



FISCAL SUSTAINABILITY REPORT 2020



The Parliamentary Budget Officer (PBO) supports Parliament by providing economic and financial analysis for the purposes of raising the quality of parliamentary debate and promoting greater budget transparency and accountability.

This report provides PBO's assessment of the sustainability of government finances over the long term for the federal government, subnational governments and public pension plans.

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Executive Summary

To assess whether a government's fiscal policy is sustainable requires projecting current policy beyond a budget's medium-term planning horizon. Fiscal sustainability means that government debt does not grow continuously as a share of the economy.

Across all provinces and territories, the ageing of the population will move an increasing share of Canadians out of their prime working-age years and into their retirement years, resulting in slower growth in the Canadian economy.

Slower economic growth will put downward pressure on government revenues as growth in the tax base slows. At the same time, population ageing will put upward pressure on other government programs such as health care, Old Age Security and pension benefits. Programs targeted to younger age groups will face reduced pressure as the population ages.

The objective of this report is to identify if changes to current fiscal policy are required to avoid unsustainable government debt accumulation and to estimate the magnitude of these changes.

Conclusions

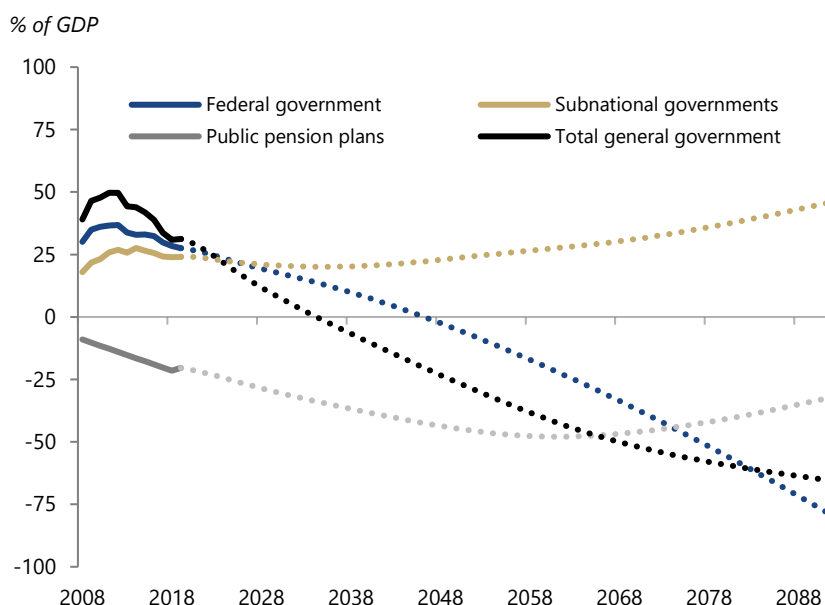
Total general government sector

From the perspective of the government sector as a whole (that is, federal and subnational governments and public pension plans combined), current fiscal policy in Canada is sustainable over the long term. Relative to the size of the Canadian economy, total government net debt is projected to remain below its current level over the long term (Summary Figure 1).

This perspective, however, masks fiscal policy at the subnational level that is not sustainable—albeit to a modest extent. Under current policy, we project that the federal government will eliminate its net debt and shift into a net asset position. Combined with the public pension plans, this net asset accumulation more than offsets the projected increase in subnational government net debt.

Summary Figure 1

Government net debt relative to GDP



Sources: Statistics Canada and Parliamentary Budget Officer.

Note: The projection period covers 2019 to 2093.

Fiscal sustainability and the fiscal gap

PBO assesses fiscal sustainability using the fiscal gap—the difference between current fiscal policy and a policy that is sustainable over the long term.

The fiscal gap represents the immediate and permanent change in revenues, program spending, or combination of both, expressed as a share of GDP, that is required to stabilize a government’s net debt-to-GDP ratio at its current level over the long term.

A negative gap indicates that net debt is projected to decline as a share of GDP and that there is room available to increase spending or reduce taxes while maintaining fiscal sustainability.

For each public pension plan, the fiscal gap represents the immediate and permanent change in contributions or benefits that returns the net asset-to-GDP ratio to its current level over the long term.

Federal government

Current fiscal policy at the federal level is sustainable over the long term. PBO estimates that the federal government could permanently increase spending or reduce taxes by 1.8 per cent of GDP (\$41 billion in current dollars) while maintaining net debt at its current (2018) level of 28.5 per cent of GDP over the long term.

The federal government’s sizeable medium-term primary surpluses and declining spending on children’s benefits and the Canada Social Transfer (relative to the size of the economy) are key contributors to federal fiscal room.

Our estimate of federal fiscal room has been revised up from 1.4 per cent of GDP in our 2018 assessment. This primarily reflects downward revisions to our long-term assumptions for interest rates.

Subnational governments

For the subnational government sector as a whole, current fiscal policy is not sustainable over the long term.¹ PBO estimates that permanent tax increases or spending reductions amounting to 0.3 per cent of GDP (\$6 billion in current dollars) would be required to stabilize the consolidated subnational government net debt-to-GDP ratio at its current (2018) level of 23.9 per cent of GDP over the long term.

Our estimate of the subnational fiscal gap has been revised down from 0.8 per cent of GDP in our 2018 assessment. This revision is mainly due to announced changes in fiscal policy by provincial governments in Ontario and Alberta.

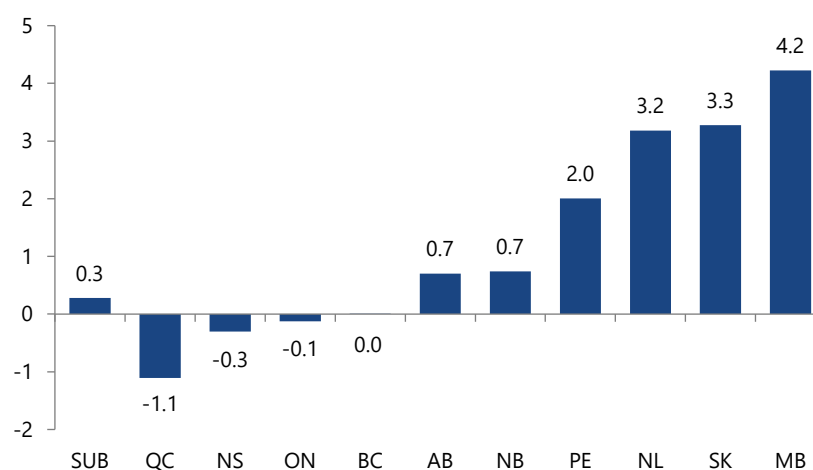
Rising health care costs due to population ageing drive the deterioration in subnational government finances over the long term. In addition, some subnational governments face significant budgetary pressures in the near term, as well as reduced federal transfers (relative to the size of their economies), that compound their fiscal challenges.

- We estimate that current fiscal policy in four provinces is sustainable: Quebec, Nova Scotia, Ontario and British Columbia (Summary Figure 2).
- We estimate that governments in the fiscally sustainable provinces have fiscal room to increase spending or reduce taxes, ranging from 1.1 per cent of provincial GDP in Quebec to 0.1 per cent of provincial GDP in Ontario.
- Current fiscal policy is not sustainable in the remaining provinces and the Territories. The amount of policy actions required to achieve fiscal sustainability in these jurisdictions ranges from 0.7 per cent of provincial GDP in Alberta to 11.4 per cent of territorial GDP for the Territories.
- We estimate that Manitoba, Saskatchewan and Alberta combined contribute 0.4 percentage points to the subnational fiscal gap (Summary Figure 3).

Summary Figure 2

Subnational government fiscal gap estimates

% of GDP

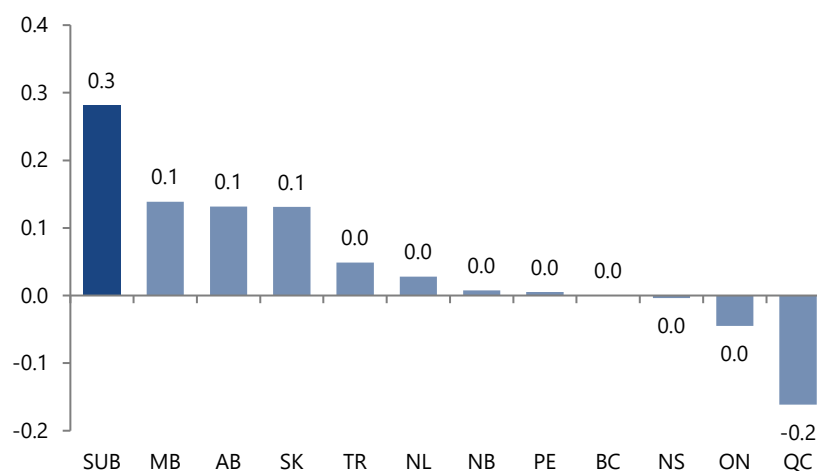


Source: Parliamentary Budget Officer.

Note: Fiscal gaps for each province and the territories are expressed relative to their corresponding provincial and territorial GDP. SUB refers to the consolidated subnational government sector. The Territories combined have a fiscal gap of 11.4 per cent of territorial GDP.

Summary Figure 3 Contributions to the consolidated subnational fiscal gap

Percentage points of GDP



Source: Parliamentary Budget Officer.

Note: Contributions to the consolidated subnational fiscal gap are expressed relative to Canadian GDP. SUB refers to the consolidated subnational government sector.

Public pension plans

The current structure of the Canada Pension Plan (CPP) and Quebec Pension Plan (QPP) is sustainable over the long term. We estimate the fiscal gaps for the CPP and QPP to be, respectively, 0.0 per cent of GDP (in Canada) and -0.2 per cent of GDP (in Quebec). Under the current structure of the CPP, projected contributions and benefits are sufficient to ensure that, over the long term, the net asset-to-GDP position remains close to its initial value. In the case of the QPP, contributions could be reduced, or benefits increased, by 0.2 per cent of GDP, while maintaining fiscal sustainability.

Our fiscal gap estimate for the CPP has been revised slightly from -0.1 per cent of GDP in our 2018 assessment. This slight revision reflects lower rate of return assumptions. In the case of QPP, upward revisions to projected net cash flows (contributions less expenses) offset the lower rate of return, leaving its fiscal gap estimate unchanged from our 2018 assessment.

Sensitivity of results

To help gauge the sensitivity of our baseline fiscal gap estimates, we consider alternative demographic, economic and fiscal policy scenarios. We find that our qualitative assessment of fiscal sustainability for the federal government is unchanged across the range of scenarios considered. Our sustainability assessment is reversed under some alternative scenarios for subnational governments and for pensions plans with baseline fiscal gaps at or near zero (see Table A-1 in Appendix A).

1. Introduction

Fiscal sustainability means that government debt does not grow continuously as a share of the economy. Assessing whether—and the degree to which—fiscal policy is sustainable involves projecting government net debt relative to the size of the economy over the long term under the assumption that current fiscal policy, including intergovernmental transfers, is maintained.

