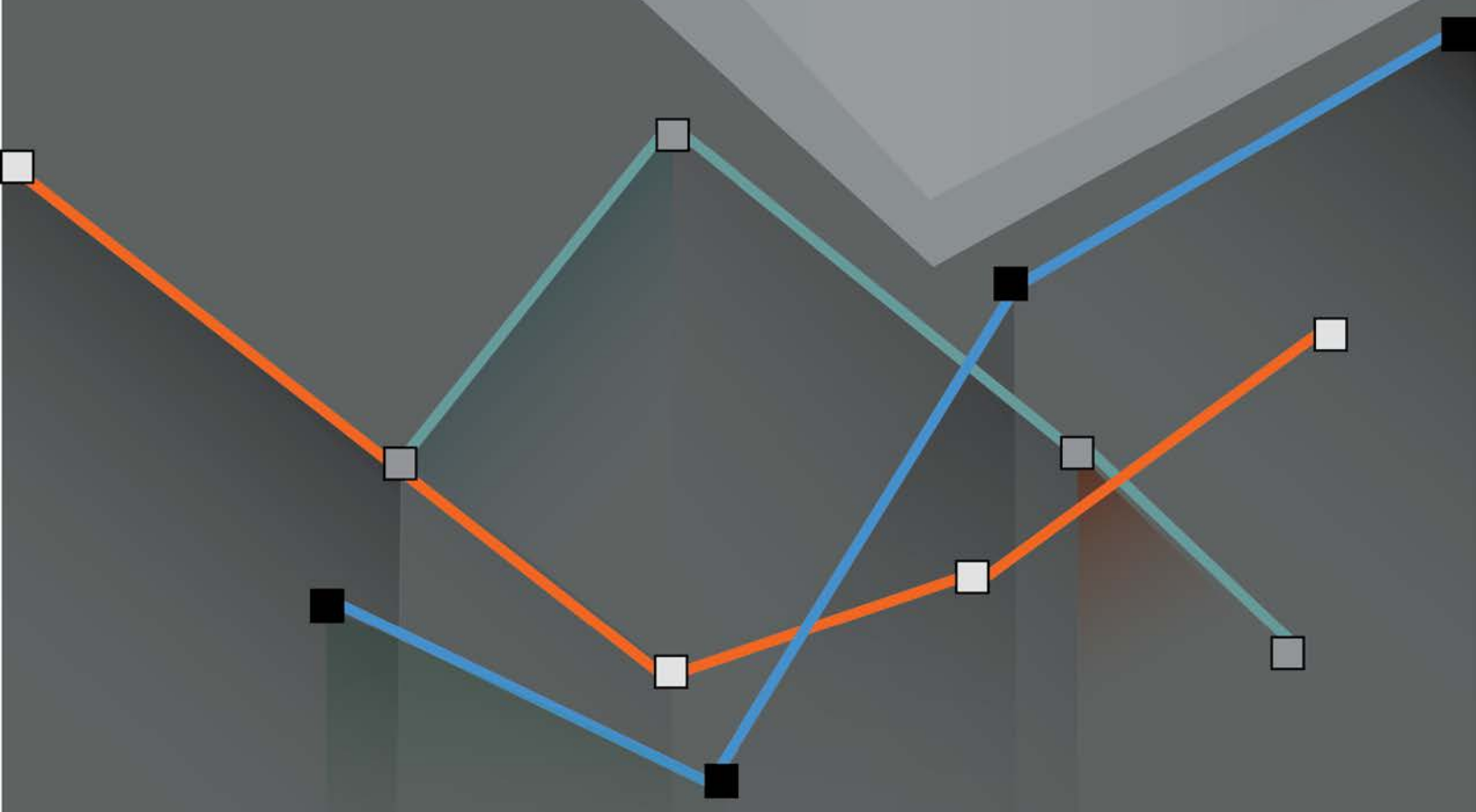
Department of Finance Canada
Ministère des Finances Canada

UPDATE OF LONG-TERM ECONOMIC AND FISCAL PROJECTIONS

2018



Canada

Cette publication est également disponible en français.

Cat. No.: F2-252/2018E-PDF
ISBN: 978-0-660-07207

Introduction

Canada's economy has continued to show solid growth since the publication of the 2017 *Update of Long-Term Economic and Fiscal Projections*. After having posted the strongest economic growth of all the Group of Seven (G7) countries in 2017, Canada is still expected to remain among the fastest-growing economies this year and next. Going forward, despite recent robust economic activity, the Canadian economy will face a number of challenges that are likely to weigh on growth—in particular, pressures that are the result of an aging population.

This report provides updated long-term economic and fiscal projections to 2055–56, using the medium-term forecast presented in the 2018 *Fall Economic Statement* as the starting point. Updated long-term projections continue to indicate that the federal public finances are sustainable over the longer term, with the federal debt-to-GDP (gross domestic product) ratio projected to be on a downward track over the entire projection horizon.

