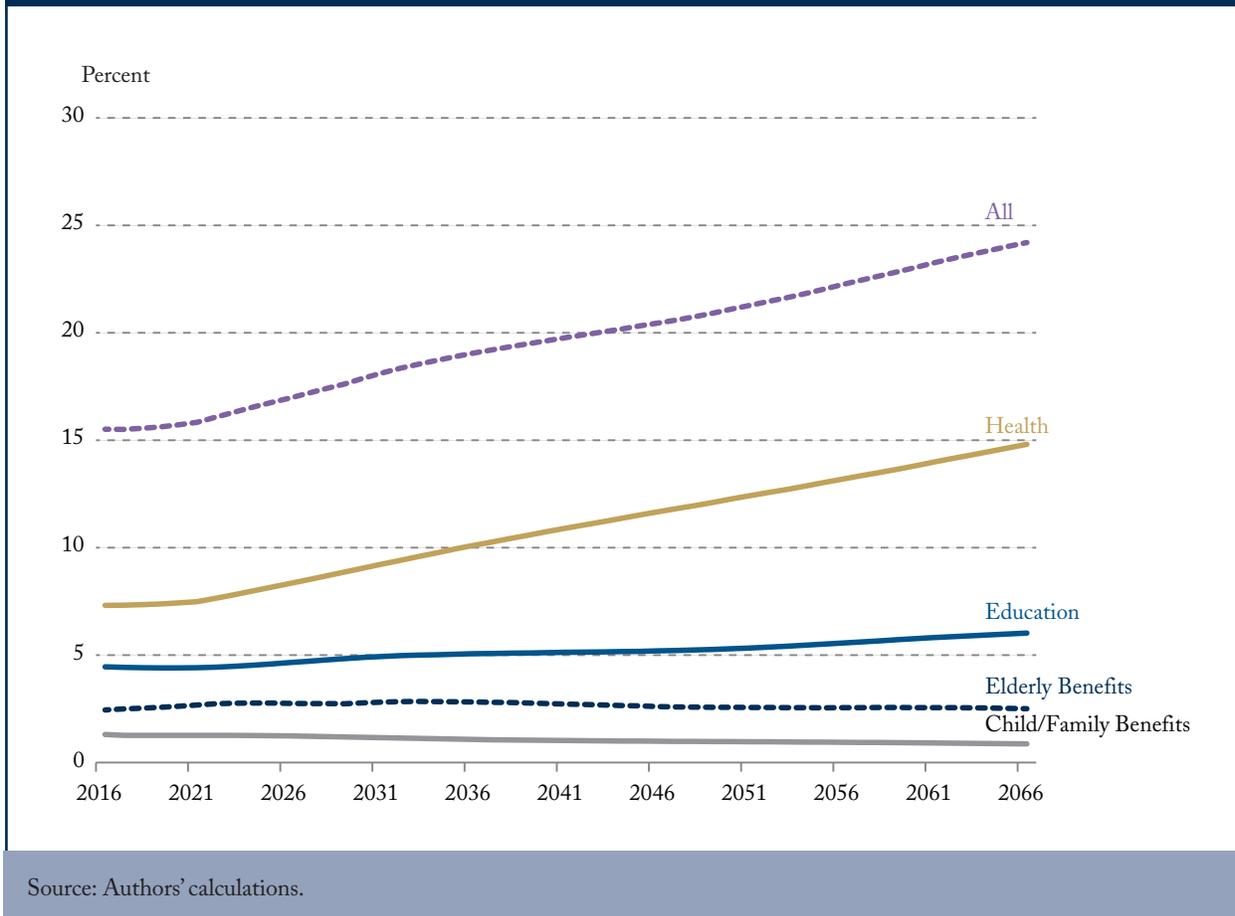
Elderly benefits: We calculate real OAS/GIS benefits per eligible person from the projections of the Office of the Chief Actuary (2017). Base-year provincial spending are authors' calculations from Statistics Canada's Social Policy Simulation Database and Model (SPSD/M), Release 23.0. As just noted, provincial payments assume the same time path of service or transfer intensity for provincial elderly populations. For the working-longer scenarios, we also assume that the federal government reinstates its policy to raise OAS age eligibility from 65 to 67 over the 2023-2029 period.