These long-term fiscal projections are **not forecasts or predictions** of the most likely outcomes. Rather, they are illustrative scenarios that show the consequences of maintaining a government's current fiscal policy over the long term, after accounting for the economic and fiscal implications of population ageing.

We produce these projections to motivate parliamentary discussion about the adequacy of current fiscal policy to deal with expected long-term demographic and economic challenges; the earlier that a required policy intervention can be identified, the lower will be the cost of its implementation.

Scenarios in which there is excessive debt or asset accumulation are unlikely to be realized given future fiscal policy actions and responses by households, firms and financial markets. Nonetheless, long-term debt-to-GDP projections serve as a useful signal and gauge of the sustainability of current fiscal policy.

Arithmetically, a government's debt-to-GDP ratio will increase over time if its debt grows faster than GDP. It is informative, however, to isolate the key drivers underlying this debt accumulation: the primary balance relative to GDP and the differential between the effective interest rate on debt and GDP growth. A government's debt-to-GDP ratio will increase if its primary balance as a share of GDP is smaller than the interest-growth rate differential multiplied by the current debt-to-GDP ratio.

The degree to which current fiscal policy needs to be adjusted to achieve sustainability can be quantified by the fiscal gap. Specifically, PBO's baseline fiscal gap is calculated as the immediate and permanent change in the primary balance required to stabilize the debt-to-GDP ratio at its current level after 75 years. The change in the primary balance can be achieved by adjusting revenues and/or spending on programs. Appendix B provides a detailed definition of the fiscal gap.

Similar to the federal and subnational government sectors, we calculate fiscal gaps for the public pension plans. These gaps represent the immediate and permanent changes in contributions and/or benefits required to stabilize their net asset-to-GDP ratios at current levels after 75 years.

The primary balance

A government's primary balance is defined as revenues less non-interest spending. It represents the contribution to debt accumulation that is directly influenced by fiscal policy. Subtracting public debt charges from the primary balance yields the more familiar budgetary balance or "net lending".

In the case of the public pension plans, we refer to the primary balance as the net cash flow, which represents plan contributions less benefits and administrative expenses.

To help gauge the sensitivity of our baseline fiscal gaps, we consider alternative demographic, economic and fiscal policy scenarios.

We use Statistics Canada's *Government Finance Statistics* (GFS) as the basis for our fiscal projections.² The GFS measure and analyze the economic dimensions of the public sector of Canada, consistent with Canada's *System of National Accounts* and the International Monetary Fund's global guidelines *Government Finance Statistics Manual 2014*.³

Internationally consistent GFS support comparative fiscal analysis, such as PBO's Fiscal Sustainability Report (FSR), by overcoming definitional and accounting differences between public entities. In Canada and elsewhere, governments' financial statements and reports (for example, the Public Accounts and budgets) are based on unique organizational structures and on the accounting and reporting practices of individual governments, so there is a lack of consistency across jurisdictions and over time.⁴ The GFS provides the data consistency necessary for a coherent view of the current and future financial prospects of all levels of government in Canada.⁵

All our projections are based on the GFS but align our medium-term fiscal projections for subnational governments with the Public Accounts-based budget forecasts prepared by provincial governments.⁶ Users should note that discrepancies between GFS and Public Accounts-based statistics may lead to different growth paths for revenues, expenditures and the primary balance in historical data and the current forecast year, but these growth differences should tend toward zero over time.⁷ The data for our FSR projections is available electronically on our website.⁸

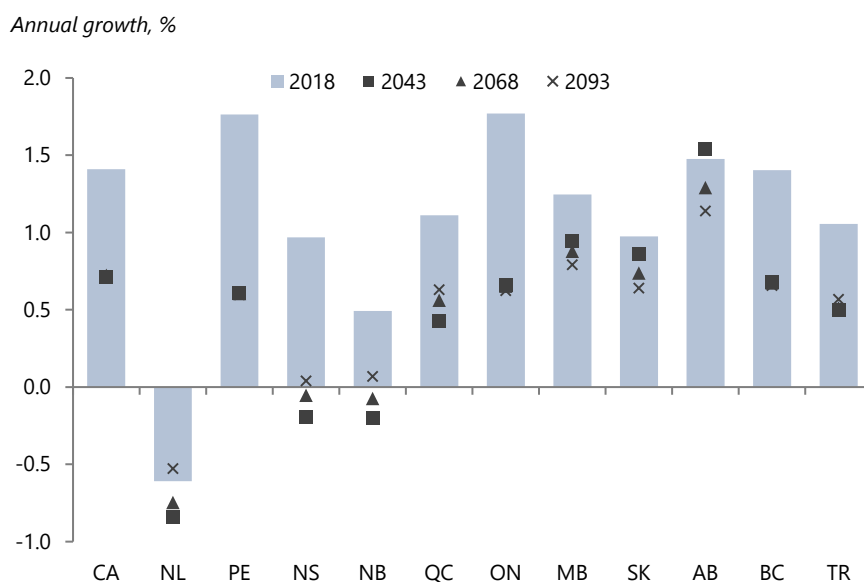
The remainder of the report is structured by sector: federal government; subnational governments; and public pension plans. Additional methodological and technical details can be found in our 2017 FSR.⁹

2. Demographic projection

The evolving demographic profile of the Canadian population is one of the key drivers of PBO's long-term economic and fiscal projection. Across all provinces and territories, the ageing of the population will move an increasing share of Canadians out of their prime working-age years and into their retirement years, resulting in slower growth in the labour force and GDP.

PBO's baseline demographic assumptions have been updated to reflect Statistics Canada's *Population Projections for Canada (2018 to 2068), Provinces and Territories (2018 to 2043)* which was published on 17 September 2019.¹⁰ Population growth at the national level is projected to slow from 1.4 per cent in 2018 to 0.7 per cent in 2093, the end of our projection period (Figure 2-1). Compared to our 2018 FSR, population growth is projected to be slightly higher—roughly 0.1 percentage points on average—over the projection period. This is due in part to a higher assumed immigration rate.¹¹

There continue to be meaningful disparities in population projections at the subnational level. Alberta, Manitoba and Saskatchewan will see the highest population growth although growth in all three provinces will decline from recent levels. By contrast, the population in Newfoundland and Labrador, Nova Scotia and New Brunswick is projected to decline over the projection period.

Figure 2-1 Population growth

Sources: Statistics Canada and Parliamentary Budget Officer.

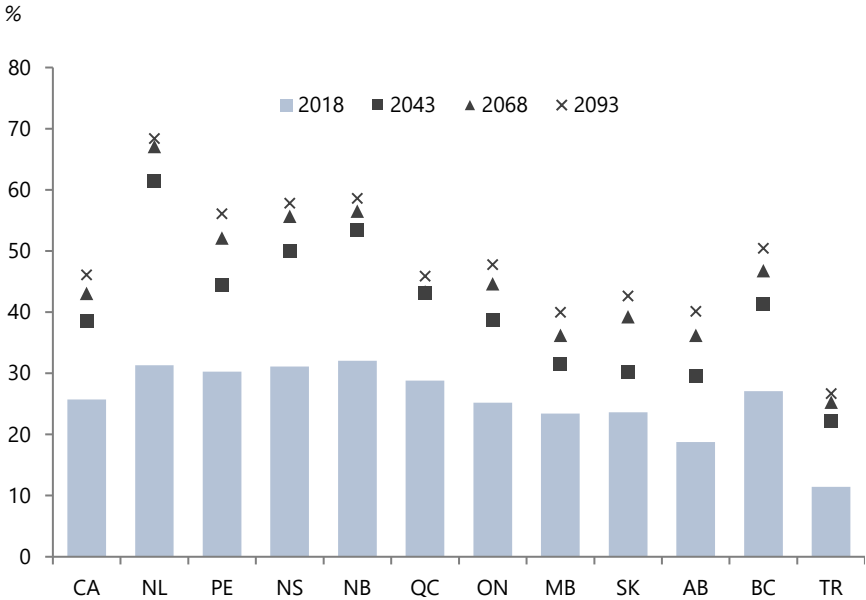
Compared to our 2018 FSR, population growth is projected to be higher, on average, over the projection period for all provinces and territories except for British Columbia and Alberta. Saskatchewan, New Brunswick, Nova Scotia and Newfoundland and Labrador are projected to have the largest increases in population growth relative to our 2018 FSR.

The median age of Canada's population is projected to increase from 40.8 years in 2018 to 44.6 in 2068.¹² The senior dependency ratio—the ratio of individuals 65 years and older relative to the population between 15 to 64 years of age—is projected to increase at the national level from 25.7 per cent in 2018 to 46.1 per cent in 2093 (Figure 2-2). The most acute period of population ageing is projected to occur over the next 25 years.

At the subnational level, the Atlantic provinces are projected to experience the most acute population ageing because these provinces are projected to have relatively lower fertility and net migration rates. The senior dependency ratio in these provinces is projected to be at or exceed 45 per cent by 2044.

The prairie provinces and the Territories are projected to experience a smaller increase in the senior dependency ratio compared to other provinces, but the ratio is still projected to rise well above current levels, particularly over the next 25 years.

Figure 2-2 Senior dependency ratio



Sources: Statistics Canada and Parliamentary Budget Officer.

3. Economic projection

Labour input, labour productivity and GDP

Labour input measures the total number of hours worked and is determined by the size of the working-age population, the employment rate and the average number of hours worked.

Labour productivity measures the amount of output produced per hour worked.

Real GDP is equal to labour input multiplied by labour productivity. Potential GDP is the amount of output that the economy can produce when capital, labour and technology are at their respective trends.

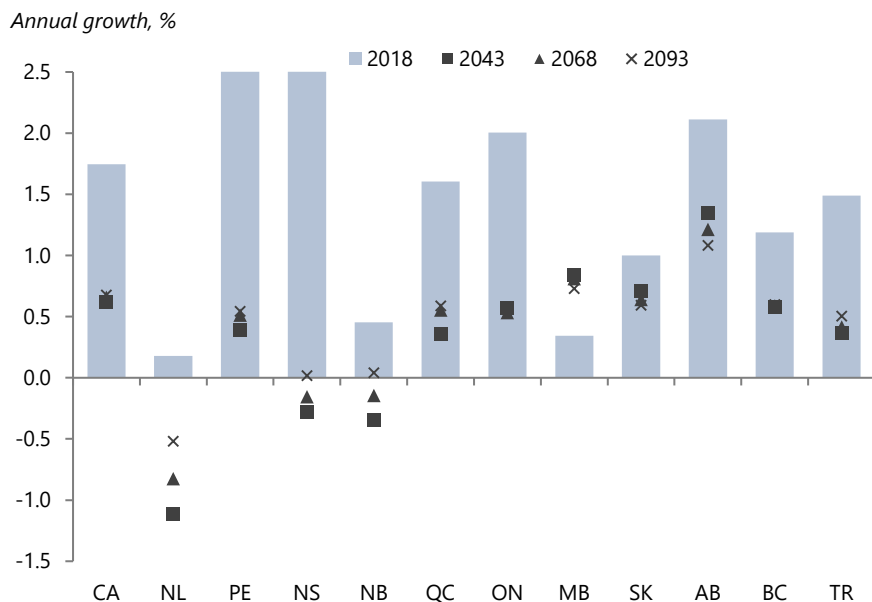
Growth in real GDP per capita is typically used to measure increases in living standards.