The Government remains committed to sound fiscal management—balancing the need to make smart investments to support long-term economic growth while preserving Canada's low-debt advantage for current and future generations.

The remainder of this report outlines Canada's long-term economic and fiscal projections taking into consideration current trends and a reasonable set of demographic, economic and fiscal assumptions and scenarios. A technical description of the methodology and key assumptions underlying this analysis is provided at the end of this report.

As with any projections that extend over several decades, those presented in this report are subject to a fair degree of uncertainty. These should not be viewed as a forecast of the future. They are scenarios that could occur based on current economic trends and a reasonable set of demographic, economic and fiscal assumptions, and assuming no additional policy actions. They are intended to provide a broad analysis of the Government's fiscal position and to allow the Government to respond more effectively to upcoming challenges, while protecting the long-term sustainability of public finances.

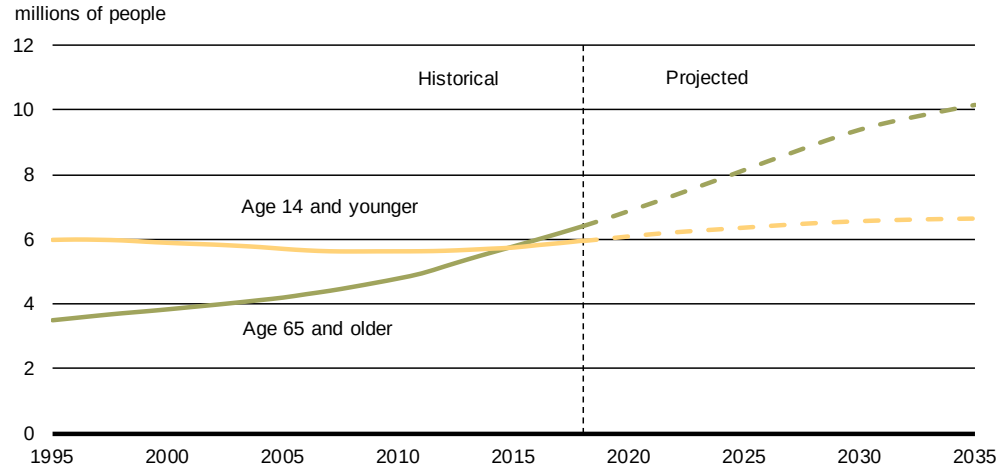
Canada's Demographic Transition

Canadians are living longer than ever and now have one of the highest life expectancies in the world. Combined with falling fertility rates, these positive developments in longevity have resulted in the overall population of Canada gradually growing older. There are more seniors aged 65 and over than there are children under the age of 15, a trend that began in 2015 (Chart 1). By 2055, it is projected that 25 per cent of the population will be 65 or older compared to 17 per cent today.

The Canadian population has been gradually growing older

Chart 1

Canadian Population Projection by Age Group



Source: Statistics Canada.

Labour Market Impacts

With the oldest members of the large baby boom generation well into retirement age, the impact of this important demographic shift is already being felt. Over the coming decades, however, as the youngest members of this large generation continue to retire from the labour market and are replaced by relatively smaller generations of new workers, the ratio of Canada's workers to our elderly population is expected to decrease even more dramatically.

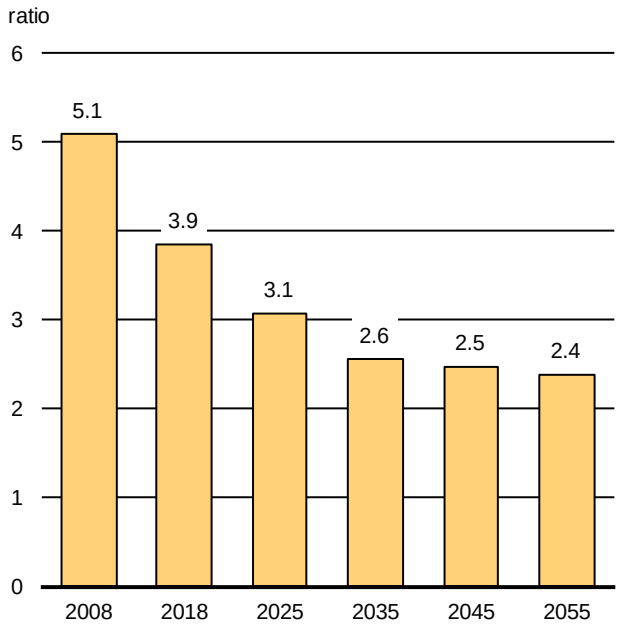
Overall, within the next 20 years, the number of working-age Canadians (aged 15 to 64) for every senior (aged 65 and over) is expected to fall by 50 per cent from its point at the beginning of the last decade (Chart 2), one of the largest projected decreases among Organisation for Economic Co-operation and Development (OECD) countries.