Child/family benefits: Spending on federal and provincial child-related benefits varies with relevant populations up to age 17. We assume unchanging indexes of transfer intensity. Federal family benefits delivered through the tax system, while indexed to inflation, are income-tested, so real income growth erodes their real value. SPSD/M simulations suggest that in the scenarios modelled here, these offsetting characteristics leave average nominal spending per child unchanged – an assumption that has also been made for (generally much smaller) provincial programs.

benefits declines somewhat as a share of GDP, the sum of all demographically sensitive programs rises from about 15.5 percent of GDP today to 24.2 percent in the mid-2060s (see Figure 2).

This rise implies major tax hikes. Expressing all taxes as a share of GDP, financing the higher cost of these demographically sensitive programs would require an aggregate national tax rate increase of the same magnitude: 8.7 percentage points. Currently, tax revenue amounts to about one-third of Canada's GDP (OECD 2016). So, even if all other government spending could be kept constant in real terms, demographic change implies an average hike in the effective rate of every tax of more than one-quarter by 2066.

Figure 2: Demographically Sensitive Programs, as a Share of National GDP, 2016–2066



An illuminating way of thinking about this fiscal burden is to imagine that we had anticipated it years ago. Suppose we had begun a national savings program to pre-fund it and that, by now, that imaginary program had built an asset stock large enough to cover the increased cost of these programs without raising the aggregate national tax rate. For this exercise, we assume asset returns equal to a high-quality provincial government bond yield, for which we use Ontario. Since these are political promises rather than contractual obligations, we use 50 years – roughly the life expectancy of the average-age Canadian – as the period over which this imaginary fund would bridge the gap. The amount we would have needed to set aside by now, to fund these programs without raising taxes for 50 years, is huge: \$4.5 trillion.⁴ That is, in a sense, the unfunded liability of Canada's demographically sensitive public programs.

Scenarios with Later Retirement

What if a longer working life raises the labour-force participation of older workers? There are many ways to

⁴ Robson, Busby and Jacobs (2014) put the implicit liability of demographically sensitive programs at \$4.3 trillion. The small net increase since then reflects some largely offsetting demographic and economic developments, and a decline (from 3.5 to 3.3 percent) in the Ontario long-term bond yield used as a discount rate.

model such a change: for simplicity, we assume that the participation rates of the 60-64, 65-69 and 70-74 age groups rise halfway (in one alternative) or fully (in the other) to match that of the next-youngest cohort, roughly simulating two- and four-year delays in the average age of retirement. We assume the former change occurs over a decade, and the latter change, in the scenario where it takes place, occurs over two decades. Figure 1 shows the ratios of people past working age to people of working age under these two scenarios.

If labour-force participation among older Canadians rose in these ways, and the resulting larger workforce boosted tax and income, the fiscal picture would brighten notably. The version roughly corresponding to a two-year official retirement delay – from 65 to 67 – boosts the tax base enough to reduce the share of GDP devoted to demographically sensitive programs by about one percentage point by 2066. The version equivalent to retirement at age 69 reduces it by a further 0.9 of a percentage point.

Under these scenarios, the increase in the national aggregate tax rate would still be substantial: some 7.7 percentage points with retirement at age 67 and 6.8 percentage points with retirement at 69. However, relative to the baseline in which the aggregate tax rate rises by 8.7 percentage points, or more than one-quarter, either would be a major improvement. In the former case, the effective increase in the average rate of all taxes would be less than one-quarter; in the latter, it would be closer to one-fifth.

