


Ontario 

Ministry of Finance

Ontario's Long-Term Report on the Economy 2024–46



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Introduction

In accordance with the *Fiscal Sustainability, Transparency and Accountability Act, 2019*, Ontario's *Long-Term Report on the Economy* presents a long-range assessment of Ontario's economic and fiscal environment.

This report:

- Describes anticipated changes in the economy and in population demographics over the next 20 years;
- Outlines the potential impact of these changes on the public sector and on Ontario's fiscal policy during that period; and
- Analyzes key fiscal policy issues that the Minister of Finance believes are likely to affect the long-term sustainability of the economy and of the public sector.

Looking beyond Ontario's current economic and fiscal environment allows the government to focus on long-term decision-making. The decisions it makes in the next few years will prepare Ontario to deal with the opportunities and challenges of the coming decades. While the future can never be known in detail, it is useful to assess the broad trends that will shape Ontario's economic and fiscal environment.



These trends include:

- Continued rapid increase in the provincial population driven by immigrants and non-permanent residents to be concentrated in metropolitan areas;
- Population aging with an increase in the number of seniors and aging within the 65+ age group;
- Slower growth of the provincial economy compared to the historical trend, reflecting slower labour force growth driven in part by an aging population;
- Productivity projected to grow slightly slower than its historical average over the long-term outlook;
- Slower long-term growth in government revenues due to a projected easing in economic growth; and
- Faster increase in the demand for public services compared to overall economic growth.

This report considers these and other forces that will affect Ontario over the next two decades and examines their implications for Ontario's long-term economic and fiscal prospects.

In addition, the report explores the pivotal role of infrastructure to foster and support growth, including the importance of continued investments in infrastructure over the next 10 years. Opportunities to harness Ontario's sectoral strengths to increase economic growth and improve the province's productivity performance are also highlighted, as well as the role of innovation to drive growth in these sectors and across the economy.





Chapter 1

Demographic Trends and Projections

Chapter 1

Demographic Trends and Projections

Introduction

Over the next quarter century Ontario's population is projected to grow substantially, with wide-ranging implications for the economy and for the provision of public services. The demographic trends taking place in Ontario are in many ways different from those observed in other economically developed jurisdictions around the world. The province welcomes a comparatively much higher number of international migrants each year than other jurisdictions, resulting in a faster pace of population growth. The young migrants settling in the province keep the working-age population growing and contribute to slowing the aging of the population. However, since most new international migrants settle in metropolitan areas, there is a dichotomy in the demographic outlook between regions of the province.

Ontario's demographic outlook features the following long-term trends:

- i. Continued rapid increase in population;
- ii. Population growth driven by immigrants and non-permanent residents;
- iii. Concentration of population growth in metropolitan areas; and
- iv. Increase in the number of seniors and aging within the 65+ age group.

The demographic outlook reflects the latest population projections published by the Ontario Ministry of Finance.¹ These projections are based on assumptions that reflect past trends in all streams of migration and the continuing evolution of long-term fertility and mortality patterns. The projections presented in this report are for the reference, or medium-growth scenario, which is considered most likely to occur if recent trends continue. Alternative scenarios are also discussed.

¹ Ontario Ministry of Finance, "Ontario Population Projections, 2022-2046, (summer 2023)," <https://www.ontario.ca/page/ontario-population-projections>

Ontario's Demographic Outlook: Four Long-Term Trends

i. Continued Rapid Increase in Population

Since 1971, Ontario's population has doubled. Between 1971 and 2023, the provincial population grew from 7.8 million to 15.6 million, increasing at an average pace of 1.3 per cent, or 149,000 annually. Ontario's share of the Canadian population also rose, from 35.7 per cent in 1971 to 38.9 per cent in 2023.

Provincial population growth has accelerated in recent years, recording increases of 303,000 (2.0 per cent) in 2021-22, and 463,000 (3.1 per cent) in 2022-23. This is much faster than the average annual growth of 158,000 (1.1 per cent) observed in the preceding decade (2011 to 2021), and faster than most other jurisdictions. The population of the province grew faster due to increased immigration and a rapidly growing number of non-permanent residents.



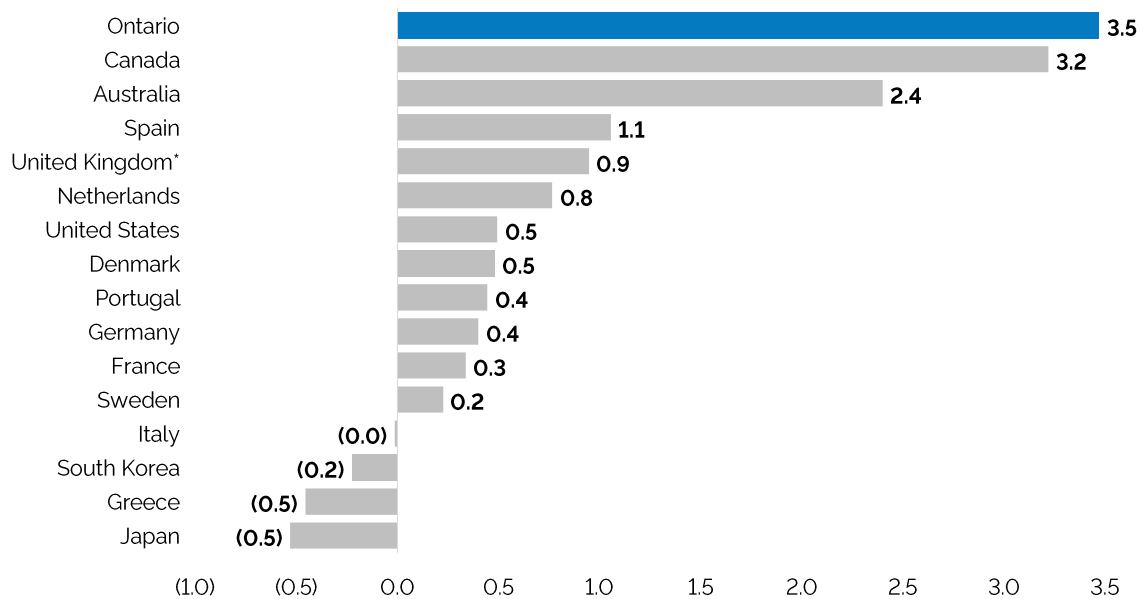
In Perspective: Ontario's Population Growth

Compared to other high-income jurisdictions for the latest 12-month period for which data is available, Ontario's and Canada's populations have been growing at a much faster pace. The provincial population grew about three times as fast as that of the Netherlands, the United Kingdom and Spain, and seven times as fast as in the United States. Countries with more advanced population aging, such as Greece and Japan, have been experiencing population declines.

Chart 1.1

Recent Population Growth Rate of Selected Countries and Ontario

Rate of population growth over the most recent 12 months reported
(Per Cent)



*Excludes Scotland (not reported yet).

Note: Calendar year 2023, except for Germany (to October 1, 2023), Australia and U.S. (2022-23), Greece and Portugal (calendar 2022), the UK (2021-22).

Sources: Each country's national statistical agency.

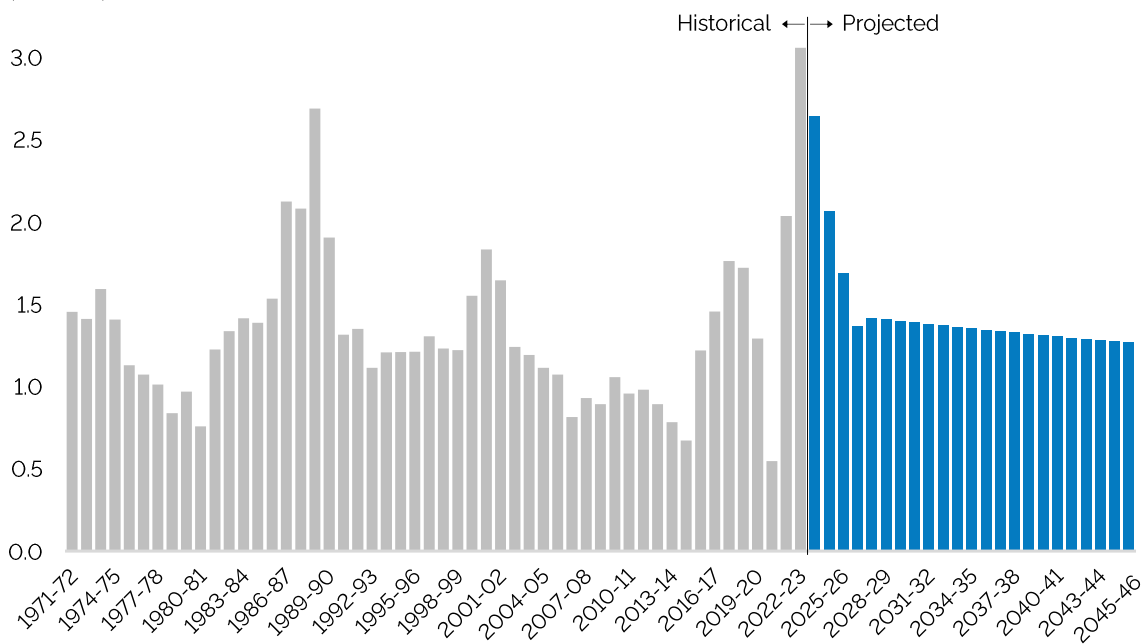
Ontario's population is projected to continue growing rapidly in the short term, but at a moderating pace, increasing by 413,000 (2.6 per cent) in 2023-24, 331,000 (2.1 per cent) in 2024-25, and 276,000 (1.7 per cent) in 2025-26. The declining pace of population growth to 2026 reflects a projected return to more normal annual increases in the number of non-permanent residents compared to the record-breaking growth currently taking place.

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After 2026 and in the long term, Ontario's population is projected to continue experiencing significant growth driven by immigration. The pace of increase in the provincial population is projected to decline marginally in the long term, from 1.4 per cent in 2026-27 to 1.3 per cent by 2045-46. However, the corresponding annual growth in number of people is projected to increase gradually over time, from 227,000 in 2026-27 to 271,000 annually by 2045-46. The provincial population is projected to rise from 15.6 million in 2023 to 21.7 million in 2046. This represents an increase of 6.1 million (39 per cent) over the next 23 years.

Chart 1.2 Growth Rate of Ontario's Population

Annual rate of population growth, 1971-2046
(Per Cent)



Sources: Statistics Canada for 1971-2023 and Ontario Ministry of Finance projections.

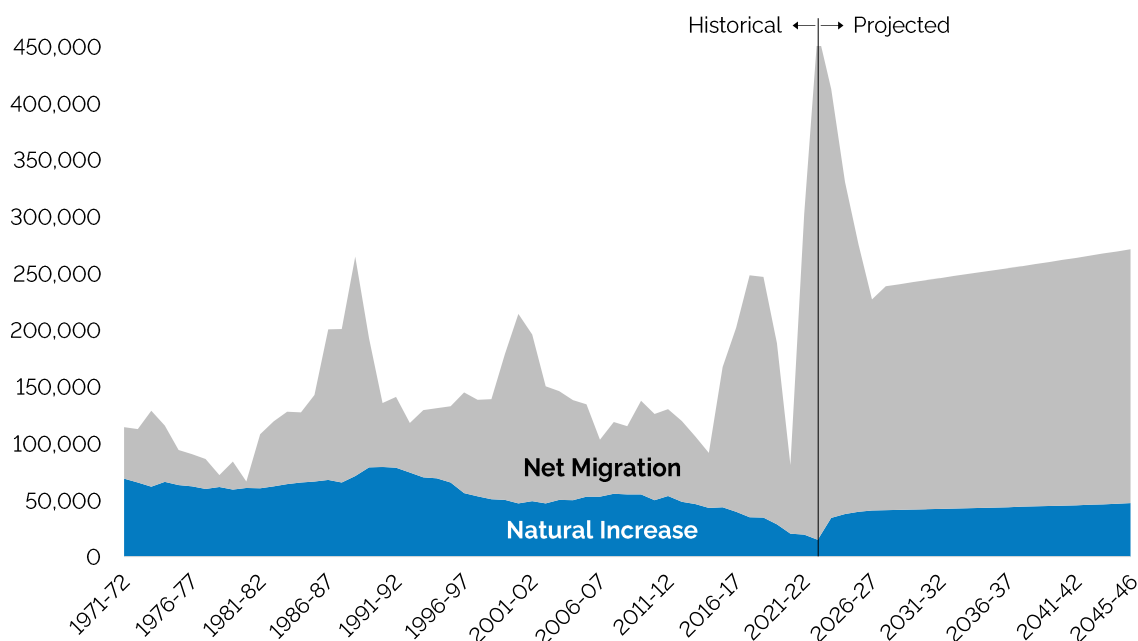
ii. Population Growth Driven by Immigrants and Non-Permanent Residents

The share of annual population growth coming from natural increase, which is births minus deaths, has been declining over the last 50 years. Low fertility rates, an aging population and rising international migration have resulted in an increasing contribution of net migration to provincial population growth. Net migration in Ontario is the sum of all provincial migration inflows minus outflows during a given time period, including both international and interprovincial migrants.

In the 1970s, about one third of population growth was coming from net migration and two thirds from natural increase. The situation has now reversed. Over the 10 years preceding the COVID-19 pandemic, natural increase accounted for 28 per cent of population growth in Ontario, and net migration for 72 per cent.

Chart 1.3 Natural Increase and Net Migration in Ontario

Contribution of natural increase and net migration to annual population growth, 1971-2046
(Number of People)



Sources: Statistics Canada for 1971-2023 and Ontario Ministry of Finance projections.

This trend is expected to continue over the projection period to 2046, as fertility rates are forecasted to remain low and the population to continue aging. Natural increase is projected to account for 17 per cent of Ontario's population growth over the projection period to 2046, with net migration remaining the main source of population growth (83 per cent).

Chapter 1

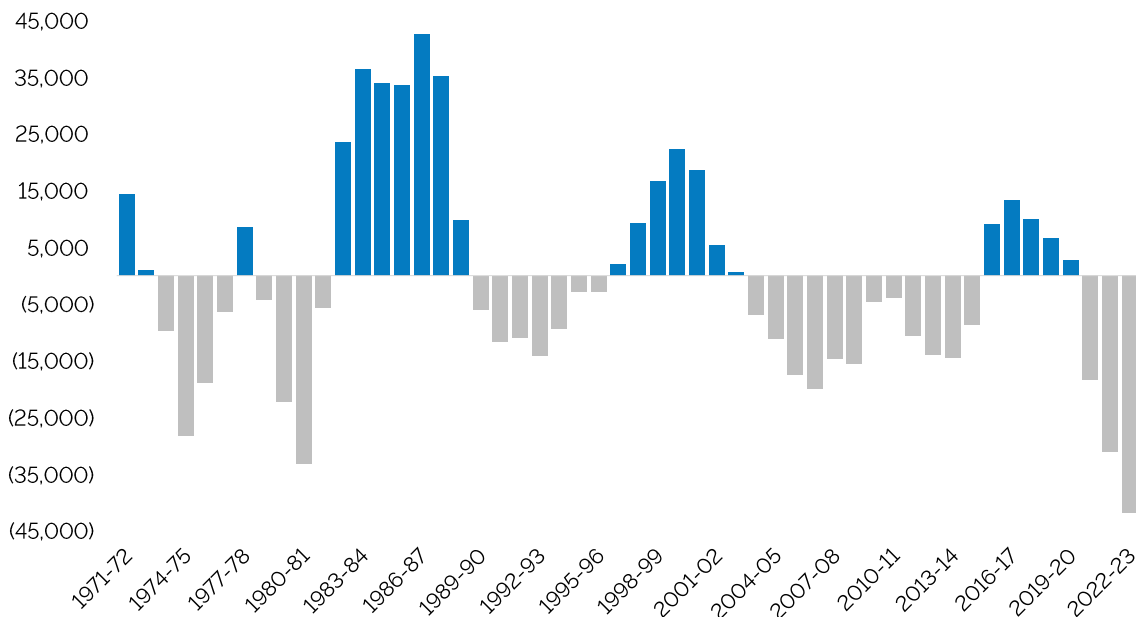
International migration is by far the main driver of net migration. While interprovincial migration with the rest of the country fluctuates between periods of net gains and net losses, by contrast international migration provides a relatively steady inflow of young migrants. Immigration is usually the largest component of net migration, but it has been exceeded by the net increase in the number of non-permanent residents in 2022-23.

Interprovincial Migration

In any given year, net gains or losses of people to and from other provinces can have a significant impact on annual population growth in the province. However, over longer time periods the contribution of interprovincial migration to Ontario's population growth has been minor. This is because periods of annual net gains usually alternate with periods of yearly net losses, in a pattern that tends to follow economic cycles. Since 1971, Ontario's population exchanges with the rest of the country add up to a total net loss of 65,000 people, or 1,250 per year.

Chart 1.4 Net Interprovincial Migration to Ontario

Net annual interprovincial migration to Ontario, 1971-2023
(Number of People)



Source: Statistics Canada.

Immigrants

In 2022-23, 199,000 immigrants settled in Ontario, accounting for 43 per cent of all immigrants to Canada. This number of immigrants is more than the entire provincial population of Prince Edward Island (174,000), and more than the number of residents of the City of Burlington (194,000). This level of immigration is almost double that observed during the 2010s, when Ontario welcomed on average 112,000 immigrants per year.



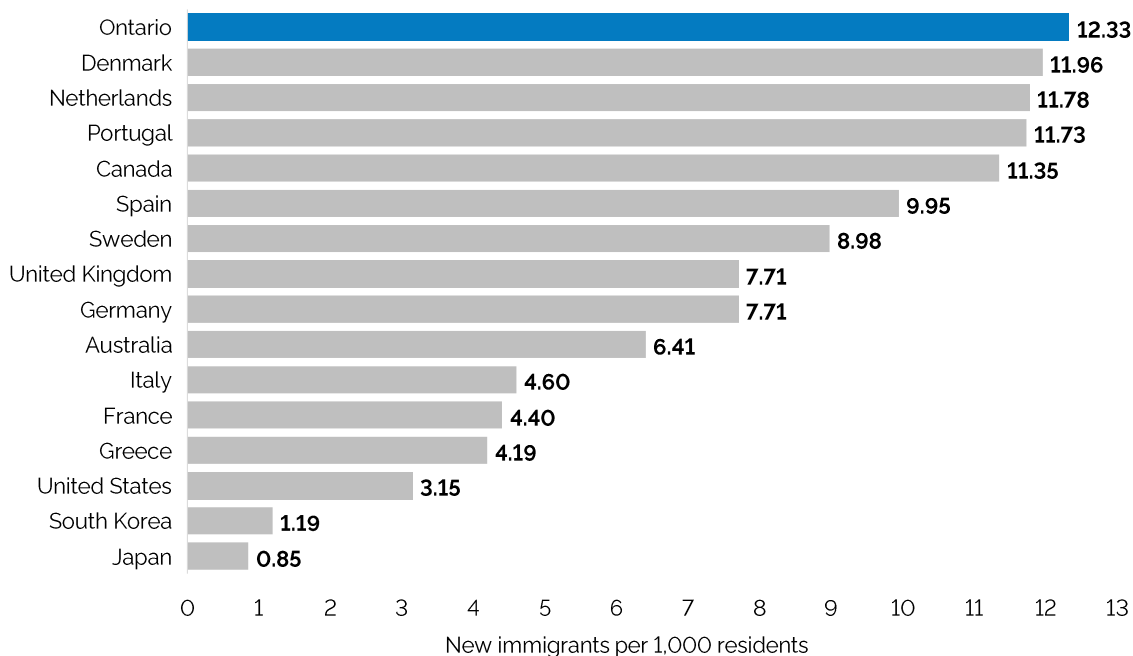
In Perspective: Immigration to Ontario

Ontario has a high rate of immigration compared to other advanced economies around the world, corresponding to about double the immigration rate of Australia and four times that of the United States. Some smaller countries in Europe also recently recorded high immigration rates, including Denmark, the Netherlands and Portugal.

Ontario’s immigration rate is likely to rise even higher over the coming years, following the planned 15 per cent increase in the federal immigration targets from 2022 to 2025.