Over the long term, the Canadian economy is assumed to operate at its productive capacity, or potential GDP, which is determined by trends in labour input (that is, total hours worked) and labour productivity (that is, GDP per hour worked).¹³ PBO’s methodology for projecting GDP at the provincial and territorial level is detailed in our 2017 FSR.¹⁴

As a greater proportion of the population shifts into older age groups that are less likely to work, or work fewer hours, this will put downward pressure on growth in total hours worked in the economy. Consequently, growth in real GDP and real GDP per capita—a commonly used measure of average living standards—will be slower.

Population ageing will contribute to slower growth in total hours worked at the national level but the magnitude of such changes varies significantly across provinces and territories. For example, Alberta and Manitoba will see relatively less drag on economic growth from population ageing (Figure 3-1). By contrast, Newfoundland and Labrador, Nova Scotia and New Brunswick will experience significantly more drag on economic growth from population ageing.

Figure 3-1 Growth in total hours worked

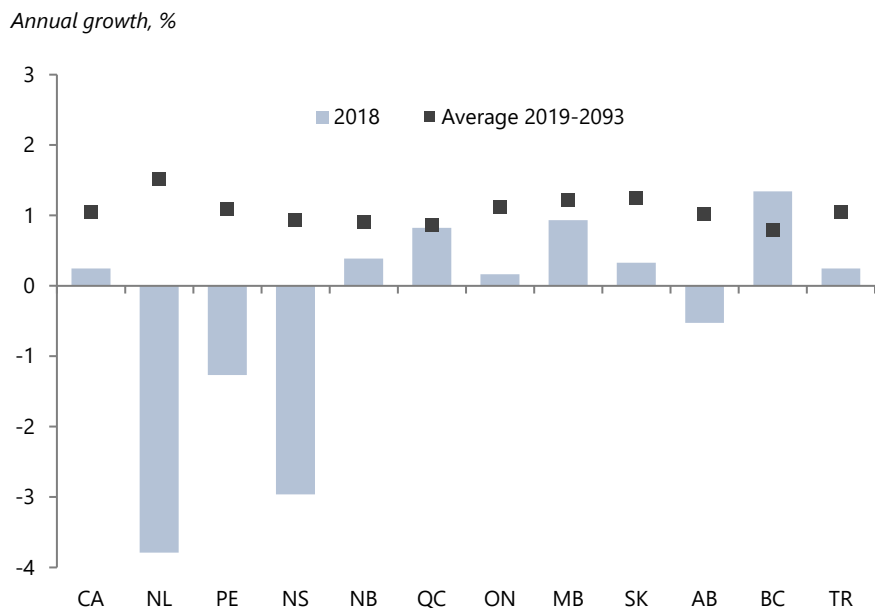


Sources: Statistics Canada and Parliamentary Budget Officer.

Nationally, we project labour productivity growth to converge to its steady-state rate of 1.1 per cent over the long term, which is in line with historical average annual growth in labour productivity observed over 1982 and 2018 (1.1 per cent).

For the provinces and territories, we project growth in labour productivity based on their respective historical average growth rates (over 1982 to 2018) but make adjustments to ensure consistency with our national projection. Newfoundland and Labrador and Saskatchewan are projected to have the fastest productivity growth over the next 75 years while Quebec and British Columbia will experience the slowest growth (Figure 3-2).

Figure 3-2 Labour productivity growth

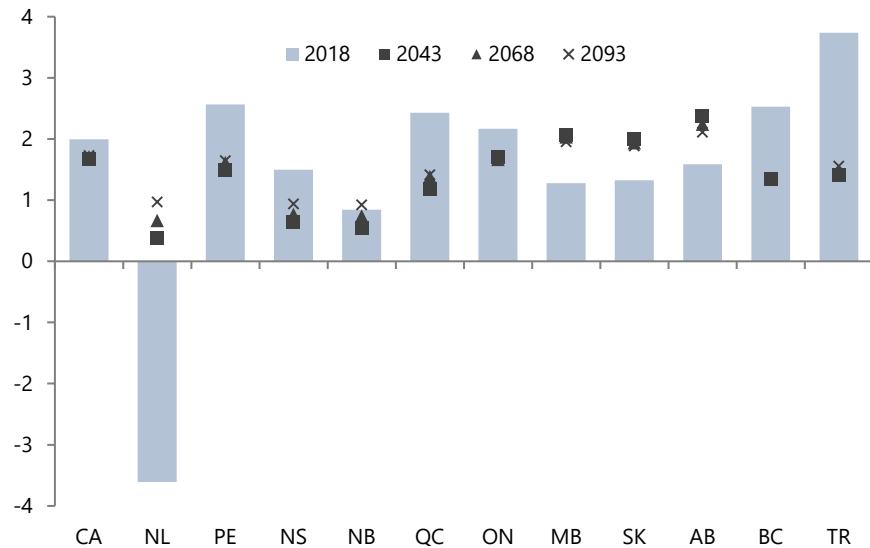


Sources: Statistics Canada and Parliamentary Budget Officer.

PBO projects that real GDP growth in Canada will slow to 1.7 per cent annually, on average, over the long term (Figure 3-3). The relative profile of real GDP growth across provinces and territories over the projection horizon primarily reflects differences in growth in total hours worked. By 2068, we project real GDP growth to range from 0.7 per cent in Newfoundland and Labrador to 2.2 per cent in Alberta.

Figure 3-3 Real GDP growth

Annual growth, %



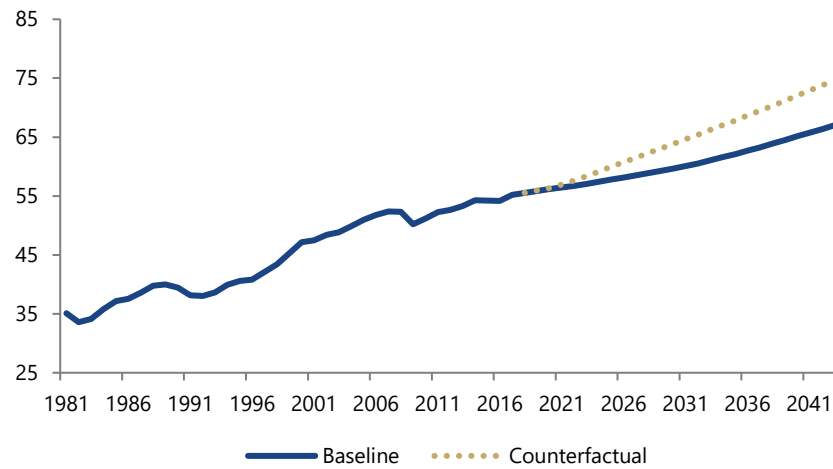
Sources: Statistics Canada and Parliamentary Budget Officer.

Growth in real GDP per capita—typically used to measure increases in living standards—is projected to average 1.0 per cent annually, which is 0.3 percentage points lower than the average growth observed over 1982 to 2018. This projected slowdown reflects slower growth in total hours worked. With total hours worked projected to ultimately grow in line with the population over the long term, growth in real GDP per capita will ultimately be driven by labour productivity.

To illustrate the impact on real GDP per capita of slower growth in hours worked, we compare our baseline projection to a counterfactual scenario in which growth in total hours worked relative to the population grows at its historical average observed over 1982 to 2018 (Figure 3-4). By 2043, we project that real GDP per capita under our baseline would be \$7,600 or 10 per cent lower compared to this no-ageing scenario.

Figure 3-4 Real GDP per capita

Chained 2012 dollars, thousands



Sources: Statistics Canada and Parliamentary Budget Officer.

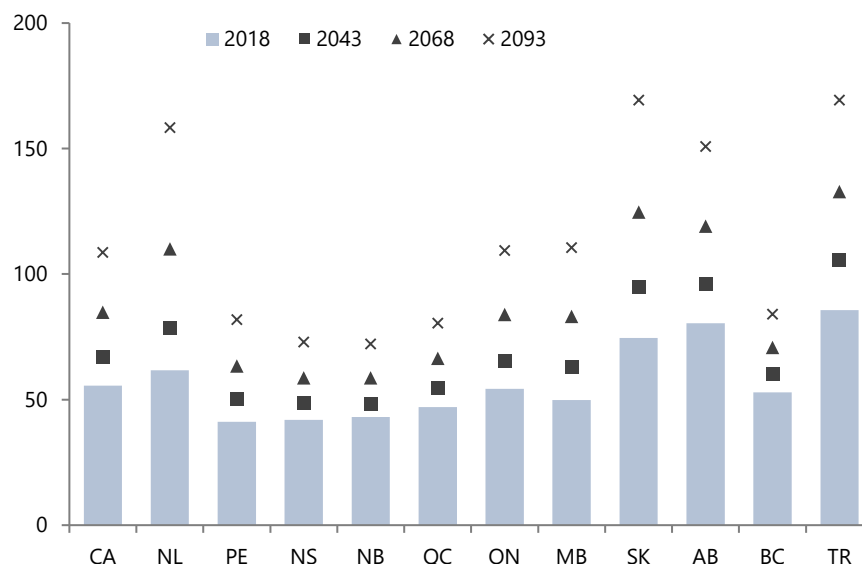
Note: The projection period covers 2019 to 2043. In the counterfactual scenario, growth in total hours worked relative to the population is maintained at its 1982 to 2018 historical average. Growth in labour productivity is the same under both projections.

Reflecting the length of the projection period and despite relatively small differences in growth rates, real GDP per capita levels are projected to diverge significantly across provinces and territories. Alberta, Newfoundland and Labrador, Saskatchewan and the Territories are projected to enjoy the highest living standards over the long term while Nova Scotia, New Brunswick and Quebec are projected to have the lowest (Figure 3-5).

For provinces, real GDP per capita is an important contributor to their fiscal capacity (which is closely linked to income per capita) that determines their eligibility for Equalization payments from the federal government. Provinces with fiscal capacity below the national standard would be eligible to receive Equalization, while those provinces above the national standard would be ineligible.

Figure 3-5 Real GDP per capita

Chained 2012 dollars, thousands



Sources: Statistics Canada and Parliamentary Budget Officer.

While our long-term assumptions for inflation are unchanged from our 2018 FSR, we have revised down our long-term assumptions for interest rates. This downward revision results from our reassessment of the (nominal) neutral interest rate (down 50 basis points from 3.0 per cent to 2.5 per cent), as well as revised estimates of the term premia for long-term government bonds.