Population aging will also result in an increase in the share of older workers in the labour force. Because older workers participate less in the labour market than do younger workers, an aging population is expected to lead to a reduction in the overall rate of labour force participation.[1] Again, the impact of the shift toward an older population is already being felt, as the overall participation rate continues its downward trend since passing its historical peak about a decade ago.

Population aging will have dramatic effects on the Canadian labour force

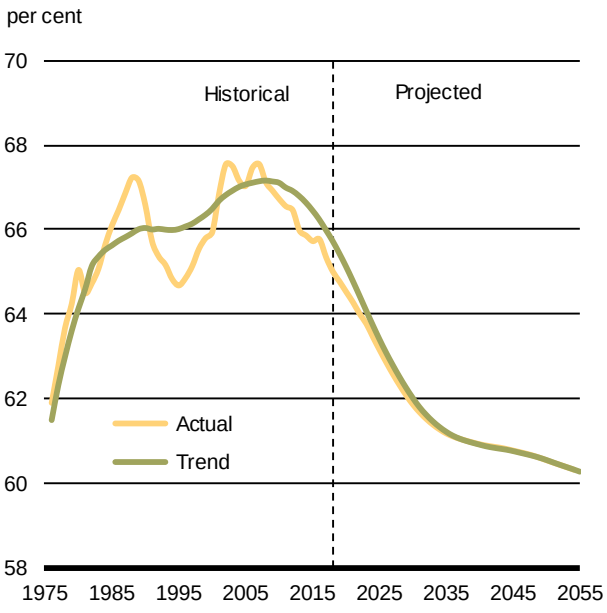
Chart 2

Ratio of Working-Age (15 to 64) Population to Population Aged 65+



Sources: Statistics Canada; Department of Finance Canada calculations.

Labour Force Participation Rate



Sources: Statistics Canada; Department of Finance Canada calculations.

[1] The labour force includes non-institutionalized individuals aged 15 and over who are either working or actively seeking a job. Labour force participation rates are low when individuals are young (ages 15 to 24), reach peak levels between the ages of 25 and 54 and begin to decline starting at age 55. While participation rates of older individuals are expected to continue to increase, they are expected to remain well below rates seen among younger age groups.

Economic Growth Impacts

Economic growth stems from growth in either labour supply or labour productivity (real output per hour worked). Reduced labour force participation due to population aging has already started and is expected to continue to reduce growth in labour supply—that is, the total number of hours worked by Canadians.

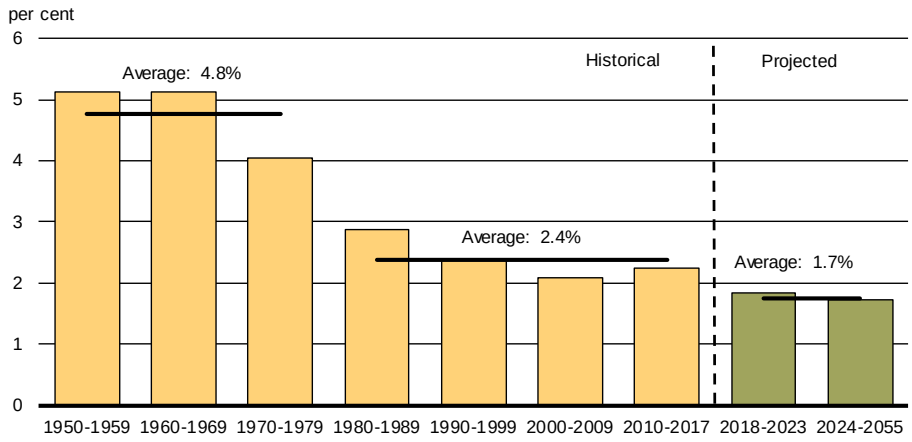
In this context, under baseline assumptions for labour force participation and productivity, the increase in the pace of population aging will have a negative impact on economic growth over the coming decades (Chart 3).

The age-related deceleration in economic growth in Canada will take place amidst other powerful, slow-moving global forces. As in Canada, the world population is aging and productivity growth has slowed across OECD countries. These structural forces are setting the stage for slower global growth over the next number of years.

Population aging will further dampen economic growth

Chart 3

Real Gross Domestic Product Growth



Sources: Statistics Canada; Department of Finance Canada calculations.