Chart 1.5
Immigration Rate of Selected Countries and Ontario

New immigrants per 1,000 residents in 2022



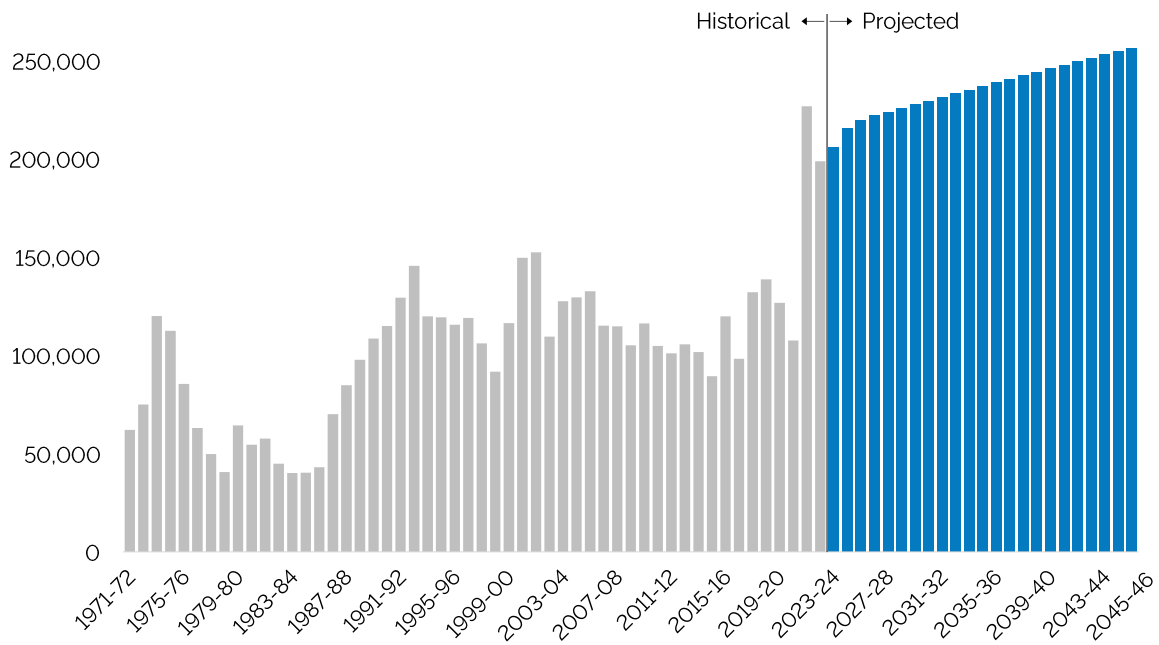
Sources: Organisation for Economic Co-operation and Development (OECD) and Statistics Canada (for Canada and Ontario).

Higher immigration levels to the province reflect the rapid increase in federal immigration targets for Canada over the past decade, which rose from 253,000 in 2013 to 465,000 in 2023. According to the federal plan, immigration levels to Canada are set to increase further to 500,000 by 2025, representing a near doubling of national immigration since 2013. This large jump in annual immigration targets is one of the main drivers of the significant long-term population growth projected for Ontario.

Over the projection horizon to 2046, annual immigration to Ontario is projected to remain strong and to increase gradually as the provincial population grows. Over 5.4 million new immigrants are projected to settle in Ontario over the next 23 years.

Chart 1.6 Immigration to Ontario

Annual immigration to Ontario, 1971-2046
(Number of People)



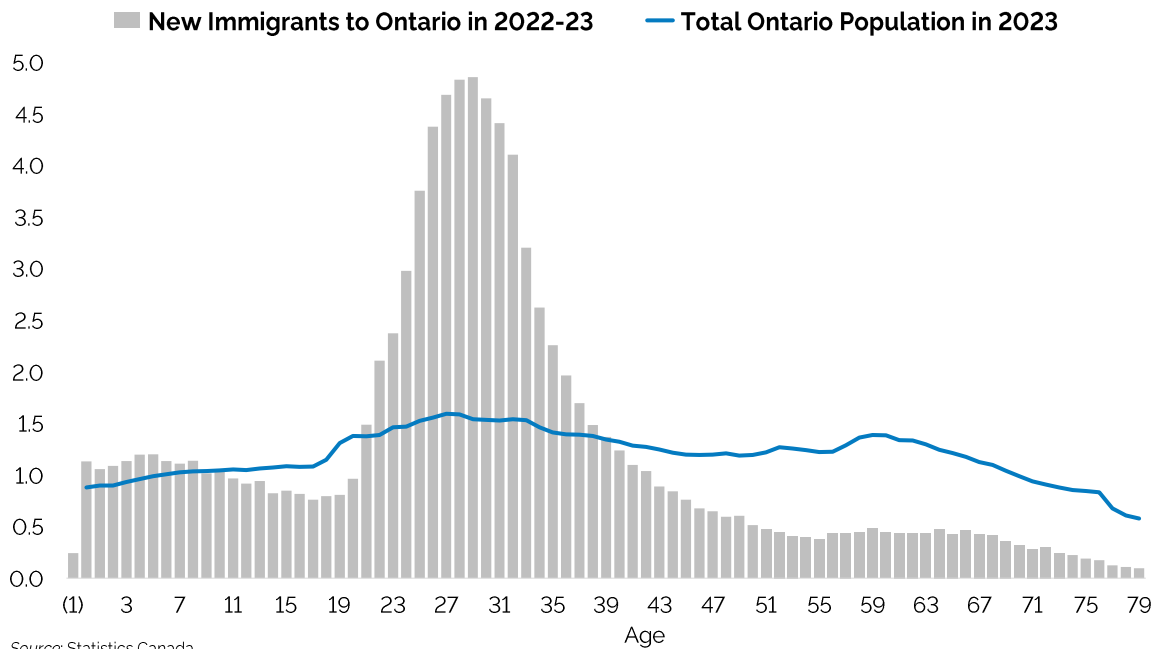
Sources: Statistics Canada for 1971-2023 and Ontario Ministry of Finance projections.

Age Distribution of New Immigrants

Immigrants to Ontario are relatively young compared to the resident population. In 2022-23, 60 per cent of all immigrants who settled in the province were between the ages of 20 and 39, compared to 29 per cent for the resident population.

Chart 1.7
Age Distribution of New Immigrants Compared to Total Population of Ontario

Proportion by age
(Per Cent)



Source: Statistics Canada.

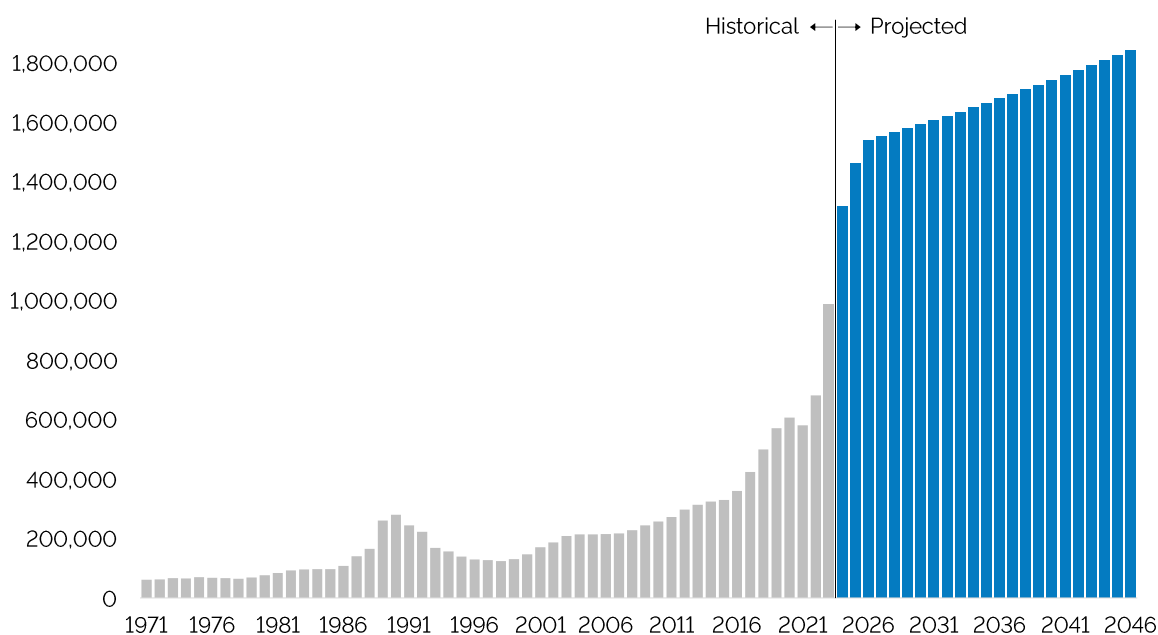


Non-Permanent Residents

In 2022-23, the number of non-permanent residents living in Ontario rose from 682,000 to 987,000, a jump of 305,000, or 45 per cent in just 12 months. This record-breaking surge followed a net increase of 101,000 during 2021-22, which was also very high historically. In the past, the number of non-permanent residents living in the province was rising at a slower pace, averaging a net increase of 21,000 per year over the two decades to 2021.

Chart 1.8 Non-Permanent Residents in Ontario

Number of non-permanent residents living in Ontario on July 1 of each year, 1971-2046
(Number of People)



Sources: Statistics Canada for 1971-2023 and Ontario Ministry of Finance projections.

Most non-permanent residents in Ontario are holders of work or study permits, with a small proportion of asylum claimants (9 per cent) and other categories (3 per cent). The largest proportion consists of international students (45 per cent). About two thirds of these students hold a study permit only and one third hold both a study and a work permit.² Co-op students represent the majority of those who hold both a study and a work permit at the same time.

² Holders of study permits can work up to 20 hours per week off campus without a work permit.

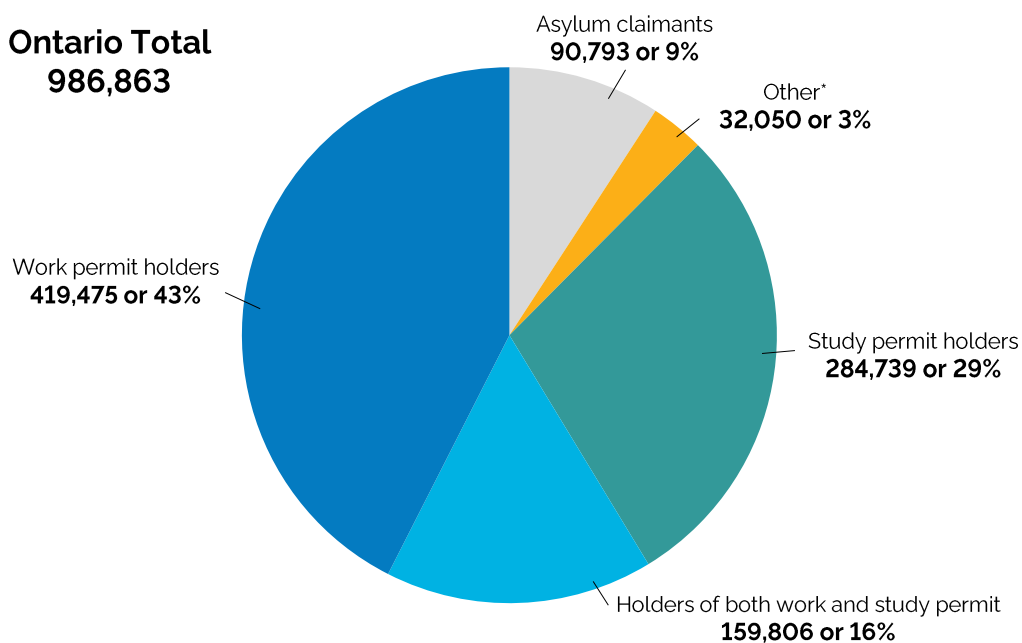
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Non-permanent residents who are holders of a work permit only account for 43 per cent of the total, but more than half of them relate in some way to the international student category, including post-graduation work permit holders, their spouses, and the spouses of current international students.

Chart 1.9

Composition of the Non-Permanent Resident Population in Ontario

Distribution of non-permanent residents by permit type in Ontario on July 1, 2023



*Includes Canada-Ukraine Authorization for Emergency Travel (CUAET) holders without work permits or study permits and other such temporary residents.
Source: Statistics Canada.

The rapid increase in the number of non-permanent residents before and after the pandemic has been driven by multiple factors, including:

- A changing immigration system increasingly targeting candidates with Canadian education credentials and work experience in Canada;
- High demand from prospective international students to study in Ontario;
- Increasing enrolment of international students at education institutions in Ontario;
- Ever-larger graduating cohorts of international students becoming eligible for post-graduation work permits;
- Increasing demand from employers to hire temporary foreign workers; and
- A surge in asylum seekers to Canada.

In addition, special measures for Ukraine have contributed to the latest increases. Since the end of March 2022, almost 300,000 Ukrainians have arrived in Canada under the Canada-Ukraine Authorization for Emergency Travel (CUAET), about half of whom have settled temporarily in Ontario.

Given the continued impact these drivers are set to have on the number of non-permanent residents in the province, net increases are projected to continue in the short-term, but at a decreasing pace. In early 2024, the federal government announced a two-year cap on admission of certain types of international students, along with other measures aimed at slowing the increase of the non-permanent resident population in Canada.³ The short-term projections for Ontario reflect this significant decline from a net increase of 265,000 in 2023-24 to 145,000 in 2024-25, and 75,000 in 2025-26. In the long term and taking into account the expiry of CUAET permits in the medium term, the average increase from 2026 to 2046 is projected at 15,000 per year.



³ The federal Minister of Immigration, Refugees and Citizenship indicated a goal to decrease the proportion of temporary residents in Canada from 6.2 per cent of total population to 5 per cent over the next three years.

Impact of Non-Permanent Residents on Ontario's Age Structure

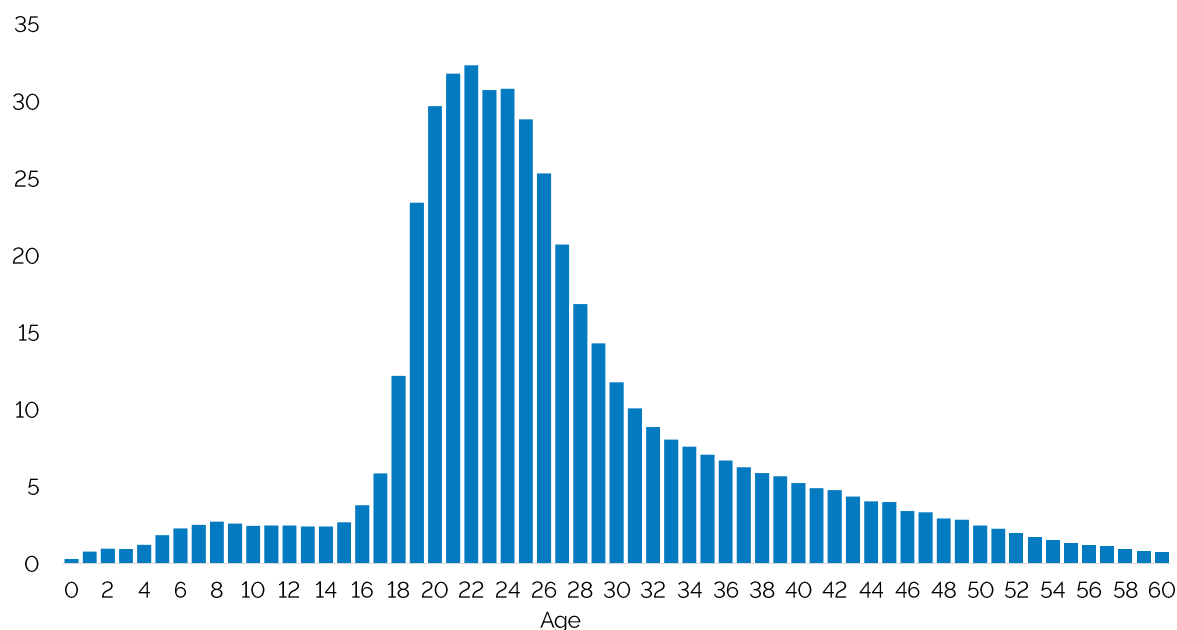
Almost one third of all Ontario residents aged 20 to 24 are non-permanent residents. This is a new phenomenon, as the proportion was less than 8 per cent just 10 years ago. This reflects the fact that most non-permanent residents in the province are either international students in school or on post-graduation work permits. This has impacted Ontario's age structure, as will be discussed in more detail later in this chapter. The 20-24 age group has become the largest in the province, surpassing the size of the cohorts of baby boomers in their early 60s.

With the projected rapid increase in the number of non-permanent residents in the province over the short term, their proportion of Ontario's total population aged 20 to 24 is projected to reach 40 per cent by 2026.

Chart 1.10

Non-Permanent Residents as a Proportion of Ontario's Population by Age

Population Share of non-permanent residents living in Ontario by age on July 1, 2023
(Per Cent)



Source: Ontario Ministry of Finance projections.

iii. Concentration of Population Growth in Metropolitan Areas

Provincial population growth has increasingly been driven by international migration, and immigrants mostly settle in the Greater Toronto Area (GTA), while non-permanent residents also tend to live in large cities. This has resulted in relatively stronger population growth in the metropolitan areas of the province, particularly in the GTA and the census metropolitan areas (CMAs) of Southern Ontario.

While 18 per cent of Ontario's population lives outside the 16 CMAs, only 7 per cent of provincial population growth over the last 20 years took place outside CMAs. From 2002 to 2022, the population living outside CMAs grew by 9 per cent or 222,000 residents. By contrast, the 16 CMAs added 2.8 million residents over those two decades, growing by 29 per cent. This dichotomy is projected to continue in the future.

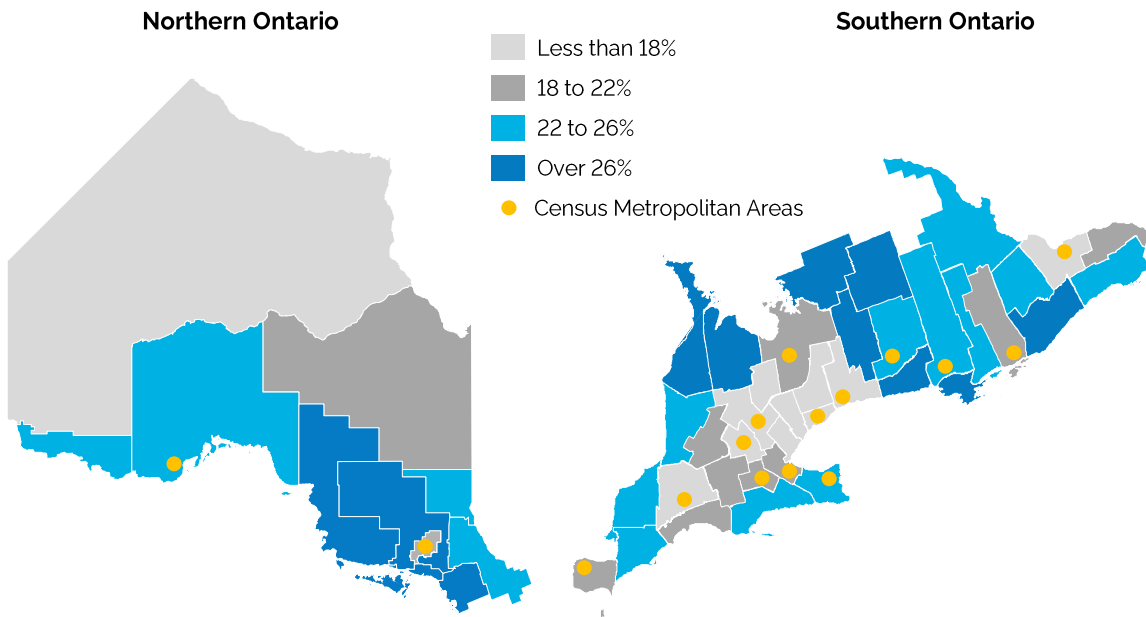


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In addition to fuelling population growth, the annual inflow of young international migrants to Ontario's metropolitan areas has slowed down the aging of their populations. Since four out of five newcomers to Ontario are under the age of 40, regions selected by more international migrants currently have comparatively younger age structures.

Chart 1.11 Proportion of Seniors by Census Division

Share of population aged 65+ in each census division in Ontario on July 1, 2022

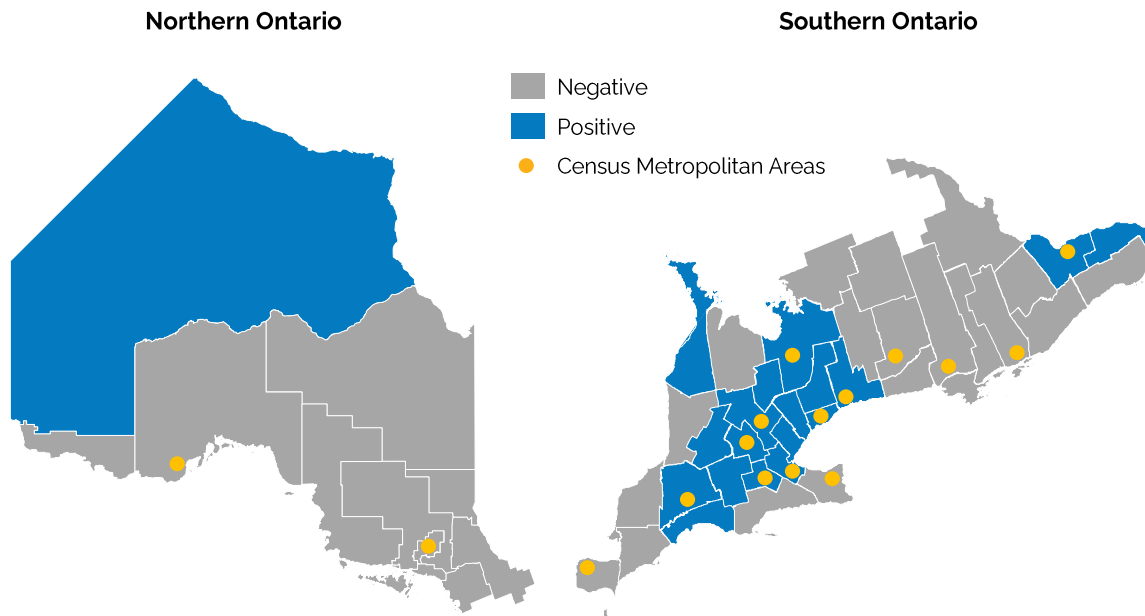


Source: Statistics Canada.

