



Fiscal Sustainability Report 2017

Institute of Fiscal Studies and Democracy
at the University of Ottawa



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IFSD is a Canadian think-tank at the University of Ottawa that sits at the nexus
of public finance and state institutions. It is at this dynamic intersection that
the IFSD strives to research, advise, engage and teach.

IFSD undertakes its work at all levels of government in Canada and abroad,
while helping to prepare its student researchers and volunteers to make their
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EXECUTIVE SUMMARY

As part of its mandate, the Institute of Fiscal Studies and Democracy (IFSD) has been tasked with undertaking fiscal sustainability assessments of subnational governments, with the initial phase of this work being focused on the province of Ontario. The process began in early-2017 with the IFSD's work on the Canada Health Transfer (CHT) negotiations between the federal and provincial-territorial governments (Bartlett, 2017a; Bartlett & Lapointe, 2017b). This work was expanded to include the IFSD's Canadian economic and federal fiscal forecasts and has now culminated in the preparation of the IFSD's inaugural Fiscal Sustainability Report (FSR). As per the IFSD's mandate, the focus of this initial FSR is on the impact of different demographic projections and economic forecasts on the finances of the Government of Canada and the Government of Ontario. The IFSD plans to expand on this work in the coming months to include other subnational jurisdictions in Canada and abroad.

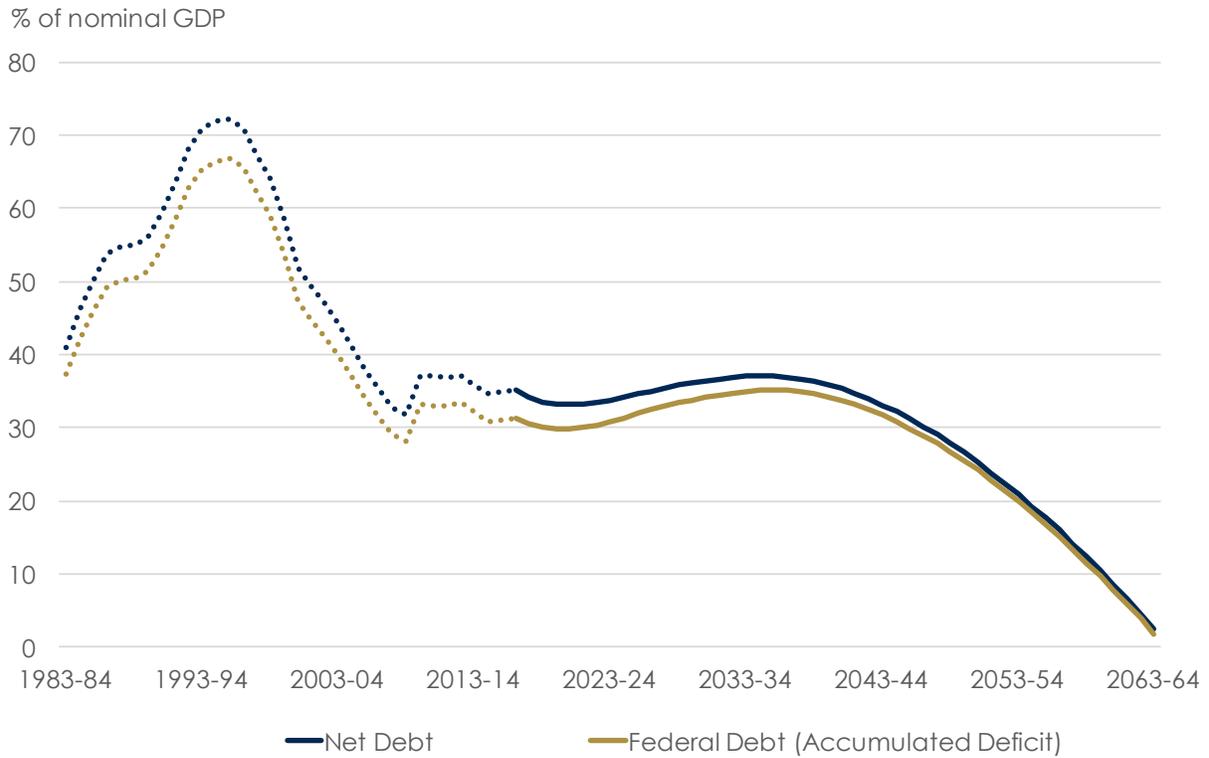
Looking specifically to the results of its inaugural FSR, the IFSD has determined that the finances of the Government of Canada are sustainable, broadly meaning the net debt-to-GDP ratio is likely to fall below its current level over the forecast horizon (Chart A). This is also true under most reasonable demographic and economic scenarios. It also implies that, despite an outlook for persistent budget deficits, the Government of Canada has the fiscal room to permanently increase spending, reduce revenues, or a combination of both. Indeed, through the 2063-64 fiscal year, the IFSD has estimated in its base case scenario that the federal government could permanently adjust its spending and/or revenue by 0.8% of GDP annually and still remain on a sustainable fiscal track. This is otherwise expressed as a 'fiscal gap' of -0.8% of GDP, where a negative fiscal gap means a government has fiscal room to maneuver.

The outlook for the Government of Ontario's finances are similarly optimistic, although more nuanced. In the base case scenario, the Government of Ontario is estimated to have fiscal room to permanently increase spending, reduce revenues, or both by 0.6% of GDP annually (Chart B). A fiscal gap of -0.6% of GDP is good news, and the finding that the Government of Ontario is in a fiscally-sustainable position holds true under most demographic and economic assumptions. However, this result hinges critically on the assumption that there is no enrichment to spending growth beyond the underlying demographic and economic drivers, such as population growth, aging, real income growth, and inflation. Indeed, when the assumption that health care spending increases over time based on these drivers is augmented by historical spending enrichment, the Government of Ontario's fiscal position becomes unsustainable under most demographic and economic assumptions. Additionally, enriching spending on education and social services would act to further exacerbate this fiscal unsustainability.

The IFSD's inaugural FSR is therefore a cautionary tale for the Government of Ontario. If spending is kept in line with the underlying demographic and economic drivers, the current fiscal position is sustainable. But increase spending beyond that pace and Ontario's finances won't be sustainable for long.

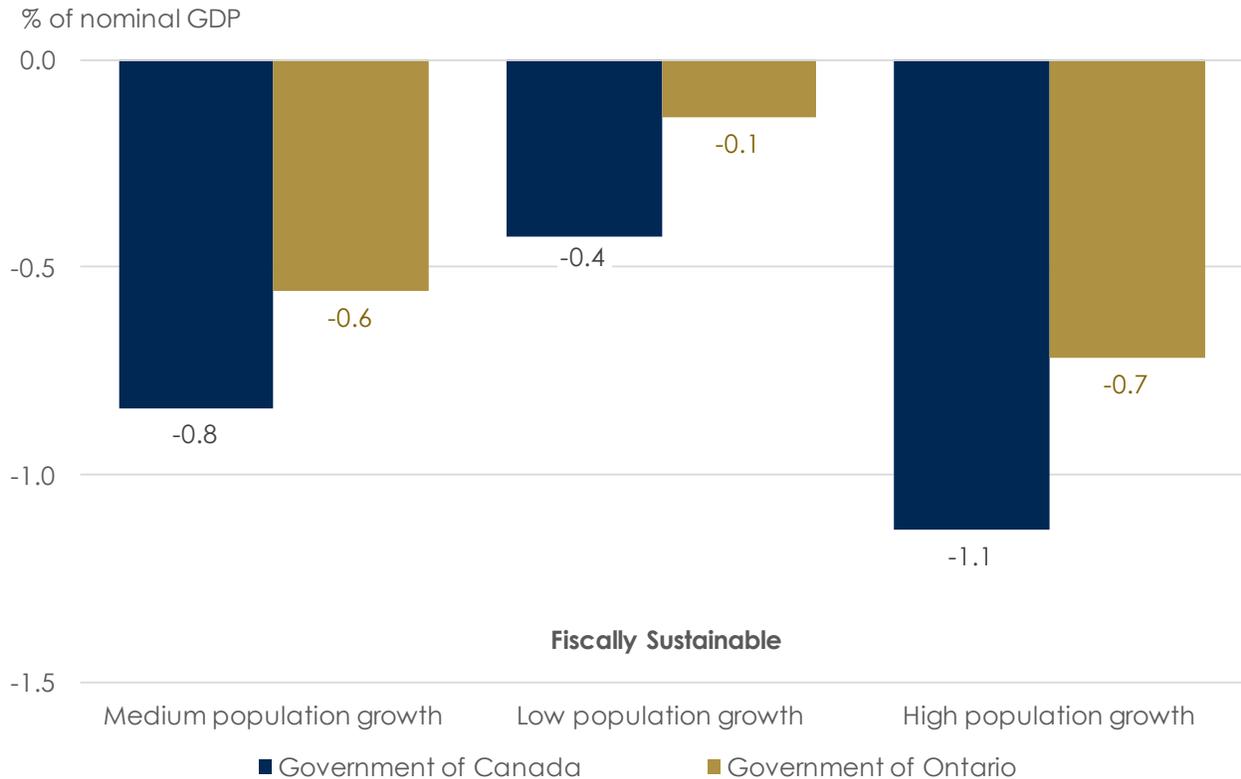
However, there is a further nuance to this healthcare enrichment discussion. Specifically, if the federal government had allowed the CHT to increase at an annual pace of 5.2%, as the provinces and territories requested in late 2016, the Government of Ontario could have enriched health care at its historical average pace and the finances of both the Canada and Ontario Governments could have remained fiscally sustainable (Chart C). However, that isn't how the negotiations played out. As a result, the fiscal imbalance between the federal government and the provinces and territories including Ontario persists and is likely to continue to do so for the foreseeable future.

Chart A: Federal Net Debt and Accumulated Deficit



Sources: Government of Canada, Statistics Canada, Institute of Fiscal Studies and Democracy.

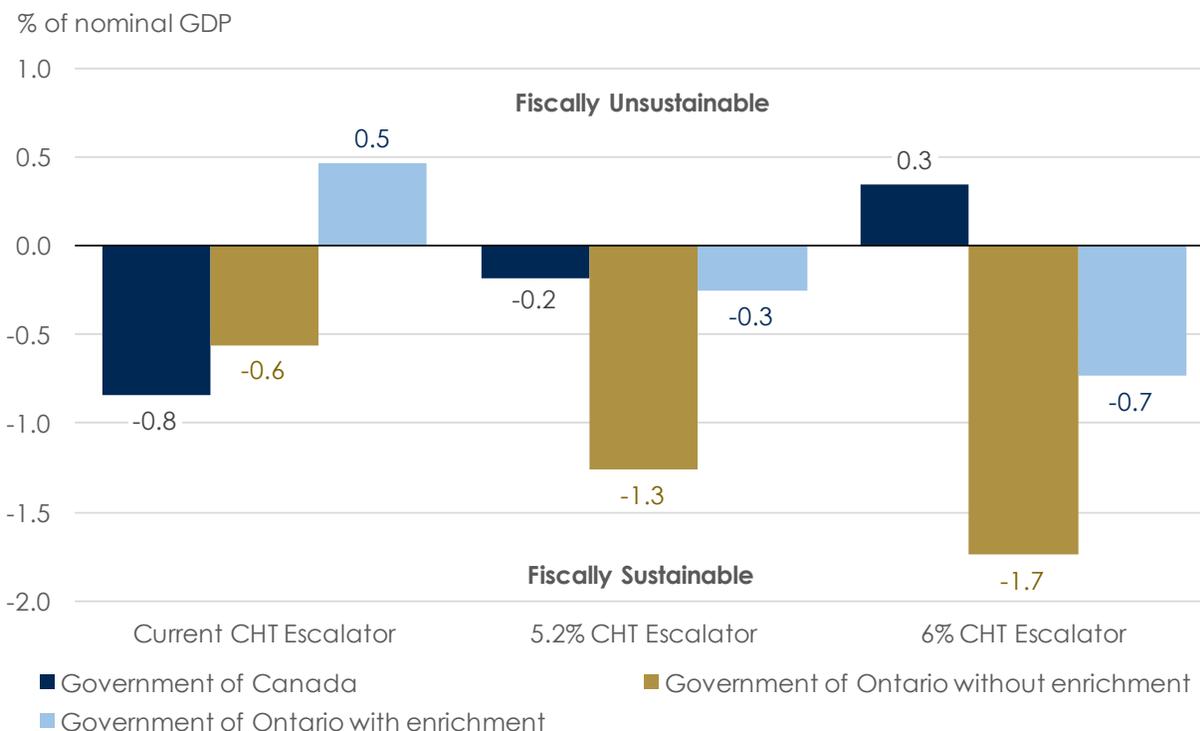
Chart B: Fiscal Gap with Different Population Projections



Source: Institute of Fiscal Studies and Democracy.

Note: The fiscal gap is estimated for a period ending in the 2063-64 fiscal year.

Chart C: Fiscal Gaps with Different Health Care Enrichment



Source: Institute of Fiscal Studies and Democracy.

Note: The fiscal gap is estimated for a period ending in the 2063-64 fiscal year.

Further, while detailed analysis was undertaken to complete this report, the fiscal impacts of some public policies are missing due to gaps in publicly-available information. For instance, at the federal level, this report incorporates the planned infrastructure spending over the coming years found in Budget 2017. However, it does not include the impact of the additional defence spending laid out in the 2017 National Defence white paper, due to the unavailability of the forecast changes in the planned annual defence spending on an accrual accounting basis (National Defence, 2017). With planned defence spending (on a cash basis) to be nearly 0.5% of nominal GDP higher in the 2024-25 fiscal year than was planned in Budget 2017, the impact of this change will notably reduce the estimate of the federal government's long-term fiscal room provided in this report. As details become available, the IFSD's fiscal sustainability analysis will be updated to incorporate this and other missing information. With regard to the province of Ontario, this report is based on revenue, expenditure, and debt estimates presented in the Public Accounts of Ontario 2016-17 (Government of Ontario, 2017). Further, the IFSD's FSR also doesn't take into account the impacts of the changes to electricity taxation in Ontario, which was addressed recently by the Auditor General of Ontario (2017). Taken all together, the balance of impacts of the measures that are left unaccounted for suggests that the IFSD's current fiscal sustainability estimates for both the overnments of Canada and Ontario are sound but are likely somewhat optimistic.

Finally, it should be highlighted that this report is not an endorsement of the current policy mix or approach to fiscal planning of the Governments of Canada and Ontario. The IFSD believes that prudent and responsible fiscal planning is one that is complemented by multiple credible fiscal targets. Among these fiscal targets, fiscal sustainability—a very long-term approach that assumes the status quo continues unabated for decades—makes a necessary but not sufficient contribution to prudent and responsible fiscal planning. It is a first step but should never be considered the only goal worth

striving for. We owe it to future generations to ensure that money spent today, particularly that which is financed through deficits and borrowing, is spent wisely. This means governments doing their due diligence at the outset to ensure that desired policy outcomes are clearly defined, approaches to measuring the successes and failures on the path to achieving these outcomes are understood and implemented, and that failures are not ‘swept under the rug’ but are instead addressed promptly to get fiscal policies back on track. To date, it is the opinion of the IFSD that significant gaps remain in this regard at both the federal and provincial-territorial levels in Canada, putting at risk the fiscal room that may be enjoyed today.

I. INTRODUCTION

As is all too often the case, it is tempting to look to the next budget or election to judge a government on its fiscal performance. Budget deficits are frequently held up as the only fiscal target worth striving for, and that any government that falls short of this goal should be considered a fiscal failure.

However, while this may make for good headlines, it makes little sense to look exclusively at the budget balance when examining the fiscal position of a government. Indeed, a government's fiscal rectitude must not only be judged on the here and now, but also on how it has positioned itself over the long-term and across generations. If decisions are instead based on balancing budgets in the short-term while sacrificing long-term fiscal sustainability, today's political expediency may result in a larger debt burden being borne by our children.

This report is a summary of the findings of the Institute of Fiscal Studies and Democracy (IFSD) in regard to the fiscal sustainability of the finances of the Government of Canada and Government of Ontario on a Public Accounts basis. While these are the two largest revenue-generating and -spending governments in Canada, these are merely a starting point for an expansion of the IFSD's fiscal sustainability work to other subnational jurisdictions, both in Canada and abroad.

The conclusions of this report are generally positive. The IFSD has determined that the Government of Canada's finances are sustainable. Using the IFSD's economic and fiscal forecasts as a starting point, the IFSD has concluded that the federal government is in a fiscally-sustainable position under a range of demographic and economic assumptions. This means that the federal government has additional room to permanently increase spending, reduce taxes, or both.

For Ontario, the conclusions are also positive but more cautionary. In the IFSD's base case scenario, the Government of Ontario's finances are sustainable, meaning the debt-to-GDP ratio will generally decline over the forecast, and Ontario has room to increase spending, reduce taxes, or do some combination of both. This is also true under a range of demographic and economic scenarios. However, relative to the federal government, the Ontario Government has less fiscal room. Additionally, the various assumptions explored by the IFSD do not include spending enrichment—that amount of spending that cannot be explained by underlying demographic and economic drivers such as population growth, aging, real income growth, and inflation. Adding the historical average health care enrichment to the various demographic and economic scenarios leaves the Government of Ontario in a fiscally-unsustainable position in nearly all demographic and economic scenarios. While not undertaken here, adding enrichment for other program spending in line with its historical average would push the Ontario government's finances even further into the red over the long-term.

In summary, despite high budget deficits in the first years of the long-term fiscal projection, the federal government has room to maneuver without putting its long-run debt path on an unsustainable course. At the same time, the Government of Ontario's finances are also on a sustainable, albeit more tenuous, path. Indeed, enriching programs beyond what the underlying demographic and economic drivers suggest would render its finances unsustainable under most scenarios. As such, the Government of Ontario must maintain a check on its spending in order to keep its debt under control over the long-term. Given it has managed to do just that in recent years, particularly in the context of health care spending, the prospect of Ontario keeping a cap on spending in line with demographic and economic fundamentals is not unrealistic.