In nominal terms, we assume that the 3-month treasury bill rate will be 2.45 per cent over the long term (revised down by 50 basis points). The 10-year Government of Canada benchmark and long-term (maximum 30 year maturity) bond rates are assumed to be 3.25 per cent and 3.65 per cent (revised down by 75 and 65 basis points), respectively.

In addition, we have revised our assumptions of the spreads between federal and subnational interest rates.¹⁵ Provincial interest rate spreads are approximately 20 basis points higher, on average, compared to our previous assumptions. Despite upward revisions to provincial spreads, downward revisions to federal rates result in lower subnational effective interest rates compared to our 2018 FSR (50 basis points lower on average).

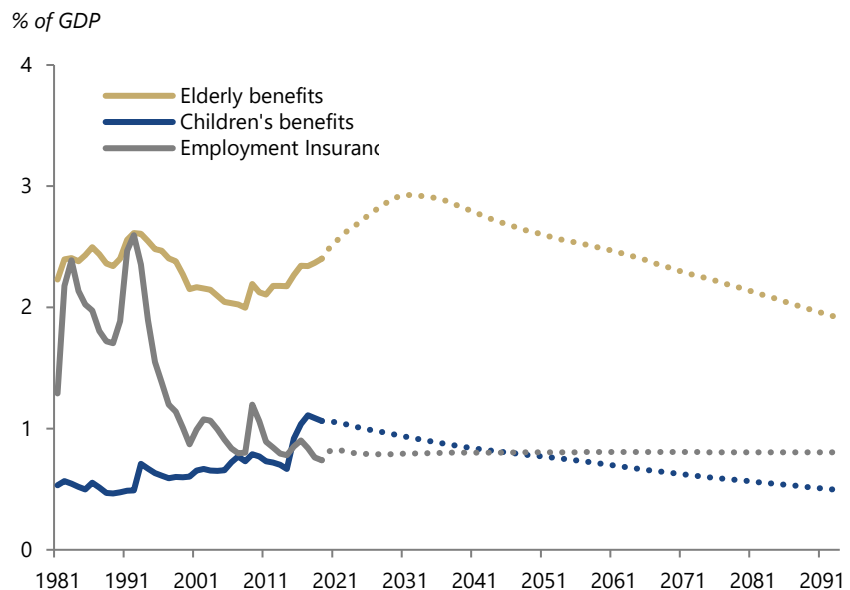
Downward revisions have resulted in some jurisdictions (the federal government and subnational governments in Alberta and Manitoba) having effective interest rates that are lower than their nominal GDP growth rates over the long term. As noted in previous FSRs, the difference between the effective interest rate and GDP growth rate plays a key role in debt-to-GDP dynamics. In cases where the interest rate is lower than the growth rate, the

debt ratio would remain stable over the long term even under permanent primary deficits.¹⁶

4. Federal government

Current fiscal policy at the federal level is sustainable over the long term. This reflects sizeable medium-term primary surpluses and declining long-term spending (relative to the size of the economy) on children's benefits (Figure 4-1) and the Canada Social Transfer (CST), under status quo policies.

Figure 4-1 Major transfers to individuals: federal government



Sources: Statistics Canada and Parliamentary Budget Officer.

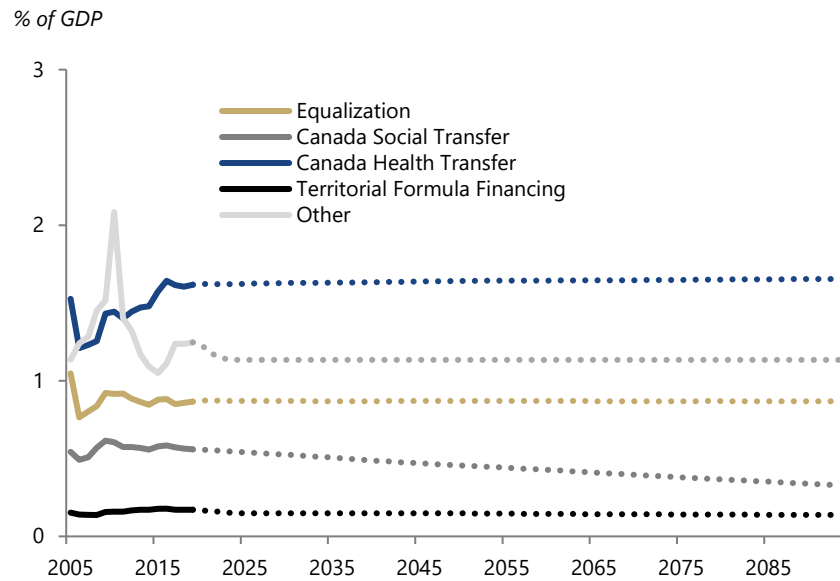
Note: The projection period covers 2019 to 2093.

Federal spending on elderly benefits amounted to 2.4 per cent of GDP in 2018. As the last of the baby-boom cohort reaches 65 years of age, we project that spending on elderly benefits will continue to increase, peaking at 2.9 per cent of GDP in 2031. However, given that benefit payments are indexed to inflation only, spending on elderly benefits is ultimately projected to decline as these cohorts age and pass on.

Children's benefits reached a peak of 1.1 per cent of GDP in 2017. However, given that the under-18 age group will comprise a smaller share of the total population over the coming decades and that benefit payments are indexed only to inflation, children's benefits will decline relative to the size of the economy. By the end of our projection, children's benefits are projected to decline to 0.5 per cent of GDP.

Federal major transfers to other levels of government are also projected to decline slightly between 2020 and 2093, from 4.5 per cent of GDP to 4.1 per cent of GDP (Figure 4-2). The Canada Health Transfer (CHT) and Equalization are legislatively linked to growth in the national economy. However, the Canada Social Transfer (CST) is not—it is legislated to increase by 3 per cent per year, which is 0.7 percentage points lower, on average, than our projected growth in nominal GDP. We project that CST payments will decline from 0.6 per cent of GDP in 2018 to 0.3 per cent of GDP by 2093.

Figure 4-2 Major transfers to provinces: federal government

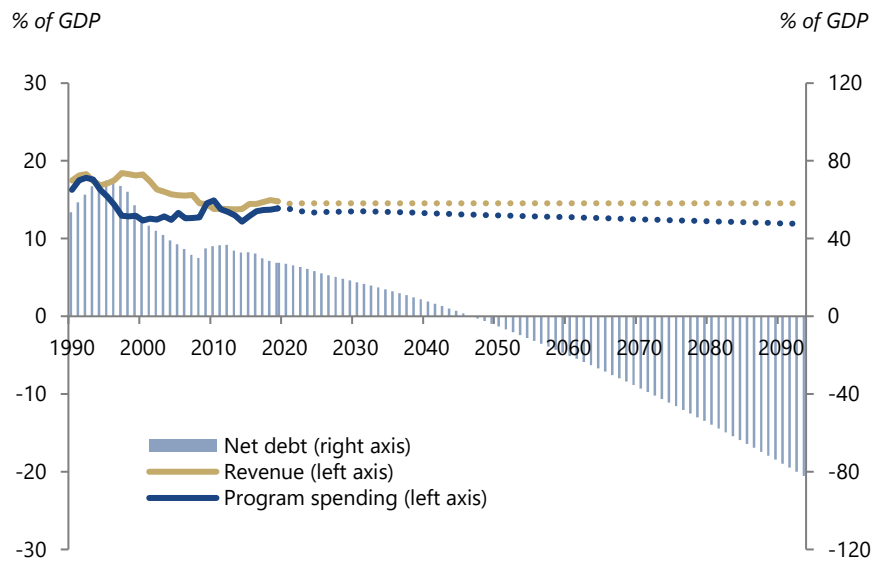


Sources: Statistics Canada and Parliamentary Budget Officer.

Note: The projection period covers 2019 to 2093.

Given these projected declines in transfers to individuals and other governments, we project that revenues will continue to exceed program spending over the projection period, resulting in continuously increasing primary surpluses (Figure 4-3). Based on our projection, federal government net debt, currently 28.5 per cent of GDP (2018), would be eliminated by 2047.

Figure 4-3 Fiscal projection summary: federal government



Sources: Statistics Canada and Parliamentary Budget Officer.

Note: The projection period covers 2019 to 2093.

Fiscal sustainability assessment

Current fiscal policy at the federal level is sustainable over the long term. To maintain net debt at its current (2018) level of 28.5 per cent of GDP over the long term, PBO estimates that the federal government could permanently increase spending or reduce taxes by 1.8 per cent of GDP (\$41 billion in current dollars) while maintaining fiscal sustainability.

Our qualitative assessment that current federal fiscal policy is sustainable over the long term is unchanged across the alternative demographic, economic and fiscal policy assumptions considered (see Table A-1 in Appendix A).

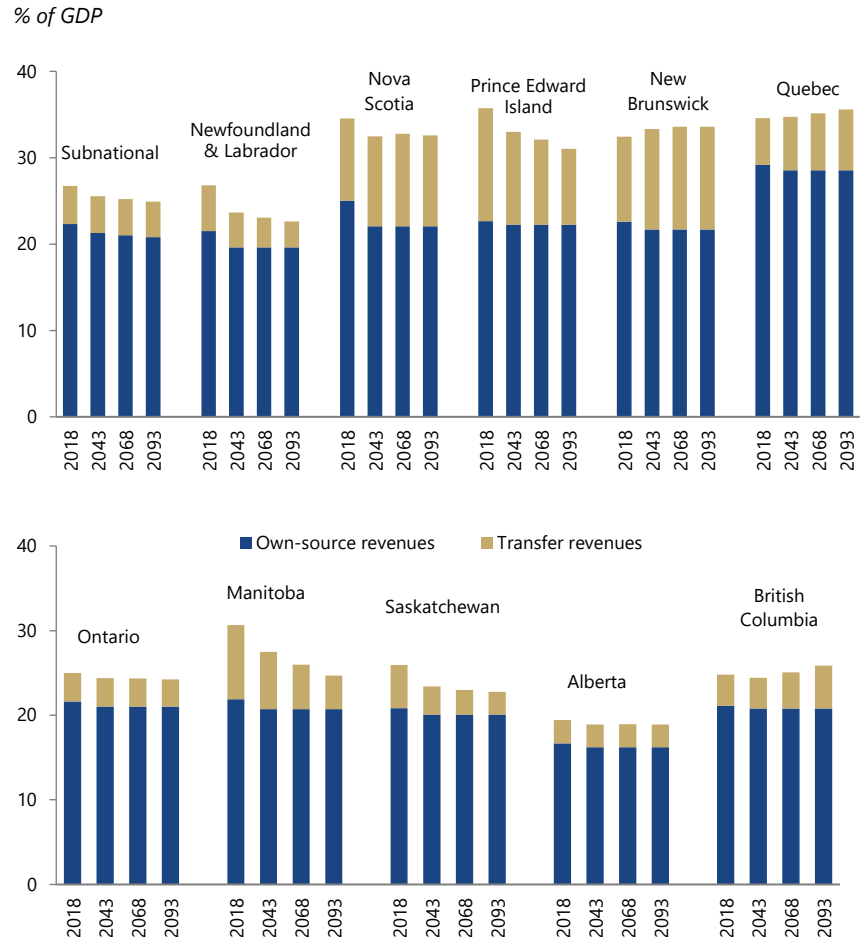
Our estimate of federal fiscal room has been revised up from 1.4 per cent of GDP in our 2018 assessment. This primarily reflects downward revisions to our long-term assumptions for interest rates.¹⁷