Due to their younger age structures, metropolitan areas are seeing a slower decline in their natural increase, compounding their relatively faster pace of migration-driven population growth. In 2021-22, only 19 of Ontario's 49 census divisions were experiencing positive natural increase (more births than deaths), down from 30 census divisions 20 years ago. Most census divisions that continue to see more births than deaths are located in the Greater Golden Horseshoe.

Chart 1.12 Natural Increase by Census Division

Natural increase (birth minus deaths) in each census division in Ontario in 2021-22



Source: Statistics Canada.

This dichotomy in demographic trends over time among regions of the province has led to a concentration of population growth in Ontario's metropolitan areas, a phenomenon that is projected to continue. Nevertheless, despite the older age structure in many rural and northern areas, population growth continues to take place in those regions, but at a slower pace than in metropolitan areas, driven by migrants from the rest of the province and some international migration. In 2021-22, all 49 census divisions experienced population growth, a trend that is also projected to continue to 2046.

Regional Demographic Outlook

The GTA’s population is projected to grow by 41 per cent from 2023 to 2046, adding another 3.1 million people to reach 10.5 million residents. This is slightly faster growth than for the province as a whole (+39 per cent). The region is projected to account for over half of provincial population growth over the period. It is projected that 49 per cent of Ontarians will live in the GTA by 2046, up from 46 per cent in 2006 and 48 per cent in 2023.

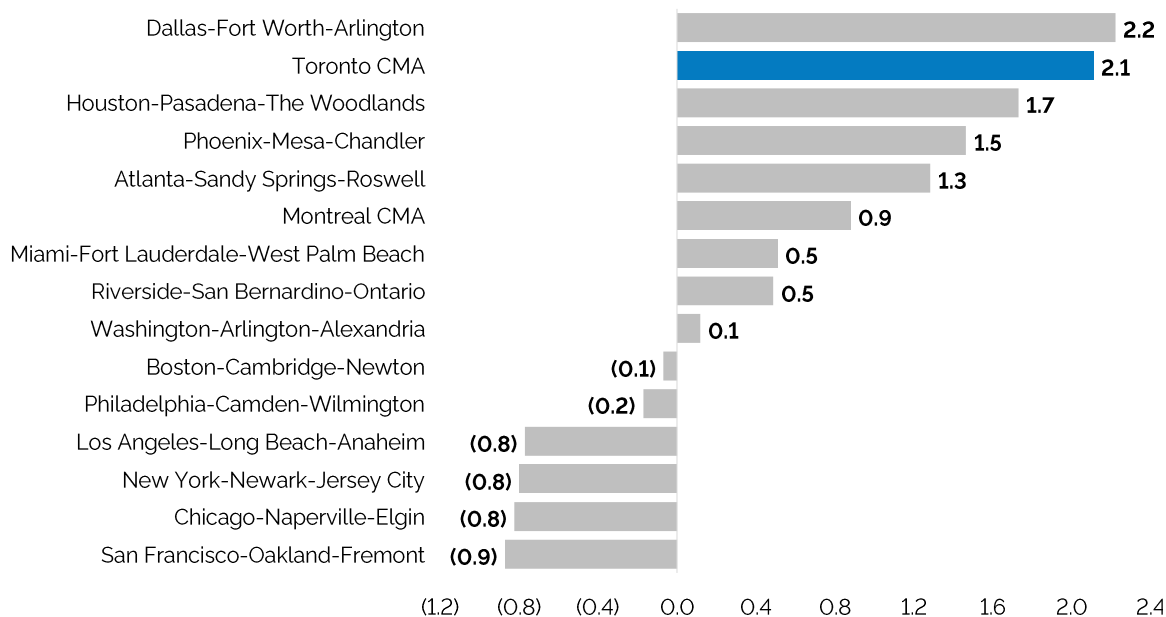
In Perspective: Toronto's Population Growth

Among the top 15 most populous metropolitan areas in Canada and the United States, the Toronto census metropolitan area grew at the second-fastest pace in 2021-22 at 2.1 per cent, behind the metropolitan area of Dallas at 2.2 per cent and followed by Houston at 1.7 per cent. Six metropolitan areas in the group experienced population declines, including the three most populous (Chicago, New York, and Los Angeles). As a group, these 15 metropolitan areas saw average growth of 0.3 per cent in 2021-22.

Chart 1.13

Population Growth in the 15 Most Populous Metropolitan Areas in Canada and the United States

Rate of population growth in 2021-22
(Per Cent)



Sources: Statistics Canada for the Toronto and Montreal CMAs and the U.S. Census Bureau for American Metropolitan Statistical Areas (MSAs).

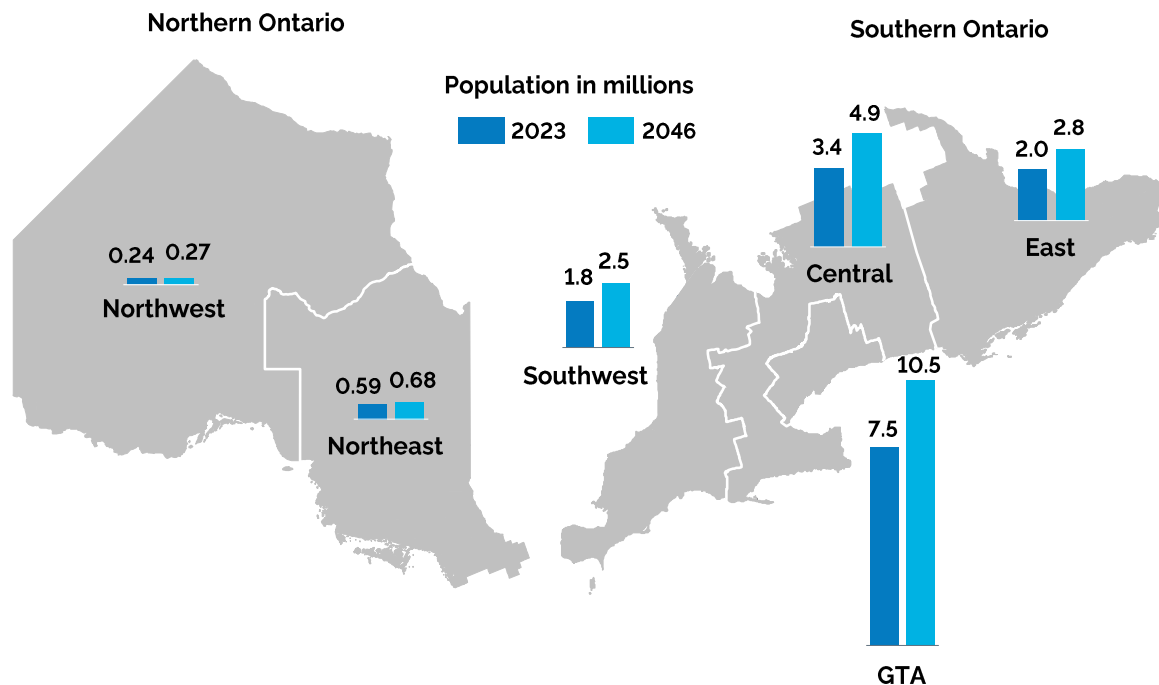
Central Ontario, with seven of Ontario’s 16 CMAs, is projected to be the fastest-growing region of the province, with growth of 43 per cent, from a population of 3.4 million in 2023 to 4.9 million in 2046.

From 2023 to 2046, both Eastern and Southwestern Ontario are projected to experience population growth at about the same pace as the province as a whole. Eastern Ontario is projected to see population growth of 783,000, or 39 per cent over the period, from 2.0 million in 2023 to 2.8 million by 2046. The population of Southwestern Ontario is projected to grow by 665,000, or 36 per cent, from 1.8 million to 2.5 million.

Population growth trends for the North changed significantly over the past few years, driven by rapid growth in the number of non-permanent residents living in the region and more immigrants through the new Rural and Northern Immigration Pilot. The population of Northern Ontario is projected to increase by 104,000 or 12 per cent, from 837,000 in 2023 to 941,000 by 2046. Within the North, the Northeast is projected to see its population edging up by 83,000, or 14 per cent, from 593,000 to 676,000. The Northwest is also projected to experience slight population growth of 21,000 people, or 9 per cent, from 244,000 to 265,000.

Chart 1.14
Regional Population Projections

Population of Ontario regions in 2023 and 2046



Source: Ontario Ministry of Finance projections.

iv. Increase in the Number of Seniors and Aging Within the 65+ Age Group

Population aging in Ontario is the result of low fertility rates and increasing life expectancies, compounded by the aging of the large cohorts of baby boomers. The pace of population aging in Ontario is slower than in many other developed jurisdictions, due to strong international migration to the province. Nevertheless, over the rest of the 2020s and the 2030s, the number of seniors is set to continue increasing rapidly. At the same time, the aging of baby boomers will result in an increasing proportion of older seniors within the 65+ age group.

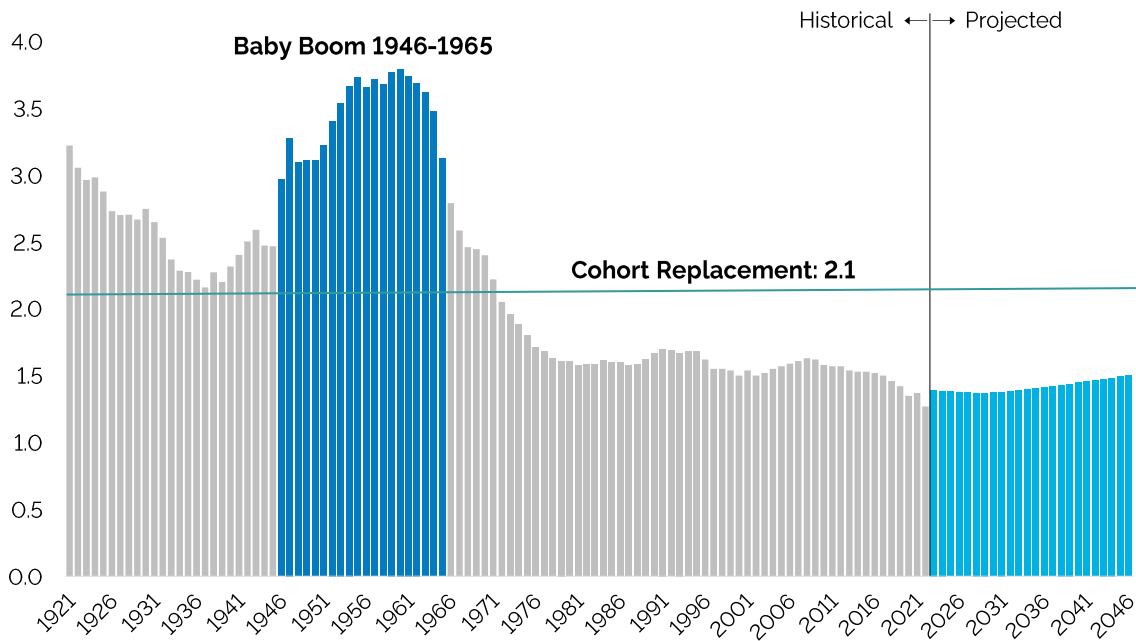
Baby boomers, born from 1946 to 1965, are now aged 59 to 78. The largest cohorts were born in the early 1960s, when Ontario's total fertility reached a high of 3.8 children per woman. Following the baby boom, fertility rates declined rapidly over the rest of the 1960s and 1970s, falling below the cohort replacement level of 2.1 children per woman in 1972. From the late 1970s to the late 2000s, Ontario's total fertility rate was fairly stable, hovering in a narrow band between 1.45 and 1.65. However, further declines have been observed over the last decade, down to 1.27 children per woman in 2022.



Fertility rates are not expected to return to the levels observed in the 1950s and early 1960s. The total fertility rate is assumed to increase slightly to 1.50 children per woman by 2046. Since fertility rates at younger ages have declined so much that they are now very low, there is less potential for them to show large additional declines in the future. At the same time, the fertility of women aged 30+ is likely to continue rising slowly, driving the slight projected increase in the total fertility rate.

Chart 1.15
Fertility in Ontario

Total Fertility Rate in Ontario, 1921-2046
(Number of People)



Sources: Statistics Canada for 1921-2022 and Ontario Ministry of Finance projections.

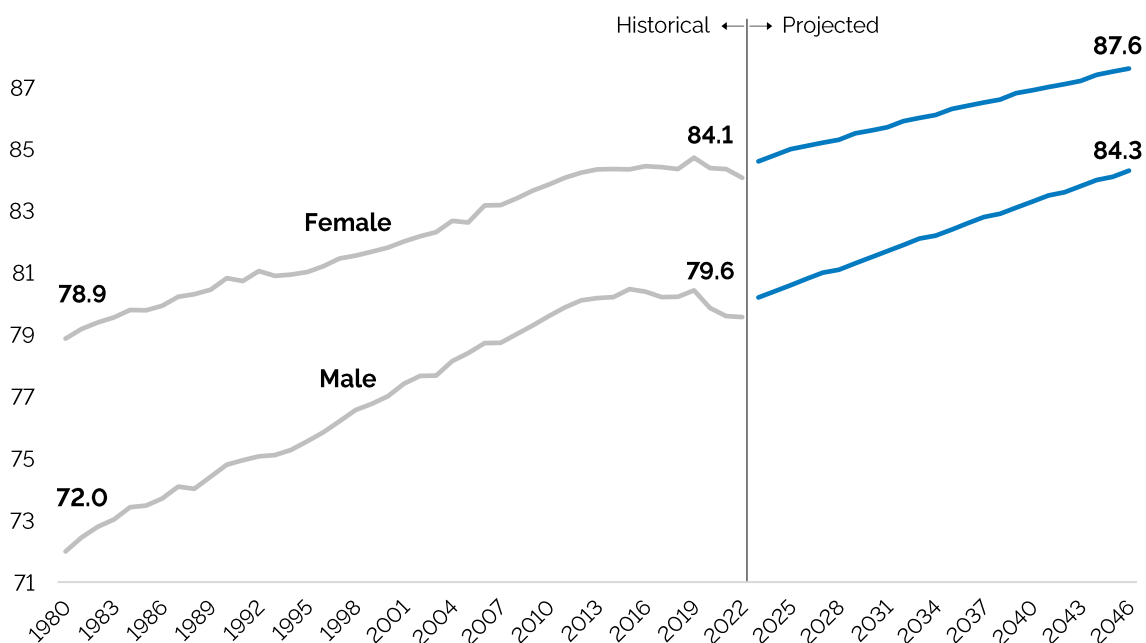
Increased longevity is also contributing to a larger share of seniors in the population. For instance, over the last 30 years, life expectancy at birth for Ontario men increased from 75.1 years in 1992 to 79.6 years in 2022, for a total gain of 4.5 years of life. The life expectancy at birth of Ontario women increased at a slower pace over the same period, with a total gain of 3.0 years of life, from 81.1 to 84.1 years.

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Over the last few years, the pace of increase in longevity has slowed due to COVID-19, elevated mortality due to opioid overdoses, and smaller gains coming from improving heart disease survival. Nevertheless, life expectancy is projected to continue increasing in the future, but at a slower pace than in the past. The increase is projected to be driven by continuing gains in cancer survival rates. By 2046, life expectancy at birth is projected to reach 84.3 years for men and 87.6 years for women.

Chart 1.16 Life Expectancy in Ontario

Life expectancy at birth in Ontario, 1980-2046
(Years of Life)



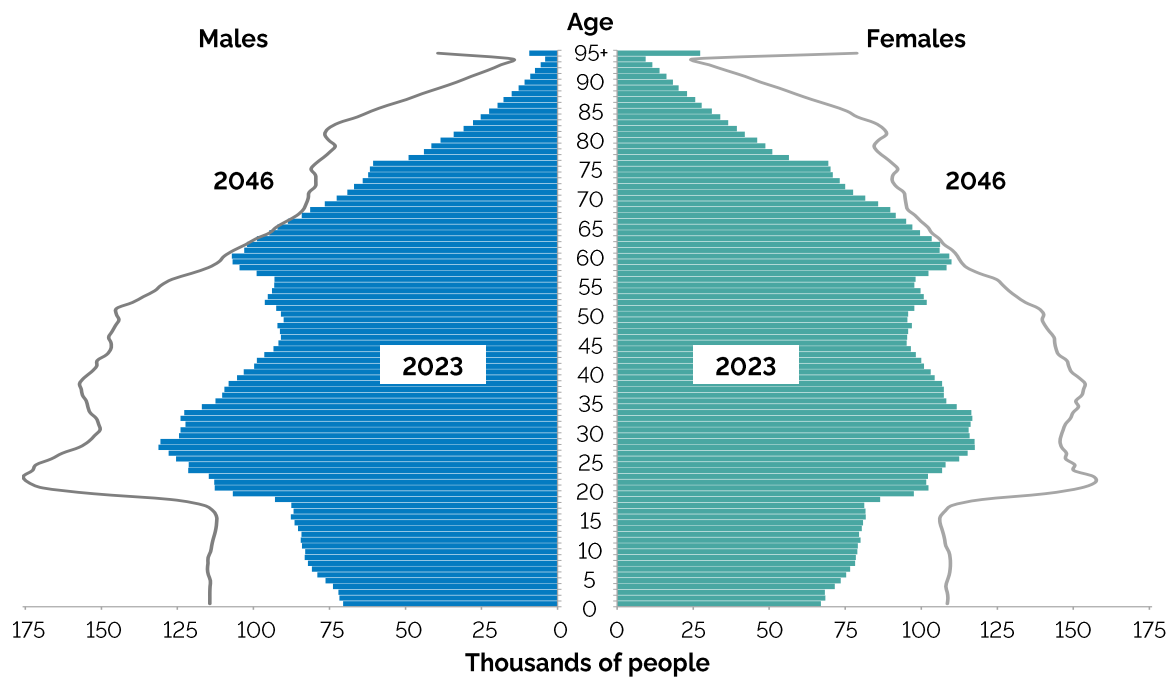
Sources: Statistics Canada for 1971-2022 and Ontario Ministry of Finance projections.

Over the last 50 years, the combination of falling fertility, increasing life expectancy, and aging of the baby boomers has resulted in population aging. In 2016, for the first time on record, the number of seniors aged 65+ in Ontario surpassed the number of children aged 0 to 14 years. Children now account for less than 15 per cent of Ontario's population, down from 28 per cent in 1971. By contrast, the share of seniors in the provincial population is now at an all-time high of 18 per cent, up from 8 per cent in 1971.

More recently, increasing levels of international migration have altered the age profile of Ontario’s population. Most notably, the largest age cohorts in the province are no longer those of the baby boom peak (now in their early 60s). In 2023, the largest age cohorts in Ontario were in their mid-20s and were composed of over one quarter non-permanent residents (see Chart 1.10) and a significant proportion of immigrants. New permanent residents (immigrants) will age over time like the rest of the population, eventually becoming seniors. However, the ever-increasing population of non-permanent residents in the province (1.5 million by 2026) will remain a revolving group of residents at younger ages. Their presence will help keep the age profile of the provincial population from aging as rapidly as in many other developed economies.

Chart 1.17
Age Pyramid of Ontario's Population

Number of males and females by single year of age in 2023 and 2046



Sources: Statistics Canada for 1971-2023 and Ontario Ministry of Finance projections.

Chapter 1

Age Profile Outlook for Ontario's Population

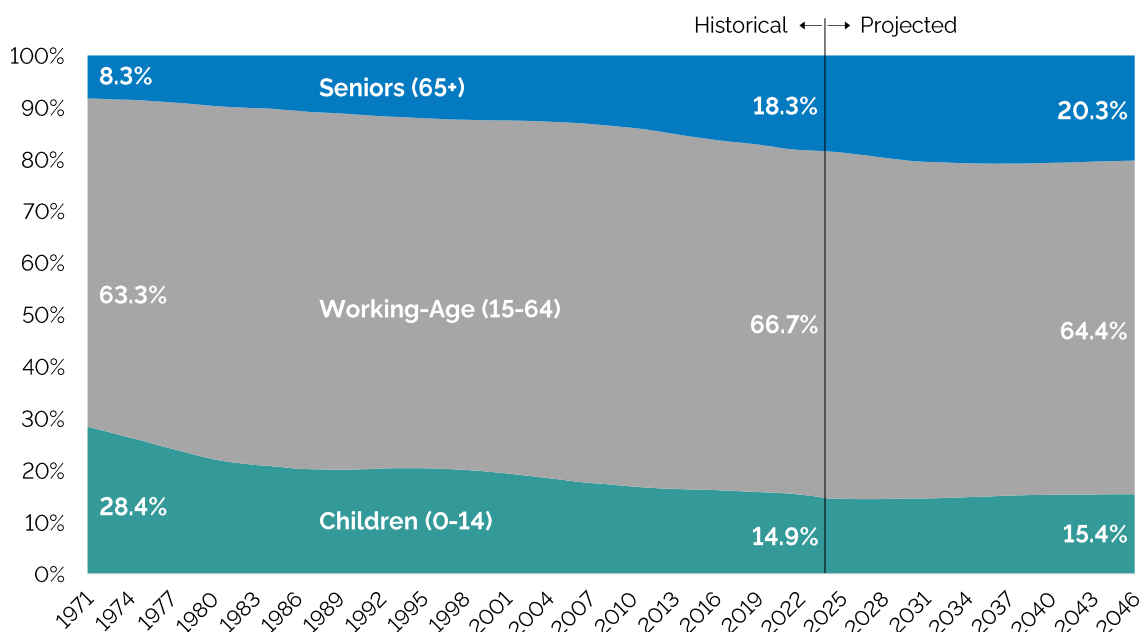
Over the projection period to 2046, population aging is set to continue in Ontario, but at a slower pace than was observed over the past two decades.