II. CANADIAN ECONOMIC AND FEDERAL FISCAL FORECASTS

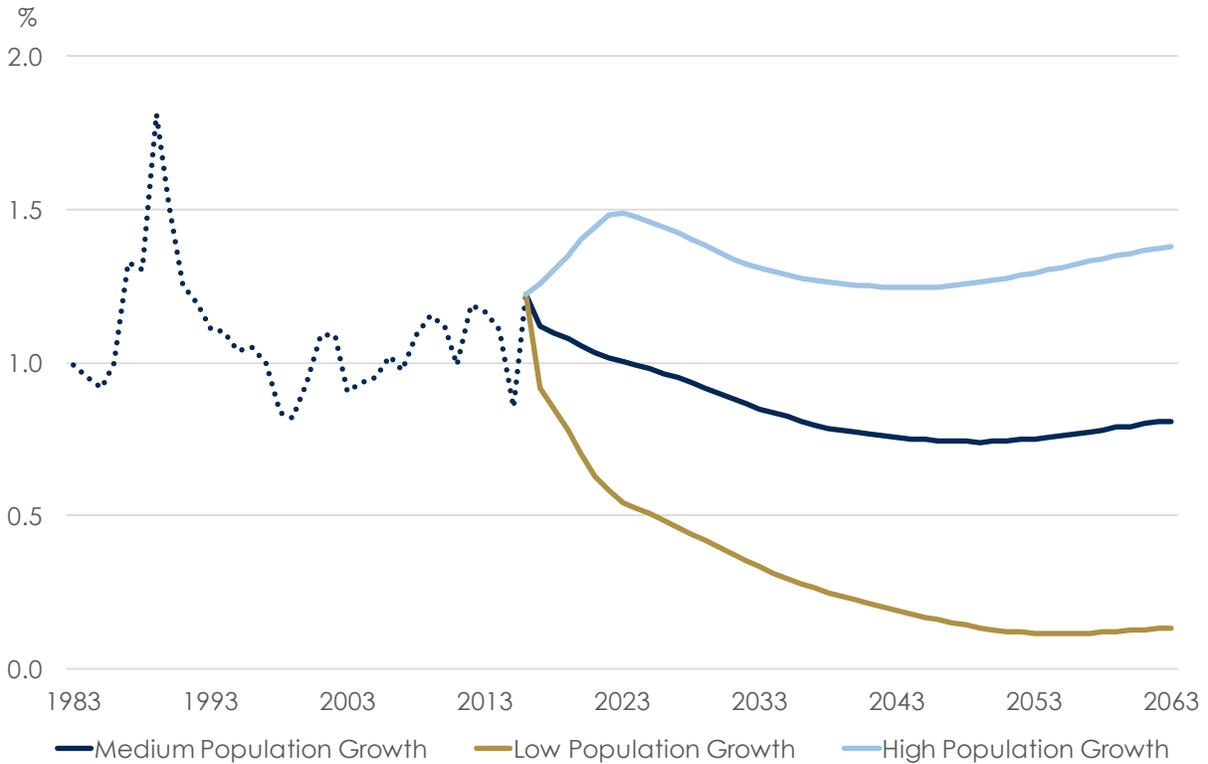
Canadian Demographic Projections

One of the most important considerations in undertaking long-term economic and fiscal projections is the demographic outlook. Of all areas where forecasters have excelled in projecting the future, demographics has had the greatest success. After making assumptions for fertility, immigration and emigration, and mortality rates based on historical trends, the task is rendered relatively straightforward, as today's 50-year-old is next year's 51-year-old.

Statistics Canada has published several 'Medium' projection scenarios for Canada and the provinces and territories which have varied assumptions for inputs to the projection, such as fertility, net immigration, and mortality rates. Each scenario has inputs returning to historical averages taken over different periods. For the purposes of the IFSD's fiscal sustainability analysis, the 'M1' medium population projection from Statistics Canada was used. It was selected due to the regularity with which it is used by other forecasters, such as the Department of Finance Canada (2016), thereby allowing for easier comparisons. The 'Low' and 'High' population projections produced by Statistics Canada were also used in undertaking the IFSD's fiscal sustainability analysis (Chart 1).

Of course, headline population growth isn't the only input used in long-term economic and fiscal projections. The underlying composition of the population matters at least as much. Many types of public expenditures are linked to specific age groups, such as elderly benefits at the federal level and education in the provinces. Further, as Canadians aged 25 to 64 years are more likely to be employed and working full-time than Canadian aged 65 and over, the age composition of the country matters a great deal to the outlook for Canada's economy. In the medium population growth scenario, the ratio of Canadians aged 65 years and over to those aged 25 to 64 years—known as the old-age dependency ratio (OADR)—is projected to increase rapidly from 33% over the next few years to 43% during the decade spanning 2024 to 2033 (Chart 2). After that, the OADR is projected to rise gradually to over 50%. Examined differently, through 2023, there will be roughly three people aged 25 to 64 for every person aged 65 years and over. Starting around 2050, this will evolve such that there will be only two people aged 25 to 64 for every person 65 years and over. And while the numbers differ depending on the population growth scenario used, the paths are similar.

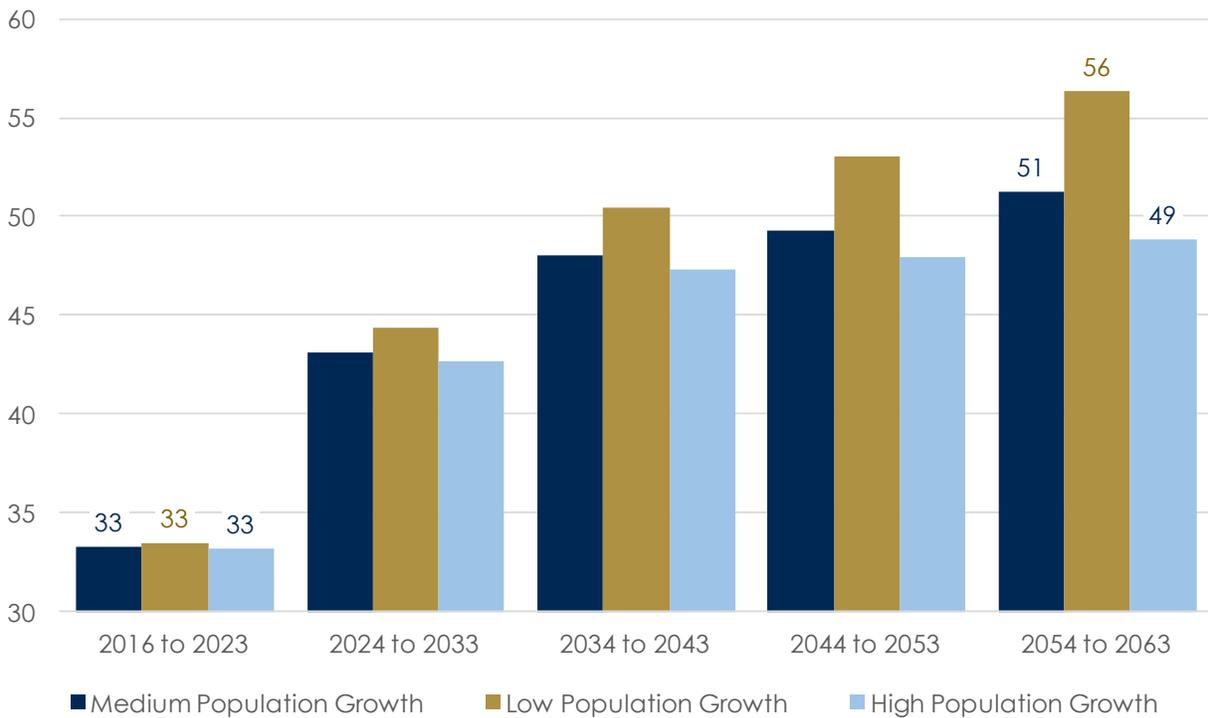
Chart 1: Population Growth Forecast Scenarios



Sources: Statistics Canada, Institute of Fiscal Studies and Democracy.

Chart 2: Old Age Dependency Ratio Forecast Scenarios

old-age dependency ratio, annual average, %



Sources: Statistics Canada, Institute of Fiscal Studies and Democracy.

Demographic projections are among the most important inputs in the IFSD's economic forecast. They help to determine the contribution of labour in real Gross Domestic Product (GDP)—the volume of output or economic activity generated by an economy. As was previously mentioned, Canadians have different propensities to be employed (employment rate) and to actively participate in the labour force (participation rate) at different ages. Differences are also pronounced by sex, as women are more likely to be employed than men earlier in their careers, but men are more likely to be employed during and after middle age (Chart 3).

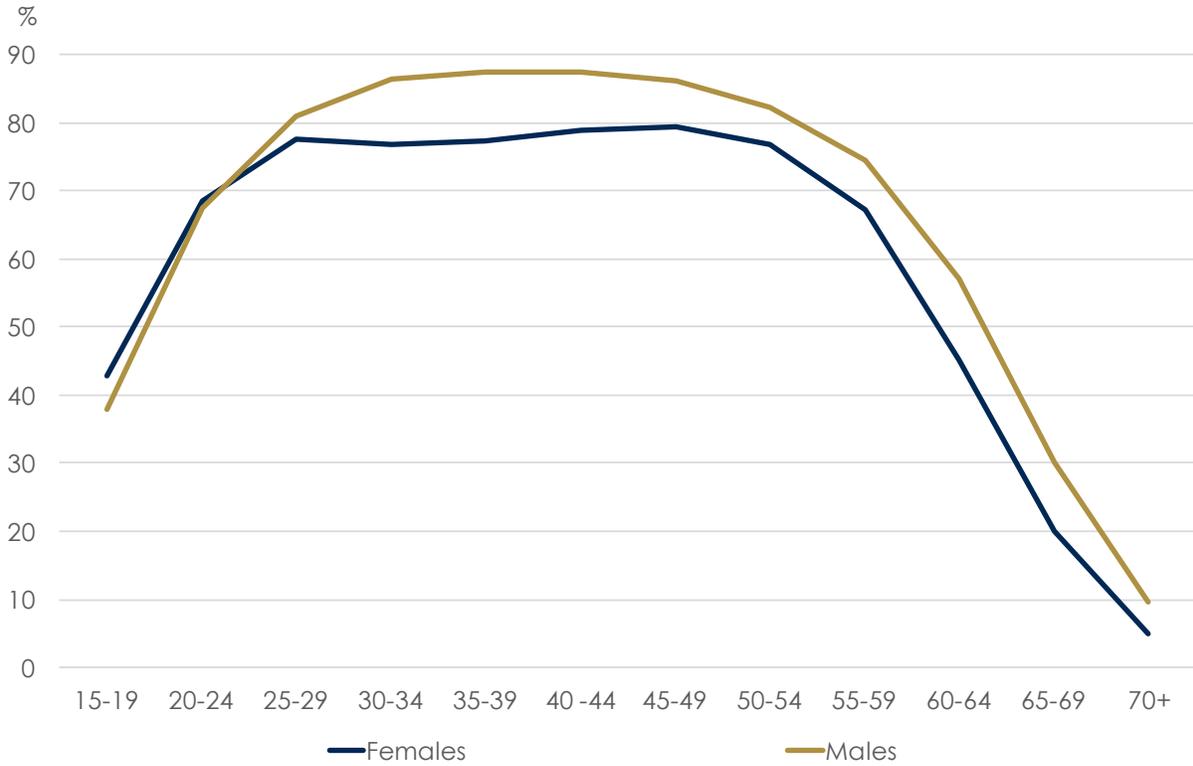
The propensity to work based on age and sex is important for projecting employment and, ultimately, total hours worked or 'labour input'. Discussed in detail by Bartlett (2017b), the approach to projecting labour input discussed here is similar to that used by the Department of Finance Canada (2016) and the Bank of Canada (2015). Forecasting labour input begins by forecasting employment and participation rates by age and sex cohort. These projections are then combined with population projections and forecasts of average weekly hours worked to generate a forecast of labour input. Chart 4 illustrates the result of this process, with the trend extracted to abstract from any impact of the business cycle. It can be observed that labour input growth is expected to decelerate over time largely as a result of Canada's aging population, with differences being pronounced across the medium, low, and high population growth scenarios from Statistics Canada.

In contrast to the substantial granularity employed in forecasting labour input, labour productivity growth in Canada is instead simply assumed to return to its long-run average of 1.1%. This the same assumption used by the Department of Finance Canada (2016) and the Bank of Canada (2015), and therefore allows for comparisons with these organizations.

Combining trend labour input and productivity then provides a projection of trend real GDP, more commonly known as potential GDP. This forms the anchor toward which the level of actual real GDP converges over time. And with inflation ultimately expected to converge to 2% (the Bank of Canada's Consumer Price Index (CPI) inflation target for conducting monetary policy), a forecast for trend nominal GDP—the broadest measure of the tax base—can be derived. Not surprisingly, the forecast for nominal GDP growth shows a similar, albeit higher, pattern to that observed for labour input growth as it is the key driver of changes in growth over the long-term while trend productivity growth and inflation are projected to be stable (Chart 5).

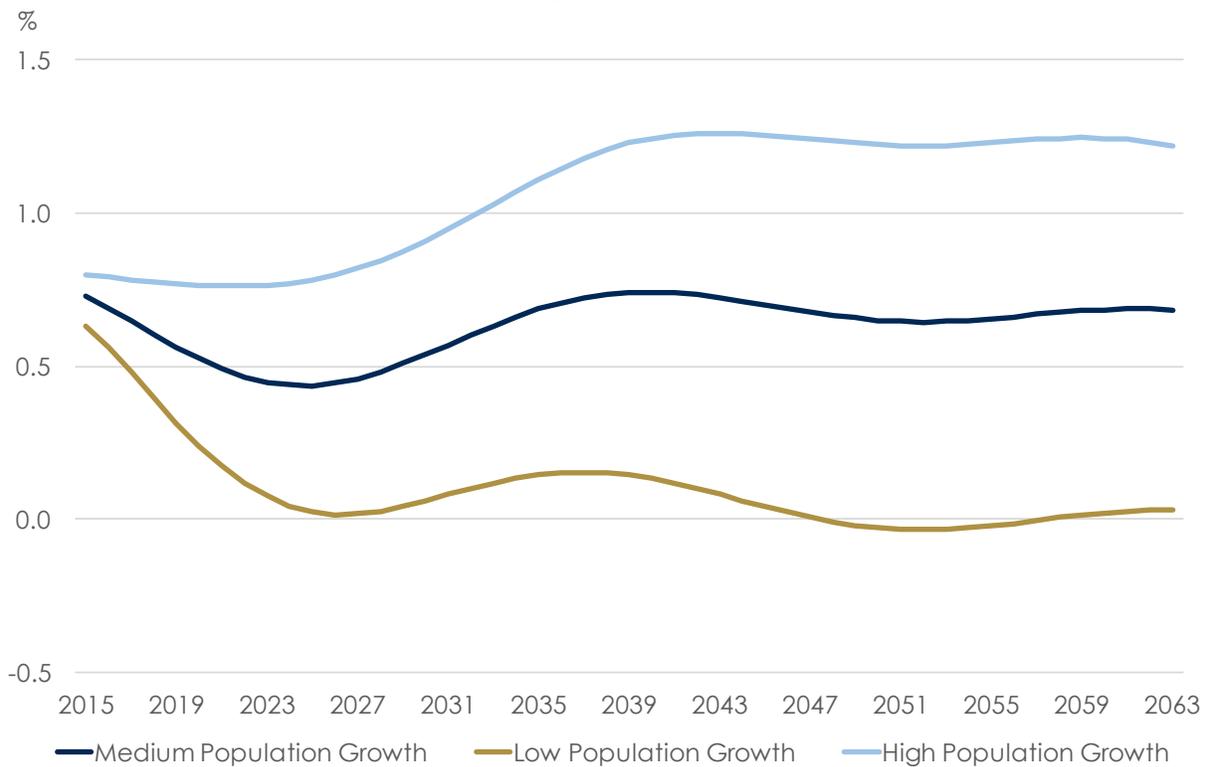
Other important economic variables for the fiscal forecast are interest rates as these are used both to determine public debt charges and in fiscal sustainability calculations. In order to do this analysis, the federal and provincial-territorial governments look to the yields on Government of Canada 90-day Treasury bills and 10-year nominal bonds. Chart 6 illustrates the IFSD's outlook for these yields using the medium population growth scenario. And while there are differences in the interest rate forecasts when various population projections are used, interest rates are expected to rise from their current lows but to ultimately converge to a lower level than was observed prior to the 2008-09 recession in all scenarios.