Public Finance Impacts

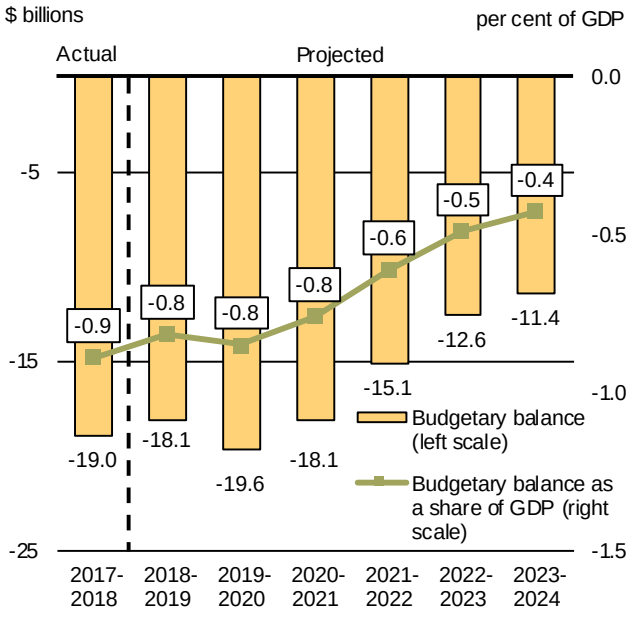
Supported by a strong medium-term economic outlook, as reflected in the September private sector economic outlook survey, the medium-term fiscal forecast presented in the 2018 *Fall Economic Statement* shows a gradual reduction in the budgetary deficit starting in 2020–21 as well as a continuously declining federal debt-to-GDP ratio (Table 1, Chart 4).[2]

Table 1
2018 *Fall Economic Statement* Budgetary Balance and Debt

		Projection					
	2017–2018	**2018–2019**	**2019–2020**	**2020–2021**	**2021–2022**	**2022–2023**	**2023–2024**
Budgetary balance (billions of dollars)	-19.0	-18.1	-19.6	-18.1	-15.1	-12.6	-11.4
Federal debt (per cent of GDP)	31.4	30.9	30.5	30.3	29.8	29.2	28.5

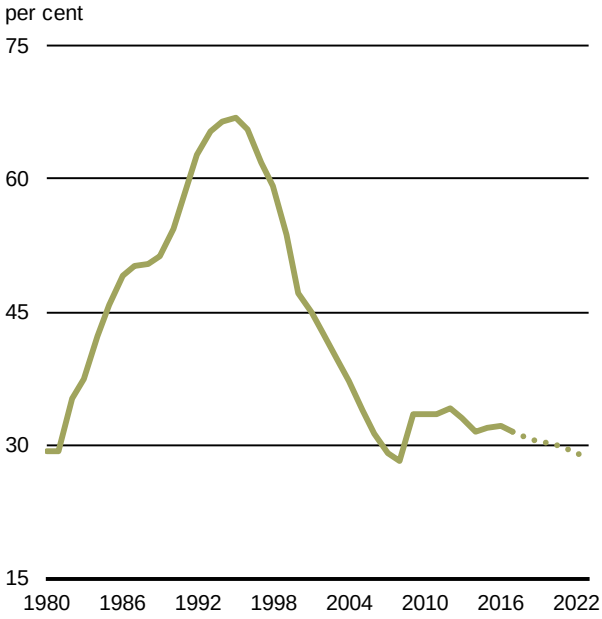
Carefully managing deficits will help ensure long-term fiscal sustainability

Chart 4
Federal Budgetary Balance



Note: 2017–18 has been restated to reflect the historical revisions to Canadian GDP series published along with the Provincial and Territorial Gross Domestic Product by Income and by Expenditure Accounts for 2017, released on November 8, 2018.
Sources: *Fiscal Reference Tables*; Department of Finance Canada calculations.

Federal Debt-to-GDP Ratio



Note: Figures have been restated to reflect the historical revisions to Canadian GDP series published along with the Provincial and Territorial Gross Domestic Product by Income and by Expenditure Accounts for 2017, released on November 8, 2018.
Sources: *Fiscal Reference Tables*; Department of Finance Canada calculations.

[2] In 2018, the Government revised its methodology for selecting the discount rates used to value its unfunded pension obligations. This change in accounting policy, described in greater detail in the *Annual Financial Report of the Government of Canada—2017–2018*, has also been applied on a retroactive basis back to 2008–09. This restatement resulted in a $19.6-billion increase in the opening balance of the federal debt in 2017–18, a $0.5-billion increase in the 2017–18 deficit, and a $0.4-billion decrease in the projected 2022–23 deficit. This accounting change has practically no impact on the projected long-term debt-to-GDP ratio. Also, the 2018 *Fall Economic Statement* introduced a number of measures to encourage investment and boost investor confidence which are expected to have fiscal impacts beyond the medium term. The long-term fiscal projections presented in this report have been adjusted to reflect this impact.