Chart 1.18

Age Distribution of Ontario's Population

Proportion of Ontario's population by broad age group, 1971 to 2046

(Per Cent)



Sources: Statistics Canada for 1971-2023 and Ontario Ministry of Finance projections.

The number of children aged 0 to 14 is projected to increase moderately over the projection period, from 2.3 million in 2023 to 3.3 million by 2046. The children's share of population is projected to decrease initially from 14.9 per cent in 2023 to 14.4 per cent by 2026, followed by a slow increase to 15.4 per cent by 2046.

The number of Ontarians aged 15 to 64 is projected to increase from 10.4 million in 2023 to 14.0 million by 2046. This age group's share of total population is projected to decline slowly for most of the projection period, from a peak of 66.9 per cent in 2024 to 64.0 per cent by 2038, and to increase slowly thereafter to reach 64.4 per cent by 2046. Overall, the proportion of Ontarians aged 15 to 64 is projected to remain higher than it was in the early 1970s.

The growth rate of the population aged 15 to 64 is projected to quickly trend lower initially, to an average of 0.8 per cent annually over the late 2020s, a pace of change similar to that observed over the 2010s. Thereafter, as the grandchildren of baby boomers reach age 15 and strong international migration continues, the pace of annual growth of the 15 to 64 age group is projected to accelerate, reaching 1.3 per cent in 2045-46.

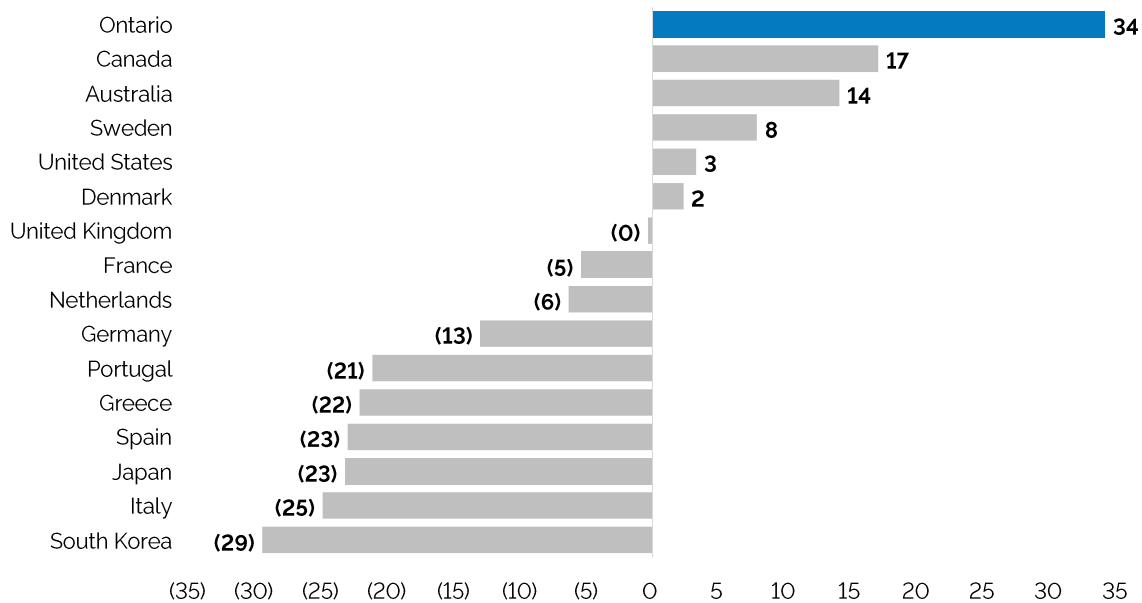
In Perspective: Ontario's Working-Age Population Growth

One aspect of Ontario's demographic outlook that differs significantly from that of other advanced economies is the province's high migration rate, which translates into large inflows of young residents each year. This phenomenon impacts projected changes in the provincial age structure and makes Ontario's outlook significantly different from that of most other countries.

For instance, Ontario's working-age population (15 to 64) is projected to grow by 34 per cent between 2023 and 2046. This is much higher than the growth projected in other high-immigration countries such as Australia (+14 per cent) and the United States (+3 per cent). According to the United Nations' World Population Prospects projections (2022 revision), most advanced economies in Europe and Asia are set to experience shrinking working-age populations to 2046, including France (-5 per cent), Germany (-13 per cent), Japan (-23 per cent) and South Korea (-29 per cent).

Chart 1.19
Projected Change in the Size of the Working-Age Population

Change in the number of residents aged 15 to 64, 2023 to 2046
(Per Cent)



Sources: Statistics Canada (for Canada), Ontario Ministry of Finance projections (for Ontario) and United Nations World Population Prospects: 2022 Revision.

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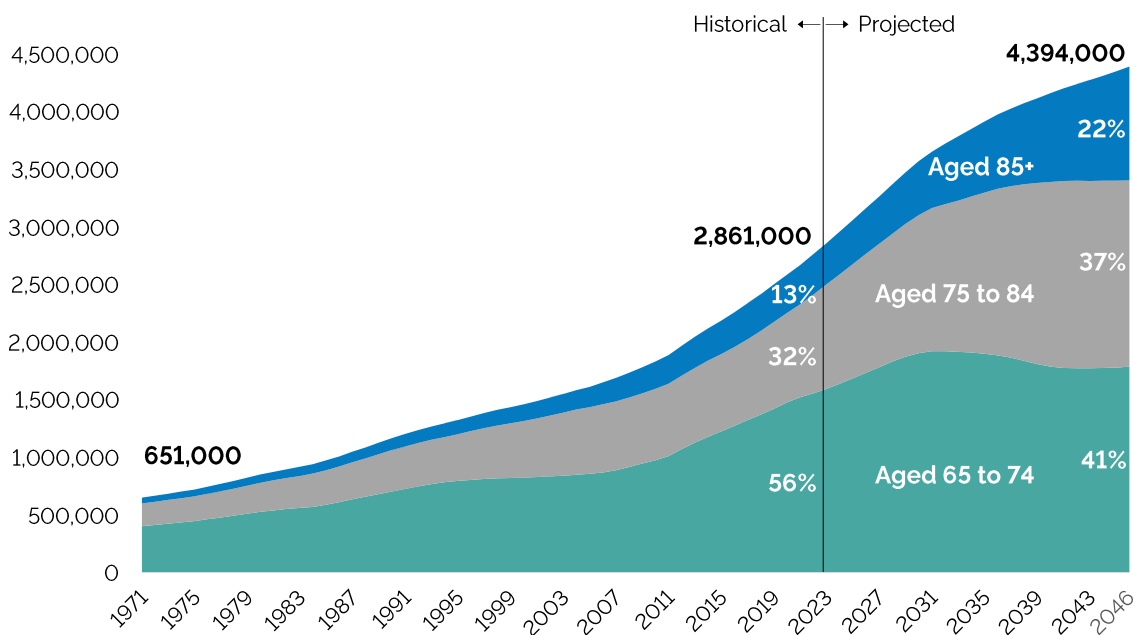
The number of seniors aged 65+ is projected to increase significantly, from 2.9 million or 18.3 per cent of population in 2023, to 4.4 million, or 20.3 per cent by 2046. However, the projected increase in the share of seniors to 2046 will be much slower than that observed over the recent past. Since 2000, the share of seniors increased by 5.8 percentage points, compared to a projected increase of 1.9 percentage points between 2023 and 2046.

By the early 2030s, once all baby boomers have reached age 65, the growth in the number of seniors will slow significantly. The share of seniors is projected to reach a peak at 20.9 per cent in 2036. The annual growth rate of the senior age group is projected to slow from an average of 3.1 per cent over 2023-31 to 1.0 per cent by the end of the projection period.

The older age groups will experience the fastest growth among seniors. The number of people aged 75 and over is projected to double in size, from 1.3 million in 2023 to 2.6 million by 2046. The number of people in the 90+ group will almost triple, from 143,000 to 417,000.

Chart 1.20 Growth and Aging of the Population Aged 65+ in Ontario

Ontario seniors by age group, 1971 to 2046
(Number of People)



Sources: Statistics Canada for 1971-2023 and Ontario Ministry of Finance projections.

As a result, the 65+ age group will see a reversal of its proportion of younger versus older seniors. In 2023, the younger cohorts aged 65 to 74 (all baby boomers), represented the majority (56 per cent) of the senior population. By 2046, the 75+ age group will account for 59 per cent of all seniors, an increase largely driven by the passage of the large cohorts of baby boomers into the older senior age groups.

In Perspective: Ontario's Population Aging

The proportion of seniors in Ontario's population in 2022 (18.3 per cent) was lower than the average for high-income countries (19.2 per cent) within the Organisation for Economic Co-operation and Development (OECD). Most European countries had much higher shares of seniors, including Italy at 24.1 per cent and Germany at 22.4 per cent. Japan had the highest proportion of seniors in the OECD at 29.9 per cent in 2022.

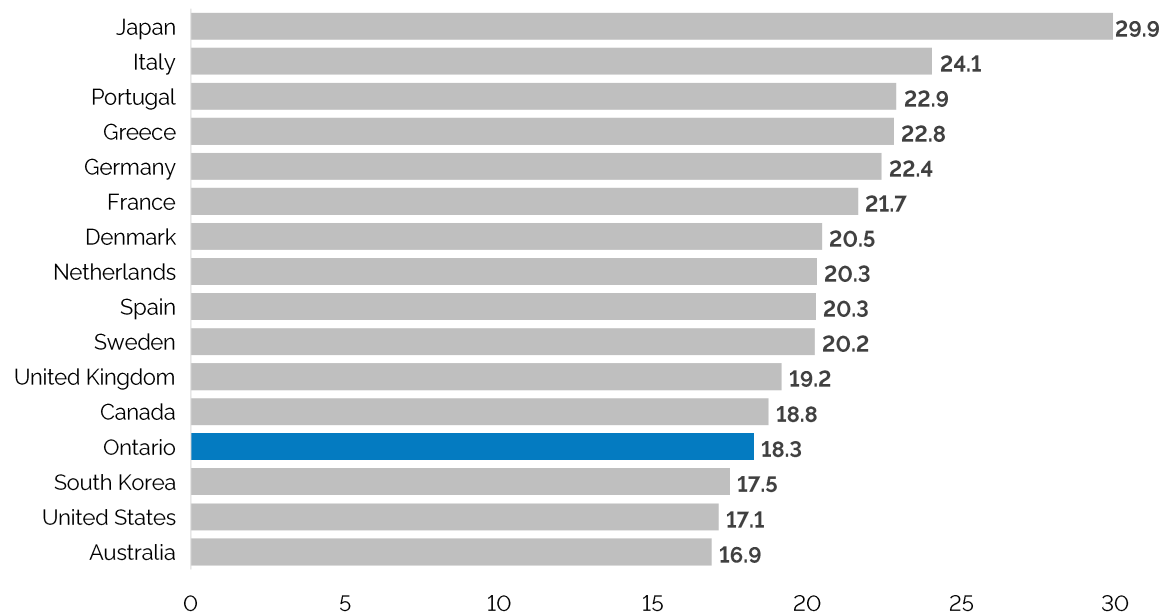
The United States (17.1 per cent) and Australia (16.9 per cent) had slightly lower shares of seniors than Ontario, partly due to the fact that their cohorts of baby boomers are relatively smaller.

Chart 1.21

Proportion of Seniors in Selected Countries and Ontario

Proportion of population aged 65+ in 2022

(Per Cent)



Sources: The World Bank and Statistics Canada (for Canada and Ontario).

Alternative Scenarios

The Ontario Ministry of Finance projections provide three growth scenarios for the population of the province to 2046. The medium-growth, or reference scenario, presented in this chapter is considered most likely to occur if recent trends continue. The low- and high-growth scenarios provide a forecast range based on plausible changes in the components of growth.

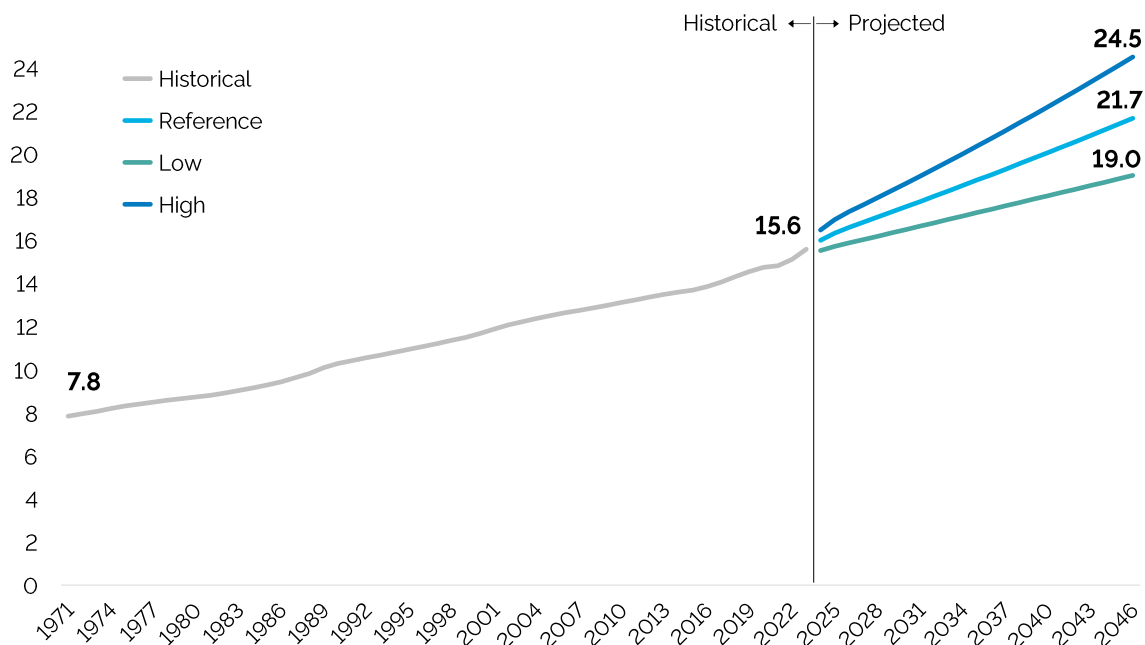
Under all three scenarios, Ontario’s population is projected to experience growth over the 2023 to 2046 period. In the reference scenario, population is projected to grow 39 per cent, or almost 6.1 million, over the next 23 years from an estimated 15.6 million on July 1, 2023 to almost 21.7 million on July 1, 2046.

In the low-growth scenario, population increases 22 per cent, or 3.4 million, to reach over 19 million people by 2046. The age profile of the population is older in this scenario as a result of lower fertility and fewer international migrants.

In the high-growth scenario, population grows 57 per cent, or 8.9 million, to 24.5 million people by the end of the projection period. In this scenario, population aging takes place at a slower pace as a result of higher fertility and more international migrants.

Chart 1.22
Population Projections Scenarios for Ontario

Ontario population on July 1 of each year, 1971 to 2046
(Number of People in Millions)



Sources: Statistics Canada for 1971-2023 and Ontario Ministry of Finance projections.

Table 1.1

Scenarios for Population Growth and Age Distribution

	Low Scenario	Reference Scenario	High Scenario
2046 Population	19,038,542	21,692,236	24,542,399
Population Growth (2023 to 2046)	3,430,173	6,083,867	8,934,030
Population Growth Rate (total 2023 to 2046)	22%	39%	57%
Population Growth Rate (average annual 2023 to 2046)	0.87%	1.44%	1.99%
Natural Increase (total 2023 to 2046)	33,491	983,583	2,069,045
Natural Increase Rate (average annual 2023 to 2046)	0.01%	0.23%	0.44%
Net Migration (total 2023 to 2046)	3,674,205	5,116,015	6,618,421
Net Migration Rate (average annual 2023 to 2046)	0.93%	1.22%	1.47%
Share of 0 to 14 Age Group in 2046	13.8%	15.4%	16.8%
Share of 15 to 64 Age Group in 2046	64.5%	64.4%	64.0%
Share of 65+ Age Group in 2046	21.6%	20.3%	19.1%

Source: Ontario Ministry of Finance projections.

In Perspective: Ontario Ministry of Finance Projections

Both Statistics Canada and the University of Toronto develop detailed population projections for Ontario. Statistics Canada's projections were released in August 2022, before the latest increase in immigration targets and the recent surge in non-permanent residents. To the mid-2040s, Statistics Canada was projecting slower growth as a result of lower international migration assumptions, compared to the reference scenario of the Ontario Ministry of Finance (summer 2023). The University of Toronto's February 2024 projections show slightly slower growth due to assumptions of lower fertility and fewer non-permanent residents.

Table 1.2

Projected Population Growth Comparisons

(Per Cent Change)

	Statistics Canada 2023–2043	Ministry of Finance 2023–2046	University of Toronto 2023–2046
Average Annual Population Growth Rate	1.01	1.44	1.26

Note: University of Toronto projections are from the Policy and Economic Analysis Program (PEAP).

Chapter 1

Implications of Ontario's Demographic Outlook

Ontario's unique demographic outlook comes with many potential economic, fiscal and policy implications. They differ from implications arising from the outlook of most other jurisdictions around the world with slower-growing populations that are aging at a faster pace.

The rapid pace of overall population growth projected for the long term in Ontario will support continued demand for public services. See *Chapter 3: Fiscal Trends and Projections*.

The fact that Ontario's future population growth is set to increasingly be fuelled by young international migrants is likely to require continued efforts to ensure newcomers are successful in the provincial labour force and in their communities. Since the recent rapid increase in the number of non-permanent residents living in Ontario is also projected to continue, new and targeted ways of supporting this growing transient population can ensure their success and enhance their contribution to the provincial economy. See *Chapter 2: Economic Trends and Projections*.

Continued faster population growth in metropolitan areas will likely mean continued high demand for infrastructure such as transit, highways, water, electricity, and schools. See *Chapter 4: Delivering Infrastructure for Long-Term Growth*.

While the proportion of seniors will increase at a slower pace than in the past, the large increase in the number of seniors will require continued investment, in particular in the health sector. See *Chapter 3: Fiscal Trends and Projections*.

The increasing share of seniors is expected to weigh on future labour supply, since older workers transitioning into retirement age have significantly lower participation rates compared to other working-age groups. As the share of these workers continues to grow, it is expected to put downward pressure on the overall labour force participation rate. See *Chapter 2: Economic Trends and Projections*.



Chapter 2:

Economic Trends and Projections

Chapter 2

Economic Trends and Projections

Introduction

This chapter outlines a long-range projection of Ontario's economy between 2024 and 2046. The projection is based on a set of external economic assumptions, as well as demographic trends outlined in *Chapter 1: Demographic Trends and Projections*. Between 2024 and 2046, Ontario real gross domestic product (GDP) is expected to grow by 2.1 per cent on average per year.

Compared with *Ontario's 2020 Long-Term Report on the Economy*, real GDP growth is expected to be on average 0.1 percentage points higher. However, Ontario's economy is projected to grow at a slower pace over the long term when compared to its historical trend. This deceleration reflects an anticipated slowdown in labour force growth driven in part by an aging population. Immigration will continue to support increases in Ontario's working-age population over the outlook and help offset some of this slowdown. Over the outlook, productivity growth is assumed to be slightly slower compared to its historical trend, a challenge which can be met by further enhancing the productive capacity of the labour force through innovation, skills training and increased business investment.

Table 2.1

Summary of Ontario's Long-Term Economic Outlook (Average Annual Per Cent Change)

	1982-2023	2024-2046
Nominal GDP	5.2	4.0
Real GDP	2.4	2.1
Consumer Price Index	2.9	2.0
Labour Productivity	1.1	1.0
Labour Force	1.4	1.1

Note: Historical average for labour productivity growth reflects the 1998 to 2022 period.