5. Subnational governments

In contrast to the federal government, subnational governments will face ever-increasing health care costs due to population ageing that will not be dampened or offset by lower inflation-adjusted spending per beneficiary, as is the case for Old Age Security. Reduced federal transfers (relative to the size of their economies), also contribute to the deterioration in subnational government finances over the long term.¹⁸

Provinces derive their revenues from own sources, which we assume to grow in line with provincial nominal GDP over the long term, and federal transfers. Consequently, total revenues tend to rise or fall as a share of provincial GDP in our projection because of federal transfers, such as Equalization, CHT and CST (Figure 5-1). The Territories, however, derive most of their revenues from federal transfers, which given their structure, results in increased transfers (relative to territorial GDP) over the long term.¹⁹

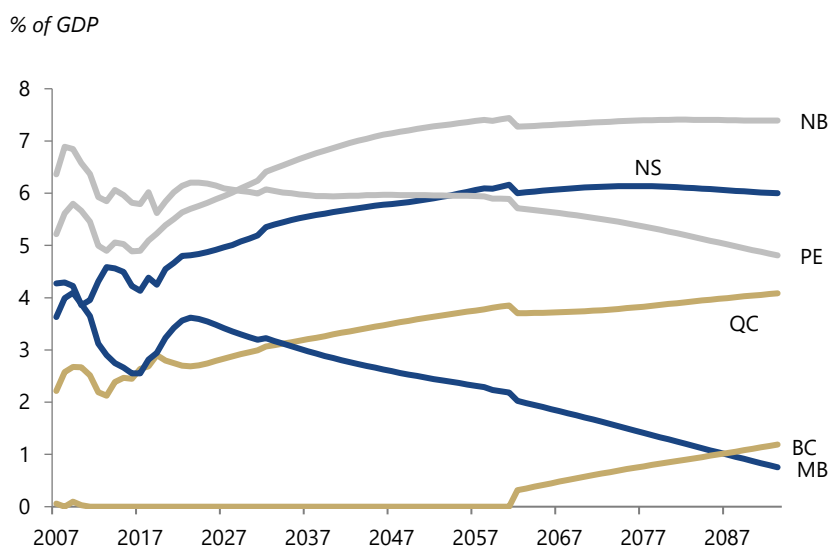
Figure 5-1 Subnational government revenues: provinces



Sources: Statistics Canada and Parliamentary Budget Officer.

Equalization payments help explain part of these long-term trends in transfer revenue, because they are determined according to each province’s fiscal capacity relative to the Canadian average. As fiscal disparities widen, the amount of Equalization payments received by provinces with lower-than-average per capita incomes, such as Quebec and British Columbia, will increase relative to their GDP over the long-term. In contrast, provinces with relatively higher per capita income growth will see decreases in Equalization payments relative to their GDP, such as Prince Edward Island and Manitoba (Figure 5-2).

Figure 5-2 Equalization payments: receiving provinces



Sources: Statistics Canada and Parliamentary Budget Officer.

Note: The projection period covers 2019 to 2093.

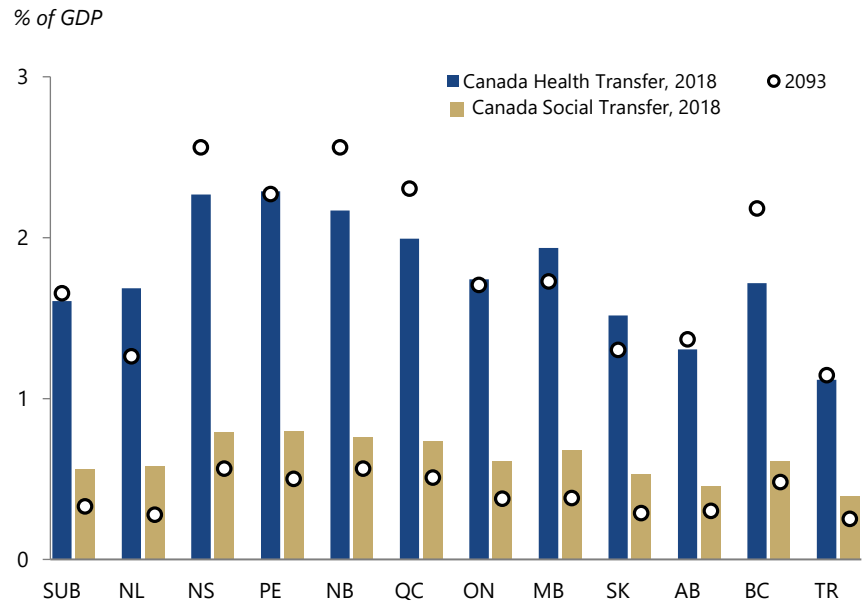
Under current legislation, the Equalization envelope grows in line with nominal GDP at the national level. Therefore, the amounts transferred to subnational governments can be either above or below the necessary amounts to bring all provinces to the national standard. On balance, Equalization payments would be lower if the nominal GDP growth escalator were not in place over our 75-year projection horizon.

Similar to Equalization, CHT and CST payments do not increase uniformly across the provinces when measured relative to their nominal GDP.

Relative to the size of their economies, CHT payments will increase in provinces that have lower growth in nominal GDP per capita, compared to the national average (namely, Quebec, New Brunswick and Nova Scotia). Conversely, CHT payments will decrease relative to GDP in several other provinces (and the Territories combined) that are projected to have growth in nominal GDP per capita above the national average (Figure 5-3).

The legislated annual growth of CST payments (3 per cent) is lower, on average, than the national nominal GDP growth over the long term. Consequently, all provinces and territories will receive lower CST payments relative to GDP over the long term.

Figure 5-3 Canada Health Transfer and Canada Social Transfer



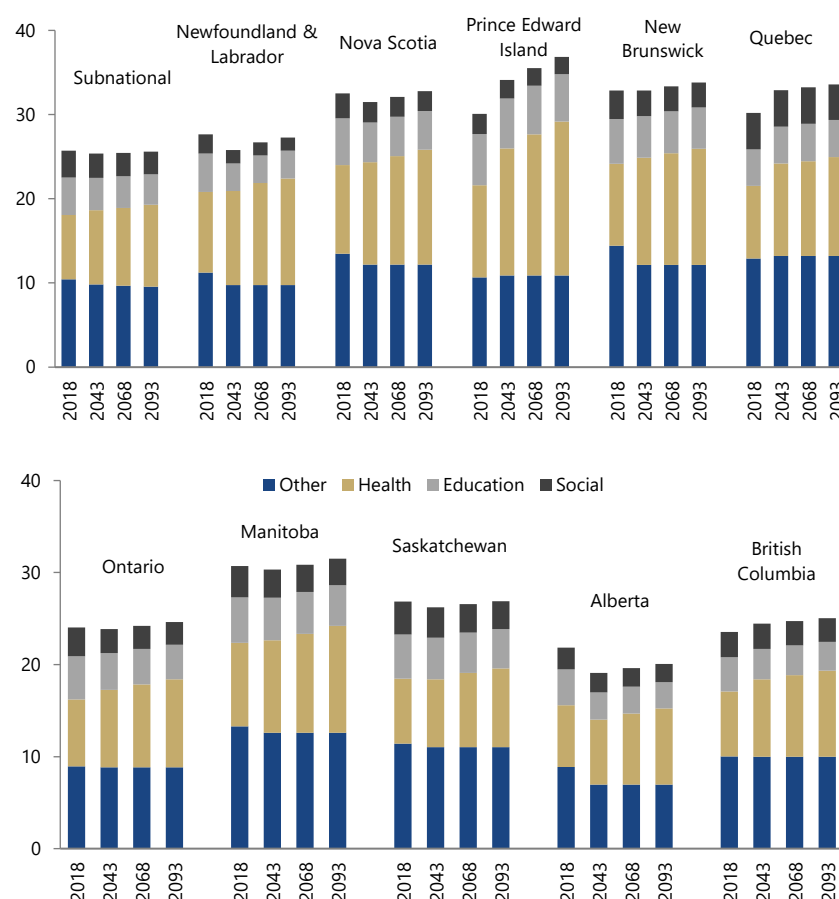
Sources: Statistics Canada and Parliamentary Budget Officer.

Note: SUB refers to the consolidated subnational government sector.

Subnational government program spending is categorized into four main categories: health, education, social and other (Figure 5-4).²⁰ Health spending makes up a large portion of provincial and territorial program spending and all provinces and territories will face rising health care costs due to population ageing. However, based on our projections, these cost pressures will not be spread uniformly across the country, as costs reflect the composition of demographics and current provincial policies.²¹

Figure 5-4 Subnational government program spending: provinces

% of GDP



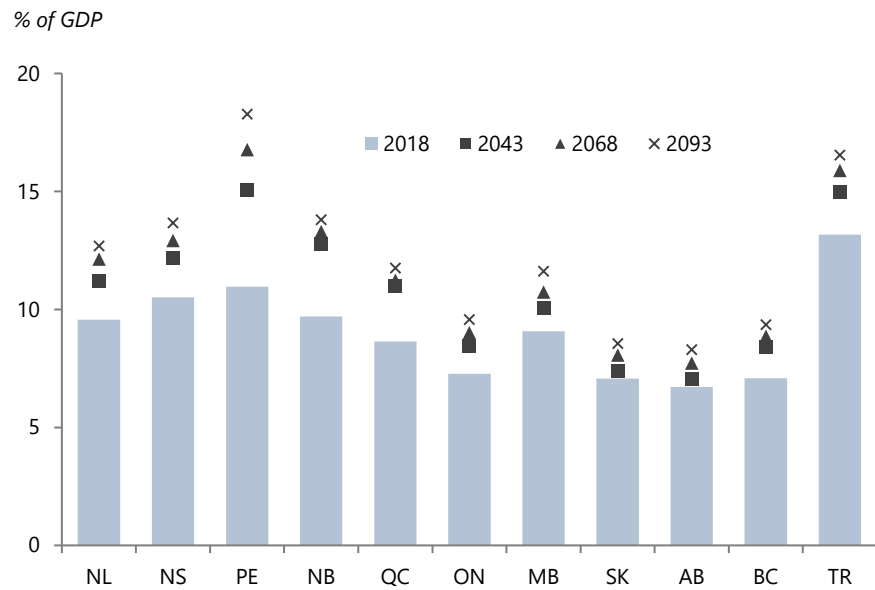
Sources: Statistics Canada and Parliamentary Budget Officer.