Chart 3: 2016 Employment Rates by Age and Sex



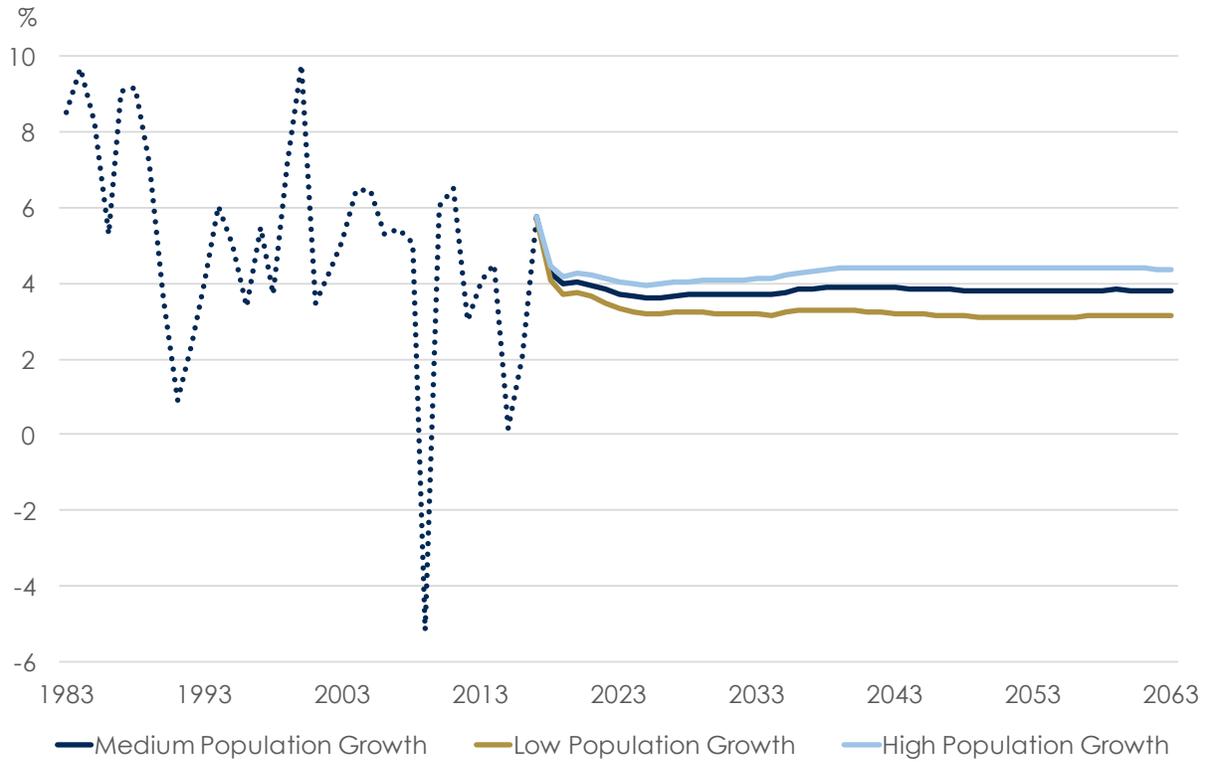
Source: Statistics Canada.

Chart 4: Trend Labour Input Growth Forecast Scenarios



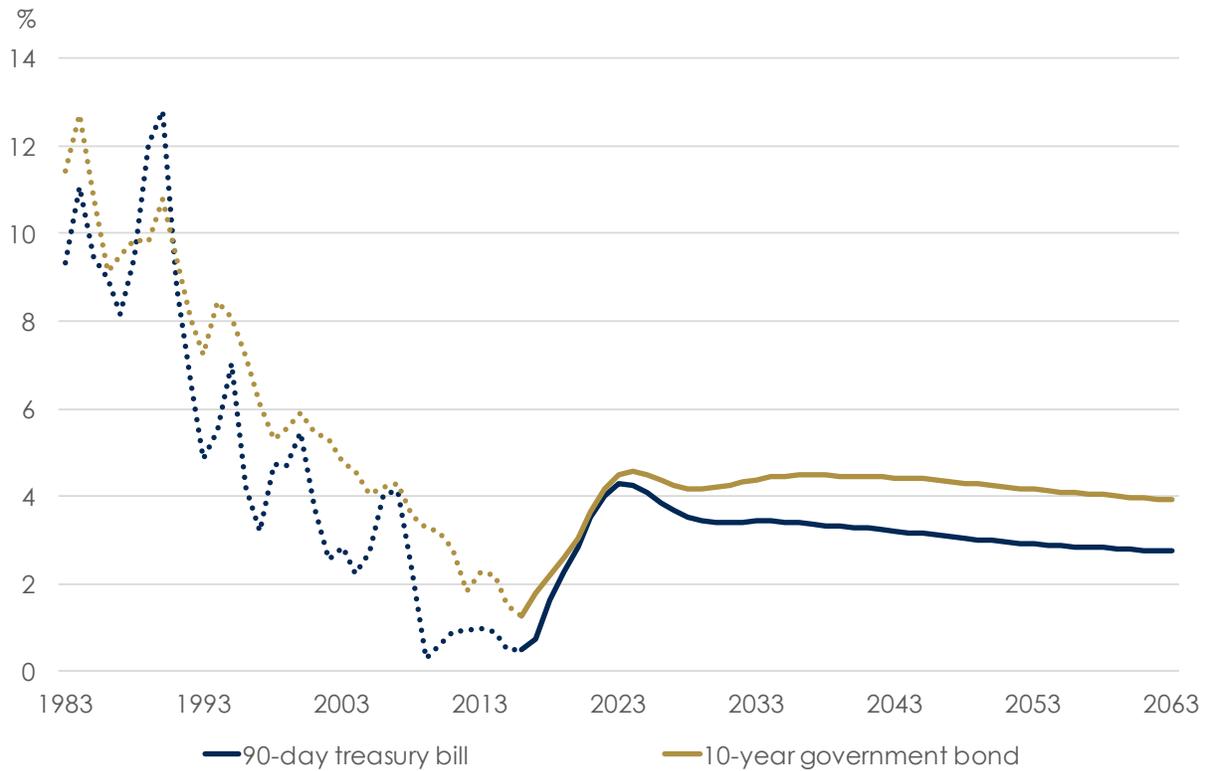
Sources: Statistics Canada, Institute of Fiscal Studies and Democracy.

Chart 5: Nominal GDP Growth Forecast Scenarios



Sources: Statistics Canada, Institute of Fiscal Studies and Democracy.

Chart 6: Yields on Select Government of Canada Bonds



Sources: Bank of Canada, Institute of Fiscal Studies and Democracy.

Federal Fiscal and Debt Forecast

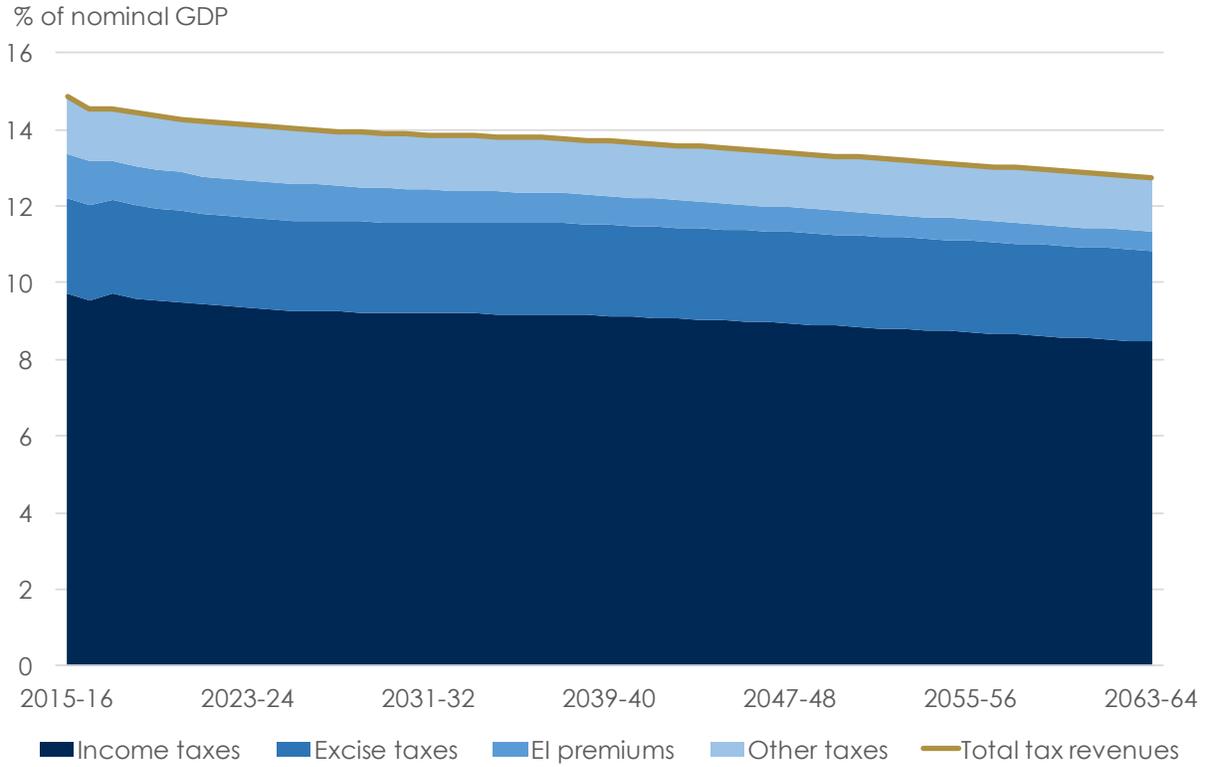
The demographic and economic forecasts are used as inputs into the IFSD's fiscal forecasts. On the revenue side, the income and expenditure categories that comprise nominal GDP form the bases from which taxes and other revenues are derived. Meanwhile, demographic and economic variables such as population growth, aging, real income growth, and inflation are all inputs into the outlook for government spending. The IFSD uses its September 2017 Canadian economic and federal fiscal forecasts to form the starting point for its long-term federal fiscal forecast (Bartlett & Lapointe, 2017a; Bartlett & Lapointe, 2017c).

For the federal government, revenues are broken into four main categories: income taxes, excise taxes, Employment Insurance premiums, and other revenue. Using the medium population growth scenario, it can be observed that revenues are expected to decline modestly as a share of GDP through the 2063-64 fiscal year (Chart 7). This is largely the result of changing demographics weighing on revenues from personal income taxes and Employment Insurance (EI) premiums.

Meanwhile, federal government program expenses, as a share of nominal GDP, are expected to decline much more than is the case for revenues, falling from 14.3% in fiscal 2016-17 (as per the IFSD's September 2017 federal fiscal forecast) to 10.6% in fiscal 2063-64 (Chart 8). The primary reason for the lower forecast path of program expenses as a share of the economy is due to direct program expenses (DPE)—the discretionary part of federal government spending which is largely tied to departmental budgets.¹

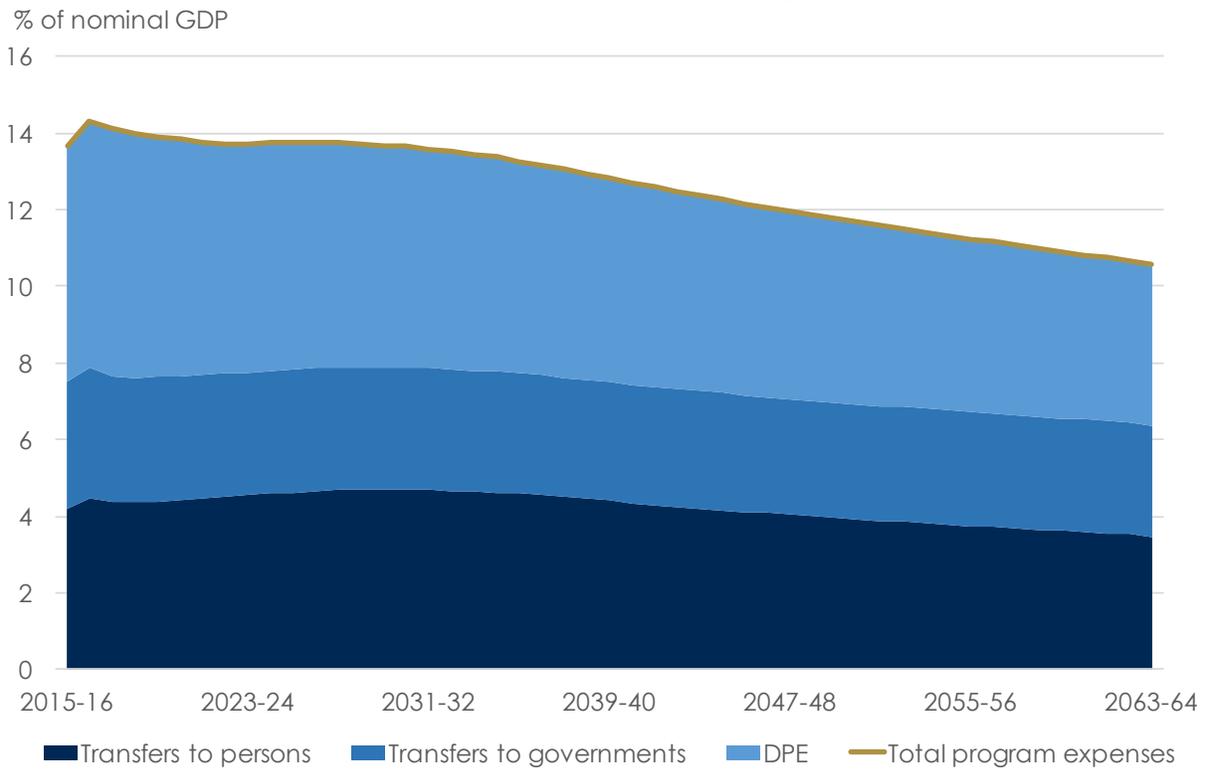
Federal government revenue less program expenses is equivalent to the primary balance. The primary balance outlines whether or not a government's revenue is sufficient to meet the cost of programs it is delivering and transfers it is making before the interest on its debt is taken into account. From the 2016-17 fiscal year through the 2063-64 fiscal year, the federal government primary balance is expected to remain positive as a share of nominal GDP, if only just barely through to the 2030-31 fiscal year (Chart 9). After that, the primary balance is expected to gradually increase as a share of GDP, reaching 2.2% by the 2063-64 fiscal year.

Chart 7: Federal Government Revenue Forecasts



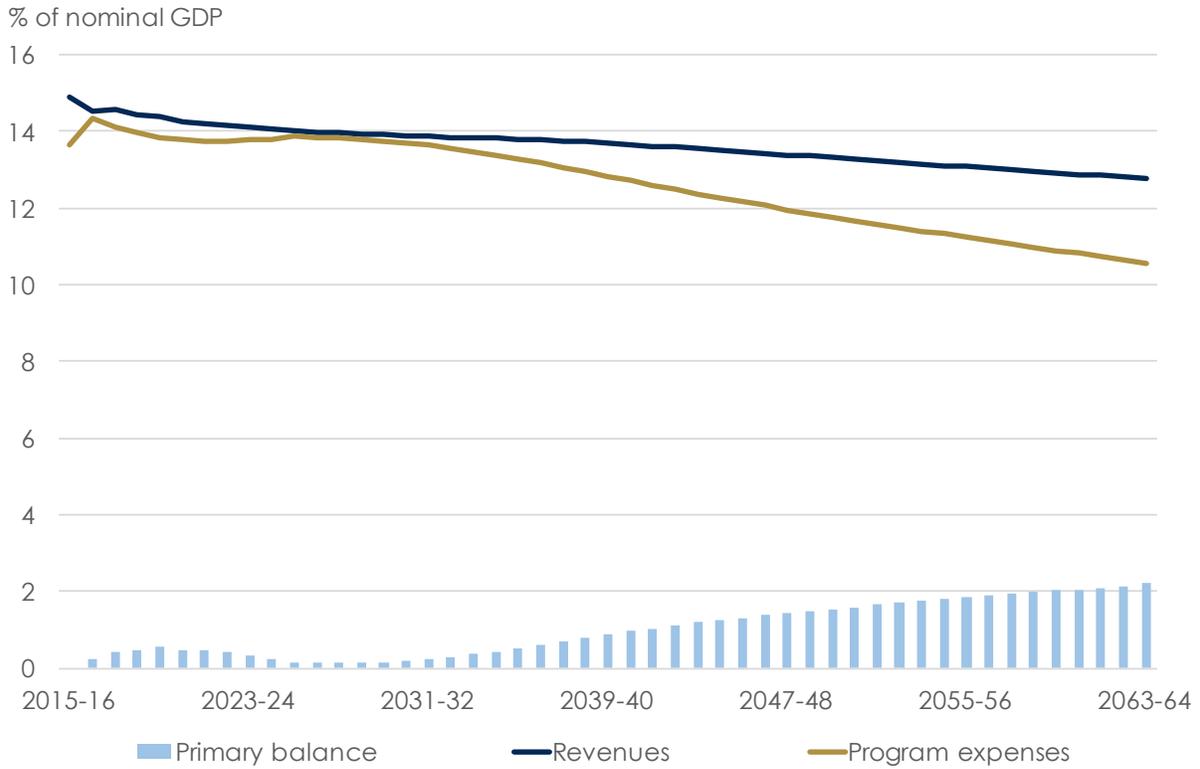
Sources: Government of Canada, Institute of Fiscal Studies and Democracy.

Chart 8: Federal Government Expense Forecasts



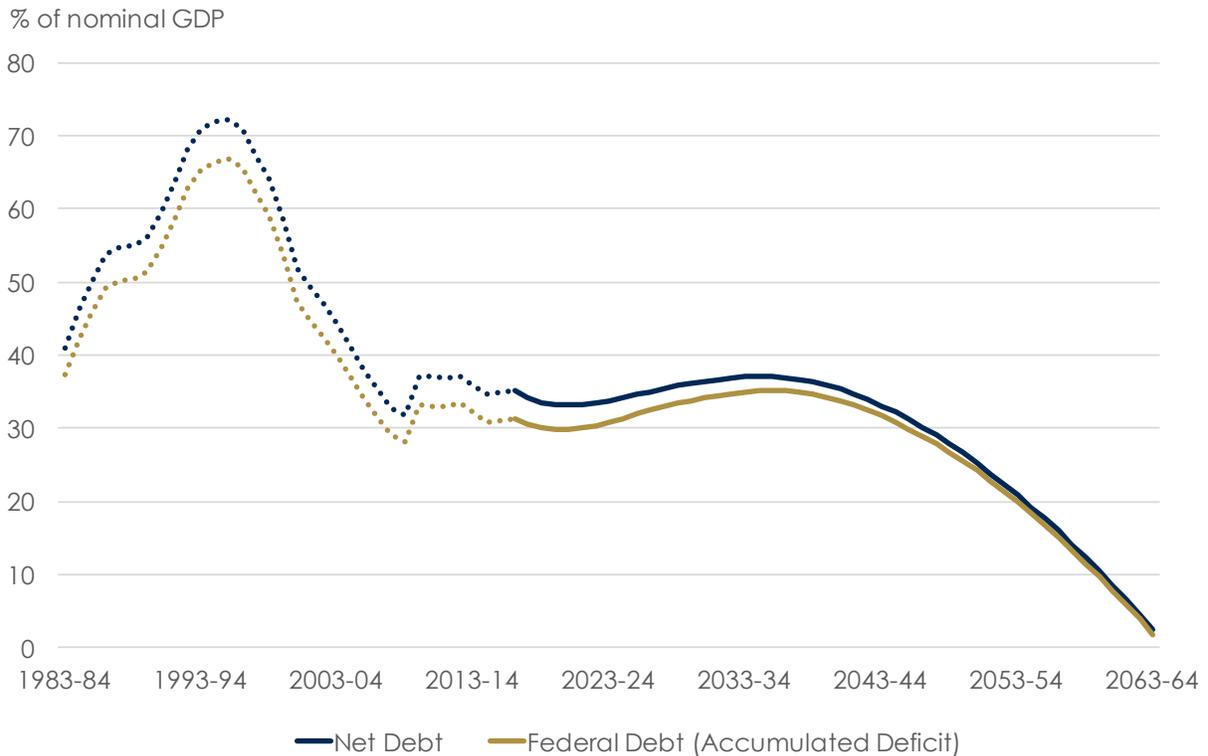
Sources: Government of Canada, Institute of Fiscal Studies and Democracy.