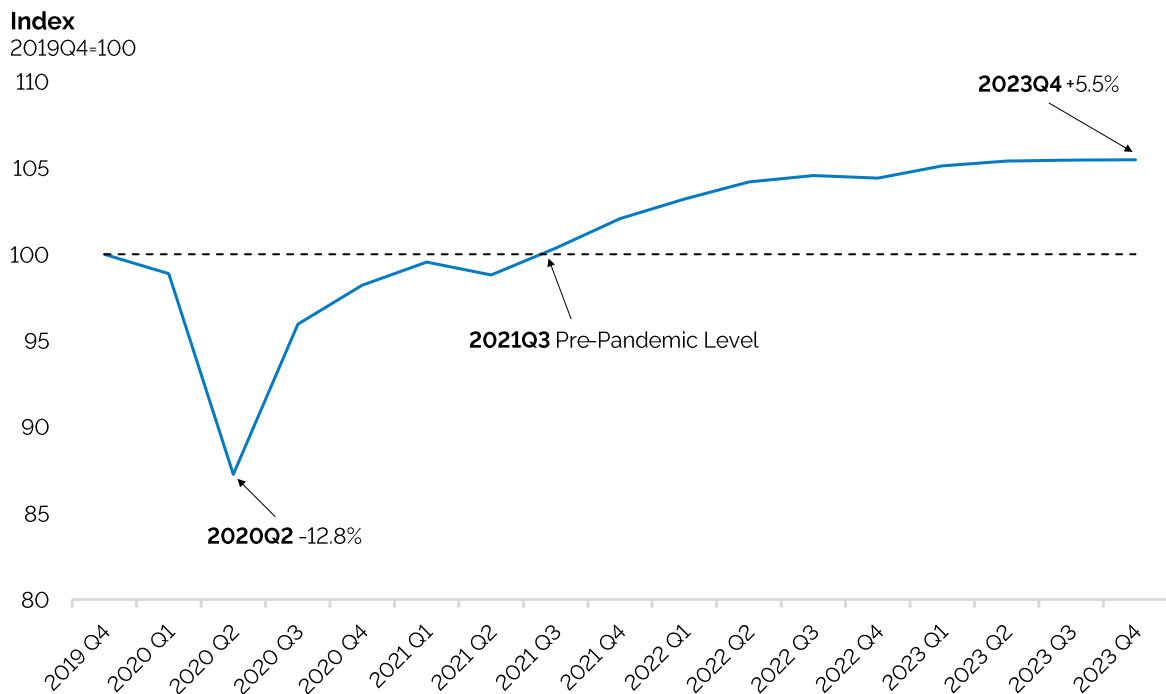
Sources: Statistics Canada and Ontario Ministry of Finance.

Chapter 2

Ontario's Post-Pandemic Economic Recovery

The COVID-19 pandemic resulted in one of the most significant economic downturns in modern history, however the recovery has been robust. During the onset of the pandemic, Ontario's real GDP contracted by 12.8 per cent by the second quarter of 2020 relative to the pre-pandemic level in the fourth quarter of 2019. Virtually all industries were significantly impacted by the pandemic, with sharp declines in real GDP experienced in accommodation and food services (-60 per cent), arts, entertainment and recreation (-56 per cent) and transportation and warehousing (-38 per cent). Ontario real GDP returned to its pre-pandemic level by the third quarter of 2021 and by the fourth quarter of 2023 real GDP was 5.5 per cent above the pre-pandemic level.

Chart 2.1
Ontario Real GDP Recovery From Pandemic



Note: The latest data point is 2023Q4.
Source: Ontario Ministry of Finance.



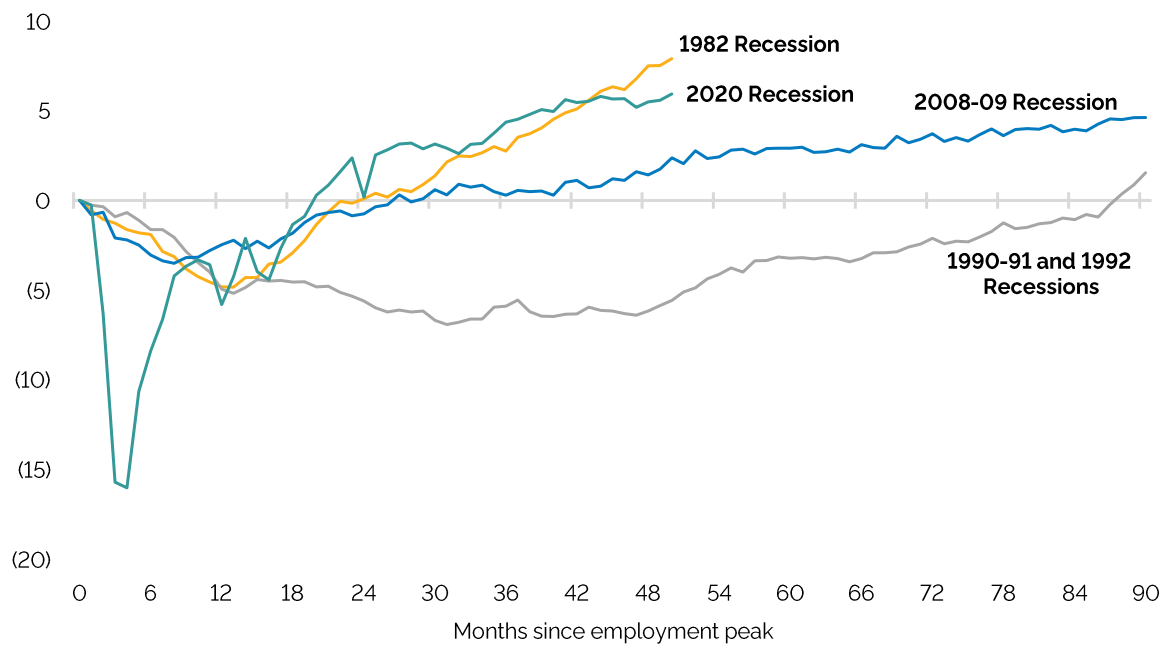
During the initial months of the pandemic, Ontario also experienced a sharp drop in employment (-16 per cent), surpassing the severity and speed of all prior modern economic downturns. However, the recovery in employment was also faster and stronger than any previous recession, exceeding its pre-pandemic level by September 2021.

Despite the sudden and significant economic impact of the pandemic, the long-term projection presented in this chapter begins with many Ontario economic indicators well above their pre-pandemic level, including GDP and employment.

Chart 2.2 Ontario's Employment Recovery

Employment

(Per Cent Change from Peak Employment by Month)



Note: The latest data point is March 2024.
Sources: Statistics Canada and Ontario Ministry of Finance.

External Economic Environment

Ontario is part of an integrated global economy, strongly influenced by growth in other regions, commodity prices, the Canadian dollar exchange rate and interest rates. Assumptions about these key external factors shape the backdrop of this long-term projection and are broadly aligned with private-sector forecasts.

Table 2.2

Key External Economic Assumptions

(Average Annual)

	1982-2023	2024-2046
Rest-of-Canada Real GDP (Per Cent Change)	2.1	2.0
U.S. Real GDP (Per Cent Change)	2.7	2.0
Canadian Dollar (Cents US)	79.7	78.9
90-Day Treasury Bill Rate (Per Cent)	4.6	2.8
10-Year Government of Canada Government Bond Rate (Per Cent)	5.7	3.5
U.S. 90-day Treasury Bill Rate (Per Cent)	3.7	2.8
10-Year U.S. Government Bond Rate (Per Cent)	5.4	3.5
West Texas Intermediate (WTI) Oil Price (2023 US\$ per Barrel)	65.9	77.5

Note: Historical average for West Texas Intermediate Oil Price reflects the 1986 to 2023 period.

Sources: Statistics Canada, U.S. Bureau of Economic Analysis, Bank of Canada, U.S. Energy Information Administration, Federal Reserve and Ontario Ministry of Finance.

Global Economy

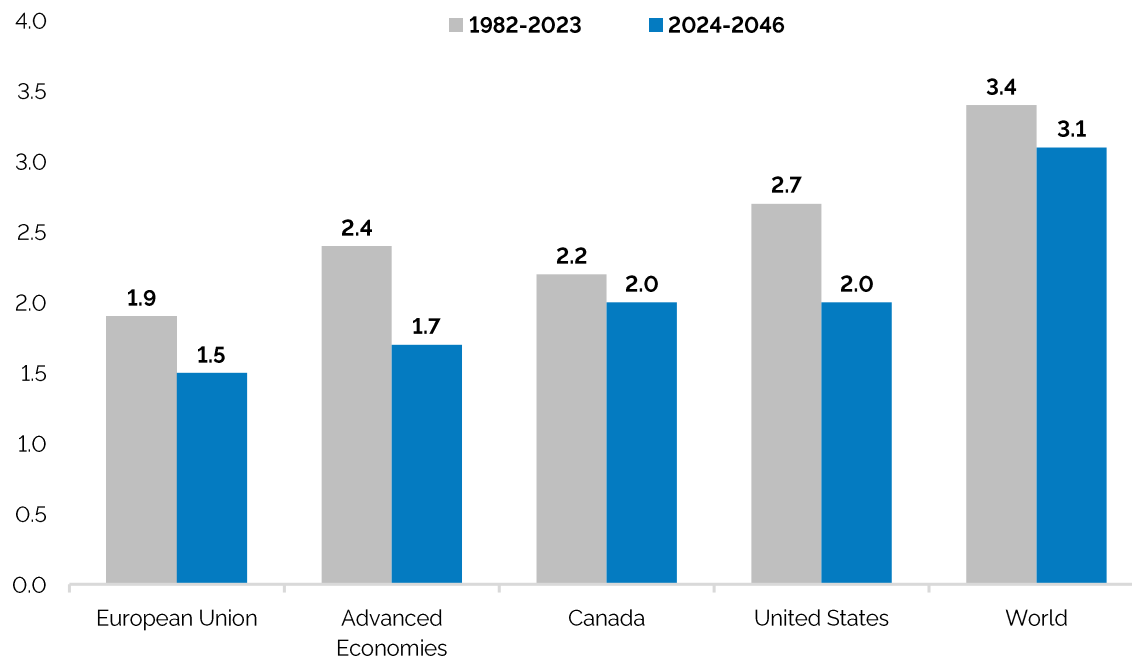
Following a strong rebound from the pandemic, global economic growth is projected to moderate. Supply chain disruptions, ongoing geopolitical tensions and excess demand have contributed to record high inflation and prompted many central banks to raise key interest rates. The impact of tighter credit conditions and restrictive monetary policy are expected to weigh on global demand over the near term.

Overall, global real GDP is projected to advance at an average annual pace of 3.1 per cent over the long term, down from its historical average of 3.4 per cent. Over the long-term projection, labour force growth is expected to slow in many regions due to an aging population, leading to a deceleration in global economic growth.

Chart 2.3

Global Economic Growth Projections

Average Annual Real GDP Growth
(Per Cent)



Sources: International Monetary Fund (April 2024), Statistics Canada, U.S. Bureau of Economic Analysis and Ontario Ministry of Finance.

United States

U.S. economic growth is a key driver of Ontario's exports and overall economy. The United States is Ontario's largest trading partner, accounting for nearly 82 per cent of merchandise goods exports in 2023. The long-term projection assumes the U.S. economy will grow at an average annual pace of 2.0 per cent, slower than its historical average of 2.7 per cent.

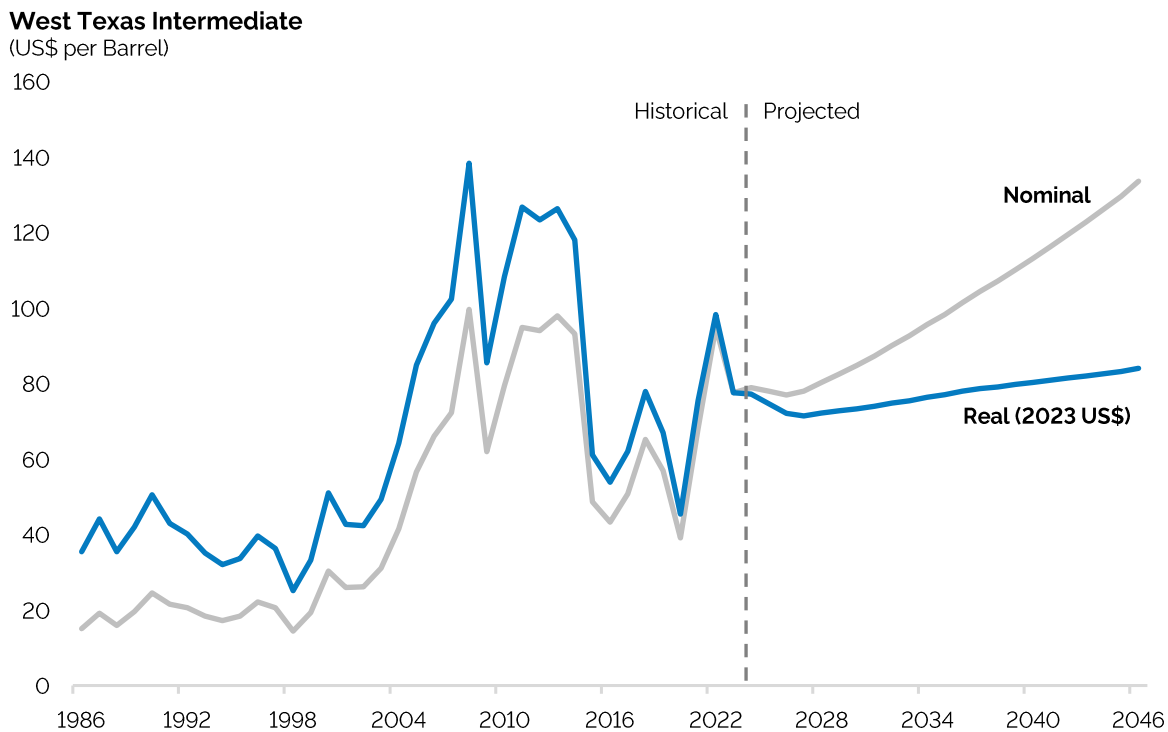
According to the U.S. Congressional Budget Office (CBO), slowing population growth and an aging workforce will weigh on the labour force and potential real GDP growth over the long term. However, increases in educational attainment and life expectancy of the working-age population are expected to partially offset the slowdown.

Commodity Prices

Global commodity markets have experienced significant volatility in recent years. After declining sharply during the COVID-19 pandemic, global crude oil prices rebounded, in part due to rising demand, tighter supply conditions and Russia’s invasion of Ukraine. As a net importer of commodities, higher oil prices increase costs for businesses and consumers and generally weaken Ontario’s terms of trade.

Over the long term, oil prices are expected to rise, supported by continued global demand, especially in emerging markets such as China and India. This projection assumes West Texas Intermediate (WTI) crude oil prices will reach \$134 US per barrel by 2046. In real terms, prices are expected to rise modestly, approaching \$84 US per barrel by the end of the projection period. There is considerable uncertainty around this projection related to both ongoing and unexpected geopolitical events and the transition toward cleaner energy technologies which could significantly impact oil markets in the future.

Chart 2.4
Long-Term Outlook for Crude Oil Prices



Sources: U.S. Energy Information Administration, U.S. Bureau of Economic Analysis and Ontario Ministry of Finance.

Interest Rates

Global supply disruptions resulting from the COVID-19 pandemic, ongoing geopolitical tensions and excess demand led to high inflation, both domestically and abroad. In response, the Bank of Canada, along with many other central banks, raised key interest rates to restore price stability. The Bank of Canada raised its policy interest rate from 0.25 per cent in March 2022 to 5.0 per cent in July 2023.

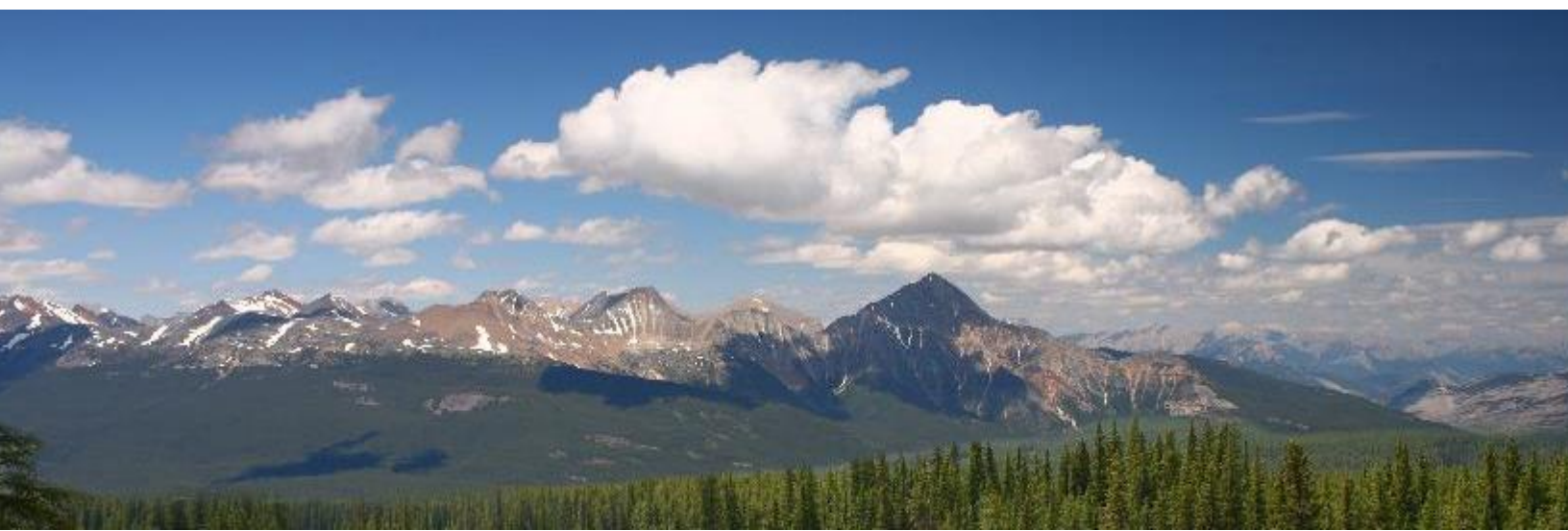
As inflation moderates, the policy interest rate is projected to fall to levels consistent with the neutral rate of interest — that is, the rate needed to keep economic activity at its longer-run potential and inflation at its target. The Bank’s estimate of the neutral rate lies between 2.25 and 3.25 per cent. This projection assumes the three-month Government of Canada treasury bill rate will settle at 2.8 per cent, on average. Longer-term rates, like the 10-year Government of Canada bond rate, are expected to average 3.5 per cent over the projection period.

Canadian Dollar

The Canadian/U.S. dollar exchange rate is particularly important for Ontario as the United States is by far Ontario’s largest trading partner. The Canadian dollar is expected to rise modestly over the long-term projection, consistent with the steady increase in commodity prices. Canada is a net exporter of oil, therefore, a gradual rise in oil prices is expected to boost economic growth, especially in oil-producing provinces, and lead to a gradual appreciation in the dollar over time.

Rest of Canada

The rest of Canada is expected to remain an important destination for Ontario’s exports. Economic growth in the rest of Canada is projected to average 2.0 per cent annually over the long term, supported by a modest rise in commodity prices and stable economic growth in the United States.



Ontario's Potential Economic Output

Potential economic output is the speed at which the economy can grow over the long term without increasing the rate of inflation. Two key components of long-term potential growth are the labour supply and the efficiency with which workers use capital to produce output, namely, productivity.

Labour Force

Labour force growth depends on growth in the working-age population and the participation rate, which is the percentage of the working-age population either employed or seeking employment. Growth in Ontario's working-age population is based on the demographic projections presented in *Chapter 1: Demographic Trends and Projections*.

Despite the impact of strong immigration-led population growth, Ontario's labour force growth is projected to slow over the outlook. The moderation in growth is due to Ontario's labour force participation rate, which is projected to ease from its historical average of 66.9 per cent to 63.1 per cent over the projection period. The following demographic trends are expected to impact labour markets over the long term.

Aging Workforce

Labour force participation among older workers (aged 55 and over) has gradually risen over the past few decades. Notably, participation rates among those in the pre-retirement age cohort of 55 to 64 improved significantly since the late 1990s. The increase in labour market engagement is owed to several factors including rising rates of educational attainment, improved health outcomes and greater employment opportunities. Furthermore, the elimination of the mandatory retirement age has also contributed to the rise in participation rates for those 65 and over.

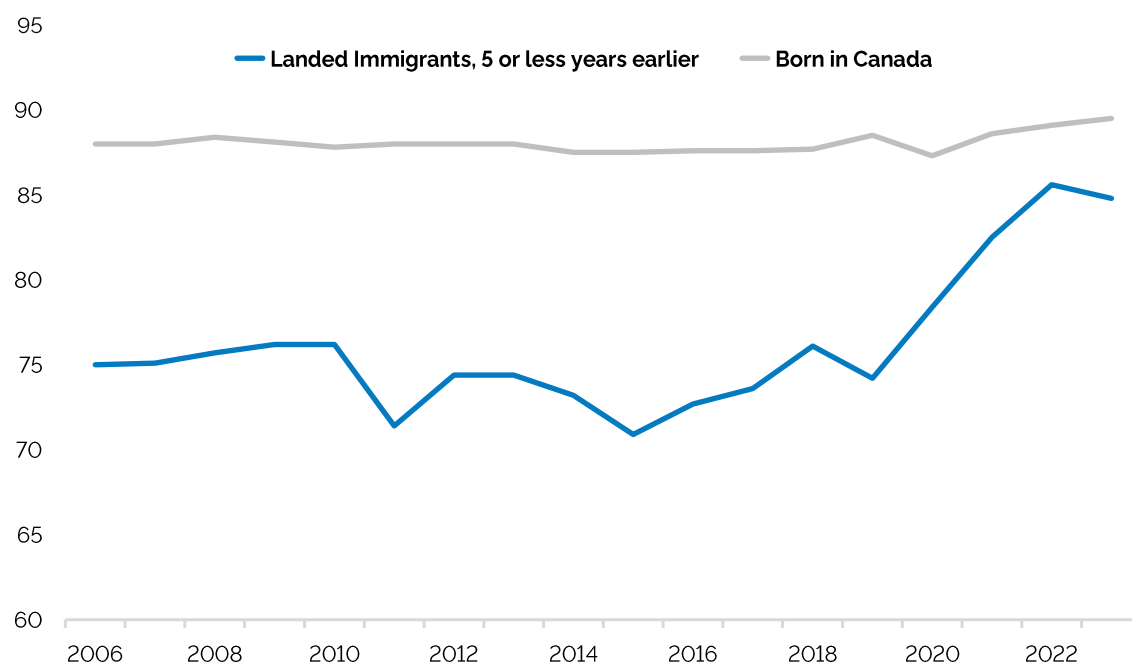
The aging of Ontario's population is expected to weigh on labour supply over the projection period. Older workers transitioning into retirement age have significantly lower participation rates compared to other working-age cohorts, which is expected to put downward pressure on the overall participation rate.