Subnational spending on health care varies significantly across provinces and territories. In 2018, health care spending ranged from a low of 6.7 per cent of GDP in Alberta, to a high of 13.2 per cent of GDP in the Territories (Figure 5-5).

Over the long term, we project that Prince Edward Island will experience the largest (percentage-point) increase in health care spending, approximately 7.3 percentage points of GDP. This reflects Prince Edward Island's relatively higher spending on older age groups combined with above-average increases in the share of the elderly in their population.

In addition, given that the federal CHT envelope is limited to growth in nominal GDP, we project that the ratio of the federal CHT to subnational health spending will decline from 20.9 per cent in 2018 to 17.0 per cent by 2093.

Figure 5-5 Health spending: subnational governments



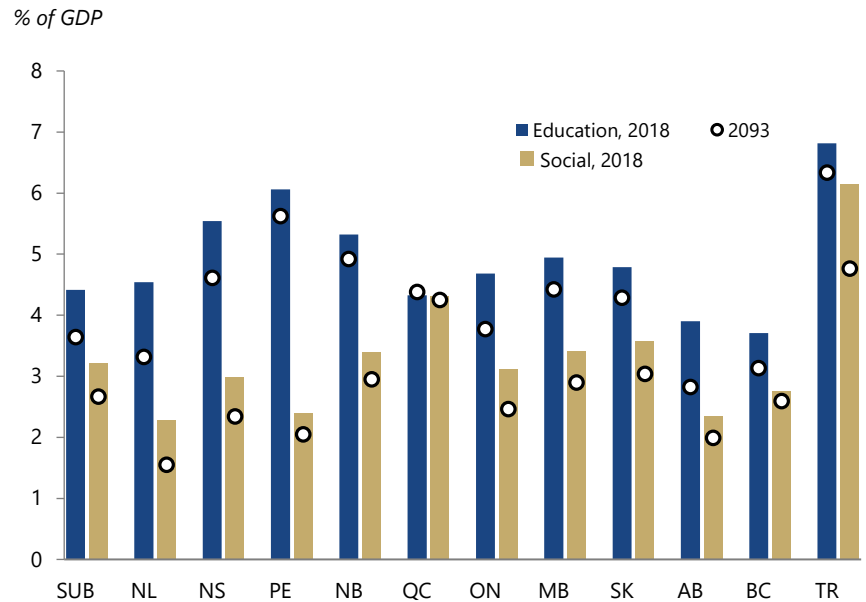
Sources: Statistics Canada; Canadian Institute for Health Information; and Parliamentary Budget Officer.

Education and social services spending by subnational governments are targeted to younger age groups in the population—children ages 5 to 24 for education and the working-age population aged 15 to 65 for social services.

Over the long term, as the share of these age groups in the population declines, subnational spending on these programs is projected to grow more slowly than their economies (Figure 5-6). That said, long-term savings from education and social spending are insufficient to offset increases in their health care costs.

In addition to the decreasing share of these groups, the federal CST envelope is limited to annual growth of 3 per cent. Consequently, we project that the ratio of the federal CST to subnational education and social services spending will decline from 7.4 per cent in 2018 to 5.2 per cent by 2093.

Figure 5-6 Education and social spending: subnational governments

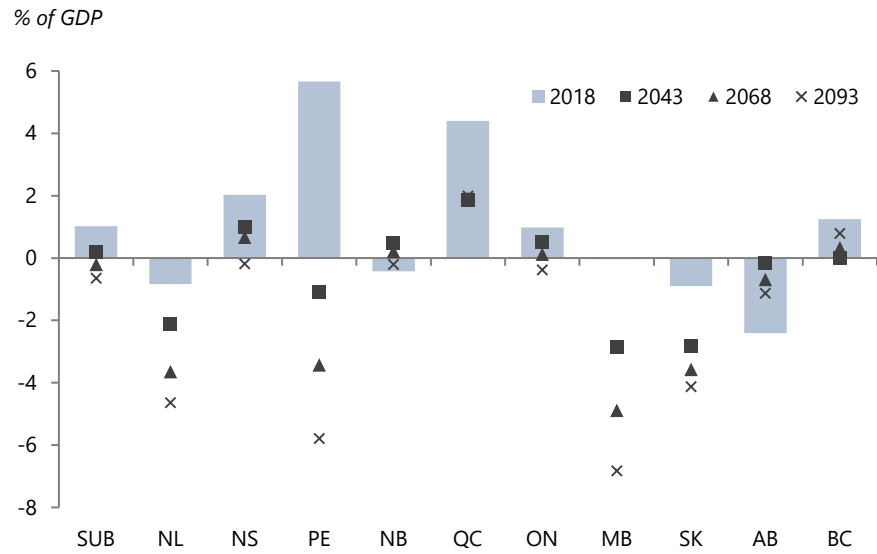


Sources: Statistics Canada and Parliamentary Budget Officer.

Note: SUB refers to the consolidated subnational government sector.

Primary balances in most provinces and territories are projected to deteriorate over the long term as population ageing puts upward pressure on health care spending. For some provinces (Prince Edward Island and Manitoba), this dynamic is exacerbated by a reduction in federal transfers relative to the size of their economies as they are projected to have a higher growth in nominal GDP per capita than the national average over the long term. Under current policy, we project that these provinces will see the largest deterioration in their primary balance (Figure 5-7).²²

Figure 5-7 Primary balances: subnational governments



Sources: Statistics Canada and Parliamentary Budget Officer.

Note: SUB refers to the consolidated subnational government sector. The territorial subnational government primary balance is projected to decrease from -4.8 per cent of GDP in 2018 to -13.3 per cent in 2093.

Over the long term, primary deficits, combined with rising public debt charges, lead to excessive debt accumulation in some provinces and the Territories. Net debt in five provinces and in the Territories is projected to exceed 100 per cent of GDP by 2093. However, the remaining five provinces, and the subnational government sector as a whole, will remain under 100 per cent, and in some cases, below zero per cent (Table 5-1).

Table 5-1 Net debt: subnational governments

	<i>% of GDP</i>			
	2018	2043	2068	2093
Subnational	23.9	21.2	30.3	47.0
Newfoundland and Labrador	34.1	89.3	240.9	463.2
Nova Scotia	26.8	3.7	-7.6	-9.4
Prince Edward Island	30.1	8.1	73.9	211.2
New Brunswick	31.2	54.2	85.2	125.2
Quebec	35.5	14.4	-21.1	-69.3
Ontario	32.3	16.5	14.8	22.1
Manitoba	33.3	86.3	191.8	342.5
Saskatchewan	12.4	65.2	152.4	253.6
Alberta	5.3	15.5	28.9	52.0
British Columbia	3.9	5.8	13.5	4.4
Territories	-12.6	231.7	599.6	1027.6

Sources: Statistics Canada and Parliamentary Budget Officer.

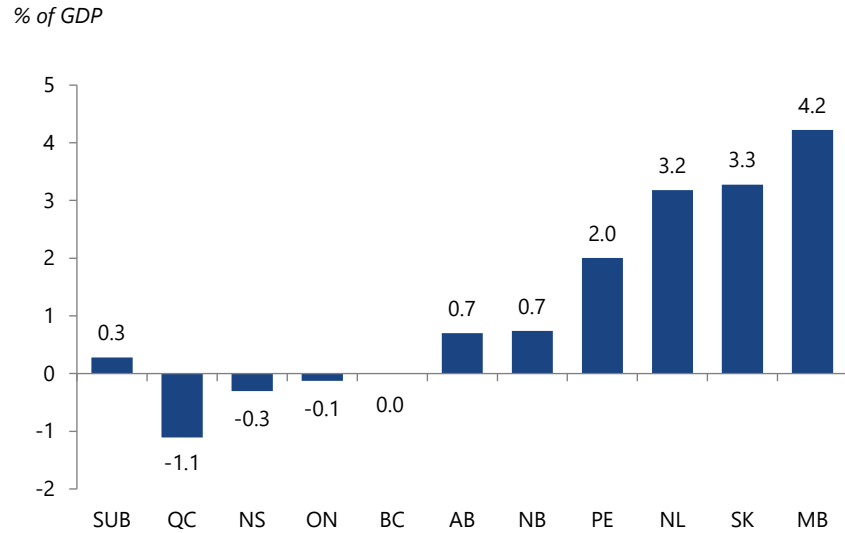
Fiscal sustainability assessment

For the subnational government sector as a whole, current fiscal policy is not sustainable over the long term (Figure 5-8). We estimate that permanent tax increases or spending reductions amounting to 0.3 per cent of GDP (\$6 billion in current dollars) would be required to stabilize the consolidated subnational government net debt-to-GDP ratio at its current level of 23.9 per cent of GDP over the long term.

We estimate that current fiscal policy in four provinces is sustainable over the long term: Quebec, Nova Scotia, Ontario and British Columbia. We estimate these provinces have fiscal room to increase spending or reduce taxes, ranging from 1.1 per cent of provincial GDP in Quebec to 0.1 per cent of GDP in Ontario.

All other provinces and territories have current fiscal policies that are not sustainable over the long term. Based on our estimates, the amount of policy actions required to achieve fiscal sustainability ranges from 0.7 per cent of provincial GDP in Alberta to 11.4 per cent of territorial GDP for the Territories.

Figure 5-8 Subnational government fiscal gap estimates

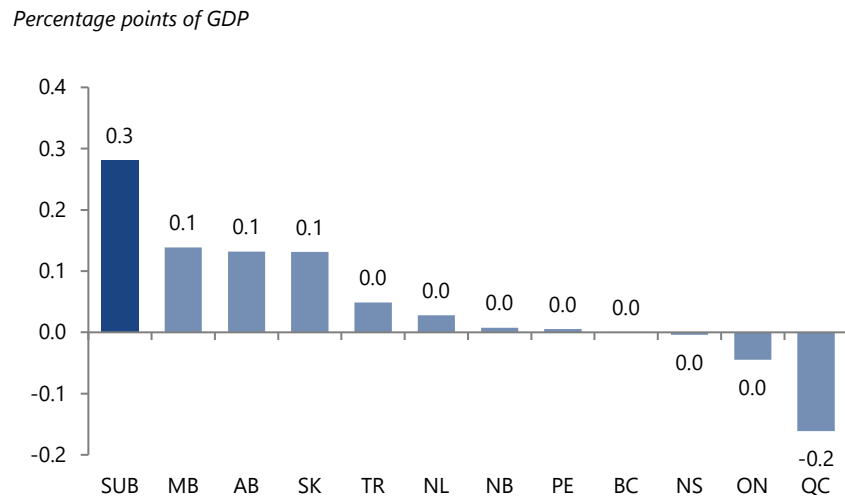


Source: Parliamentary Budget Officer.