Chart 9: Federal Government Primary Balance Forecast



Sources: Government of Canada, Institute of Fiscal Studies and Democracy.

Chart 10: Federal Net Debt and Accumulated Deficit



Sources: Government of Canada, Statistics Canada, Institute of Fiscal Studies and Democracy.

The IFSD's forecast of the federal primary balance has important implications for the outlook of the Government of Canada's future debt path (see Annex A). For instance, the primary balance is forecast to shrink through the 2030-31 fiscal year due to the rising cost of elderly benefits pushing the level of program expenses closer to that of revenues. As a result, the federal net debt-to-GDP ratio is expected to rise above its current level, reaching a peak of 37.1% in the 2034-35 fiscal year (Chart 10).² However, as the growth in revenues is forecast to outpace that of expenses over the subsequent 30 years, the primary balance is forecast to improve substantially and the net debt-to-GDP ratio along with it. Consequently, the IFSD is forecasting that the federal debt will be almost entirely eliminated by the end of the forecast period (2063-64 fiscal year).

III. ONTARIO ECONOMIC AND FISCAL FORECASTS

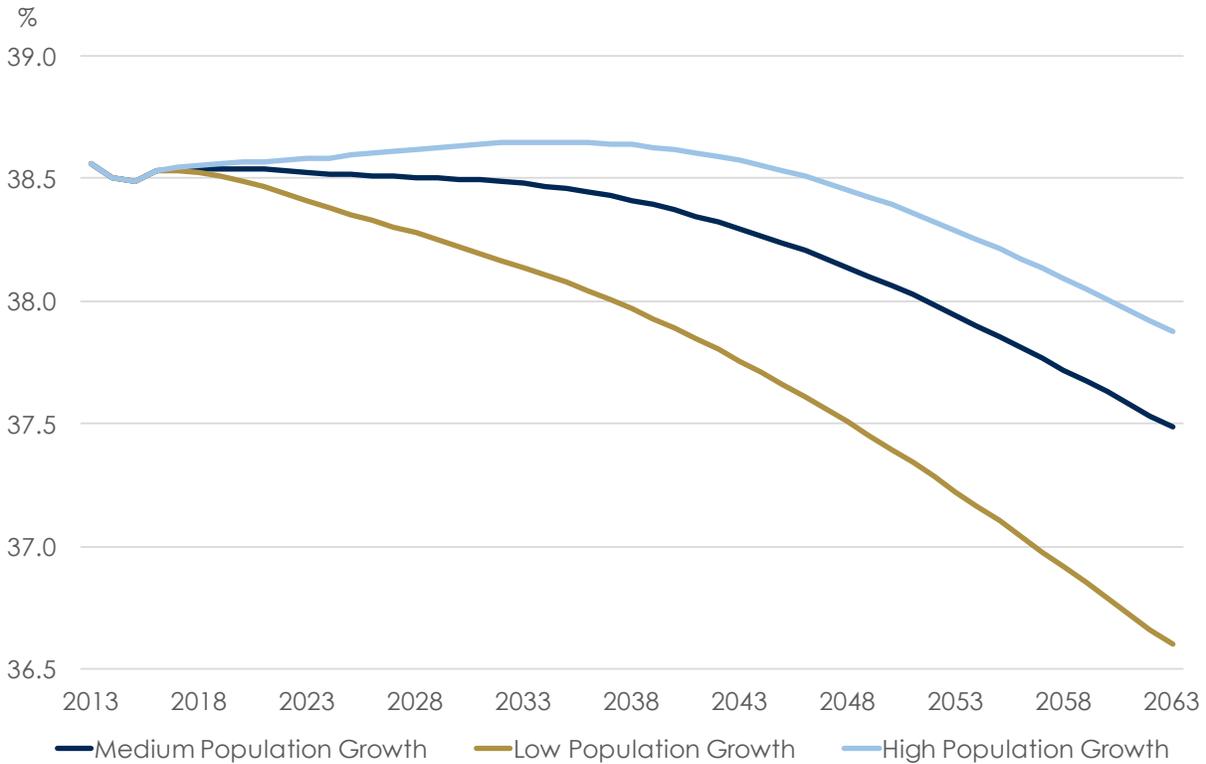
As the IFSD has done in the past, we begin our model development for the provinces and territories with Ontario, as it is the most populous province with among the richest available data. Following the publication of the IFSD's 2017 FSR, we will expand our analysis to include detailed economic and fiscal forecasts of other Canadian provinces and territories, as well as other subnational jurisdictions abroad.

Ontario Demographic Projections

According to Statistics Canada, Ontario was home to nearly 40% of Canada's population in 2016, making it the country's most populous province. And over the projection period—ranging from 2017 to 2063—Statistics Canada doesn't expect the Ontario share of Canada's population to change materially.³ These population shares are similar across Statistics Canada population growth projection scenarios (Chart 11). As such, trends in Ontario's total population growth broadly resemble those illustrated in Chart 1. It also means that the share of transfers that Ontario receives based on its relative share of Canada's population, such as the Canada Health Transfer (CHT) and Canada Social Transfer (CST), shouldn't change materially over time.

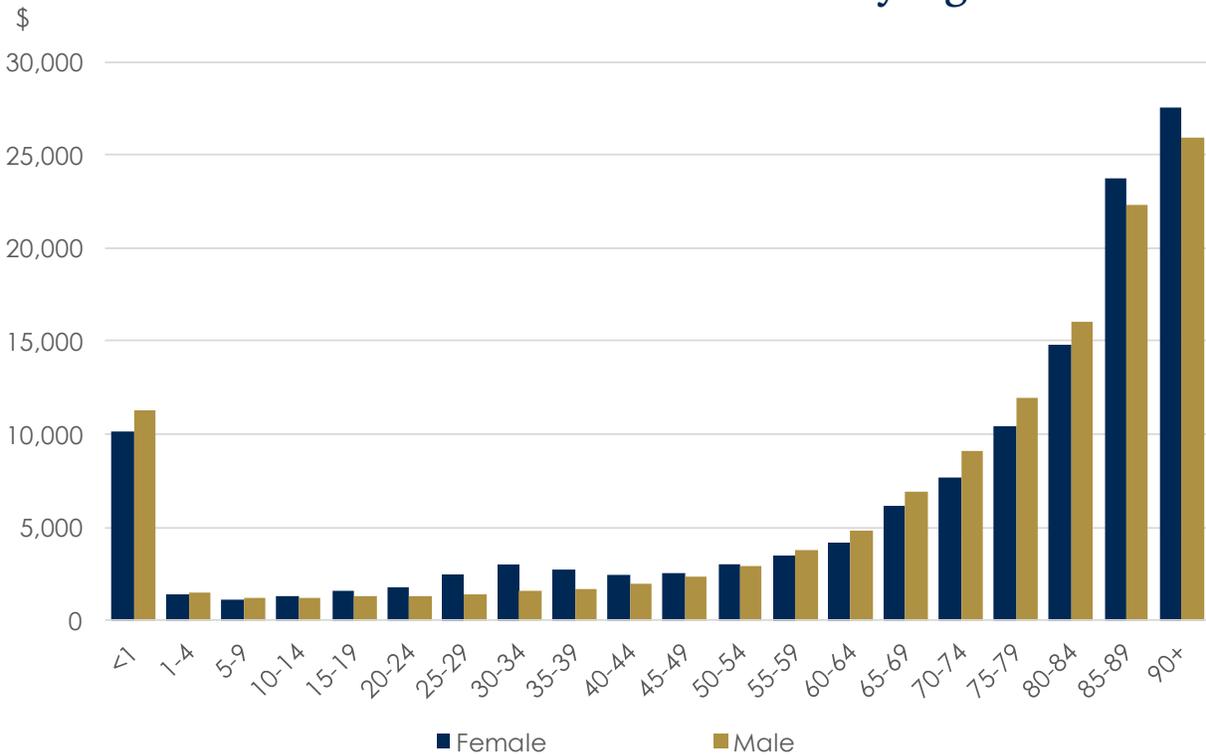
But total population is just one of many demographic considerations that must be examined. Indeed, the shifting age structure of a population is at least as important at the provincial level as it is at the federal level for several reasons. As was discussed previously, different age and sex cohorts have different levels of engagement in the labour market, which is then reflected in the estimate of labour input that underpins real GDP. The impact of demographic changes is then reflected in the tax bases underlying revenues, as well as expenditures. For instance, take the average cost of providing health care to Ontarians, which differs markedly by both age and sex (Chart 12). After the initial high cost of health care associated with birth, costs remain relatively low until people reach their mid- to late-40s, at which time health care costs begin to rise at a nearly exponential rate. For men, this happens earlier in life, as they have a shorter life expectancy than women. And, for women, there is an additional period of modestly higher cost than men from their mid-20s through late-30s associated with child birth.

Chart 11: Projected Ontario Share of Canadian Population



Sources: Statistics Canada, Institute of Fiscal Studies and Democracy.

Chart 12: Cost of Ontario Health Care by Age and Sex



Sources: Canadian Institute for Health Information.

Note: Estimates are for 2014.

Ontario Economic Forecast

Ontario's economy has been doing very well in recent years. This reflects solid fundamentals, such as steady and stable population growth, as well as the changing economic tide that began in mid-2014 as a result of the lower Canadian dollar on the back of falling oil prices.

From 2010 through 2013, real GDP growth averaged 2.0%. In the three years that followed, it averaged 2.6%, and the IFSD is forecasting it will hit 2.8% in 2017. After that, growth is expected to cool somewhat, decelerating enough to bring real output in line with the potential output of the economy. That said, average real GDP growth in Canada and Ontario is expected to be broadly similar over the long-term under the medium population growth scenario (Chart 13). In the near-term, nominal GDP growth is expected to be higher in Canada relative to Ontario, reflecting the greater sensitivity of aggregate prices at the national level to changes in energy prices.

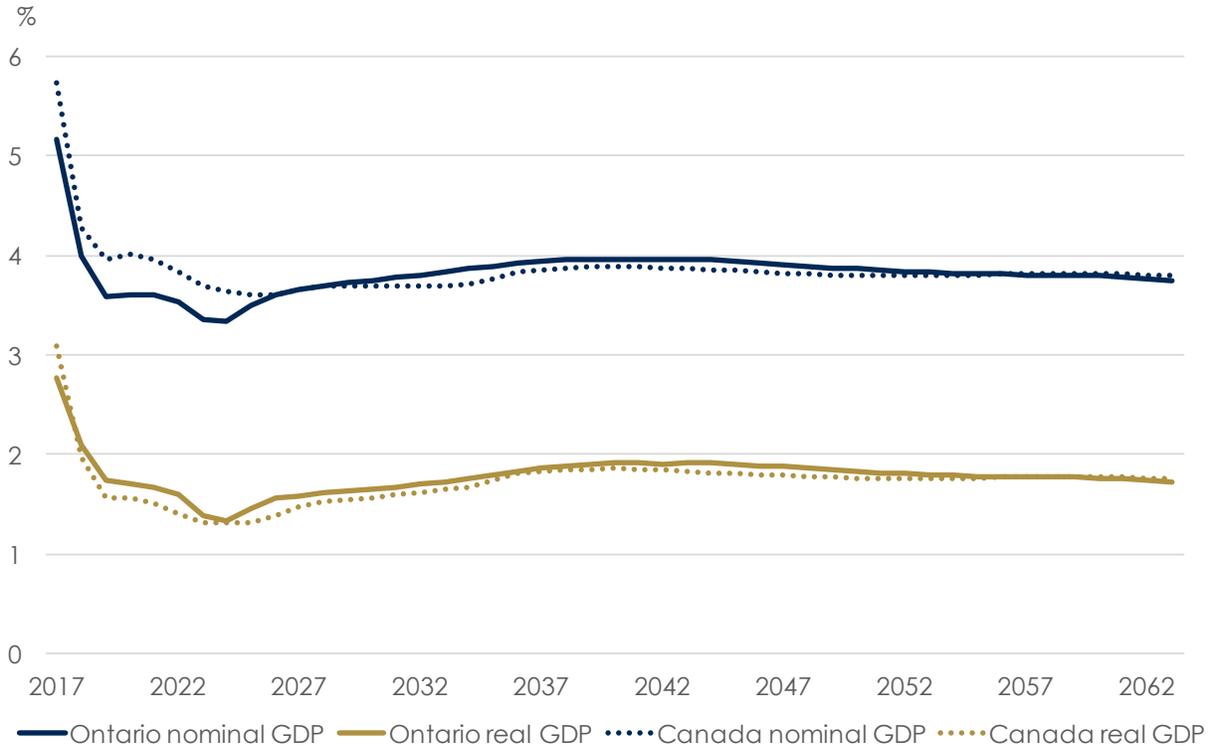
Ontario Fiscal and Debt Forecast

In a fiscal federation like Canada, while provinces and territories have significant independence to raise revenues and spending, they also receive a substantive share of their revenues from the federal government through transfers. As such, undertaking long-term economic and fiscal forecasts for the federal government are important first steps of assessing the fiscal sustainability of provincial and territorial governments. It also allows for an understanding of how changes to federal transfers, such as the CHT, impact both national and subnational government finances. In order to illustrate this relationship, the IFSD has elected to use Ontario as the province on which to base its first subnational forecast, as it did in undertaking its analysis of the CHT negotiations at the beginning of 2017 (Bartlett, 2017a; Bartlett & Lapointe, 2017b).

Ontario has a much more diverse set of revenue sources than the federal government does. Looking first to taxes, while some are linked to the same tax bases, such as personal income tax, corporate income tax, and the Harmonized Sales Tax, others are linked to different tax bases such as housing market activity and prices. In addition to the transfers from the federal government already mentioned, which include the CHT, CST, Labour Market Agreements, and Equalization, revenue from Government Business Enterprises (GBEs) is also a much more important source of revenue in Ontario than at the federal level.

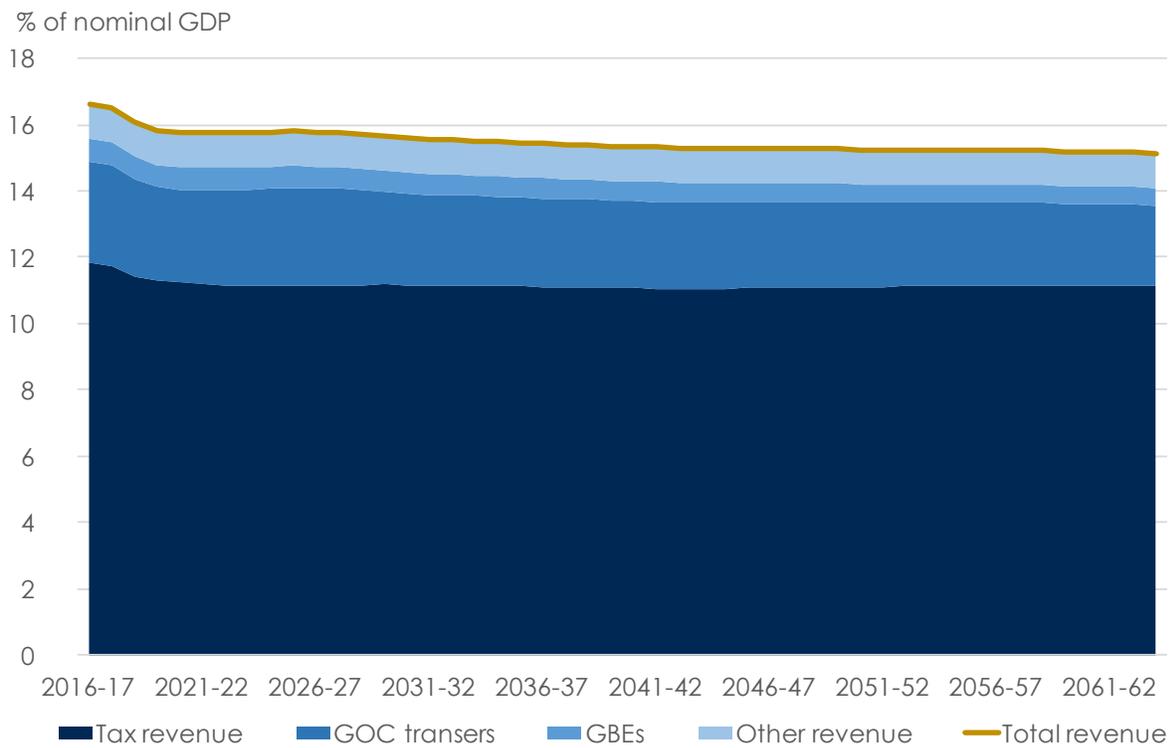
Much like at the federal level, Government of Ontario revenues are expected to decline, albeit modestly, over time as a share of nominal GDP (Chart 14). Much of the deceleration in revenues reflects the fact that the income tax revenues as a share of GDP has recently been high relative to history, in part as a result of economic activity that has been well in excess of the potential output of Ontario's economy. As economic growth slows toward more normal levels, the level of taxes, particularly income taxes, is expected to converge to its historical share of nominal GDP. That said, income taxes will continue to make up the lion's share of the Ontario government's revenues.