Immigration

Immigration is a key driver of Ontario's labour force growth, accounting for more than half of the increase in the province's workforce between 2006 and 2023. During that time, the labour force participation gap between newer immigrants and non-immigrants has gradually narrowed, due in part to policies which have helped attract skilled and educated workers to the province. Over the long term, immigration will continue to drive growth in Ontario's working-age population and help to partially offset the drag of an aging population on the labour force, placing Ontario in a more advantageous demographic position than many other advanced economies.

Chart 2.5
Stronger Labour Force Participation Among Recent Immigrants

Participation Rate, 25 to 54 years
 (Per Cent)



Source: Statistics Canada.

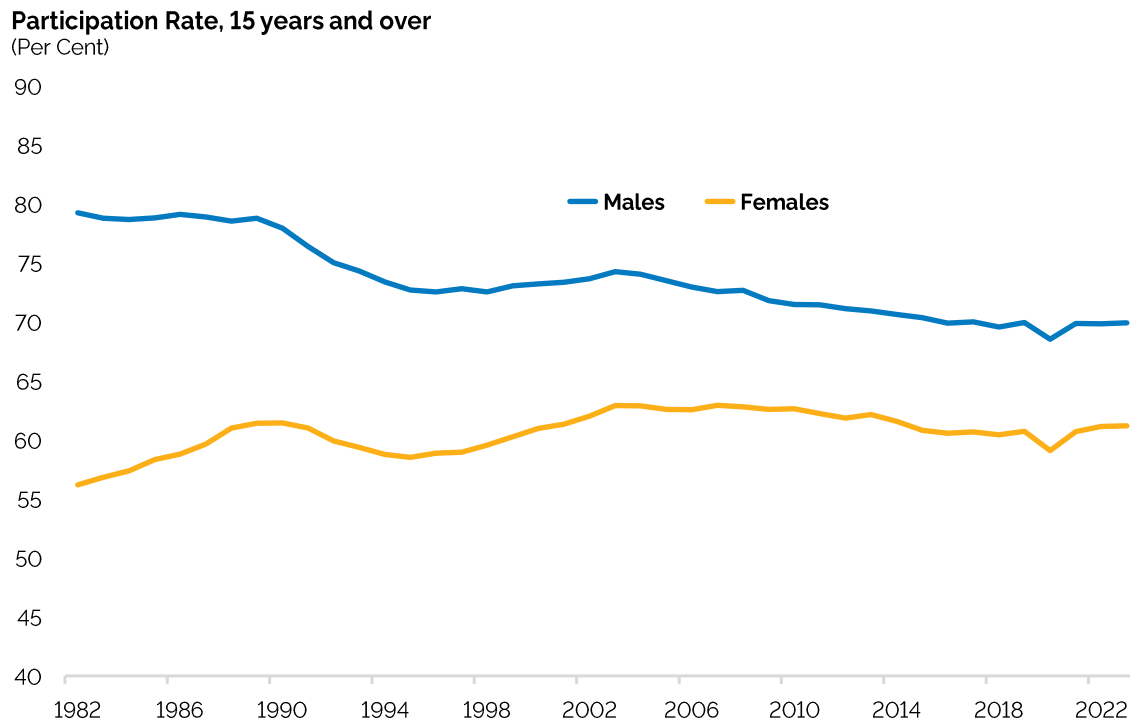
Chapter 2

Labour Force Participation Rates

Over the past few decades, labour force engagement among females has risen significantly, which has led to the gap between male and female participation rates to narrow from 23.1 percentage points in 1982 to 8.8 percentage points in 2023. The increase in labour force participation is due to several factors, including rising levels of educational attainment among female workers. The share of core working-age females in the labour force with a university degree has increased from 18 per cent in 1990 to 51 per cent in 2023. Male labour force participation rates have historically been relatively steady with a slight decline in core working-age males over the long term.

Over the outlook period, the participation rates of both male and female workers are projected to decline modestly as older workers transition to retirement.

Chart 2.6
Male and Female Labour Force Participation Rates



Source: Statistics Canada.

Non-Permanent Residents in Ontario's Labour Force

As highlighted in *Chapter 1: Demographic Trends and Projections*, the number of non-permanent residents in Ontario increased by over 400,000 in the last two years, reaching about 1 million. The majority of non-permanent residents now living in the province either have work permits or are allowed to work under study permits or as asylum seekers. Therefore, they likely constitute one of the fastest-growing segments of Ontario's labour force. Non-permanent residents are by nature a transient group, but they now represent a significant proportion of the workforce in many industries in the province, notably in agriculture, retail and hospitality. Over the outlook period, the number of non-permanent residents is projected to continue increasing, but at a significantly slower pace than in the recent past.

Productivity

Labour productivity growth — defined as real GDP per hour worked — is a key measure of economic prosperity and living standards. As Ontario's labour force growth slows over the long term, productivity growth will become an increasingly important driver of potential economic output. Growth in labour productivity is largely dependent on business investment in capital stock, the skills composition of the workforce and technological progress.

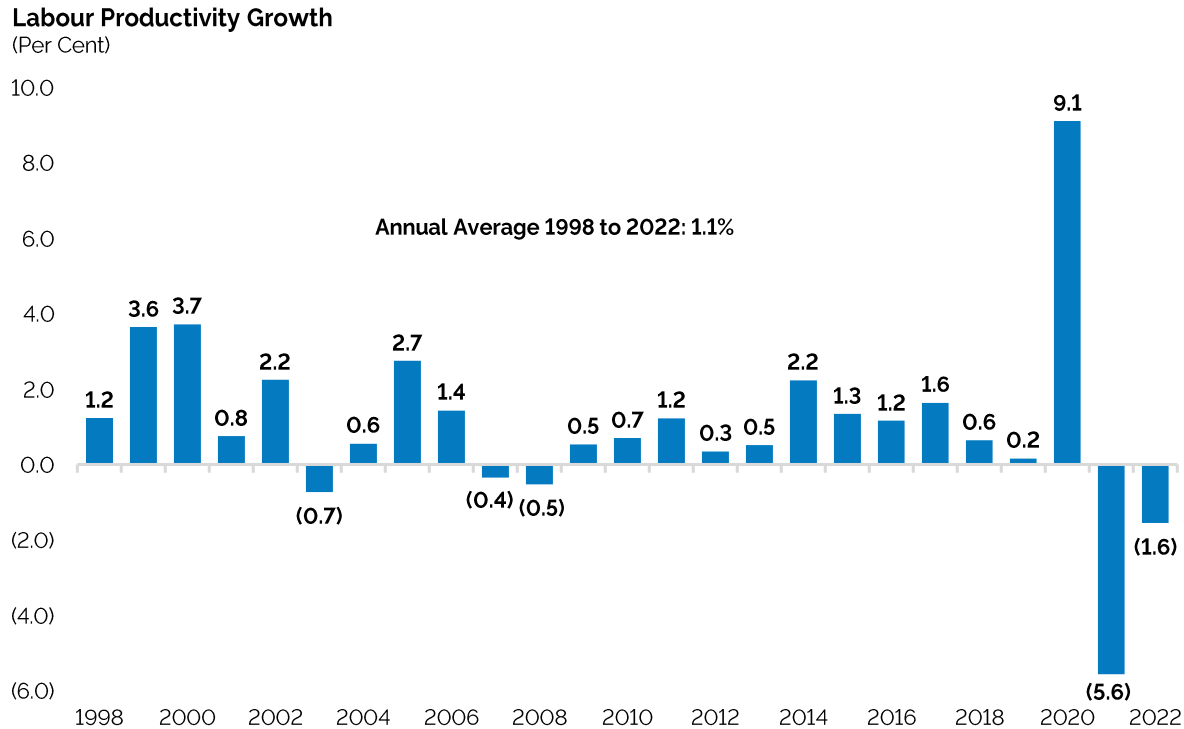
Over the past two decades, Ontario's labour productivity has experienced periods of cyclical variation. Following a period of faster growth between 1998 to 2002, productivity advanced at a much slower pace from 2003 to 2011, due in part to rising global commodity prices, a strengthening Canadian dollar and the impact of the 2008-09 global financial crisis. Following this period, Ontario's productivity performance improved, growing at an average annual pace of 1.0 per cent between 2012 to 2019.



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The COVID-19 pandemic had an unprecedented impact on productivity growth. Early in the pandemic, hours worked declined faster than output, leading to a significant rise in productivity in 2020. As working hours recovered faster than output, productivity fell sharply in 2021 and 2022. Productivity is projected to grow at a modest pace over the medium term, before returning to its historical average of 1.1 per cent annually over the long-term projection period.

Chart 2.7
Ontario Labour Productivity Growth



Source: Statistics Canada.

Over the long term, structural factors such as aging demographics and educational attainment could impact productivity growth. Given the inherent uncertainty of productivity projections, the implications of lower and higher rates of productivity growth for Ontario's economy are explored through scenarios later in this chapter.

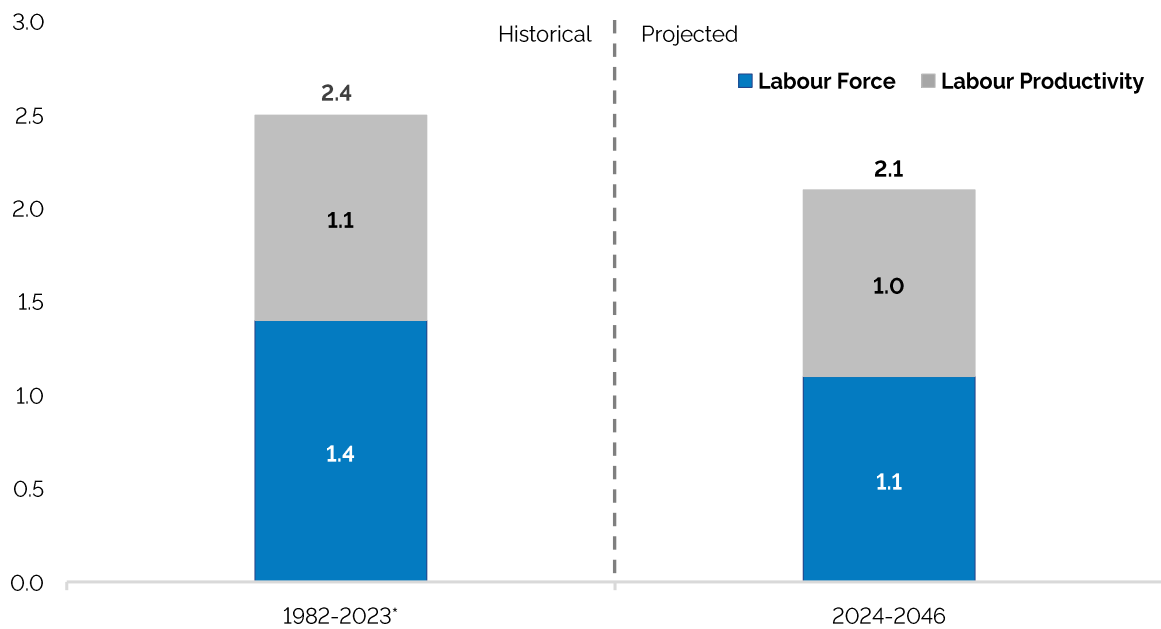
Ontario's Long-Term Economic Growth

Average annual growth in potential real GDP is projected to be 2.1 per cent for Ontario, slower than the 2.4 per cent average annual growth over the 1982 to 2023 period, driven primarily by weaker long-term labour force growth. By 2046, Ontario's real GDP is projected to be almost \$1.5 trillion.

Chart 2.8

Components of Ontario's Long-Term Economic Growth

Average Annual Real GDP Growth
(Per Cent)



*Historical average for labour productivity growth reflects the 1998 to 2022 period.

Note: Numbers may not add due to rounding.

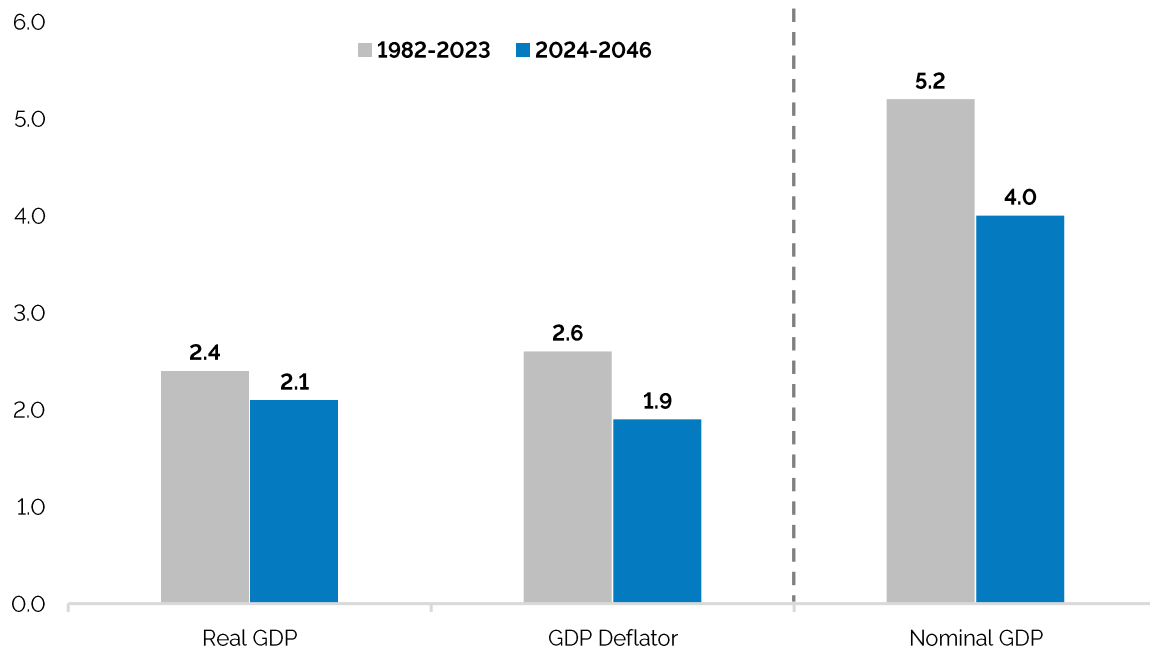
Sources: Statistics Canada and Ontario Ministry of Finance.

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Nominal GDP is expected to grow at a slower pace over the long term as economy-wide price growth moderates. Ontario's consumer price index (CPI) inflation is projected to ease to 2.0 per cent in 2025 and remain there over the long-term projection. The GDP deflator is projected to grow at an average of 1.9 per cent annually. Nominal GDP is expected to expand at an annual average rate of 4.0 per cent over the projection period, slower than the historical average of 5.2 per cent per year. By 2046, Ontario's nominal GDP is projected to be around \$2.7 trillion.

Chart 2.9
Nominal GDP Expected to Moderate

Average Annual Growth
(Per Cent)



Note: Numbers may not add due to rounding.
Source: Ontario Ministry of Finance.

Comparison to the 2020 Long-Term Report on the Economy

Compared to the 2020 Long-Term Report on the Economy, average annual growth in nominal GDP over the long term is projected to be slightly higher at 4.0 per cent. This stronger nominal GDP growth is paralleled by stronger real GDP growth at 2.1 per cent, mainly attributed to stronger labour force growth driven by higher immigration. This is partially offset by slightly lower productivity growth reflecting below-average growth over the first few years of the projection. The long-term outlook for inflation continues to be anchored to the Bank of Canada's two per cent target and remains unchanged.

Chart 2.10
Comparison to the 2020 Long-Term Report on the Economy

Average Annual Growth
(Per Cent)



Note: The 2020 Long-Term Report on the Economy did not include a medium-term projection due to uncertainty caused by the COVID-19 pandemic.

Source: Ontario Ministry of Finance.

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Risks to the Outlook

An important risk to Ontario as a small open economy is the recent trend towards increased trade protectionism such as unresolved trade disputes between China and the United States, as well as ongoing and emerging geopolitical conflicts. These potential trade barriers also present challenges alongside a slowing global growth outlook.

Developments in artificial intelligence (AI) have the potential to automate some aspects of work currently done by human labour. This technology was initially expected to primarily affect more routine and less cognitively complex occupations, but recent advances suggest the possibility of a far wider potential impact on the labour market. This emerging technology could result in significant economic benefits but could also present challenges for some sectors. See *Chapter 5: Harnessing Sector Strengths to Support Growth* for more details on emerging technologies and their potential impact on Ontario.

Given that international migration is the main driver of growth in the provincial labour force, there are risks related to changes in immigration policies. The recent increases in national immigration targets and the surge in non-permanent residents over the last few years were the result of specific policies that may change further in the long term.



Alternative Scenarios

The path of long-term economic growth in Ontario is based on trends and assumptions that are subject to uncertainty and risk. The section below outlines the key risks and trends that could impact the economy, and how changes in key factors could influence Ontario's long-term growth.

Labour Force Growth

As outlined in *Chapter 1: Demographic Trends and Projections*, there are potential alternative paths for population growth in Ontario. Over the long-term projection, a higher labour force growth scenario would lead to average annual real GDP growth of 2.7 per cent, and the 2046 level of real GDP would be about \$1.7 trillion versus \$1.5 trillion in the base case. In contrast, under a lower labour force growth scenario, real GDP growth would average 1.6 per cent annually, and the 2046 level of real GDP would be about \$1.3 trillion versus \$1.5 trillion in the base case.

Table 2.3

Alternate Labour Force Scenarios
(Average Annual)

	Long-Term Projection		
	Lower Labour Force Growth	Base Case	Higher Labour Force Growth
Real GDP Growth	1.6	2.1	2.7
Population Growth	0.9	1.4	2.0
Labour Force Growth	0.6	1.1	1.7

Source: Ontario Ministry of Finance.



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Productivity Growth

Another factor that could be different is the province's long-run productivity growth. There have been periods when Ontario labour productivity growth experienced significant variations. Over the long-term projection, a high productivity scenario would lead to average annual real GDP growth of 2.4 per cent, and the 2046 level of real GDP would be about \$1.6 trillion compared to \$1.5 trillion in the base case. In contrast, under a low productivity scenario with real GDP growth averaging 1.8 per cent annually, the 2046 level of real GDP would be about \$1.4 trillion compared to \$1.5 trillion in the base case.

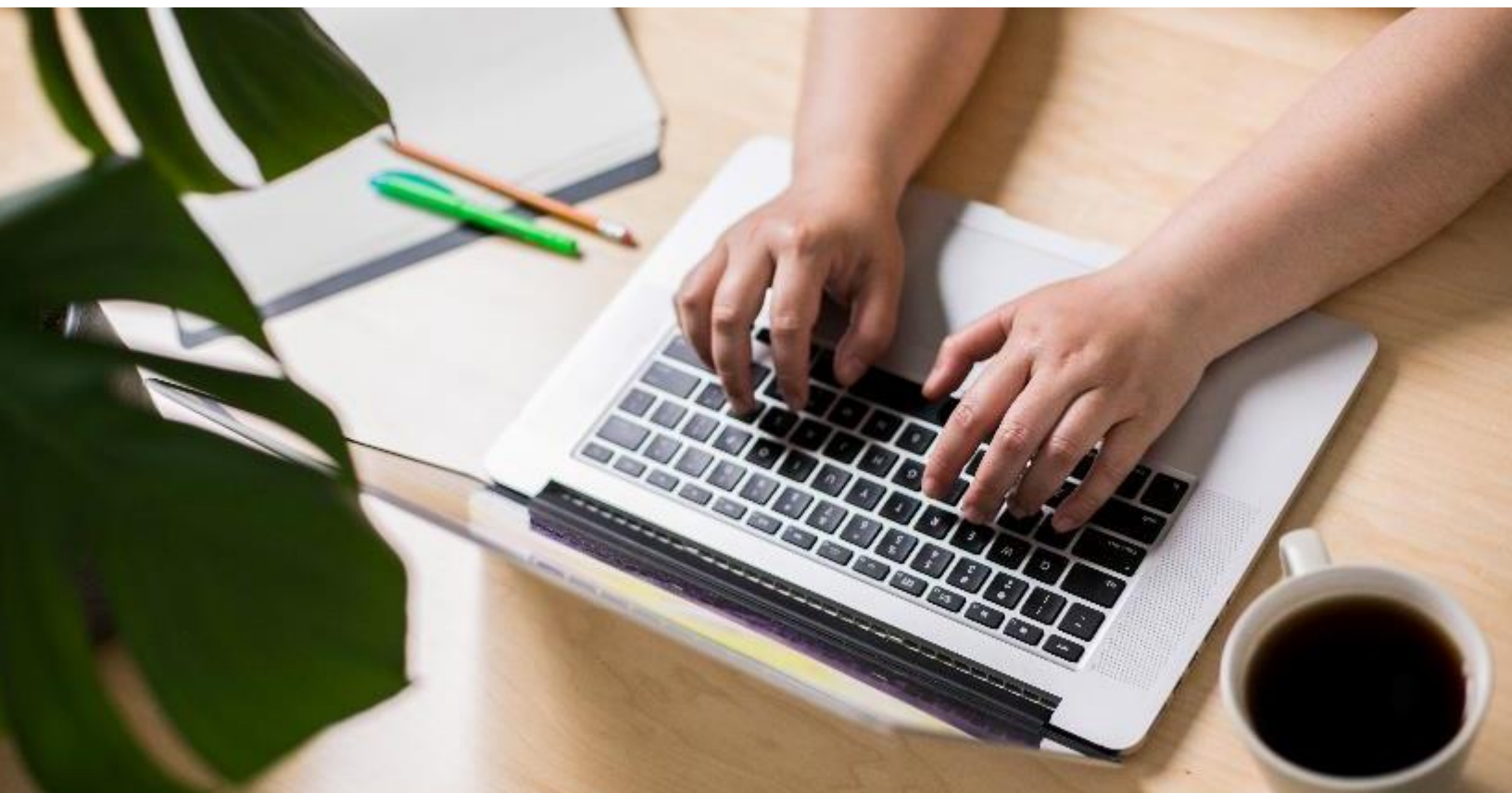
Table 2.4

Alternate Labour Productivity Scenarios

(Average Annual)

	Long-Term Projection		
	Low Productivity	Base Case	High Productivity
Real GDP Growth	1.8	2.1	2.4
Labour Force Growth	1.1	1.1	1.1
Labour Productivity Growth	0.7	1.0	1.3

Source: Ontario Ministry of Finance.