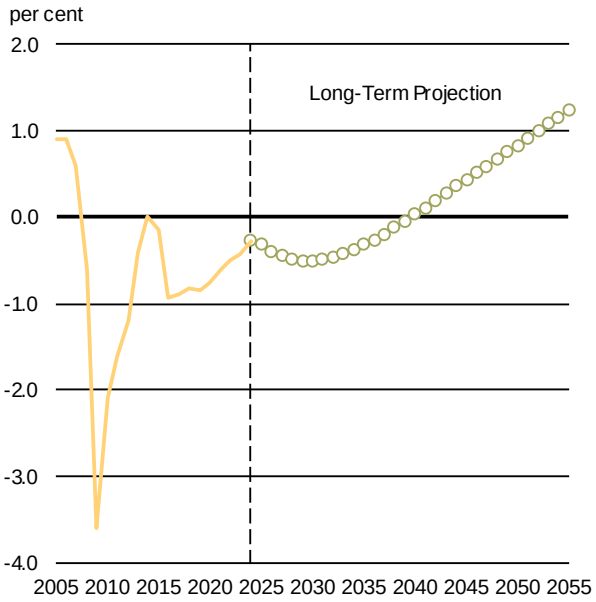
Beyond the medium term, however, it is expected that an aging population will exert downward pressures on this outlook. Assuming a constant 2 per cent annual rate of inflation, population aging will lead to lower growth in nominal GDP, the broadest single measure of the tax base. Slower nominal GDP growth will reduce the growth rate of government revenues while, at the same time, population aging is expected to put upward pressure on public expenditures, notably for age-related programs such as elderly benefits.

Using the 2018 *Fall Economic Statement* as the starting point, and assuming key current policy parameters remain the same, the federal budgetary balance-to-GDP ratio is expected to decline somewhat during the late 2020s as population aging pressures increase. With the subsequent easing of these pressures, the budgetary balance-to-GDP ratio is projected to significantly improve to reach a surplus of 1.2 per cent of GDP by the end of the projection horizon (Chart 5). This projected budgetary balance path means that the debt-to-GDP ratio remains on a downward track over the whole projection horizon. These updated long-term fiscal projections represent a slight improvement over those presented in December of last year.

Federal public finances are sustainable over the long term

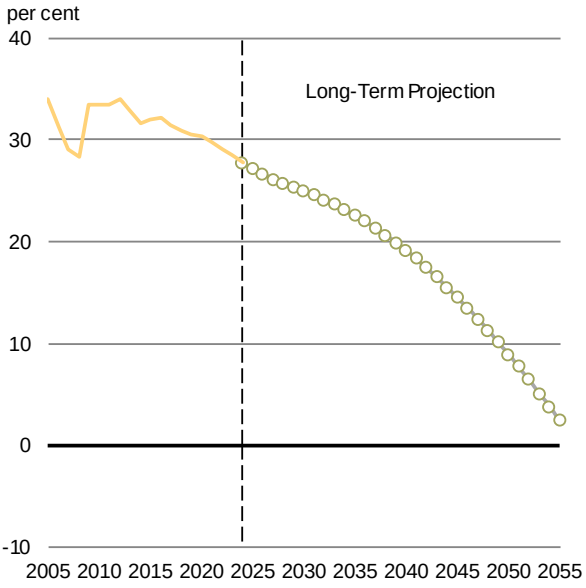
Chart 5

Federal Budgetary Balance-to-GDP Ratio



Sources: Statistics Canada; Department of Finance Canada calculations.

Federal Debt-to-GDP Ratio



Sources: Statistics Canada; Department of Finance Canada calculations.

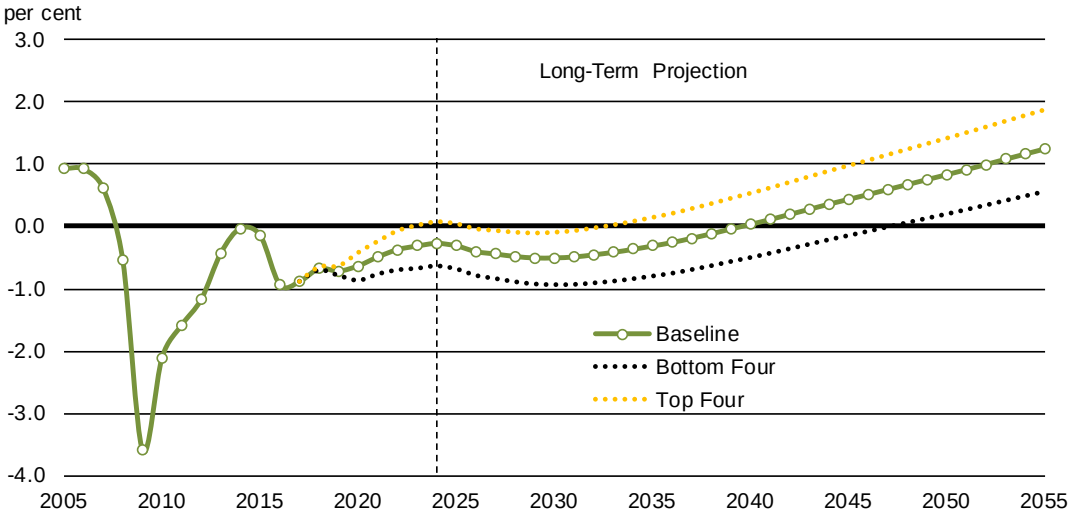
However, there are both upside and downside alternative scenarios around the baseline projection. In particular, there is significant uncertainty regarding future economic growth and, therefore, the path of nominal GDP. Changes in economic growth assumptions over the medium term can have large impacts on the budgetary balance and debt-to-GDP profile over an extended projection horizon.