Chart 13: GDP Growth Forecast for Canada and Ontario



Sources: Ontario Ministry of Finance, Statistics Canada, Institute of Fiscal Studies and Democracy.
 Note: The forecast period is the 2017-18 to 2063-64 fiscal years.

Chart 14: Ontario Government Revenue Forecast



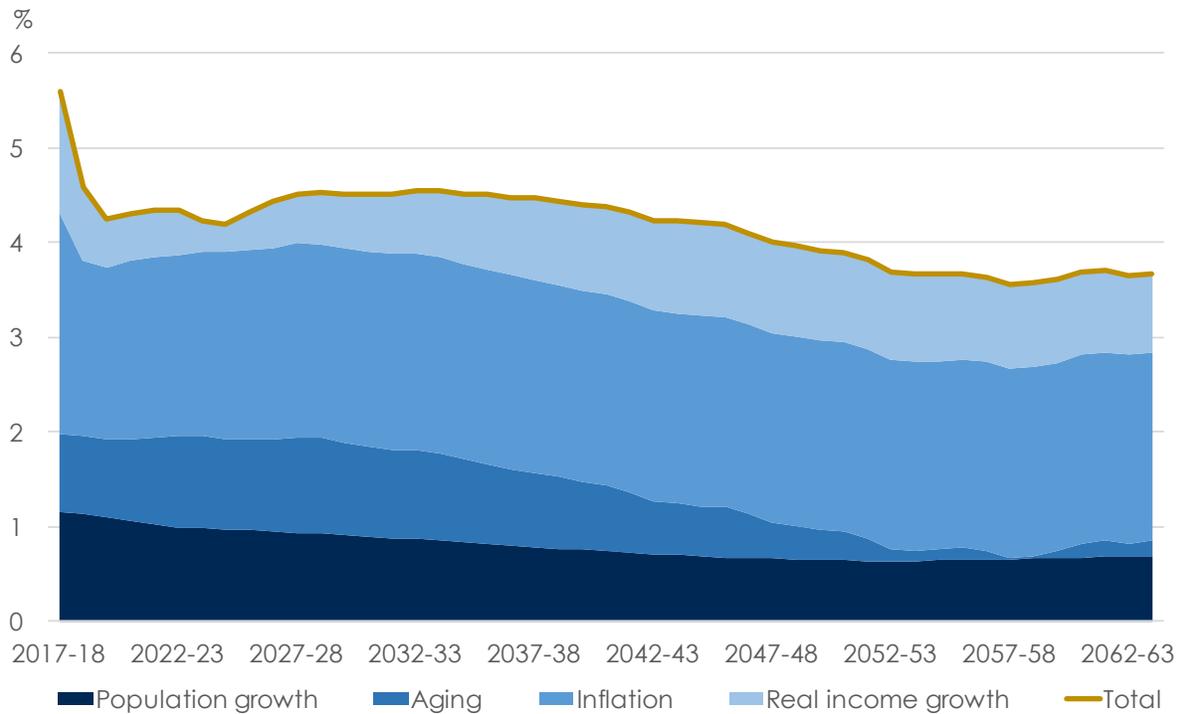
Sources: Government of Ontario, Institute of Fiscal Studies and Democracy.
 Note: The forecast period is the 2017-18 fiscal year to the 2063-64 fiscal year.

Meanwhile, expenditures in Ontario are also more diverse in their drivers than at the federal level. For instance, at the federal level, less than half of federal spending is tied to discretionary departmental spending. The remainder are transfers to either persons or other levels of government, which are largely linked to real GDP growth or CPI inflation. In contrast, in Ontario, as in the other provinces and territories, almost all expenditures are linked to departmental programs. As a result, more discretion is exercised over spending than at the federal level, although this can also leave the province on the hook for meeting spending commitments driven by forces beyond its control, such as demographics. Take health care spending as an example: as outlined in the IFSD's prior work, it is underpinned by four fundamental drivers—population growth, aging, real income growth, and inflation (Bartlett, 2017b; Bartlett & Lapointe, 2017a). Any difference between actual spending growth and the growth that is explained by these fundamental spending drivers is known as enrichment. Assuming enrichment is zero, Chart 15 illustrates how much each of these drivers contributes to the IFSD's forecast of health spending growth in Ontario. While inflation is the dominant driver of health care costs over the forecast, aging makes a significant contribution as well, particularly through the mid-2030s.

Of course, despite comprising about 45% of the Government of Ontario's expenditures in the 2016-17 fiscal year, health care spending is only part of the story. The other major expenditure categories include spending on kindergarten through Grade 12 education (21%), post-secondary education (8%), and community and social services (9%). Together, the departments that offer these services comprise the lion's share of spending in Ontario (Chart 16). The IFSD also takes into account Ontario's planned infrastructure spending (see Annex B). Looking ahead, aggregate government expenditures are expected to decline in Ontario as a share of nominal GDP through the 2063-64 fiscal year, largely as a result of lower spending on education as the population ages. In contrast, spending on health care is expected to increase as a share of Ontario's economy over the same period.

It is important to note that these forecasts do not take into account the historical enrichment of provincial programs. Enrichment is defined as the difference between actual spending growth and the growth in the underlying cost drivers such as population growth, aging, real income growth, and inflation. In the case of health care, historical average enrichment is equivalent to an additional 0.6 percentage points on top of the growth explained by demographic and economic factors. In the event that only health care is enriched at its historical average, total expenses of the Government of Ontario would stay roughly constant as a share of GDP over time. However, when it comes to education and community and social services, enrichment of these categories has been historically even higher. As a result, adding the historical enrichment of other educational and social services would cause total spending to increase as a share of GDP over the projection.

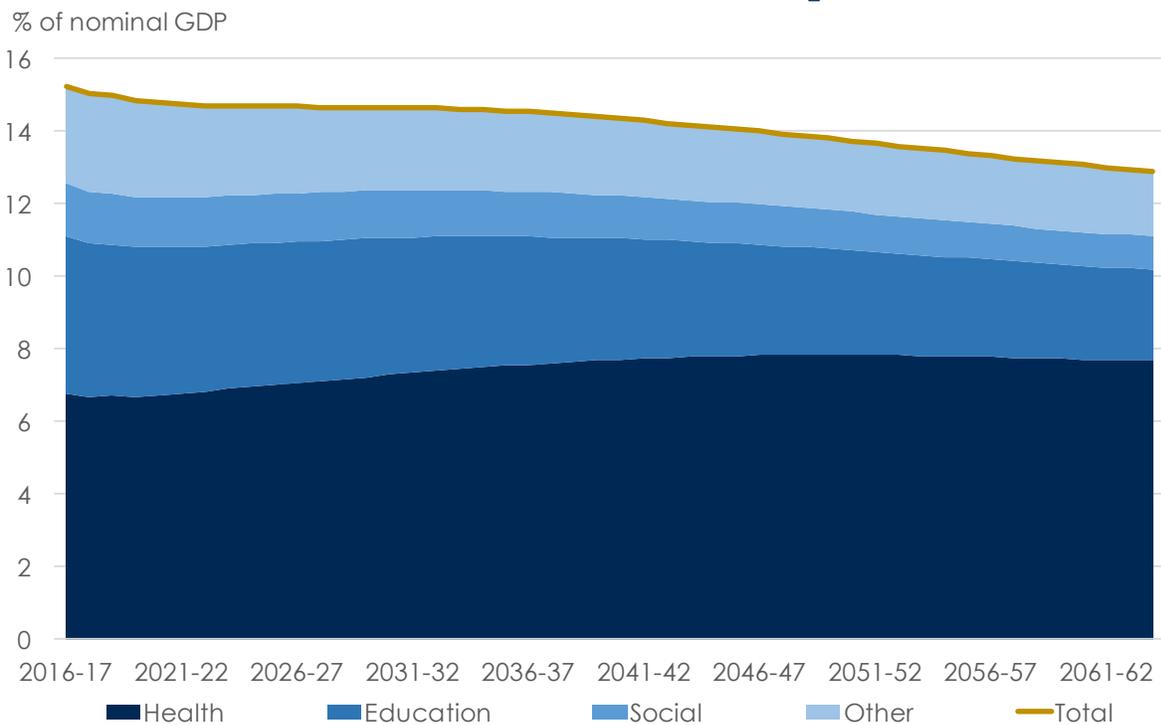
Chart 15: Ontario Health Care Spending Growth Forecast



Sources: Government of Ontario, Statistics Canada, Canadian Institute for Health Information, Institute of Fiscal Studies and Democracy.

Note: The forecast period is the 2017-18 fiscal year to the 2063-64 fiscal year.

Chart 16: Ontario Government Expense Forecast



Sources: Government of Ontario, Institute of Fiscal Studies and Democracy.

Note: Education includes kindergarten through grade 12, as well as post-secondary education. The forecast period is the 2017-18 fiscal year to the 2063-64 fiscal year.

Looking to the trajectory of Ontario's primary balance in the absence of spending enrichment, it can be observed that it follows a similar pattern to the primary balance at the federal level (Chart 17). However, unlike in the federal government's case, the primary balance in Ontario is expected to remain well above zero percent of nominal GDP in all years.

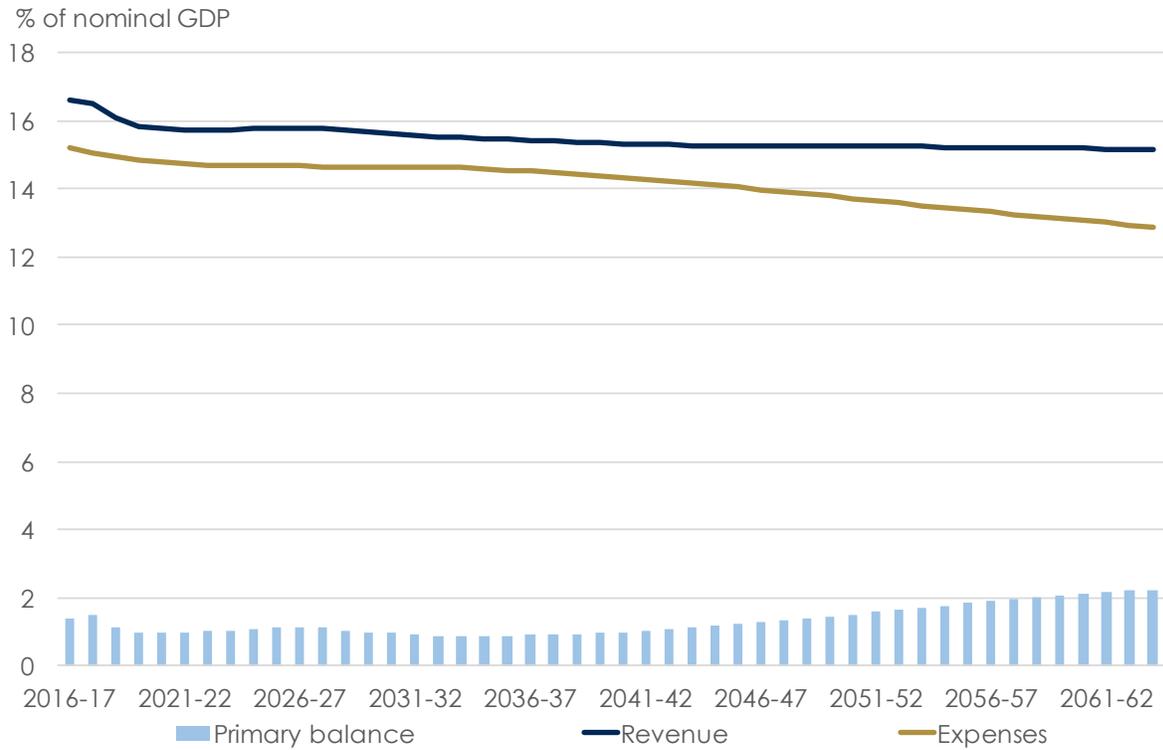
Overall, the path for Ontario's primary account balance is not expected to be strong enough to support a net debt-to-GDP profile which is as optimistic as what we have seen at the federal level (Chart 18). Indeed, Ontario's net debt-to-GDP ratio is expected to top 40% of nominal GDP for the period encompassing the 2022-23 and 2026-27 fiscal years after which Ontario's net debt is expected to decline as a share of nominal GDP through the 2063-64 fiscal year. This, in part, reflects Ontario's higher starting point for its net debt-to-GDP ratio. Much of Ontario's more pessimistic net debt profile relative to the federal government can also be linked to the higher effective interest rate (EIR) that it pays to service its debt (Chart 19). Indeed, the IFSD has assumed that the spread between the provincial and federal public debt EIRs over the projection is the same as its recent historical average, at 80 basis points. This means that Ontario's relative public debt charges are also higher, contributing to a more elevated profile for the net debt-to-GDP ratio. However, it is important to keep in mind that, while the EIRs of the federal and Ontario governments' debt are expected to rise relative to current levels, they are expected to remain below their pre-recession averages over the course of the projection.

IV. FISCAL SUSTAINABILITY ANALYSIS FOR THE GOVERNMENTS OF CANADA AND ONTARIO

The analysis presented above outlines the progression through the demographic, economic, fiscal, and ultimately debt forecasts of the Governments of Canada and Ontario, based on the medium population projection from Statistics Canada. The final contribution of this report is to summarize the analysis into a single measure of fiscal sustainability—the fiscal gap—similar to that used by the Office of the Parliamentary Budget Officer (2017) (see Annex A). The fiscal gap provides an estimate of the immediate and permanent change in the primary balance as a share of GDP which allows a government to return to a predetermined net debt-to-GDP ratio by the end of the forecast. A negative fiscal gap means a government has room to either reduce revenues, increase spending, or do a combination of both. When a fiscal gap is positive, the opposite is true.

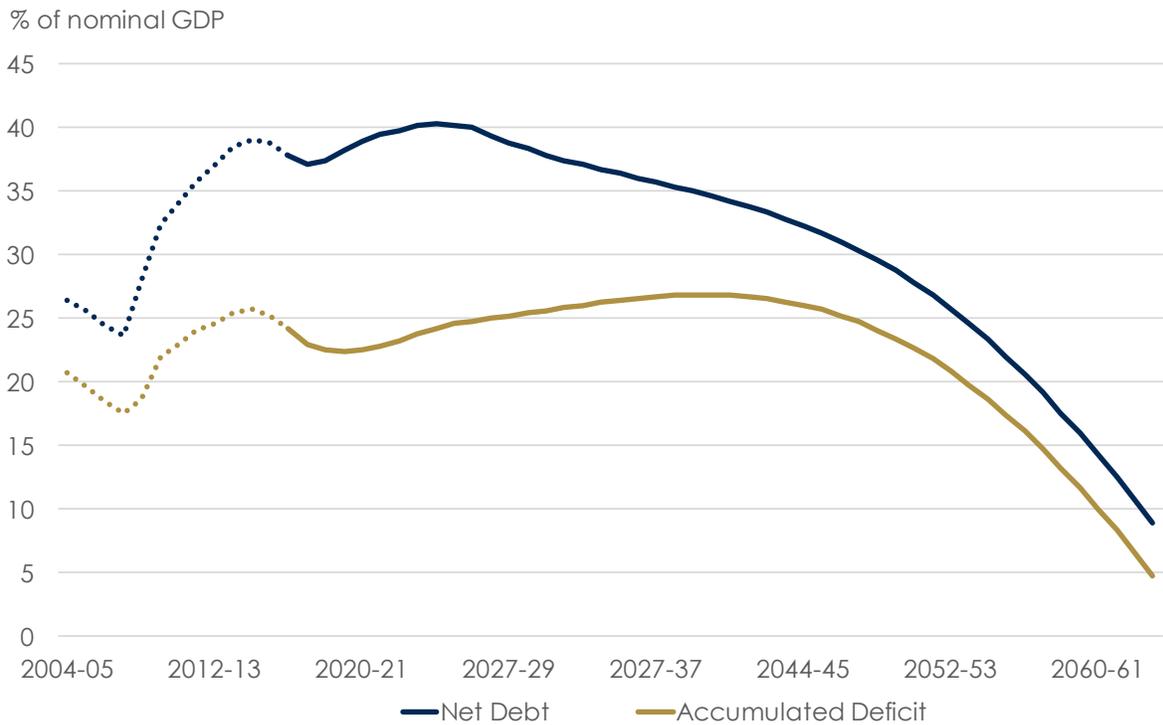
Most of the discussion in this report has focused on demographic, economic, fiscal, and debt forecasts for Canada and Ontario that are based on the M1-medium population growth projection scenario. In this section, we will compare the resulting fiscal gap estimate with those of alternative population growth, productivity growth, interest rate, Canada Health Transfer, and health care enrichment scenarios. This analysis is intended to provide a range of reasonable outcomes around the base case scenario that will illustrate the potential risks to fiscal sustainability.