Note: SUB refers to the consolidated subnational government sector.
The Territories combined have a fiscal gap of 11.4 per cent of territorial GDP.

We estimate that Manitoba, Saskatchewan and Alberta combined contribute 0.4 percentage points to the subnational fiscal gap (Figure 5-9).

Figure 5-9 Contributions to the consolidated subnational fiscal gap



Source: Parliamentary Budget Officer.

Note: SUB refers to the consolidated subnational government sector.

Our estimate of the subnational fiscal gap has been revised down from 0.8 per cent of GDP in our 2018 assessment. This revision is mainly due to announced changes in fiscal policy by provincial governments in Ontario and Alberta. Changes to fiscal policy in Nova Scotia contributed to a lesser extent. This demonstrates that policy decisions can have significant cumulative impacts over the long term and underlines the benefits of early policy actions.

To help gauge the sensitivity of our fiscal gap estimates, we consider alternative demographic, economic and fiscal policy scenarios. Our qualitative sustainability assessments for most jurisdictions are essentially unchanged across the alternative demographic, economic and fiscal policy assumptions considered (see Table A-1 in Appendix A). However, for provinces with baseline fiscal gaps at or near zero, the sustainability assessment may vary under consider alternative demographic, economic and fiscal policy scenarios.

6. Public pension plans

The Canada Pension Plan (CPP) and Quebec Pension Plan (QPP) are defined benefit public plans that provide inflation-indexed benefits for retirement, disability and survivor benefits to working Canadians. Contributions are shared equally between employees and employers.

Excess cash flows in these plans have been, and will continue to be, invested in financial markets to accumulate assets that will generate investment income to fund future cash shortfalls as the number of beneficiaries relative to contributors rises with the ageing of the population.

Our CPP and QPP projections have been updated to reflect the *30th Actuarial Report of the Canada Pension Plan* as at 31 December 2018 and the *Évaluation actuarielle du Régime de rentes du Québec* as at 31 December 2018.

Net cash flows and financial positions

Contributions to the CPP and QPP are projected to grow in line with earnings and contribution rates. Contributions to the CPP are projected to rise from 2.3 per cent of GDP in 2018 to 3.3 per cent of GDP (in Canada) by the end of our projection horizon. For the QPP, contributions are projected to increase from 3.5 per cent of GDP in 2018 to 4.9 per cent of Quebec's GDP in 2093.

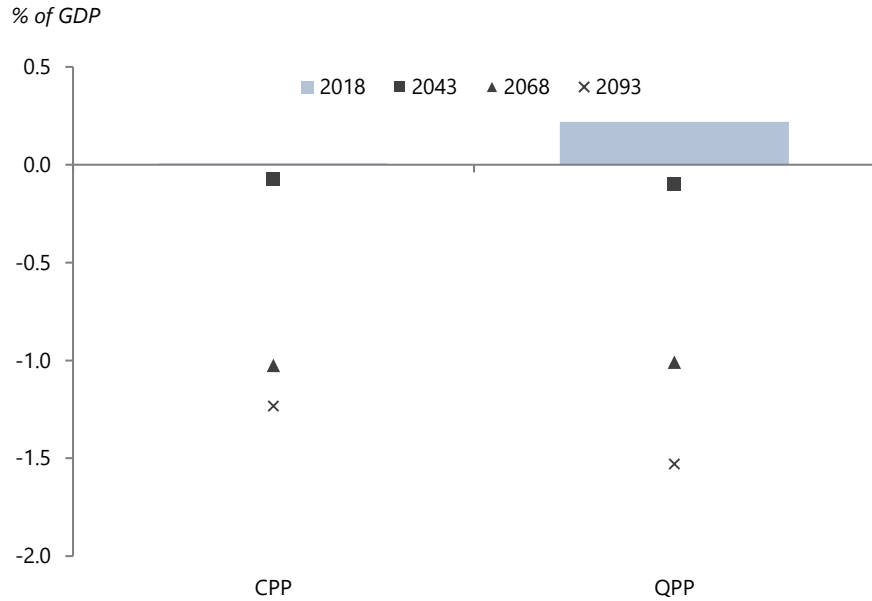
CPP and QPP expenditures are projected to grow in line with the retirement-age population, inflation and a portion of real wage growth, and will increase steadily as population ageing drives retirement benefits. CPP benefit payments are projected to double from 2.2 per cent of GDP in 2018 to 4.5 per cent by the end of the projection period. Over the same period, QPP benefits are projected to rise from 3.3 per cent of GDP to 6.4 per cent in 2093.

We have assumed that CPP and QPP administrative expenses, including investment expenses, are set equal to 1.0 per cent of their respective financial assets over the projection horizon. For the base (additional) CPP and QPP, the ultimate nominal rate of return on assets, before investment expenses, is assumed to be 6.1 (5.3) per cent.

The additional CPP and QPP benefits and contributions are combined with their base plans to project their respective financial positions over the long term. The net cash flow (that is, contributions less expenses) of the CPP is projected to rise from 0.01 per cent of GDP in 2018 to 0.39 per cent of GDP in 2025, as the additional contributions exceed the additional expenditures, and decline thereafter to a deficit of 1.23 per cent of GDP by the end of the

projection horizon (Figure 6-1). The net cash flow of the QPP is projected to increase from 0.22 per cent of GDP in 2018 to 0.53 per cent of GDP in 2025 and then decrease to a deficit of 1.53 per cent of GDP in 2093.

Figure 6-1 Net cash flow (contributions less expenses): CPP and QPP

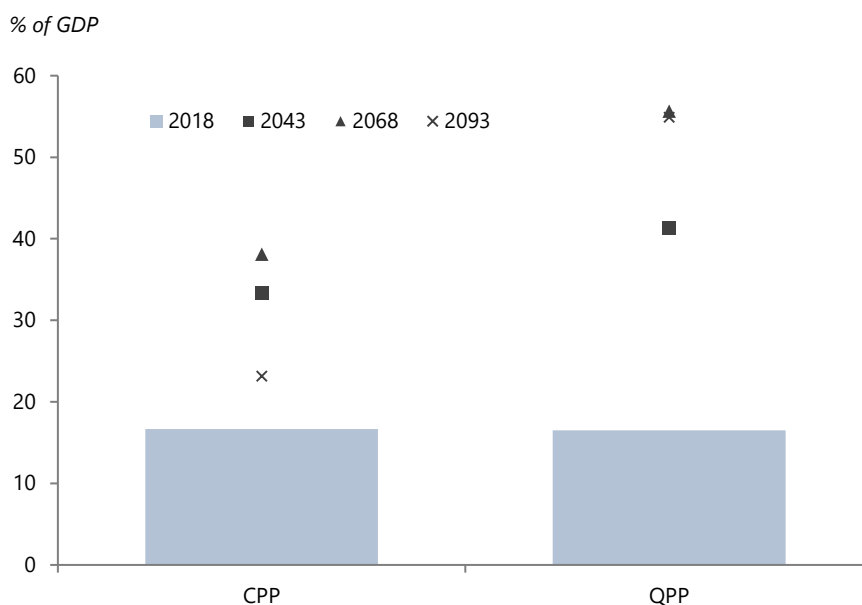


Sources: Statistics Canada and Parliamentary Budget Officer.

Note: The CPP (QPP) net cash flow is expressed relative to GDP in Canada (Quebec).

Although CPP and QPP contributions are projected to fall short of their plans' expenses over the long term, the net asset positions of the CPP and QPP are projected to increase and remain above their current levels. Asset accumulation occurs because the rate of return on plan assets is more than sufficient to generate enough investment income to cover the annual cash flow deficits. The net asset position of the CPP is projected to increase from 16.7 per cent of GDP in 2018 to 23.1 per cent of GDP by the end of the projection horizon (Figure 6-2). The QPP net asset position is projected to rise from 16.5 per cent of GDP in 2018 to 54.9 per cent of GDP in 2093.

Despite the QPP's larger cash flow deficit over the long term, its net asset position is projected to exceed that of the CPP (as a share of GDP), even though the asset return assumptions are the same for both plans. This is due to the QPP's higher *relative* rate of return. That is, the rate of return of its assets relative to nominal GDP. Since Quebec's GDP is projected to grow more slowly than the Canadian GDP, its relative rate of return is higher, which results in additional asset-to-GDP accumulation for a given net cash flow.

Figure 6-2 Net asset positions: CPP and QPP

Sources: Statistics Canada and Parliamentary Budget Officer.

Note: The CPP (QPP) net asset position is expressed relative to GDP in Canada (Quebec).

Fiscal sustainability assessment

Fiscal gaps for the CPP and QPP represent the immediate and permanent change in contributions and/or benefits that returns their net asset-to-GDP ratios to their current (2018) level after 75 years.

The current structure of the CPP and QPP is sustainable over the long term. We estimate the fiscal gaps for the CPP and QPP to be, respectively, 0.0 per cent of GDP (in Canada) and -0.2 per cent of GDP (in Quebec). Under the current structure of the CPP, projected contributions and benefits are sufficient to ensure that, over the long term, the net asset-to-GDP position remains close to its initial value. In the case of the QPP, contributions could be reduced, or benefits increased, by 0.2 per cent of GDP, while maintaining fiscal sustainability.

Our qualitative assessment that the CPP is sustainable over the long term is reversed under the older population scenario and the lower interest rate (rate of return) scenario. However, our qualitative assessment that the QPP is sustainable is unchanged across the alternative demographic and economic scenarios considered (see Table A-1 in Appendix A).

Our fiscal gap estimate for the CPP has been revised slightly from -0.1 per cent of GDP for the CPP in our 2018 assessment. This slight revision reflects lower rate of return assumptions. In the case of QPP, upward revisions to

projected net cash flows offset the lower rate of return, leaving its fiscal gap estimate unchanged from our 2018 assessment.

Appendix A: Sensitivity analysis

To help gauge the sensitivity of our baseline fiscal gaps, we consider alternative demographic, economic and fiscal policy scenarios. Fiscal gaps for each jurisdiction under our baseline and demographic, economic and fiscal policy scenarios are expressed as a percentage of GDP in Table A-1.

The following provides additional detail for the alternative scenarios considered.

Alternative demographic projections

PBO projects the fiscal gap under three alternative demographic scenarios: (1) an older population scenario with lower fertility, higher life expectancy and lower immigration rates; (2) a younger population scenario with higher fertility, lower life expectancy, and higher immigration rates; and (3) an interprovincial migration scenario based on more recent historical trends.

Alternative economic projections

To assess the sensitivity of the economic assumptions, we construct alternative projections for real GDP growth (± 0.5 percentage points) and interest rates (± 50 basis points), beginning in 2026. Alternative real GDP growth projections are constructed using different assumptions for labour productivity growth.

Alternative fiscal policy assumptions

In terms of alternative fiscal policy assumptions, we limit our focus to alternative health spending projections and alternative endpoint assumptions for government debt ratios.