For example, if the Government based current fiscal projections on the average of the top four individual forecasts for nominal GDP growth—which is equivalent to nominal GDP growth being 0.4 percentage points per year higher, on average, over the next five years than in the full September survey—this would lead to broadly balanced budgets or better starting in 2024–25 (Chart 6). Under this scenario, the debt-to-GDP ratio would decline more rapidly and the federal debt would be eliminated by the end of the projection horizon. Conversely, basing fiscal projections on the average of the bottom four individual forecasts for nominal GDP growth—which is equivalent to nominal GDP growth being 0.4 percentage points per year lower, on average, over the next five years than in the full September survey—would lead the federal budgetary deficit to reach a maximum in 2033–34, before gradually improving thereafter. Under this scenario, the debt-to-GDP ratio gradually declines to about 13.4 per cent of GDP by the end of the projection horizon.

Significant uncertainty surrounds the baseline long-term projection

Chart 6

Federal Budgetary Balance-to-GDP Ratio



Notes: Alternative forecasts between 2018–19 and 2023–24 are based on the average private sector economists' projection for nominal GDP and excluding the adjustment for risk. The top (bottom) four scenarios are based on the average of the most optimistic (pessimistic) projections for nominal GDP among the economists surveyed. Baseline long-term assumptions are applied beyond 2023–24. The baseline projection does not account for the impact of future government action or changes, or the most optimistic (pessimistic) projections for nominal GDP among the economists surveyed.

Sources: Statistics Canada; Department of Finance Canada calculations.

It is therefore imperative to continue to grow the economy by investing in people—giving them the skills they need to succeed, and equipping them with the technology and innovations that will help to make Canada more productive and competitive. While no single initiative can guarantee sustainable growth in our prosperity, the potential payoff from acting now in a broad range of policy areas is substantial, as measures tend to reinforce themselves over time.

In particular, continuing to encourage greater workforce participation by people who are traditionally under-represented in the labour market—including women, Indigenous peoples, older workers, newcomers and persons with disabilities—is key to Canada's long-term fiscal and economic performance. Similarly, initiatives that promote business investment in Canada, such as the Accelerated Investment Incentive, will increase the productivity of Canadian workers and businesses. By investing in more technologically-advanced machinery and more efficient buildings and infrastructure, businesses equip their workers with the latest technologies and state-of-the-art facilities, which, in turn, allow them to improve their business processes and produce more and higher-quality goods and services.

Methodology and Key Assumptions

Demographic Projections

The demographic projections used in this report are based on medium-growth scenario projections produced by Statistics Canada.[3] Statistics Canada projects the structure of the population by age and sex from one year to the next by adding births and net migrants and subtracting deaths. The demographic assumptions behind these projections are outlined in *Population Projections for Canada (2013 to 2063), Provinces and Territories (2013 to 2038)*, published in 2015. The main assumptions are:

- Life expectancy at birth for females is projected to increase from 83.8 years in 2013 to 88.5 years in 2055. For males, the life expectancy at birth is projected to rise from 79.6 years in 2013 to 86.7 years in 2055.
- The fertility rate for Canada used for the entire projection period is 1.67 children per woman.
- The annual immigration rate is assumed to represent about 0.75 per cent of the total population. When accounting for emigration and returning emigrants, the net immigration rate for Canada is assumed to stand around 0.6 per cent over the projection period.

For the purposes of this report, the population projections produced by Statistics Canada have been adjusted to reflect the most recent population estimates.

Economic Projections

Over the first six years of the projection (2018–2023), key economic indicators (e.g. real GDP growth and interest rates) are taken from the Department of Finance Canada September 2018 survey of private sector economists, which forms the basis for the fiscal forecast presented in the 2018 *Fall Economic Statement*. These results are then extended using the Department of Finance Canada long-term projection model. In this model, real GDP growth is assumed to depend on labour productivity growth and labour input growth. Labour input growth is determined by age- and gender-specific labour force participation and average hours worked. Both are based upon population projections from Statistics Canada by age and gender.

Labour productivity is assumed to grow at about its historical average over the 2024–2055 period (Table 2). The unemployment rate over the 2018–2023 period is taken from the private sector forecast, which projects it to stay around its current level over the medium term. Going forward, it is assumed to be somewhat below 6 per cent.