Chart 17: Ontario Government Primary Balance Forecast



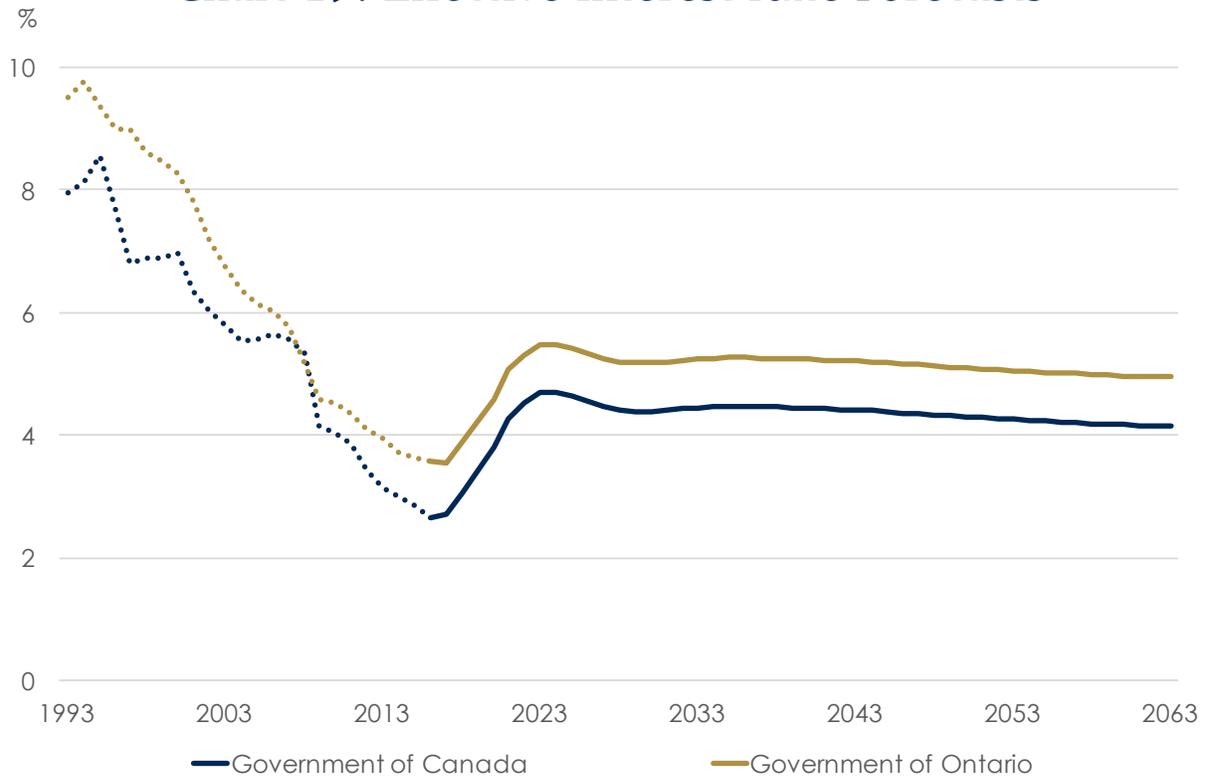
Sources: Government of Ontario, Institute of Fiscal Studies and Democracy.
 Note: The forecast period is the 2017-18 fiscal year to the 2063-64 fiscal year.

Chart 18: Ontario Net Debt and Accumulated Deficit



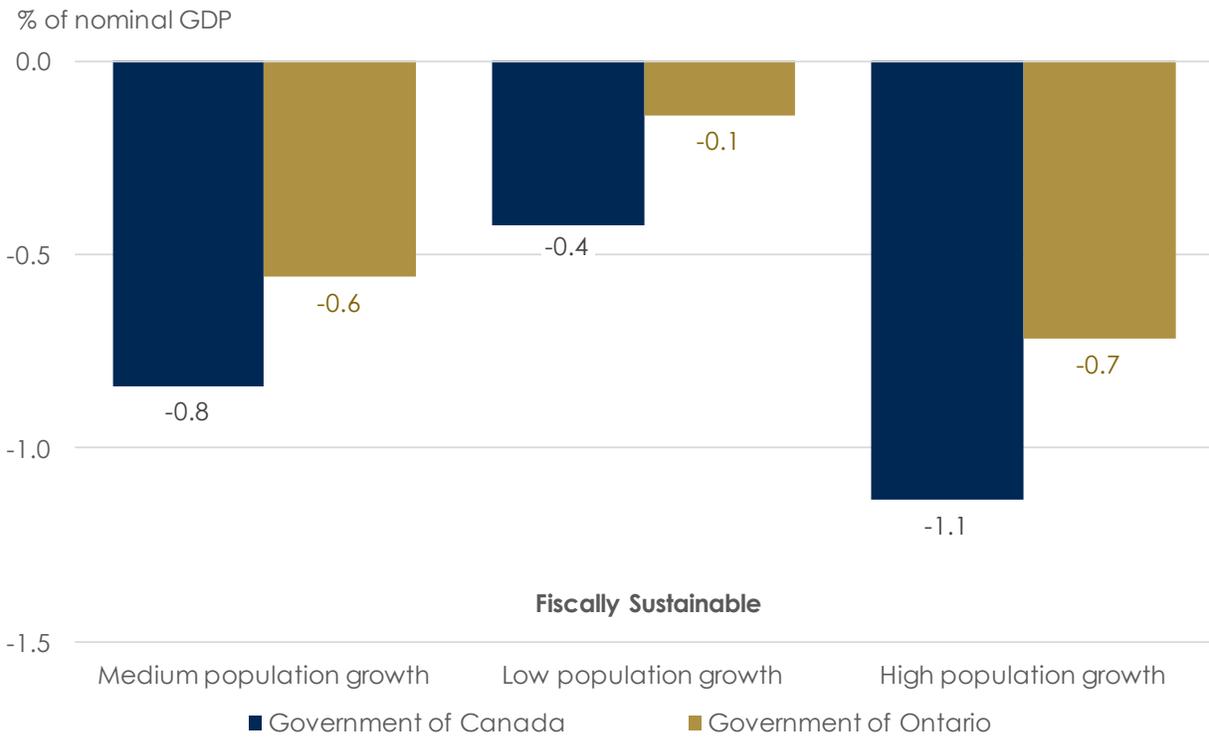
Sources: Government of Ontario, Institute of Fiscal Studies and Democracy.
 Note: The forecast period is the 2017-18 fiscal year to the 2063-64 fiscal year.

Chart 19: Effective Interest Rate Forecasts



Sources: Government of Canada, Government of Ontario, Institute of Fiscal Studies and Democracy.

Chart 20: Fiscal Gap with Different Population Projections



Source: Institute of Fiscal Studies and Democracy.
 Note: The fiscal gap is estimated for a period ending in the 2063-64 fiscal year.

Alternative Statistics Canada Population Projection Scenarios

As has been touched on earlier in this report, Statistics Canada provides alternative population projection scenarios for Canada and Ontario. Presented in Chart 20 are the fiscal gap estimates based on the medium (M1), low, and high population growth projections, with the final fiscal year of the estimate being 2063-64. In the low population growth scenario, the population grows more slowly and ages more quickly than in the M1-medium population growth scenario. As a result, there is less fiscal room available to both the federal and provincial governments in the low population growth scenario than there is in the medium population growth scenario. The opposite is true for the high population growth scenario.

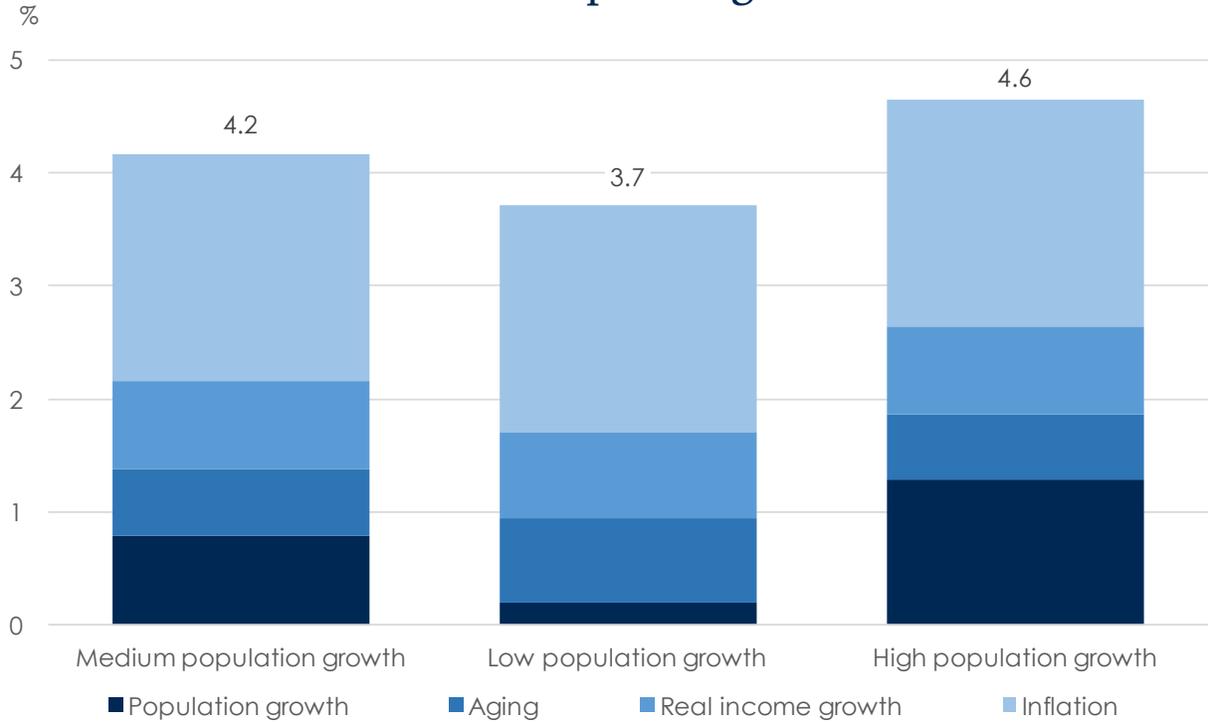
An important contributor to the change in the fiscal gap estimate in the province of Ontario is the role that demographics play in the forecast of health care spending. For instance, the population ages more rapidly in the low population growth projection, meaning the contribution from aging is higher than in either the medium or high population growth projections scenarios. However, total population growth is markedly lower in the low population growth projection, meaning total health spending growth is also lower under the low population growth projection scenario than in the high and medium population growth scenarios (Chart 21).

Alternative Productivity Growth Scenarios

As was previously discussed, the IFSD uses the naïve assumption that growth in labour productivity (real GDP divided by total hours worked) will converge to its historical average of 1.1% over the forecast. However, over history, productivity growth has varied considerably, and economists of all stripes have speculated that we have everything from the end of productivity growth to unprecedented innovation to look forward to. In order to capture some of this uncertainty around future productivity growth, the IFSD has introduced high and low productivity growth scenarios, which assume productivity growth will advance by +/- 0.5 percentage points relative to its historical average of 1.1%.

In applying these alternative productivity growth scenarios, the result under higher productivity growth leads to more fiscal room (a more negative fiscal gap) for the federal and Ontario governments, and less fiscal room (a less negative fiscal gap) in the lower productivity growth scenario (Chart 22). This outcome is intuitive, as lower labour productivity growth means lower real and nominal GDP growth, and hence lower revenue growth. Lower nominal GDP growth also feeds into some expenditure categories, both at the federal and provincial levels, providing some partial offset to the lower revenue forecast. Taken together, the net debt-to-GDP ratio is therefore higher in the low productivity growth scenario than when labour productivity growth is assumed to return to its historical average (Chart 23). The opposite is also true for the high productivity growth scenario.

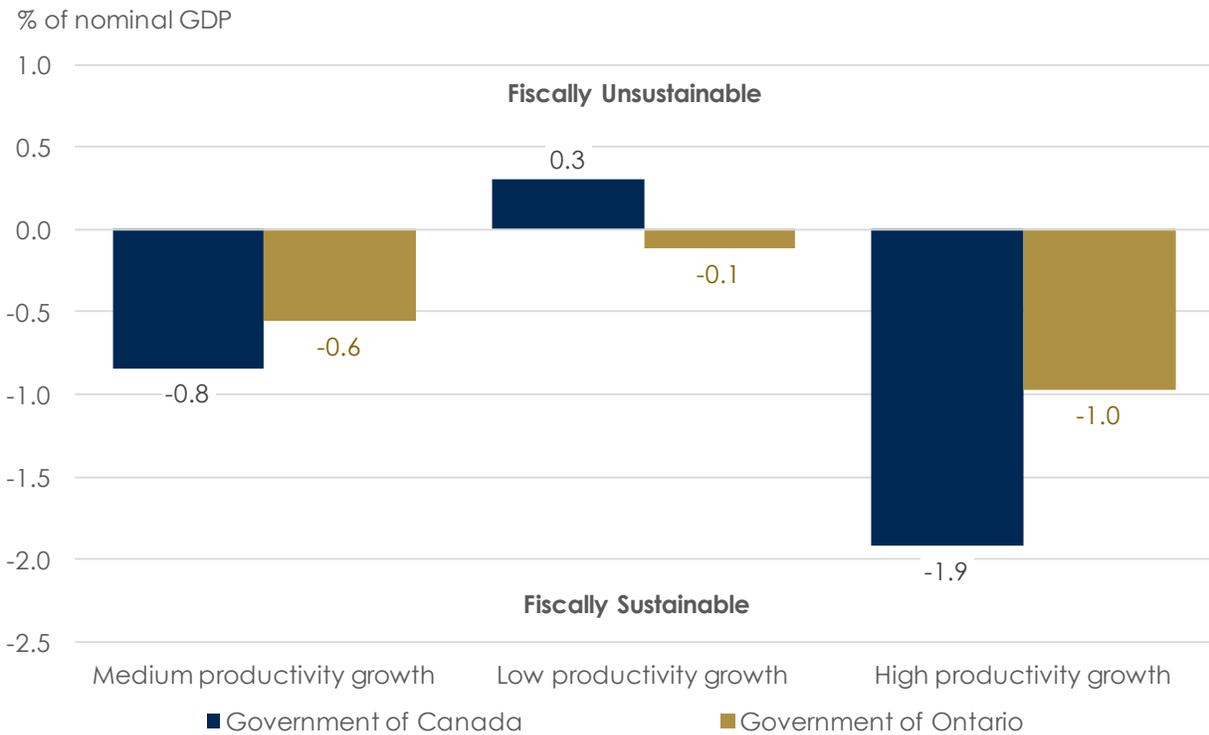
Chart 21: Health Care Spending Growth Forecasts



Sources: Government of Ontario, Statistics Canada, Canadian Institute for Health Information, Institute of Fiscal Studies and Democracy.

Note: Spending growth represents the average from the 2017-18 fiscal through tge 2063-64 fiscal year.

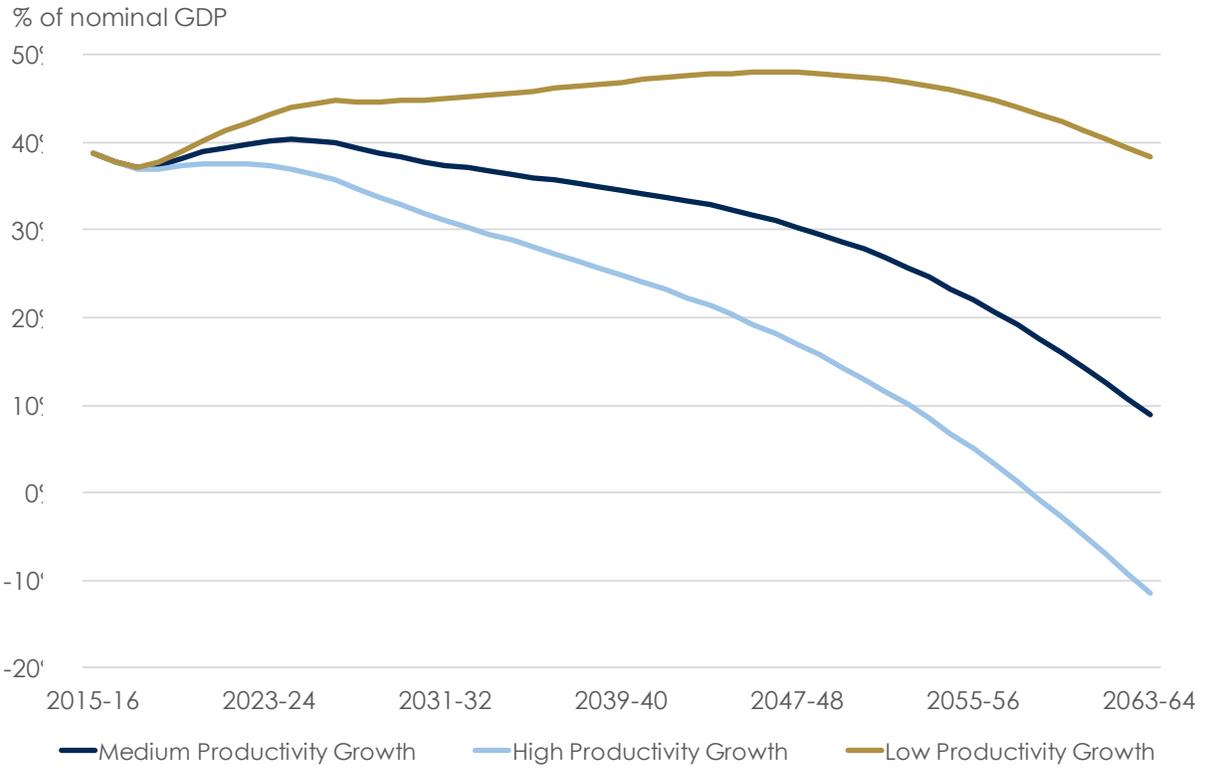
Chart 22: Fiscal Gaps with Different Productivity Forecasts



Source: Institute of Fiscal Studies and Democracy.