Expressing the fiscal challenge in terms of the assets needed to cover the costs of these programs, we get some \$3.9 trillion with retirement at age 67 and \$3.3 trillion at 69. Those are still huge numbers, but they are major improvements relative to the \$4.5 trillion baseline: \$600 billion less in the former case and \$1.2 trillion in the latter (see Table 1 for a comparison and provincial breakdown).

Clearly, demographically driven fiscal pressure affects the provinces far more than the federal government, mainly because they are the principal financers of publicly funded healthcare. Accordingly, longer working life would provide fiscal relief mainly to the provinces.

For our working-longer scenarios, we also assume that the federal government reinstates its policy to raise the age of eligibility for OAS receipt from 65 to 67 over the 2023-2029 period – reducing the number of beneficiaries, and thus program cost, by between 9 percent and 12 percent over the projection period.⁵ Although we do not model analogous changes at the provincial level, we note that if the provinces raised their ages of eligibility for various seniors' benefits at the same time, they would reduce their demography-related spending directly – and perhaps further encourage longer working life.

Discussion and Policy Implications

To recap, our baseline projections – which assume that Canadians 65 and older are for all practical purposes out of the output-and-income-generating workforce – show the burden of demographically sensitive program spending rising from about 15.5 percent of GDP today to 24.2 percent by 2066.

An alternative, in which the effective retirement age rises to 67, reduces these programs' GDP claim to 23.2 percent. To illustrate the power of longer work-life to improve the sustainability of demographically

5 In line with the Chief Actuary's projections (2017), we find that the recent CPP changes will reduce slightly the number of Guaranteed Income Supplement beneficiaries after 2040 or so, but will have limited impact on the program's cost before or after that date.

Table 1: Implicit National Liabilities in next 50 years with Working-longer Scenarios

	Health	Education	Elderly Benefits	Child/ Family Benefits	All Programs	All Programs: Working to Age 67	All Programs: Working to Age 69
<i>(in \$billions)</i>							
BC	433	29	1	-1	462	408	354
AB	732	182	20	0	934	857	779
SK	85	51	0	-	136	119	101
MB	114	45	0	0	159	140	121
ON	1,406	173	2	-2	1,578	1,411	1,243
QC	742	173	-	3	918	824	731
NB	76	15	0	0	91	82	74
NS	95	11	-	0	106	95	84
PE	17	3	-	-	20	18	16
NL	75	7	1	0	83	75	68
YK	17	1	-	-	18	17	17
NT	29	1	-	-	30	29	27
NU	13	-4	-	-	9	8	7
Provincial	3,832	688	25	0	4,545	4,083	3,620
Federal		-8	175	-253	-86	-223	-361
Canada	3,832	680	200	-252	4,459	3,859	3,259

Source: Authors' calculations.

sensitive programs, we consider a third scenario in which the effective retirement age rises to 69. That reduces these programs' GDP claim to 22.3 percent.

These results are both discouraging and encouraging. On the discouraging side, even the sunniest scenario prefigures serious fiscal pressures. On the encouraging side, later average retirement would mitigate this pressure enough to materially improve the outlook for taxes and other programs.

A further aspect worth emphasizing is the different exposure to demographic pressure at the federal and provincial levels. Although the federal government has been the main focus in the debate over whether OAS should normally begin at 65 or 67, the provinces will experience the worst of the fiscal squeeze, as Table 1 shows. For that reason, provincial governments are the ones that will experience the greatest relief from increases in the average age of retirement.

How might policy changes improve Canadians' chances of experiencing the relatively happier futures prefigured in our later-retirement scenarios?

- First, and most obviously, the federal government should restore the previously scheduled increase in the normal age of OAS eligibility to age 67 – as advised by the Advisory Council on Economic Growth

(Canada 2017). Earlier receipt of a reduced amount should be an option, as with the Canada and Quebec Pension Plans. Over time, the normal receipt age should move in line with further increases in healthy longevity. Provinces, which also use age 65 as a marker for many benefits, should raise it over time as well.