Over the medium term (2018–2023), growth in labour supply is projected to continue to contribute noticeably to overall GDP growth in part due to the positive effect of Canada's continued economic strength, which translates into a slightly falling unemployment rate (this contributes positively to labour supply growth). However, labour supply growth over the medium term is significantly less than over the 1970–2017 period, reflecting both slower growth in the working-age population as well as the increasing rate of retirement among the baby boom generation. Going forward, working-age population growth is projected to slow further while the negative contribution of labour force participation is projected to gradually moderate.

Combined, these factors suggest that the contribution made by labour supply to real GDP growth will decline significantly to an average of 0.6 percentage points per year over the medium term and further to 0.5 percentage points over the 2024–2055 period, from the 1.5 percentage points over the 1970–2017 period. Assuming productivity growth of 1.2 per cent per year, the same as over the 1970–2017 period, the overall growth in real GDP would average 1.7 per cent per year over the 2024–2055 period.

[3] Statistics Canada produces three long-term population projections based on low-, medium- and high-growth scenarios.

Table 2
Real GDP Growth Projection, Average Annual Growth Rates
per cent, unless otherwise indicated

	1970–2017	2018–2023	2024–2055
Real GDP growth	2.7	1.8	1.7
Contributions of (percentage points):			
Labour supply growth	1.5	0.6	0.5
Working-age population	1.5	1.0	0.7
Labour force participation	0.3	-0.5	-0.2
Unemployment rate	0.0	0.1	0.0
Average hours per worker	-0.2	0.0	0.0
Labour productivity growth	1.2	1.2	1.2

Note: Contributions may not add due to rounding.
Sources: Statistics Canada; Department of Finance Canada calculations.

Fiscal Projections

Using the fiscal projections up to 2023–24 presented in the 2018 *Fall Economic Statement* as the starting point, the fiscal projections contained in this report are obtained through an accounting model in which each revenue and expense category is determined independently and is modelled as a function of the underlying demographic and economic projections, with the relationships defined either by current government policies or assumptions.

The model provides a detailed examination of the fiscal implications of an aging population on government revenues and expenditures and provides an assessment of long-run fiscal sustainability by simulating long-run debt and budgetary balance paths.

The principal assumptions underlying the fiscal projections from 2024–25 through 2055–56 are:

- The Canada Social Transfer increases by 3 per cent annually, and the Canada Health Transfer and fiscal transfers (i.e. primarily Equalization and Territorial Formula Financing) payments grow in line with nominal GDP.
- Old Age Security (OAS) program benefits grow with the targeted population (65 and over for the OAS pension and the Guaranteed Income Supplement) and inflation to reflect increases in the cost of living.
- Children's benefits grow with the targeted population (less than 18 years old) and inflation to reflect increases in the cost of living.
- Direct program expenses are linked to nominal GDP growth.
- Employment Insurance (EI) benefits grow in line with the projected number of beneficiaries and the projected growth in average weekly earnings.
- The EI premium rate grows according to current program parameters, i.e. EI revenues and expenditures (benefits and administration costs) break even over time.
- All tax revenues, including personal income tax, corporate income tax and Goods and Services Tax revenues, as well as other revenues, are assumed to grow in line with nominal GDP.
- With respect to federal debt charges, new (and maturing) federal debt is (re)financed each year at new rates, consistent with the Government's medium-term debt strategy. The effective interest rate on interest-bearing federal debt is assumed to gradually increase from about 3.0 per cent in 2023–24 to 3.8 per cent by the mid-2040s and remain broadly stable around this level thereafter. Investment returns on financial assets (which are included in other revenues) are assumed to equal the borrowing costs (which are included in public debt charges) associated with their purchase.

Detailed Baseline Fiscal Projections[4]

Table 3
Long-Term Fiscal Projections
billions of dollars

	2023-24	2025-26	2030-31	2035-36	2040-41	2045-46	2050-51	2055-56
Revenues	396.7	428.2	509.0	611.9	738.9	890.7	1,069.1	1,281.0
Program expenses	370.8	398.6	478.8	570.7	678.0	802.8	949.3	1,121.7
Public debt charges	34.3	38.6	47.6	54.2	59.3	61.4	59.1	50.1
Adjustment for risk	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Budgetary balance	-11.4	-9.0	-17.4	-13.0	1.7	26.5	60.7	109.2
Federal debt	764.7	781.2	856.5	934.5	959.8	880.3	649.7	206.9
Nominal GDP[1]	2,684.5	2,879.1	3,437.6	4,142.5	5,014.7	6,059.3	7,288.9	8,752.0

[1] On a calendar-year basis.