In the baseline subnational government projections, we assume that growth in health care spending is determined by income growth (nominal GDP) and growth due to changes in the age structure of the population. Our alternative health care spending projections include excess cost growth in health care spending (that is, growth in excess of nominal GDP and growth due to population ageing) of ± 0.25 percentage points, beginning in 2023.

Our baseline fiscal gap is estimated based on an assumption that the ratio of net debt-to-GDP converges to its current level in 75 years. We consider two alternative endpoint scenarios for the federal government and subnational governments: 0 and 100 per cent of GDP.

Table A-1 Fiscal gap estimates under alternative scenarios*% of GDP*

Scenario	Federal	Subnational	Newfoundland and Labrador	Nova Scotia	Prince Edward Island	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Territories	CPP	QPP
Baseline	(1.8)	0.3	3.2	(0.3)	2.0	0.7	(1.1)	(0.1)	4.2	3.3	0.7	0.0	11.4	0.0	-0.2
Older population	(1.4)	0.5	3.5	0.0	2.7	1.0	(0.7)	0.1	4.7	3.3	0.9	0.2	11.2	0.1	0.0
Younger population	(2.4)	(0.1)	2.8	(0.6)	1.4	0.5	(1.7)	(0.4)	3.6	3.2	0.4	(0.2)	11.6	(0.2)	(0.5)
Interprovincial immigration	(1.8)	0.3	3.1	(0.1)	2.1	0.8	(1.1)	(0.1)	4.2	3.2	0.7	0.1	12.2	0.0	(0.2)
Higher GDP growth	(2.5)	0.3	3.2	(0.3)	2.2	0.7	(1.2)	(0.2)	4.3	3.3	0.7	0.0	11.7	0.0	(0.2)
Lower GDP growth	(1.1)	0.3	3.2	(0.3)	1.8	0.8	(1.0)	(0.1)	4.1	3.2	0.7	(0.0)	11.0	0.0	(0.2)
Higher interest rates	(1.6)	0.4	3.3	(0.2)	1.9	1.0	(0.8)	0.0	4.3	3.3	0.7	0.1	11.2	(0.1)	(0.3)
Lower interest rates	(2.1)	0.2	3.1	(0.4)	2.1	0.5	(1.4)	(0.3)	4.2	3.3	0.7	(0.1)	11.6	0.1	(0.1)
Higher health spending growth	(1.8)	1.1	4.0	0.7	3.5	1.7	(0.2)	0.7	5.2	4.0	1.4	0.8	11.6	N/A	N/A
Lower health spending growth	(1.8)	(0.4)	2.4	(1.2)	0.7	(0.1)	(1.9)	(0.9)	3.3	2.6	0.0	(0.7)	11.2	N/A	N/A
0% debt-to-GDP endpoint	(1.3)	0.6	3.5	(0.1)	2.3	1.0	(0.7)	0.3	4.7	3.5	0.8	0.1	11.2	N/A	N/A
100% debt-to-GDP endpoint	(3.0)	(0.6)	2.7	(0.9)	1.2	0.2	(1.7)	(1.0)	3.3	2.1	(0.7)	(1.0)	10.2	N/A	N/A

Source: Parliamentary Budget Officer.

Appendix B: Fiscal gap definition

A government's budget balance BB is defined as $BB_t = PB_t - i_t \cdot D_{t-1}$, where PB is the primary balance (revenues minus program spending) and i is the effective rate on government debt D . Government debt accumulates according to $D_t = (1 + i_t) \cdot D_{t-1} - PB_t$.

We calculate the fiscal gap over finite horizons under the assumption that the endpoint debt-to-GDP ratio d^* at some point k periods (75 years) in the future is equal to the current debt-to-GDP ratio.

$$D_t = \prod_{i=1}^k \left(\frac{1}{1+i_{t+i}} \right) \cdot d^* \cdot \bar{Y}_{t+k} + \sum_{i=1}^k \prod_{j=1}^i \left(\frac{1}{1+i_{t+j}} \right) \cdot (\overline{PB}_{t+i} + \Delta \cdot \bar{Y}_{t+i})$$

$$\Delta = \frac{D_t - \prod_{i=1}^k \left(\frac{1}{1+i_{t+i}} \right) \cdot d^* \cdot \bar{Y}_{t+k} - \sum_{i=1}^k \prod_{j=1}^i \left(\frac{1}{1+i_{t+j}} \right) \cdot \overline{PB}_{t+i}}{\sum_{i=1}^k \prod_{j=1}^i \left(\frac{1}{1+i_{t+j}} \right) \cdot \bar{Y}_{t+i}}$$

In the case where interest rates and GDP growth (g) are constant, the fiscal gap reduces to the following:

$$\Delta = \left(\frac{i-g}{1+g} \right) \cdot \left[\frac{D_t}{Y_t} - \left(\frac{1+g}{1+i} \right)^k \cdot d^* - \sum_{i=1}^k \left(\frac{1+g}{1+i} \right)^i \cdot \frac{\overline{PB}_{t+i}}{\bar{Y}_{t+i}} \right]$$

Appendix C: Sectors included in report

Public sectors included in this report
<p>Federal general government</p> <p>Government <i>Ministries and departments, non-autonomous funds and organizations</i> <i>Autonomous funds and organizations</i> Federal non-autonomous pension plans</p>
<p>Social Security Funds²³</p> <p>Canada Pension Plan Quebec Pension Plan</p>
<p>Subnational government</p> <p>Provincial and territorial general government Government <i>Ministries and departments, non-autonomous funds and organizations</i> <i>Autonomous funds and organizations</i> Provincial non-autonomous pension plans Universities and colleges²⁴ <i>Universities</i> <i>Colleges, vocational and trade institutions</i> Health and social service institutions²⁴ <i>Health boards</i> <i>Social service organizations and community boards</i> <i>Other health and social service organizations</i></p> <p>Local general government Government <i>Municipalities and quasi-municipalities, non-autonomous funds and organizations</i> <i>Autonomous funds and organizations</i> School boards^{24,25}</p> <p>Aboriginal general government</p>
<p>Public sectors not included in this report</p> <p>Government business enterprises Federal government business enterprises Provincial and territorial government business enterprises Local government business enterprises</p>

Notes

1. Subnational government includes provincial, territorial, local and aboriginal governments. See Appendix C for more detail.
2. See <http://www.statcan.gc.ca/pub/13-605-x/2014005/article/14088-eng.htm> for an overview of the Canadian Government Finance Statistics.
3. Available at: <https://www.imf.org/external/Pubs/FT/GFS/Manual/2014/gfsfinal.pdf>.
4. The main adjustments in the Government Finance Statistics are the exclusion (inclusion) of revenue or expenses otherwise included (excluded) in the Public Accounts and alternative definitions of the universe of entities included. A searchable database of public sector entities is available on Statistics Canada's website: <https://www150.statcan.gc.ca/n1/pub/13-607-x/2016001/273-eng.htm>.
5. <http://www23.statcan.gc.ca/imdb/p2SV.pl?Function=getSurvey&SDDS=5174>.
6. This report reflects budget plans published before 1 January 2020.
7. The Government Finance Statistics are estimated for 2018 and are subject to material revisions. Public Accounts data are rarely revised.
8. Available at: <https://www.pbo-dpb.gc.ca/en/blog/news/RP-1920-029-S-fiscal-sustainability-report-2020-rapport-viabilite-financiere-2020>.
9. See: https://www.pbo-dpb.gc.ca/web/default/files/Documents/Reports/2017/FSR%20Oct%202017/FSR_2017_FINAL_EN.pdf.
10. Available at: <https://www150.statcan.gc.ca/n1/pub/91-520-x/2019001-eng.htm>.
Our baseline population projection uses assumptions for fertility, mortality, immigration and intra-provincial migration from Statistics Canada's medium-growth (M1) scenario.
11. Consistent with Statistics Canada's 2019 population projections, we assume a long-term national immigration rate of 8.3 per thousand compared to 7.5 per thousand in FSR 2018.
12. See Figure 2.6 at: <https://www150.statcan.gc.ca/n1/pub/91-520-x/2019001/sect02-eng.htm>.
13. PBO's methodology for projecting trends in labour input and labour productivity is described in our 2018 report available at: http://www.pbo-dpb.gc.ca/web/default/files/Documents/Reports/2018/Potential%20GDP/Measuring_Potential_GDP_EN.pdf.
14. See: http://www.pbo-dpb.gc.ca/web/default/files/Documents/Reports/2017/FSR%20Oct%202017/FSR_2017_FINAL_EN.pdf.

15. For each province, subnational effective interest rates are assumed to converge to the federal rate plus the average spread (that is, the difference between provincial government 10-year rates and the Government of Canada 10-year benchmark rate) estimated over 2014-2017.
16. However, it remains the case that if the primary balance (relative to GDP) is smaller than the interest-growth rate differential multiplied by the debt-to-GDP ratio, the debt ratio will increase even if the differential is negative. Thus, a government could still face a fiscal cost (that is, having to increase revenues or reduce program spending) to maintain its debt-to-GDP ratio at its current level by having to run a smaller primary deficit relative to GDP.

See Peterson Institute for International Economics Working Paper 19-4, *Public Debt and Low Interest Rates*, by Olivier Blanchard for an analysis of the fiscal and welfare costs of public debt with low interest rates. Available at: <https://www.piie.com/system/files/documents/wp19-4.pdf>.
17. PBO uses projections of interest rates to discount future primary balances to present values. In our federal fiscal projection, a lower interest rate increases the present value of future primary surpluses (because federal revenues exceed program spending in our projection). This increases federal fiscal room, all else equal. In addition, lower interest rates reduce the size of the primary balance that is required to stabilize the federal debt-to-GDP ratio, which also increases federal fiscal room.
18. Subnational government includes provincial, territorial, local and aboriginal governments. See Appendix C for more detail.
19. Three quarters of territorial revenues are generated through transfers from the federal government. As such, the Territories' projection is sensitive to growth in Territorial Formula Financing, the Canada Health Transfer and the Canada Social Transfer. The Territories' overall transfer revenue is projected to decrease from 42.3 per cent of GDP in 2018 to 33.8 per cent of GDP in 2093.
20. Relative to the size of their economy, territorial program spending is projected to decrease from 60.3 per cent in 2018 to: 59.2 per cent in 2043; 60.0 per cent in 2068; and 60.6 per cent in 2093.
21. For example, a province that provides more expensive or higher quality care than the average to the most elderly citizens will face greater cost escalation due to population ageing, all else equal.
22. The Territories' primary balance is projected to decrease from -4.8 per cent of GDP in 2018 to -13.3 per cent of GDP in 2093.
23. Subsector division not based on government control.
24. Except institutions which are embedded in the federal or provincial and territorial public accounts or local government audited financial statements.
25. Primary and secondary education for New Brunswick, Nunavut and Yukon are included in provincial and territorial government.