- Second, actuarial adjustments to benefits payable under OAS and the Canada Pension Plan need to stay up to date, to ensure that people are appropriately rewarded for continuing to work after the age when they could first commence receipt.
- Third, and more generally, other age-related rules also need updating. For example, restrictions on retirement saving after a given age and requirements to start drawing retirement income can affect decisions about when to retire. A key example is the requirement for RRSP savers to start drawing down their savings, now taxable, at age 71. Abolishing that requirement outright is an attractive idea (Robson and Laurin 2015). Failing that, the trigger age should rise immediately and continue to rise with longevity.

The effect of longer work-life on the tax base will not eliminate the fiscal pressures demographic change will create for Canadian governments. But those pressures are so large that policymakers should pursue a variety of avenues to mitigate them. The gains outlined in our projections are well worth having – policy changes to promote later retirement would reduce the unfunded liabilities future finance ministers will otherwise need to confront and brighten the fiscal futures of Canadians.

References

- Robson, William B.P., Colin Busby, and Aaron Jacobs. 2014. "Managing the Cost of Healthcare for an Aging Population: 2014 Provincial Perspectives." E-Brief Series. Toronto: C.D. Howe Institute. December. Available at <https://www.cdhowe.org/public-policy-research/managing-cost-healthcare-aging-population-2014-provincial-perspectives>.
- Blomqvist, Åke, and Colin Busby. 2014. *Paying for the Boomers: Long-Term Care and Intergenerational Equity*. Commentary 415. Toronto: C.D. Howe Institute. September.
- Boyer, Marcel, and Sébastien Boyer. 2013. "The Main Challenge of Our Times: A Population Growing Younger." C.D. Howe Institute. E-Brief 161. July.
- Canada. 2017. Advisory Council on Economic Growth. "Tapping Economic Potential through Broader Workforce Participation." Ottawa. February 6.
- Carrière, Yves, and Diane Galarneau. 2011. "Delayed Retirement: A New Trend." Statistics Canada. *Perspectives on Labour and Income*, Vol. 23, No. 4.
- Colie, Courtney, Kevin Milligan, and David Wise. 2016. "Health Capacity to Work at Older Ages: Evidence from the U.S." NBER Working Paper No. 21940.
- Drummond, Don, and Derek Burleton. 2010. "Charting a Path for Sustainable Healthcare In Ontario: 10 Proposals to Restrain Costs Without Compromising Quality of Care." TD Economics Special Report. Toronto: TD Bank Financial Group. May.
- Hicks, Peter. 2012. *Later Retirement: the Win-Win Solution*. Commentary 345. Toronto: C.D. Howe Institute. March.
- OECD. 2016. *Revenue Statistics 2016*. OECD Publishing. November 30.
- Office of the Chief Actuary. 2017. *Actuarial Report on the Old Age Security Program as at 31 December 2015*. Actuarial Study No. 14. Ottawa. June 8.
- Robson, William B.P., and Alexandre Laurin. 2015. "Drawing Down Our Savings: The Prospects for RRIF Holders Following the 2015 Federal Budget." C.D. Howe Institute E-Brief 210. July.
- Robson, William B.P. 2002. *Saving for Health: Pre-Funding Health Care for an Older Canada*. Commentary 170. Toronto: C.D. Howe Institute. October.
- Statistics Canada. 2015. "Population Projections for Canada (2013 to 2063), Provinces and Territories (2013 to 2038)." Catalogue number 91-520-X. Ottawa: May 26.
- . 2017. "Age and sex, and type of dwelling data: Key results from the 2016 Census." Catalogue number 11-001-X. Ottawa: May 3.

This E-Brief is a publication of the C.D. Howe Institute.

William B.P. Robson is President and CEO at the C.D. Howe Institute.

Colin Busby is Associate Director, Research, at the C.D. Howe Institute.

Aaron Jacobs is a Researcher at the C.D. Howe Institute.

This E-Brief is available at www.cdhowe.org.

Permission is granted to reprint this text if the content is not altered and proper attribution is provided.