Table 4
Long-Term Fiscal Projections, Share of GDP
per cent

	2023-24	2025-26	2030-31	2035-36	2040-41	2045-46	2050-51	2055-56
Revenues	14.8	14.9	14.8	14.8	14.7	14.7	14.7	14.6
Program expenses	13.8	13.8	13.9	13.8	13.5	13.2	13.0	12.8
Public debt charges	1.3	1.3	1.4	1.3	1.2	1.0	0.8	0.6
Adjustment for risk	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Budgetary balance	-0.4	-0.3	-0.5	-0.3	0.0	0.4	0.8	1.2
Federal debt	28.5	27.1	24.9	22.6	19.1	14.5	8.9	2.4

Table 5
Long-Term Fiscal Projections, Annual Growth
per cent

	2023-24	2025-26	2030-31	2035-36	2040-41	2045-46	2050-51	2055-56
Revenues	3.8	3.5	3.6	3.8	3.8	3.8	3.7	3.7
Program expenses	3.3	3.8	3.7	3.6	3.5	3.4	3.4	3.4
Nominal GDP[1]	3.9	3.5	3.7	3.9	3.9	3.8	3.7	3.7

[1] On a calendar-year basis.

Sensitivity Analysis

Because long-term projections and the range of possible results are inherently uncertain, the baseline projections presented in this report are not intended to be forecasts. Rather, they provide a plausible baseline that follows from a reasonable set of demographic, economic and fiscal assumptions, and which, as this sensitivity analysis shows, is fairly robust to a number of reasonable changes to individual assumptions. On the other hand, larger changes to assumptions or a combination of changes to some of these assumptions can result in a large change in the long-term economic and fiscal outlook.

[4] The baseline projection does not account for the impact of future government action or changes, or the most optimistic (pessimistic) projections for nominal GDP among the economists surveyed.

Table 6

Description of Alternative Assumptions[1]

alternative assumption less baseline

	High	Low
Demographic:		
Fertility rate (average births per woman)	+0.5 births	-0.5 births
Immigration (per cent of population)	+0.25 p.p.	-0.25 p.p.
Life expectancy at 65	+3 years	-3 years
Economic:		
Total labour force participation rate (per cent)	+2.0 p.p.	-2.0 p.p.
Average weekly hours worked	+1.0 hour	-1.0 hour
Unemployment rate (per cent)	+1.0 p.p.	-1.0 p.p.
Labour productivity (per cent)	+0.5 p.p.	-0.5 p.p.
Interest rates (per cent)	+1.0 p.p.	-1.0 p.p.

Note: p.p. = percentage point.

[1] These alternative assumptions are applied starting in 2024 except for changes in life expectancy, which are gradually applied over the projection horizon.

Table 7

Impact of Alternative Assumptions on Nominal GDP and Real Per Capita GDP Growth, 2024 to 2055

average annual growth, per cent

	Baseline		High		Low	
	Nominal GDP	Real Per Capita GDP	Nominal GDP	Real Per Capita GDP	Nominal GDP	Real Per Capita GDP
Demographic:						
Fertility rate	3.8	1.0	3.9	0.9	3.6	1.1
Immigration	3.8	1.0	4.1	1.1	3.4	1.0
Life expectancy at 65	3.8	1.0	3.8	1.0	3.8	1.1
Economic:						
Total labour force participation rate	3.8	1.0	3.9	1.1	3.7	0.9
Average weekly hours worked	3.8	1.0	3.9	1.1	3.7	0.9
Unemployment rate	3.8	1.0	3.7	1.0	3.8	1.1
Labour productivity	3.8	1.0	4.3	1.5	3.3	0.6

Table 8

Impact of Alternative Assumptions on Nominal GDP and Real Per Capita GDP Levels in 2055

per cent difference relative to baseline

	High		Low	
	Nominal GDP	Real Per Capita GDP	Nominal GDP	Real Per Capita GDP
Demographic:				
Fertility rate	5.5	-3.2	-5.3	3.4
Immigration	10.3	1.4	-10.3	-1.6
Life expectancy at 65	0.4	-2.2	-0.4	2.1
Economic:				
Total labour force participation rate	3.3	3.3	-3.3	-3.3
Average weekly hours worked	3.0	3.0	-3.0	-3.0
Unemployment rate	-1.1	-1.1	1.1	1.1
Labour productivity	17.1	17.1	-14.7	-14.7

Table 9

Impact of Alternative Assumptions on the Federal Budgetary Balance and Debt in 2055–56

per cent of GDP

	Baseline		High		Low	
	Budgetary Balance	Debt	Budgetary Balance	Debt	Budgetary Balance	Debt
Demographic:						
Fertility rate	1.2	2.4	1.2	4.8	1.3	-0.2
Immigration	1.2	2.4	1.7	-3.4	0.7	9.5
Life expectancy at 65	1.2	2.4	0.9	6.6	1.6	-1.2
Economic:						
Total labour force participation rate	1.2	2.4	1.5	-2.6	0.9	8.3
Average weekly hours worked	1.2	2.4	1.5	-2.2	0.9	7.8
Unemployment rate	1.2	2.4	1.2	4.1	1.3	0.7
Labour productivity	1.2	2.4	2.2	-9.8	0.1	17.3
Interest rates	1.2	2.4	0.8	11.1	1.5	-3.9