Other Perspectives on Long-Term Growth

The projection for long-term real GDP growth presented in this chapter is broadly consistent with views from other forecasters, including the Conference Board of Canada and University of Toronto. The Ontario Ministry of Finance's long-term projection lies within the range of these estimates.

Table 2.5

Comparison with Other Long-Term Ontario Real GDP Projections (Average Annual Per Cent Change)

	Real GDP
Conference Board of Canada	2.1
Ontario Ministry of Finance	2.1
University of Toronto	2.0

Sources: Policy and Economic Analysis Program, University of Toronto Long-Term Forecast (2024), Conference Board of Canada Provincial Outlook Long-Term Economic Forecast: Ontario (2024) and Ontario Ministry of Finance.

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Chapter 3

Fiscal Trends and Projections



Chapter 3

Fiscal Trends and Projections

Introduction

This chapter describes the potential impact of demographic and economic trends on the public sector and Ontario's fiscal policy. Based on the demographic and economic projections presented in the previous chapters, there are three key implications for the future:

1. Rising demand for certain public services due to demographic and economic factors;
2. Lower revenue growth than in the past arising from slower than historical economic growth; and
3. Ongoing measures will be required to support sustainability of the province's finances.



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Past Trends in Ontario Government Services and Finances

Historical revenue and spending developments provide context and have implications for future trends in the province's public finances. This section discusses historical trends in:

- Demand for public services;
- Government revenues;
- Government fiscal balances;
- Government debt; and
- Debt financing costs.

Demand for Public Services

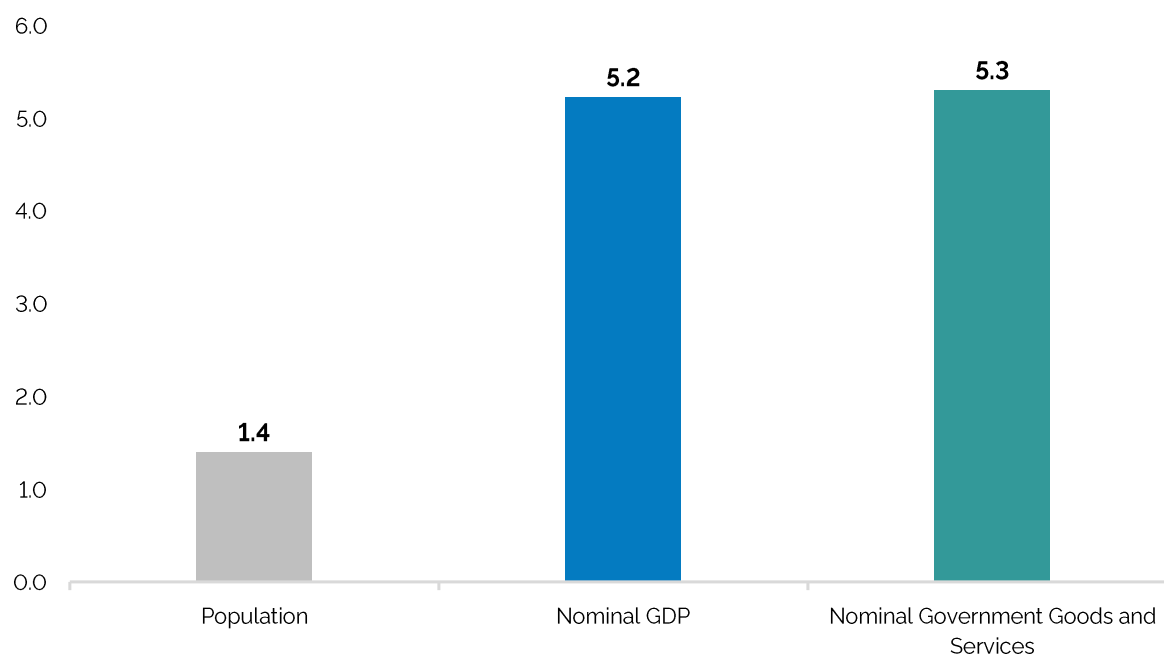
Demographics, including population growth, as well as the age and gender composition of the population, is a significant driver of demand for public services. Other demand drivers include utilization rates and delivery costs of existing programs and the introduction of new programs.



Government spending on goods and services by all levels of government in Ontario has grown at an average annual rate of 5.3 per cent over the past four decades. Over this period, the government spending growth rate has been significantly faster than population growth and slightly higher than growth in Ontario's overall economy as measured by nominal gross domestic product (GDP). Factors driving the rise in government spending include: an aging population; rising demand for public services; and increasing service delivery costs.

Chart 3.1
Past Trends in Government Spending, Ontario, 1982 to 2023

Average Annual Growth
(Per Cent)

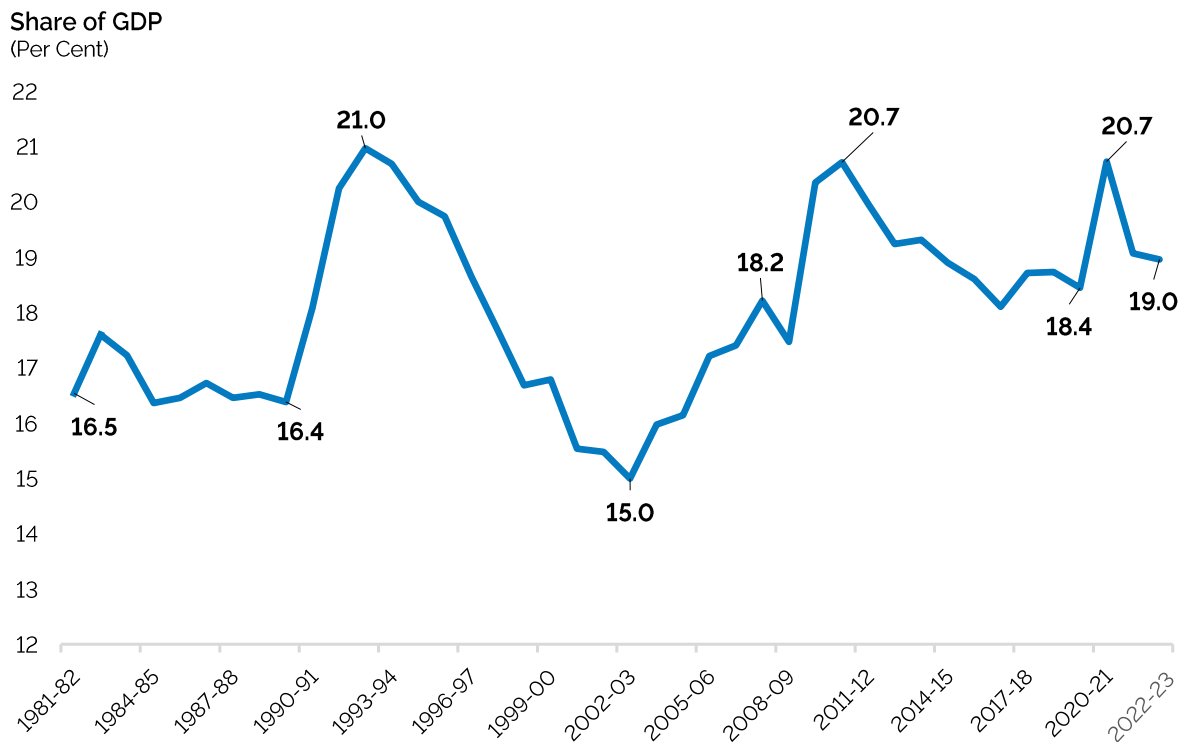


Sources: Statistics Canada and Ontario Ministry of Finance.

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Total Ontario government expenses, including program spending and interest-on-debt, have risen as a share of the economy from 16.5 per cent of nominal GDP in 1981-82 to 19.0 per cent in 2022-23. The share rose from 16.4 per cent in 1989-90 to 21.0 per cent in 1992-93, corresponding with an economic recession and high interest rates. The share then trended downwards to 15.0 per cent by 2002-03 before again moving upwards over the following decade, reaching a peak of 20.7 per cent in 2010-11 in the wake of the global financial crisis and recession. The total expense-to-GDP ratio has subsequently remained relatively stable, averaging 19.1 per cent between 2011-12 and 2022-23. The share rose from 18.4 per cent in 2019-20 to 20.7 per cent in 2020-21 during the COVID-19 pandemic and subsequently declined. In 2023-24 the total expense-to-GDP ratio is projected to be 19.0 per cent of GDP, modestly higher than the pre-pandemic share of 18.4 per cent in 2019-20.

Chart 3.2
Ontario Government Total Expense, 1981-82 to 2022-23

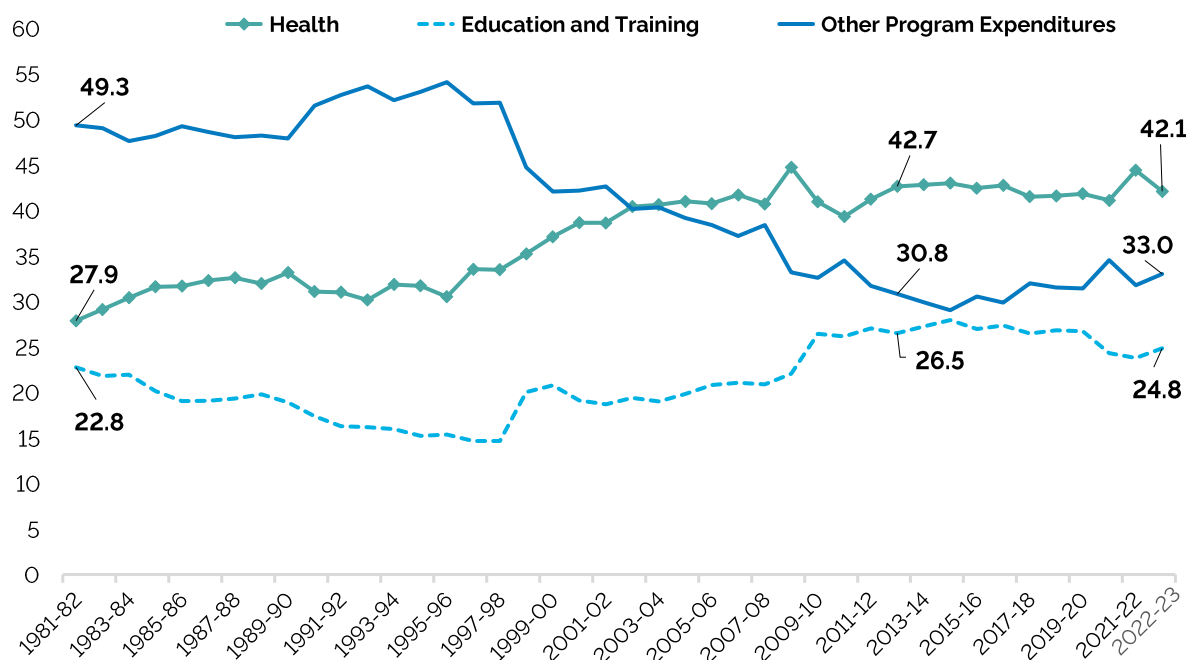


Sources: Statistics Canada and Ontario Ministry of Finance.

In 2022-23, the health care sector constituted the largest single share of total Ontario program spending at 42.1 per cent, followed by education and training at 24.8 per cent. Between 1981-82 and 2012-13, the share of health spending in total program spending gradually increased from 27.9 per cent to 42.7 per cent and the share of education and training in program spending increased from 22.8 per cent to 26.5 per cent. Over the 2012-13 to 2022-23 period, the share of health spending in total program spending has eased modestly from 42.7 per cent to 42.1 per cent while the share of education and training has declined from 26.5 per cent to 24.8 per cent. By contrast, the remaining program expenditures increased as a share of total program spending over the past decade, rising from 30.8 per cent in 2012-13 to 33.0 per cent in 2022-23 following three decades of declining shares.

Chart 3.3
Ontario Government Program Spending, 1981-82 to 2022-23

Share of Total Government Program Spending
(Per Cent)



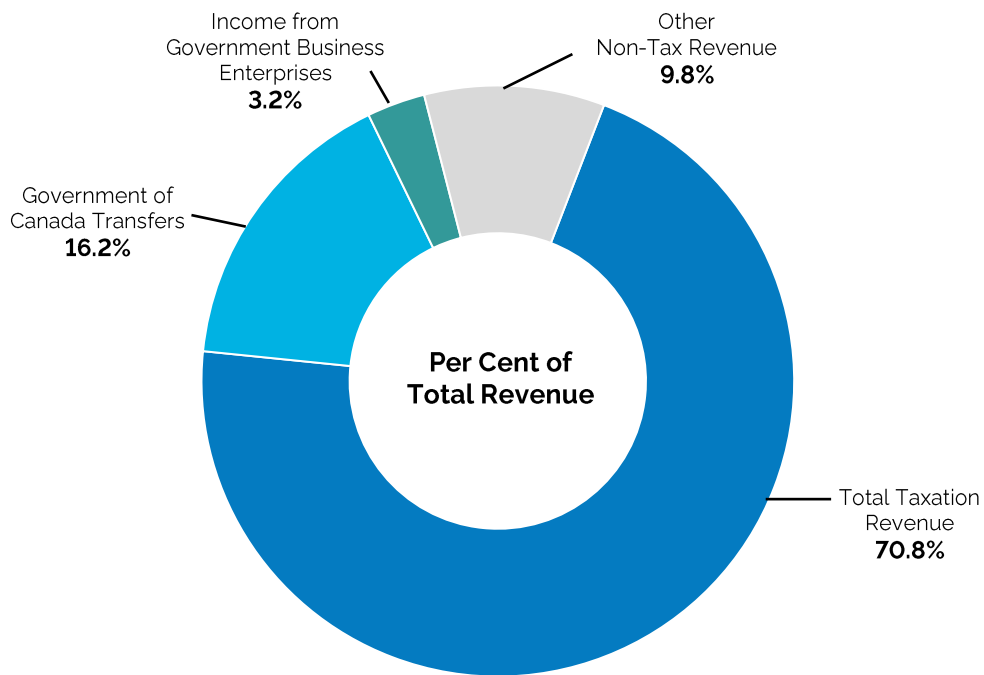
Sources: Ontario Treasury Board Secretariat and Ontario Ministry of Finance.

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Government Revenues

Taxation revenues accounted for 70.8 per cent of Ontario government revenues in 2022-23, followed by federal transfers to Ontario at 16.2 per cent. Federal transfers include major Government of Canada transfers such as the Canada Health Transfer and the Canada Social Transfer, funding for infrastructure projects and labour market programs. Net income from Government Business Enterprises (GBEs) comprised 3.2 per cent of total government revenues in 2022-23. Other non-tax revenues, covering a variety of revenue sources from fees, licences and permits, royalties for the use of Crown resources and miscellaneous revenues, comprised 9.8 per cent of total provincial revenues in 2022-23.

Chart 3.4
Ontario Government Revenues, 2022-23



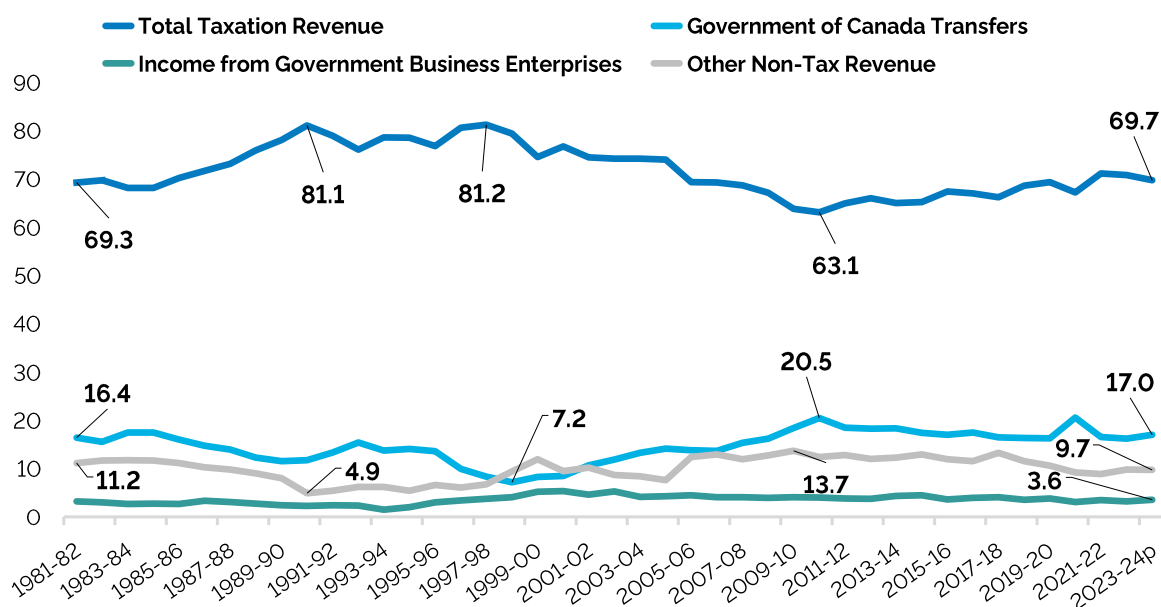
Note: Numbers may not add due to rounding.
Source: Ontario Ministry of Finance.

Taxation revenues as a share of total government revenues rose from 69.3 per cent in 1981-82 to 81.1 per cent by 1990-91 and remained close to this level for most of the 1990s. Between 1997-98 and 2010-11, the taxation revenues share of total revenues declined from 81.2 per cent to 63.1 per cent. Since 2010-11, the taxation revenues share rose gradually to 70.8 per cent by 2022-23.

These trends in the taxation revenues share of total government revenues were generally matched by opposing trends in federal transfers to Ontario. Between 1981-82 and 1998-99, federal transfers to Ontario as a share of total government revenues declined from 16.4 per cent to 7.2 per cent. However, rising federal transfers to Ontario for most of the 2000s helped to increase these transfers' share of total revenues to 20.5 per cent in 2010-11. Since 2010-11 federal transfers to Ontario have not kept pace with nominal GDP and total provincial revenue growth, with federal transfers' share of total government revenues declining to 16.2 per cent by 2022-23. Other non-tax revenues as a share of total government revenues declined from 11.2 per cent in 1981-82 to a low of 4.9 per cent in 1990-91. Since then, other non-tax revenues as a share of total government revenues have risen, increasing to a peak of 13.7 per cent in 2009-10 before declining to 9.8 per cent by 2022-23. Some of this growth was due to accounting changes from consolidating broader public sector organizations on the province's financial statements.

Chart 3.5
Ontario Government Revenues, 1981-82 to 2023-24

Share of Total Revenue
(Per Cent)



p = 2024 Budget interim estimate.
Note: Revenues have been restated to reflect reporting changes and reclassifications.
Source: Ontario Ministry of Finance.

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Federal transfers to Ontario as a share of total provincial revenues have trended downward in recent years and accounted for 17.0 per cent of revenues in 2023-24. The forecast for federal transfers is largely based on existing federal-provincial funding agreements and formulas. Federal transfers as a share of total revenues are projected to be slightly higher over the next few years relative to their share in 2023-24. While the long-term trend in federal transfers is uncertain, a further risk exists if current transfers and future agreements are not adapted to reflect anticipated demographic change and growth in demand for public services, as well as expected provincial expenditure pressures.