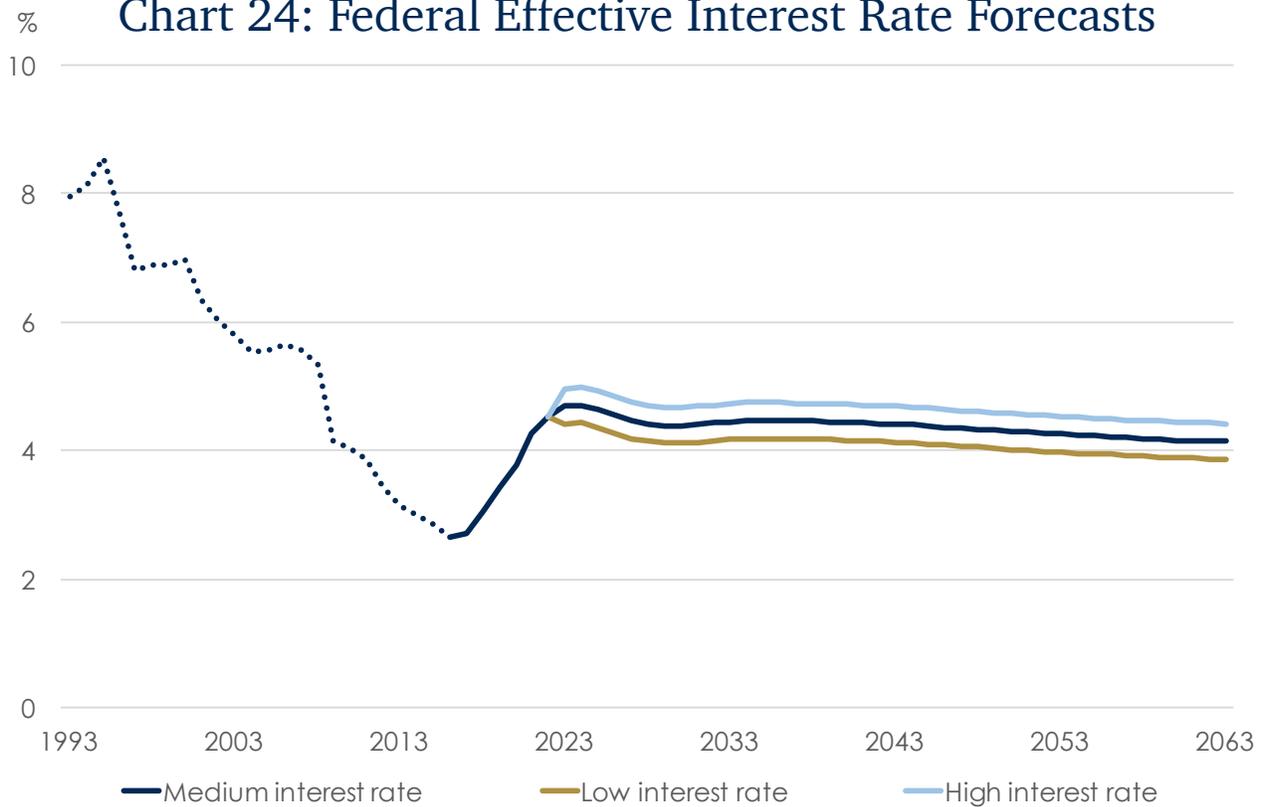
Note: The forecast period is the 2017-18 fiscal year to the 2063-64 fiscal year.

Chart 23: Ontario Net Debt and Productivity Growth



Sources: Government of Ontario, Statistics Canada, Institute of Fiscal Studies and Democracy.

Chart 24: Federal Effective Interest Rate Forecasts



Sources: Government of Canada, Institute of Fiscal Studies and Democracy.

Alternative Interest Rate Scenarios

Fiscal forecasts, particularly fiscal gap estimates, are very sensitive to the forecast of interest rates. As such, the IFSD has adjusted its yield curve—the interest rate on Government of Canada bonds plotted from shortest to longest maturity—by +/- 50 basis points (Chart 24).⁴ The adjustment is introduced into the economic model such that it feeds through to all of the economic variables like nominal GDP through its income and expenditure components as well as housing market variables and of course public debt charges.

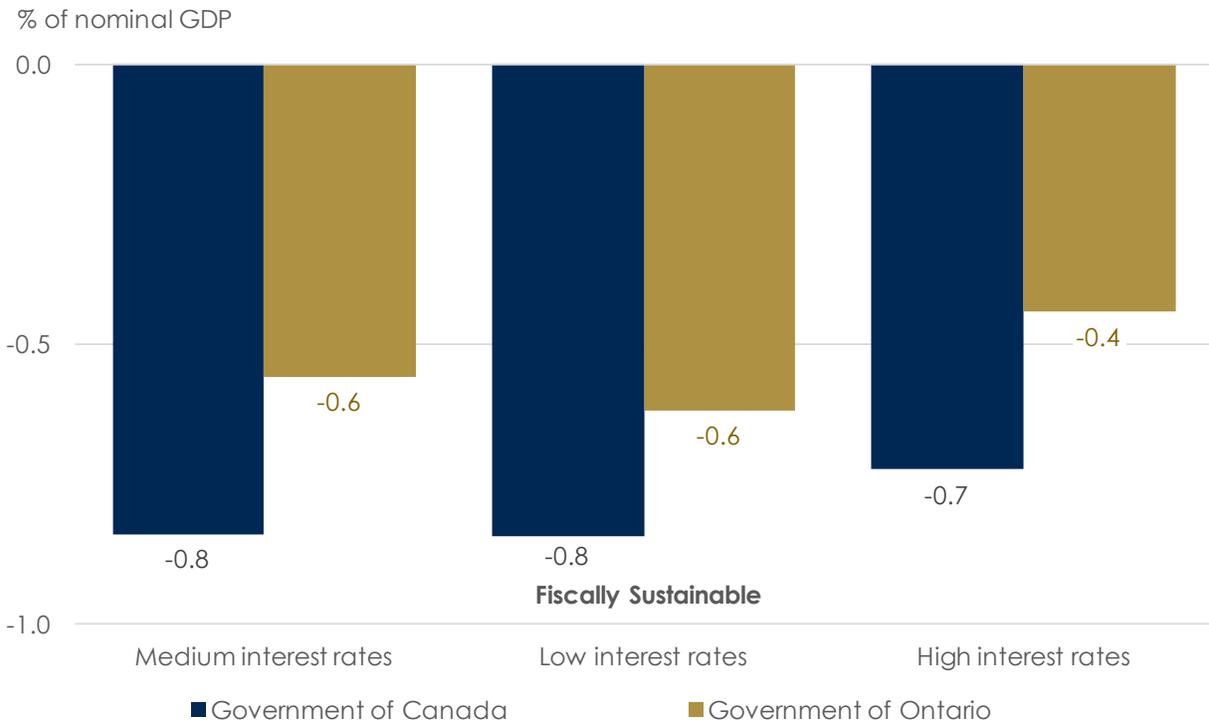
In all, this modest adjustment in the yield curve over the forecast period does not have a large impact on the outlook, particularly relative to the various population and labour productivity growth scenarios. As such, the path of the net debt-to-GDP ratio of the Governments of Canada and Ontario in the alternative interest rate scenarios tends to differ very little from the base case scenario. This is also the case with the fiscal gap estimates under the alternative interest rate scenarios (Chart 25).

Alternative CHT Escalator Scenarios

One of the most heated moments in federal-provincial relations since the October 2015 federal election has been the negotiation of the CHT escalator. Under the prior Conservative government, the CHT escalator (the growth rate of the CHT) was expected to fall from 6% annually in the decade leading up to the 2017-18 fiscal year to a three-year moving average of nominal GDP growth or 3%, whichever is higher. In December 2016, the current federal government proposed a similar escalator, complemented by an additional \$11 billion over 10 years for mental health and home care. In contrast, the provinces and territories asked the federal government to only reduce the escalator of 6% to 5.2% annually—a pace in line with the forecast increase in health care spending growth by the Conference Board of Canada (2015). While much higher than the roughly 3.5% annual CHT escalator championed by the Government of Canada, the proposed 5.2% escalator was below the 6% pace to which the provinces had become accustomed (Chart 26).

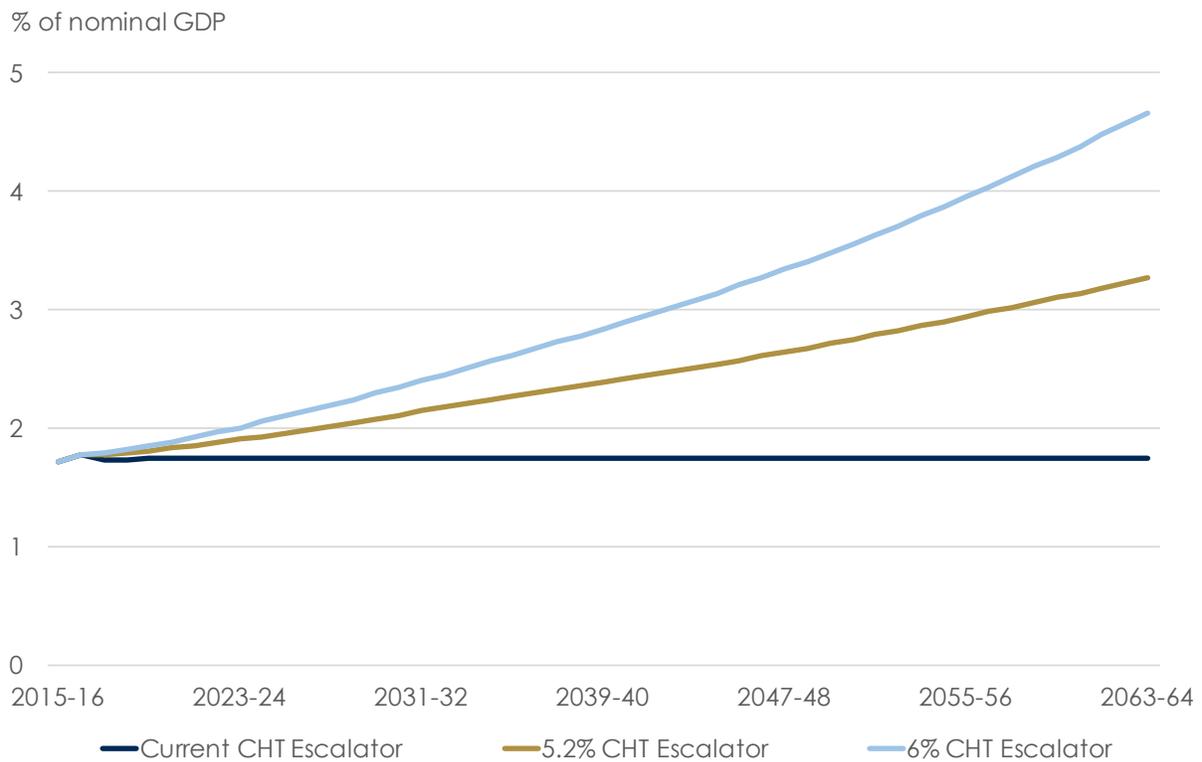
While united at first, the resolve of the provinces and territories quickly faded. All have now signed bilateral agreements with the federal government which are well below their initial asks. However, given it is the federal government that determines the level of the CHT escalator, the provinces and territories were left with no other choice. Unfortunately, the heavy-handed approach taken by the federal government in negotiating with the provinces has left their finances in a weakened situation. Take Ontario, for example. If a 5.2% CHT escalator was to be introduced, both the Governments of Canada and Ontario would continue to find themselves in a fiscally sustainable position (Chart 27). Importantly, however, this would not be true in the event that the CHT escalator was to be maintained at the previous pace of 6%. Under this scenario, the federal government's fiscal position would be rendered unsustainable.

Chart 25: Fiscal Gaps with Different Interest Rate Forecasts



Source: Institute of Fiscal Studies and Democracy.
 Note: The fiscal gap is estimated for a period ending in the 2063-64 fiscal year.

Chart 26: CHT under Different Escalator Assumptions



Sources: Government of Canada, Institute of Fiscal Studies and Democracy.

Alternative Health Care Enrichment Scenarios

So far in this report, most scenarios have yielded results that show that the finances of the Governments of Canada and Ontario are fiscally sustainable. In Ontario, this is true for all scenarios, whereas federal government finances are rendered unsustainable under the low productivity growth and 6% CHT escalator scenarios.

All of the scenarios presented have assumed no spending enrichment on the part of the Government of Ontario. However, spending growth has historically outpaced its underlying cost drivers and nowhere is this more true than in regard to health care spending growth. As was discussed earlier, health care spending growth has historically averaged 0.6 percentage points above the underlying cost drivers in Ontario.

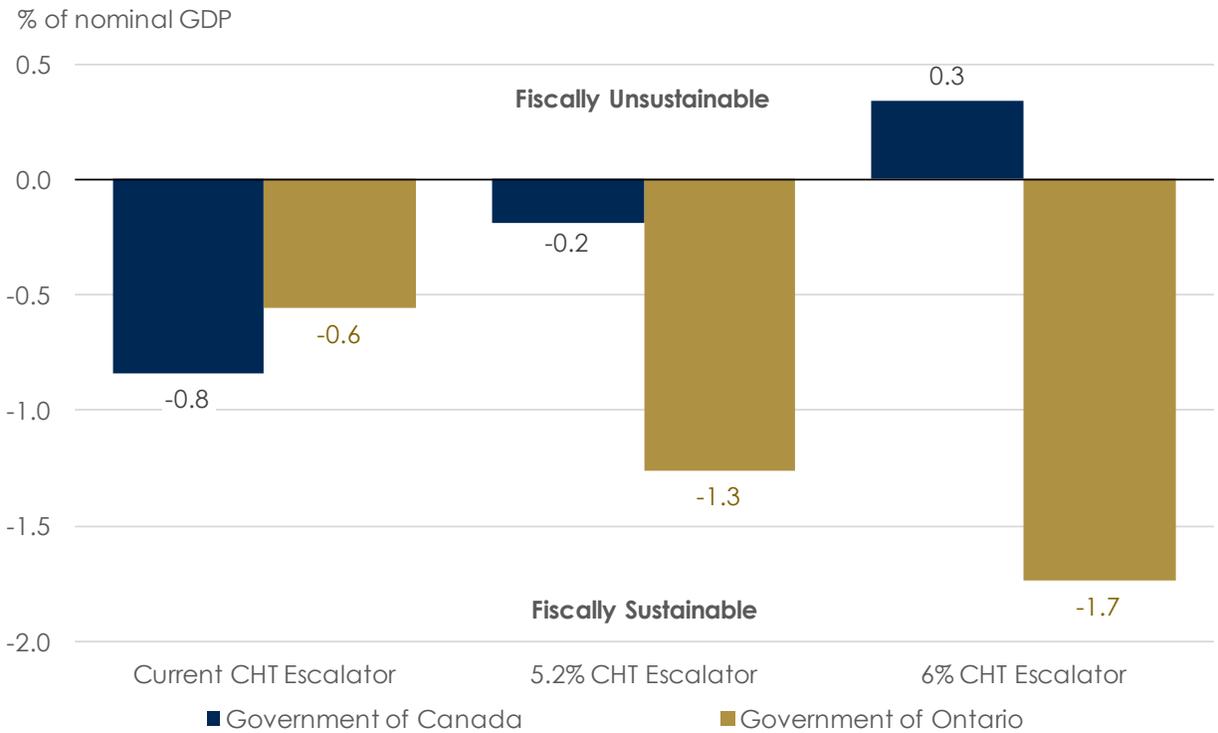
Adding health care enrichment to the outlook for health spending in Ontario dramatically changes the results. Indeed, taking the alternative CHT escalator scenarios discussed earlier, much of the additional fiscal room provided by the higher escalator would be erased if health care enrichment was to return to its historical pace (Chart 28). To illustrate the impact of adding health care enrichment to the long-term fiscal forecast for Ontario, Table 1 provides the fiscal gap estimates for all of the scenarios discussed so far, both with and without enrichment. This very much shifts the narrative from one where the Government of Ontario's finances are sustainable under most circumstance to one where they are not sustainable under most circumstances. And this analysis does not include enrichment of other expenditure categories, such as education and social services. Including these would move Ontario's long-term fiscal position even further away from being sustainable.

Ontario's 'In-House' Population Projection Scenarios

In addition to the alternative population projection scenarios published by Statistics Canada, the Government of Ontario also publishes its own population projections. As Chart 29 makes clear, these more optimistic population projections lead to much rosier fiscal outcomes relative to the population projections from Statistics Canada. Indeed, under all of the Government of Ontario's population projections, the population is younger and is growing more quickly than under the comparable Statistics Canada population projection scenarios.

Turning to the fiscal gap estimates for the Government of Ontario, these are indeed more optimistic under the Government of Ontario's 'in-house' population projections than when using those published by Statistics Canada. This suggests that there is more fiscal room for the provincial government to increase spending, reduce revenue, or both than when using Statistics Canada's population growth scenarios (Chart 30). Table 2 compares the fiscal gap calculations based on Statistics Canada and Government of Ontario population projection scenarios, determined over a forecast period through the 2041-42 fiscal year.

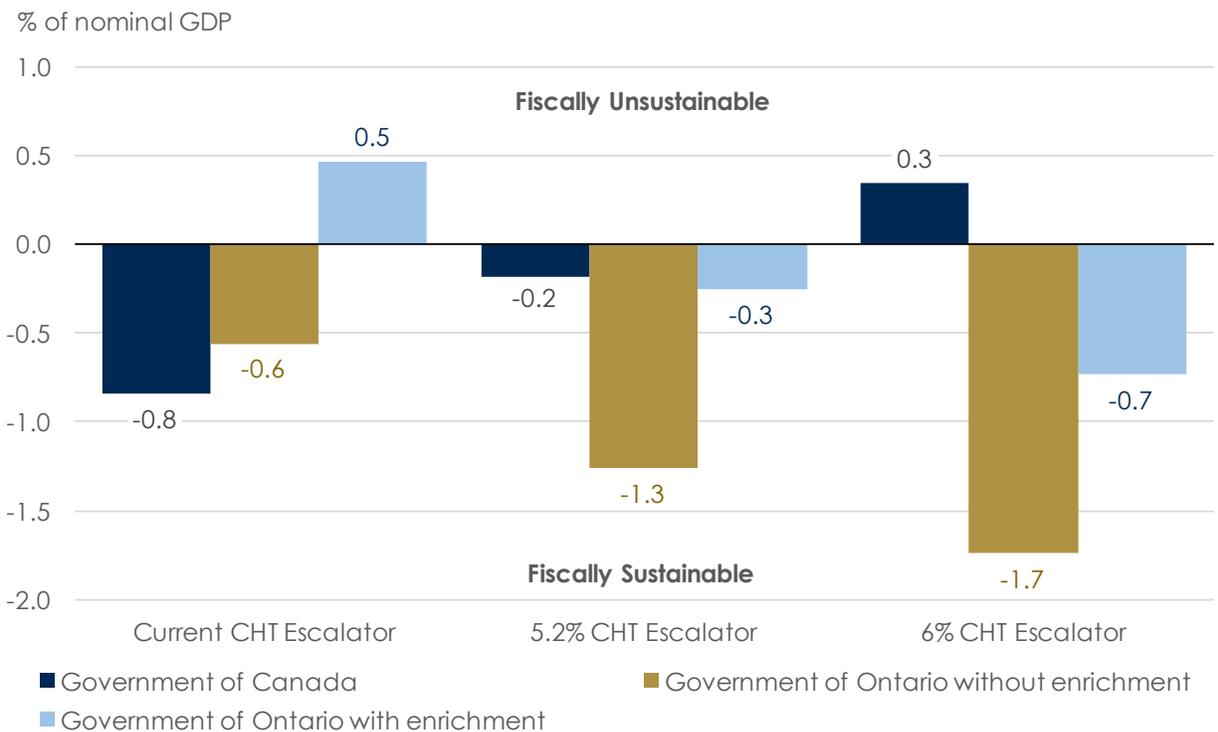
Chart 27: Fiscal Gaps with Different CHT Escalator Forecasts



Source: Institute of Fiscal Studies and Democracy.

Note: The fiscal gap is estimated for a period ending in the 2063-64 fiscal year.

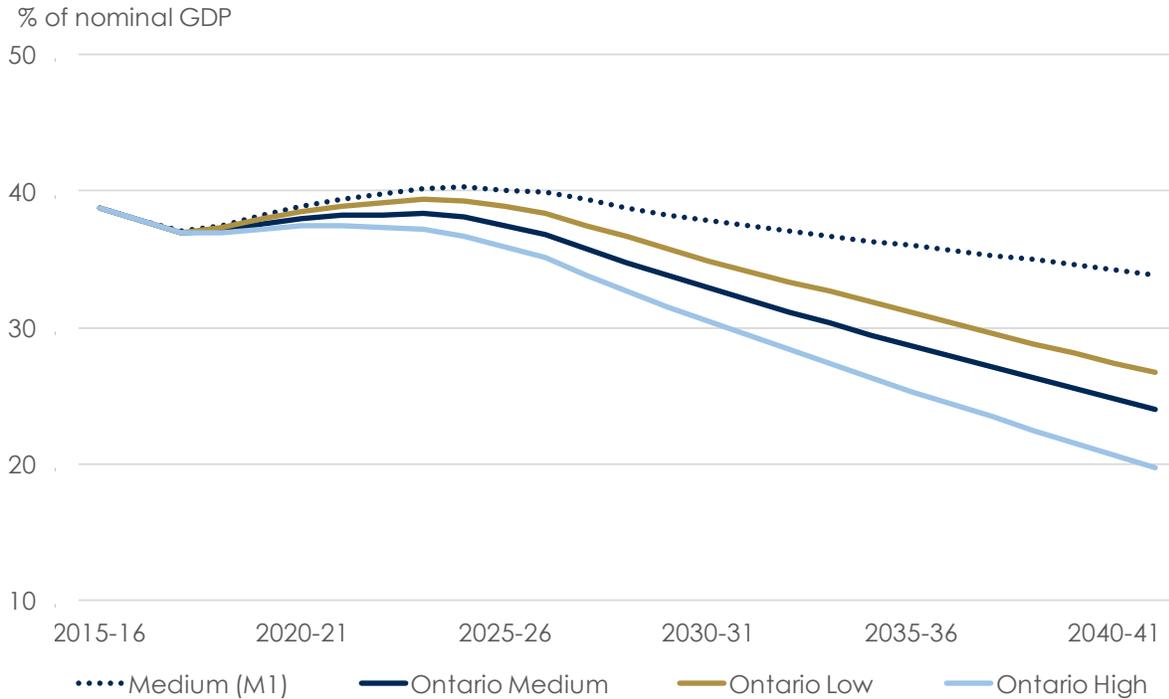
Chart 28: Fiscal Gaps with Different Health Care Enrichment



Source: Institute of Fiscal Studies and Democracy.

Note: The fiscal gap is estimated for a period ending in the 2063-64 fiscal year.

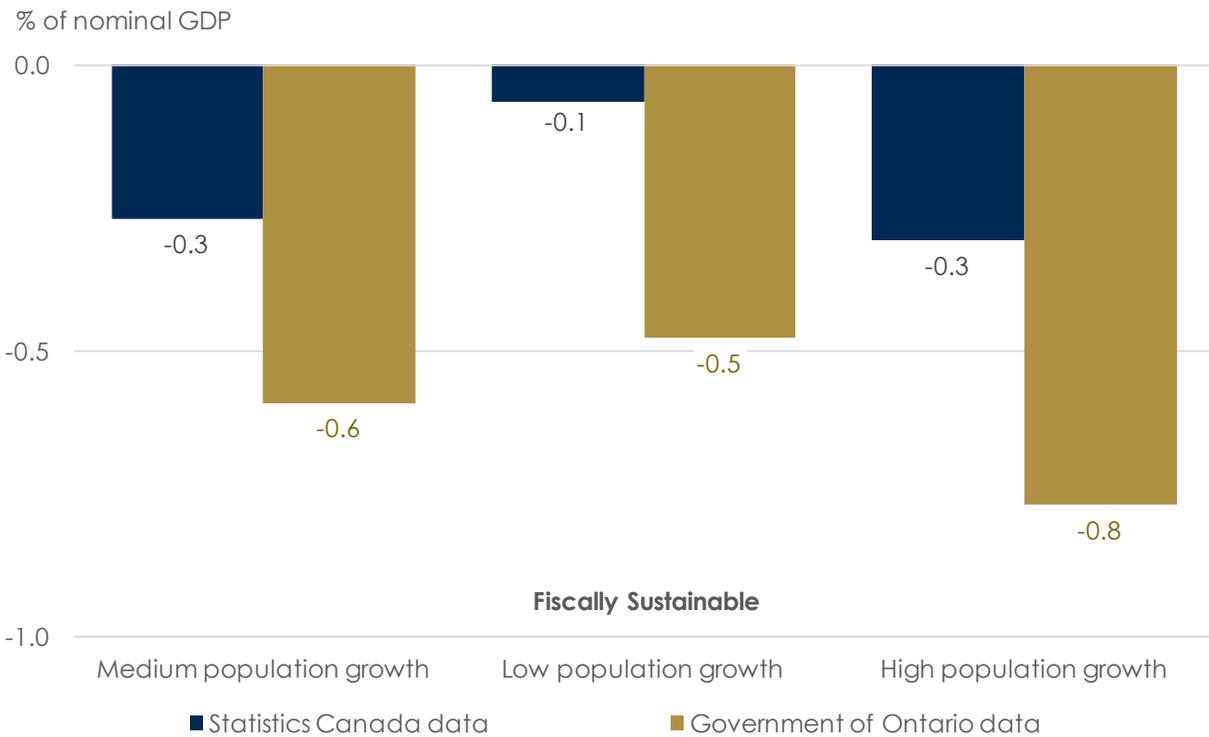
Chart 29: Ontario Debt with Internal Population Outlook



Sources: Government of Ontario, Statistics Canada, Institute of Fiscal Studies and Democracy.

Notes: Debt is net debt. The forecast period is the 2017-18 fiscal year to the 2041-42 fiscal year. Medium (M1) is the medium population projection from Statistics Canada. Ontario Medium, High, and Low projections are published by the Government of Ontario.

Chart 30: Fiscal Gaps with Different Population Forecasts



Sources: Government of Ontario, Statistics Canada, Institute of Fiscal Studies and Democracy.

Note: The forecast period is the 2017-18 fiscal year to the 2041-42 fiscal year.

Table 1: Fiscal Gap Estimates (2016-2063)

% of GDP	Ontario		Canada
	Without Enrichment	With Enrichment	
Base Case Scenario ¹	-0.6	0.5	-0.8
Statistics Canada Population Projections			
High Population Growth	-0.7	0.3	1.1
Low Population Growth	-0.1	0.9	-0.4
Productivity Growth Scenarios¹			
High Population Growth	-1.0	0.1	-1.9
Low Population Growth	-0.1	0.9	0.3
Interest Rate Scenarios¹			
High Interest Rates	-0.4	0.6	-0.7
Low Interest Rates	-0.6	0.4	-0.8
CHT Escalator Scenarios¹			
6% CHT Escalator	-1.7	-0.7	0.3
5.2% CHT Escalator	-1.3	-0.3	-0.2

¹ These scenarios use the Medium (M1) population growth projection from Statistics Canada.

Sources: Statistics Canada, Government of Canada, Government of Ontario, Institute of Fiscal Studies and Democracy.

Table 2: Fiscal Gap Estimates (2016-2041)

% of GDP	Ontario		Canada
	Without Enrichment	With Enrichment	
Statistics Canada Projection Scenarios			
Base Case Scenario ¹	-0.3	0.3	-0.3
High Population Growth	-0.3	0.2	-0.4
Low Population Growth	-0.1	0.5	0.0
Government of Ontario Projection Scenarios			
Medium Population Growth	-0.6	0.0	
High Population Growth	-0.8	-0.2	
Low Population Growth	-0.5	0.1	

¹ These scenarios use the Medium (M1) population growth projection from Statistics Canada.

Sources: Statistics Canada, Government of Canada, Government of Ontario, Institute of Fiscal Studies and Democracy.

V CONCLUSION

To conclude, under the assumptions described in this report, the fiscal positions of the Governments of Canada and Ontario are sustainable under most reasonable scenarios. However, the degree to which they are depends crucially on the assumptions made. This is particularly true in regard to how the Government of Ontario enriches its program spending beyond the underlying demographic and economic drivers. Returning to its historical average level of health care enrichment alone quickly renders its fiscal position unsustainable. And enriching other programs as well, such as education and social services, tips its finances even further into unsustainability. As such, the Government of Ontario must be very considered in how it spends, in order to keep its fiscal ship on a sustainable course.

Notes

- ¹ The IFSD also includes in its fiscal framework the infrastructure plan of the Government of Canada. Due to the nature of the infrastructure spending, all of the plan is assumed to be expensed (included in expenses of the government).
- ² Net debt is defined as total liabilities minus financial assets. The federal debt (accumulated deficit) is defined as net debt minus non-financial assets.
- ³ Population projections beyond 2038 for Ontario are a continuation of the projection assumptions used by Statistics Canada through 2038, but are not officially published population projections.
- ⁴ The spread over Canada's EIR, which defines Ontario's EIR, remains the same under the alternative interest rate scenarios.

Annex A: Debt Accounting

The approach to forecasting net debt, accumulated deficit, and the fiscal gap mainly follows that of the Parliamentary Budget Officer (2017), but on a Public Accounts basis. Net debt is defined as total liabilities minus financial assets. The accumulated deficit is defined as net debt minus non-financial assets including tangible capital assets (TCA).¹ It is assumed that budgetary deficits (surpluses) are financed through an increase (reduction) in interest-bearing debt. Investments in TCA are also financed through interest-bearing debt. Therefore, interest-bearing debt is accumulated by summing the primary account balance, the investment in tangible capital assets, and the interest on debt.⁸ The interest on debt is calculated by multiplying the effective interest rate by the previous year's stock of debt. For Canada, the effective interest rate is forecast using its historical relationship with the effective interest rate Government of Canada bond yields. For Ontario, the effective interest rate is assumed to be 80 basis points above that of the Government of Canada's over the forecast, consistent with the average spread between Government of Ontario and Government of Canada medium- to long-term benchmark bonds in the post 2009-recession period. Finally, non-interest-bearing debt (other liabilities) and financial assets are assumed to remain constant at the 2016-17 level. This way, the evolution of net debt truly represents the fiscal stance of the government, including infrastructure investment. The Financial Accountability Office of Ontario (2017) also produces a long-term economic, fiscal, and debt forecast.

Annex B: Ontario Infrastructure Plan

In 2015, the Government of Ontario announced a plan to invest \$130 billion in infrastructure over ten years. In Budget 2016, the plan, *Build ON*, was extended with a budget of \$160 billion, spent over twelve years. In Budget 2017, *Build ON* was further extended, now with a budget of \$190 billion.³ In a public accounting framework, infrastructure expenditures are divided between investment in tangible capital assets (TCA) and transfers and other infrastructure spending. TCA, forming the bulk of the infrastructure plan, are capitalised, meaning that a non-financial asset is added to the province's statement of financial position.⁴ On the contrary, transfers and other infrastructure spending, including repairs, are expensed and affect the province's budgetary balance. Finally, interest on debt is calculated at the effective interest rate on the portion of the infrastructure plan that is being capitalized.⁵

The Institute of Fiscal Studies and Democracy incorporates the Government of Ontario's infrastructure plan into its debt forecast using the projected infrastructure expenditures detailed in the [2017 Infrastructure Update](#).⁶ The IFSD makes the following adjustments to the official total infrastructure expenditures forecast (*Build ON*) in order to reflect all information available at the time of writing:

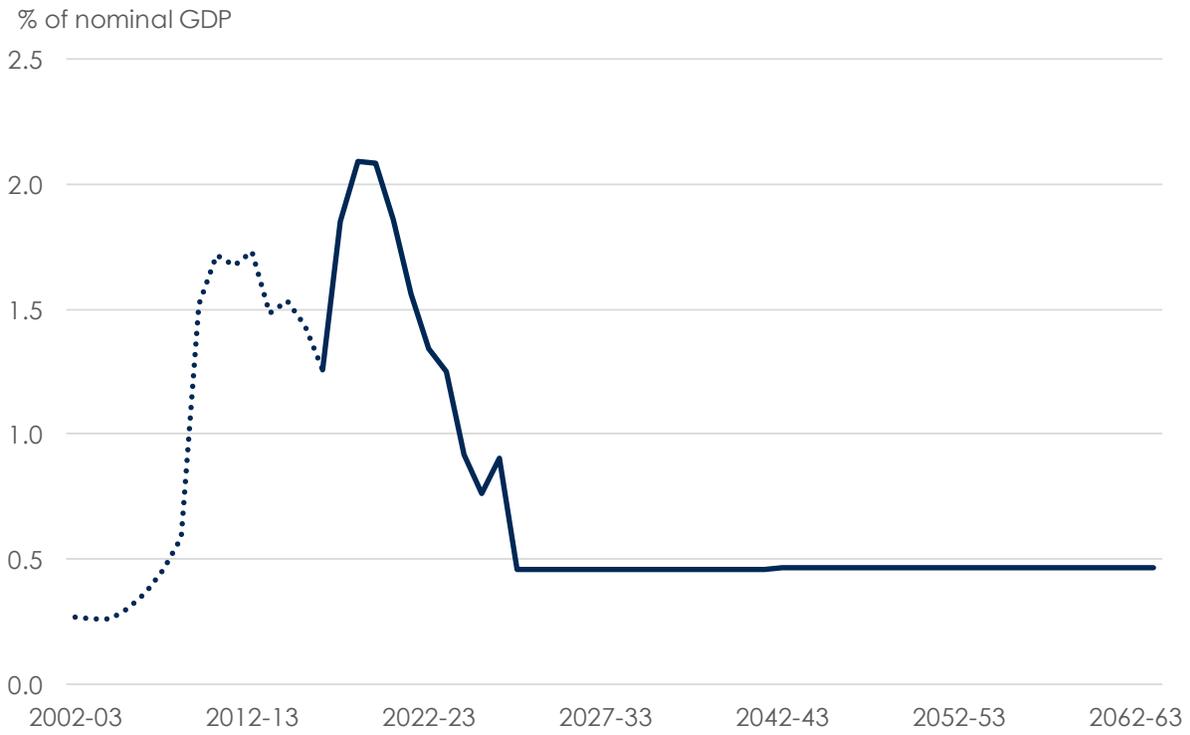
- It is assumed that the additional \$30B infrastructure expenditures announced in Budget 2017 are distributed throughout the forecast horizon based on the share of expenditures that prevailed in every year in the *2017 Infrastructure Update*;
- The forecast is extended up to 2026-2027 and \$10 billion of the total net amount of \$190 billion is attributed to that additional year and all the other years' amounts are adjusted accordingly; and
- The 2016-17 and 2017-18 forecasts are adjusted to take into account information presented in Budget 2017 and the 2016-17 Public Accounts.

In the fiscal and debt framework, it is assumed that 80% of the total infrastructure expenditures is attributed to TCA while the remaining 20% is expensed proportionally under transfers and other infrastructure spending. That breakdown roughly represents the actual attribution of infrastructure expenditures between the two aforementioned main infrastructure categories since the 2009 recession.

The 80% attributed to TCA is added to net debt every year. In order to account for depreciation expenses, the IFSD assumes that an amount equivalent to 3.2% of the gross stock value of infrastructure (e.g. the sum of the gross opening value every year and the TCA additions) is amortized every year and is therefore removed from the net debt accumulation. To calculate the opening and closing value of the gross infrastructure stock, a disposal rate of 1.5% is assumed. The 1.5% and 3.2% values represent post-recession average figures.

Finally, following the completion of the Ontario Infrastructure Plan expected in 2026-2027, the IFSD assumes that Ontario will continue investing in its infrastructure at a rate equivalent to the pre-recession average of 0.5% of GDP (Chart B1).

Chart B1: Ontario Investment in Tangible Capital Assets



Sources: Government of Ontario, Institute of Fiscal Studies and Democracy.
Note: The forecast period is the 2017-18 fiscal year to the 2063-64 fiscal year.

Appendix Notes

- 1 The federal debt at the federal level.
- 2 Public Market Debt in Ontario.
- 3 The announcement of the updated infrastructure plan was made in [Budget 2017](#) while the [2017 Infrastructure Update](#) contains the details of the various public infrastructure projects that are scheduled to be undertaken by the province under the 2016 version of the plan.
- 4 TCA are also amortized linearly over the useful life of the assets. The amortization expense, a non-cash expense, affects the province's budgetary balance but is thereafter removed from the net debt calculation.
- 5 The IFSD does not take into account interests capitalized during construction which are subtracted from the interests on debt (IOD) presented in official budgetary documents. Those interests received by the province usually represent less than 2% of total IOD incurred by the province.
- 6 The detailed yearly figures are presented on page 12 of the [2017 Infrastructure Update](#) report.

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