Net income from Government Business Enterprises (GBEs) comprised 3.6 per cent of Ontario government revenues in 2023-24. The outlook for net income from GBEs is based on Ontario Ministry of Finance estimates of net income for Hydro One Ltd. (Hydro One) and projections provided by Ontario Power Generation (OPG), the Ontario Cannabis Store (OCS), the Liquor Control Board of Ontario (LCBO), the Ontario Lottery and Gaming Corporation (OLG) and iGaming Ontario (iGO). The net income from GBEs share of total provincial revenues is projected to average 3.5 per cent over the next few years. Since many GBEs are mature businesses, over the long term, growth in their net income is expected to be in line with economic growth.

Other non-tax revenues accounted for 9.7 per cent of total provincial revenues in 2023-24 and this share is expected to decline in the near term. The near-term outlook for other non-tax revenues is based on projections provided by Ontario government ministries and agencies. Over the near term, other non-tax revenues are expected to decline largely due to the decrease in third-party revenues from Broader Public Sector Colleges reflecting the federal government's cap on international student study permit applications for two years, beginning in 2024. Over the long term, most non-tax revenues are expected to grow in line with total population growth and inflation.

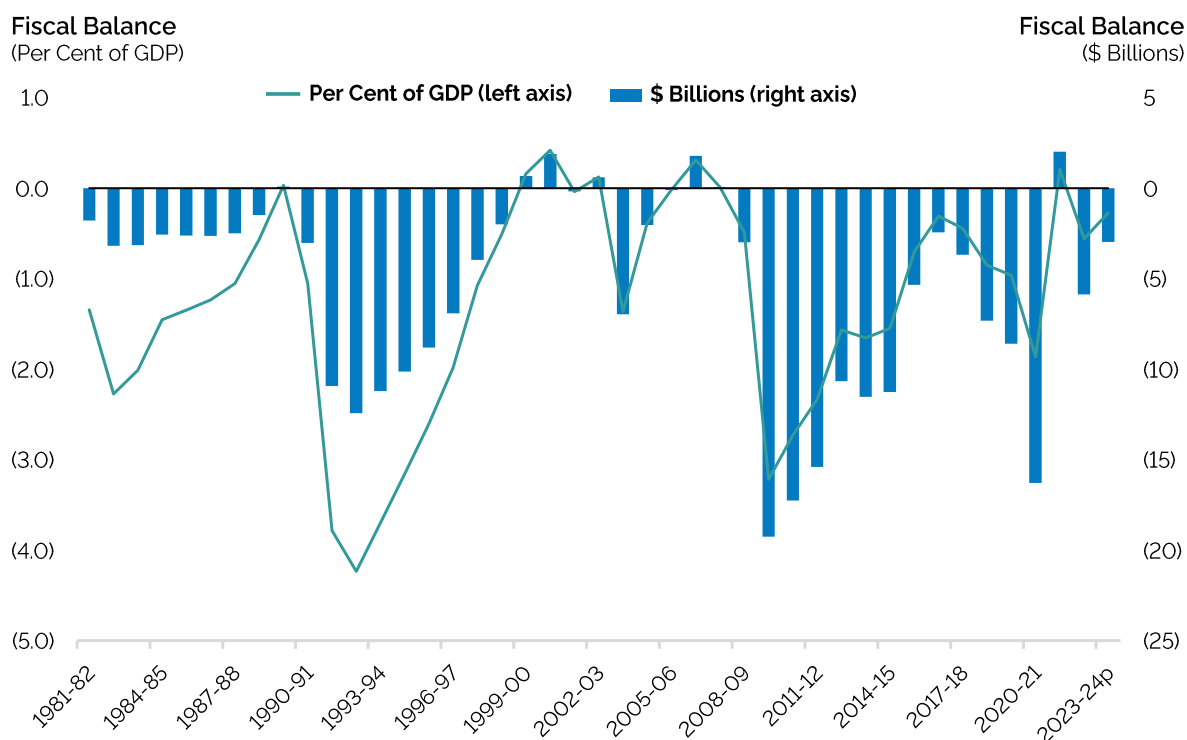
Government Fiscal Balances

Between 1981-82 and 2022-23, the province's finances have been in deficit in 35 out of the 42 years. There has been a tendency for large fiscal deficits to emerge as a consequence of economic downturns. In the recession in the early 1990s, Ontario's fiscal balance deteriorated from a balanced budget in 1989-1990 to a deficit of 4.2 per cent of GDP in 1992-1993. During the 2007-09 global financial crisis, the fiscal balance deteriorated from a surplus of 0.3 per cent of GDP in 2006-07 to a deficit of 3.2 per cent of GDP in 2009-10. The fiscal balance remained in deficit for more than a decade following the financial crisis.

The fiscal balance improved much more quickly following the most recent recession in 2020 caused by the COVID-19 pandemic. The sharp decline in the fiscal balance in 2020-21 to a deficit of 1.9 per cent of GDP returned to a surplus the following year before declining to an estimated modest projected deficit of 0.3 per cent of GDP in 2023-24.

Chart 3.6

Ontario Government Fiscal Balance, 1981-82 to 2023-24



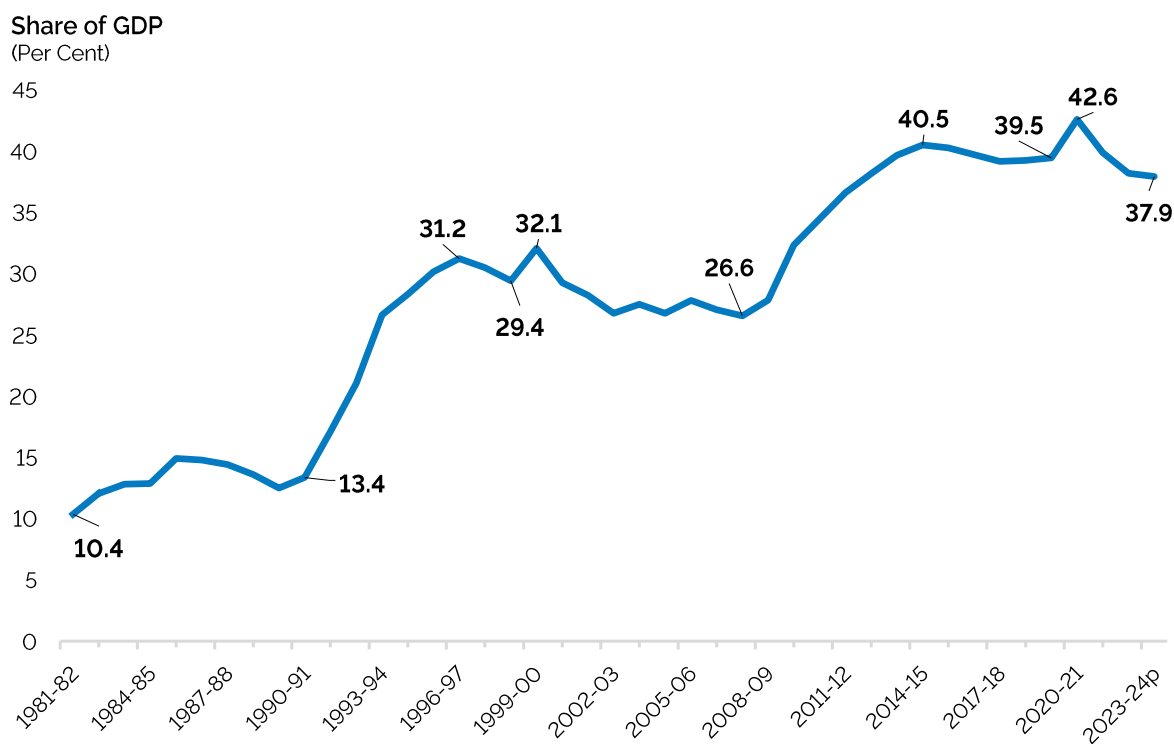
p = 2024 Budget interim estimate.
Sources Statistics Canada and Ontario Ministry of Finance.

Government Debt

Ontario’s net debt rose significantly over the past four decades. As in many other jurisdictions, Ontario’s debt levels rose during past recessions, including following recessions in the early 1980s, in 1990-91, in 2008-09 and in 2020. Over the same period, net debt has risen due to increased investments in infrastructure to meet Ontario’s growing population needs.

Ontario’s net debt-to-GDP ratio, a measure of the relationship between a government’s obligations and its ability to meet them, has also risen over the past four decades. The ratio has tended to increase following recessions without subsequently returning to pre-recessionary levels. The ratio rose from 10.4 per cent in 1981-82 to 13.4 per cent in 1990-91. Following the recession in the early 1990s, the ratio rose to 31.2 per cent in 1996-97 before declining to 29.4 per cent by 1998-99. It then again rose, reaching 32.1 per cent in 1999-2000 before trending downwards, reaching 26.6 per cent in 2007-08. The ratio then trended upwards again, reaching 40.5 per cent in 2014-15 and subsequently stabilized until it rose to 42.6 per cent in 2020-21 during the COVID-19 pandemic. Unlike previous recessions, the net debt-to-GDP ratio declined following the 2020 recession and is estimated to be 37.9 per cent in 2023-24.

Chart 3.7
Ontario Government Net Debt, 1981-82 to 2023-24

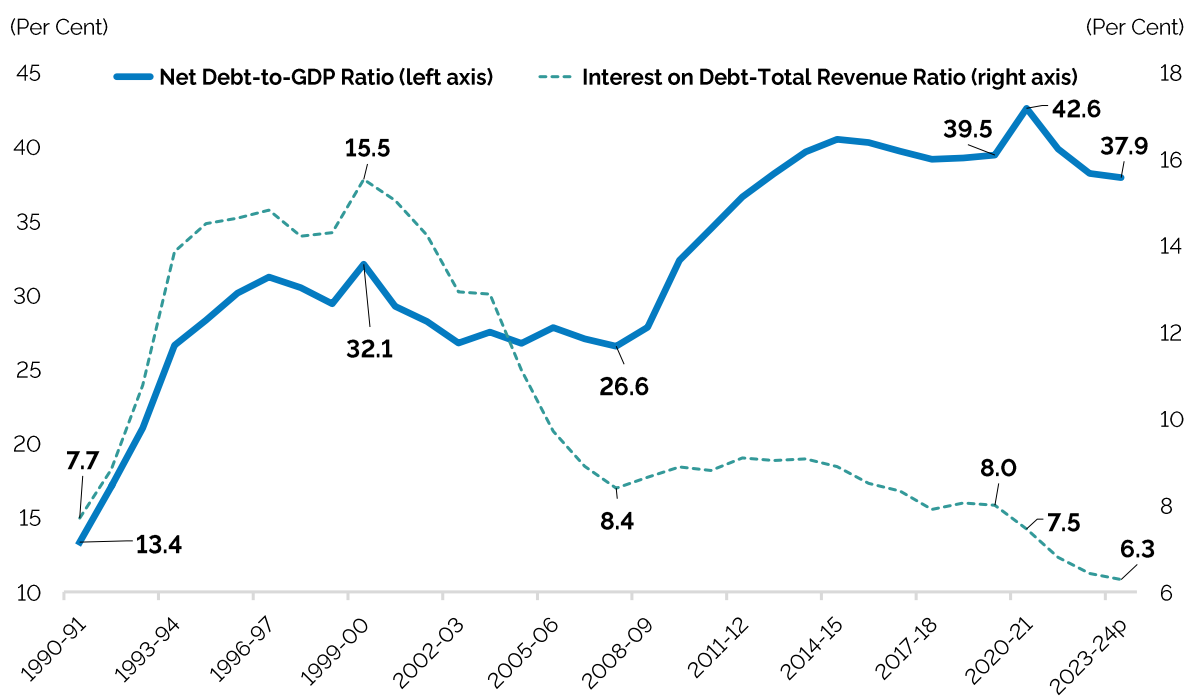


p = 2024 Budget interim estimate.
Sources: Statistics Canada and Ontario Ministry of Finance.

Debt Financing Costs

The interest on debt-to-total revenue ratio, a measure of fiscal sustainability, trended upwards from 7.7 per cent in 1990-91 to 15.5 per cent in 1999-2000, both due to rising debt levels and relatively high interest rates. Subsequent declines in interest rates helped reduce the interest on debt-to-total revenue ratio to 8.4 per cent by 2007-08, despite only a modest decline in the net debt-to-GDP ratio. Since the 2008-09 recession, debt service costs in Ontario have been supported by low interest rates. Despite rising net debt as a share of GDP, the ratio of interest on debt-to-total revenues continued to trend downwards and is estimated to be 6.3 per cent in 2023-24.

Chart 3.8
Low Interest on Debt Costs as a Share of Revenues Supported
by Low Interest Rates Since 2008-09



p = 2024 Budget interim estimate.
 Sources: Statistics Canada and Ontario Ministry of Finance.

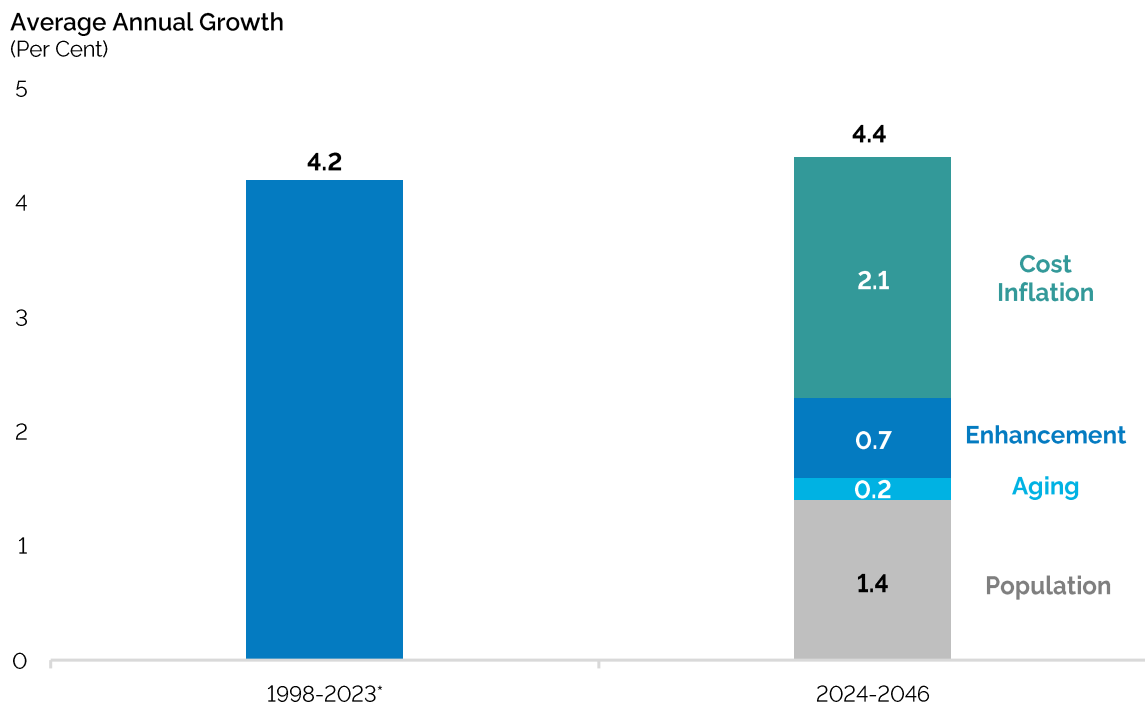
Implications of Demographic and Economic Trends for Public Services

This section examines how projected demographic and economic trends would influence the future demand for public services, and the corresponding implications for provincial government finances.

Demand for Public Services

Demand for services provided by the Government of Ontario is expected to rise at an annual rate of 4.4 per cent over the long term, higher than the 4.2 per cent average annual growth rate between 1998 and 2023. The projection for total demand is based on four main components: underlying demographic demand reflecting population growth; demand related to aging of the population; enhancement of programs based on past trends; and cost inflation.

Chart 3.9
Demand for Public Services Expected to Rise



*Historical demand for public services is estimated based on activity in economic sectors which involve significant provincial support: health care and social assistance, K-12 and postsecondary education and provincial public administration.
Sources: Statistics Canada and Ontario Ministry of Finance.

Population

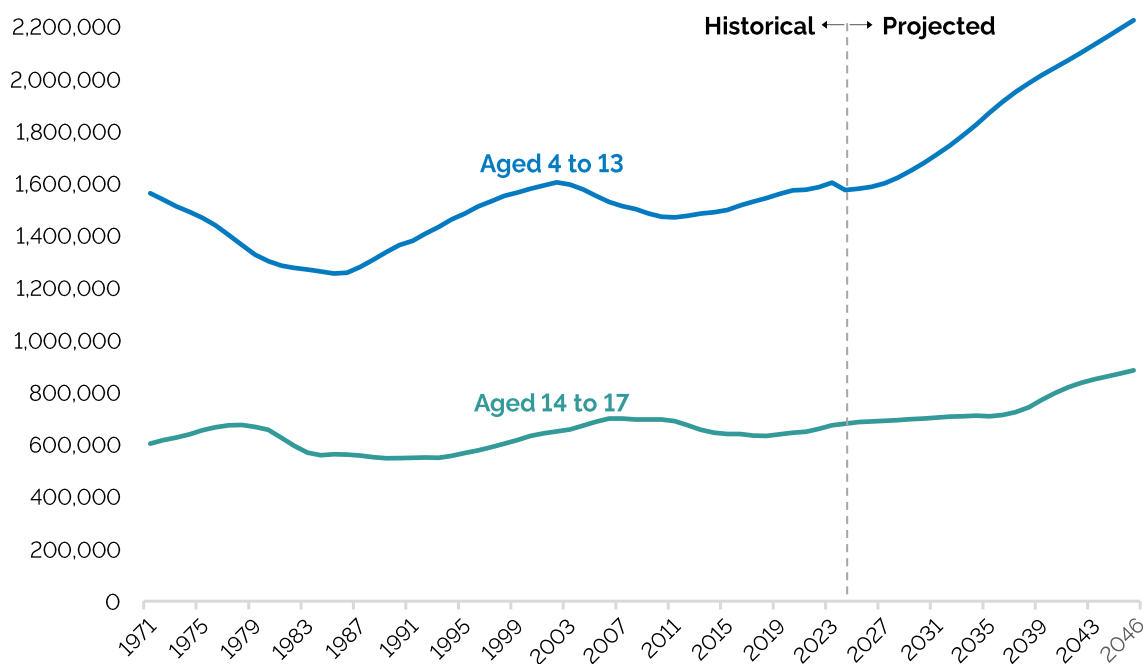
Chapter 1: Demographic Trends and Projections described how Ontario’s population is expected to continue rising rapidly over the next quarter century. Population growth is expected to be driven largely by immigrants and non-permanent residents. From 2023 to 2046, population growth in Ontario is projected to average 1.4 per cent annually.

The population growth of specific age groups will influence demand for sector-specific public services. For example, from 2023 to 2046, the number of elementary school-age children is projected to rise by about 1.4 per cent annually, on average. The 4 to 13 age group is projected to grow by 38.9 per cent from 1.60 million in 2023 to 2.23 million in 2046 — significantly greater than the 0.4 per cent, or 7,000 increase seen over the past 20 years.

The secondary school-age group (aged 14 to 17 years) is projected to continue growing in the short term, and to reach 884,000 by 2046 — 31.1 per cent higher than today’s level of 674,000. Due to regional variations in the growth of the children’s population, school enrolment will rise in some regions and fall in others.

Chart 3.10 School-Age Population in Ontario

Ontario Population by School-Age Group, 1971-2046
(Number of People)



Sources: Statistics Canada for 1971-2023 and Ontario Ministry of Finance projections.

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Aging

Ontario's population is projected to experience an overall aging due to low fertility rates, aging of large cohorts of baby boomers and rising life expectancy. Significant aging will also take place within the 65+ population, with a larger proportion of seniors in the older age groups. See *Chapter 1: Demographic Trends and Projections*, Section 4.

Spending per person on health care for seniors is significantly higher than for the remaining population. In Ontario, government health spending per person on seniors (65 years and above) was \$12,433 per person in 2021 relative to the average amount of \$5,227 per person for the entire population.

A number of key drivers affect the demand for, and cost of, health care services. The key drivers are demographics (population growth and aging), population health status, patients' expectations, inflation, technology and clinical practice.

With a projected population increase of 6.08 million by 2046, a significant increase in the number of seniors and aging within the 65+ age group in the province, demand for the appropriate services and programs will also increase.

Health care costs make up 42.1 per cent of the province's total program expense. Other jurisdictions are experiencing similar trends, which are likely to continue in the future.

Table 3.1

Ontario Health Expenditure by Age Group, 2021

Age Group	Spending per Person 2021 (\$)	Share of Population 2021 (per cent)	Share of Population 2046 (per cent)
<1	15,368	0.9	1.0
1 - 4	2,410	3.9	4.1
5 - 14	2,207	10.7	10.2
15 - 44	3,129	39.8	41.0
45 - 64	4,719	26.6	23.4
65 - 84	10,430	15.7	15.7
85+	26,076	2.3	4.6
Total	5,227	100	100

Sources: Canadian Institute for Health Information and Ontario Ministry of Finance.

In 2023, seniors accounted for 18.3 per cent of the province's overall population, with approximately 2.9 million Ontarians aged 65 or older. As noted in *Chapter 1: Demographic Trends and Projections*, the number of seniors living in Ontario is projected to increase by 54 per cent between 2023 and 2046. By 2046, seniors are projected to number 4.4 million and constitute a share of 20.3 per cent of Ontario's population.

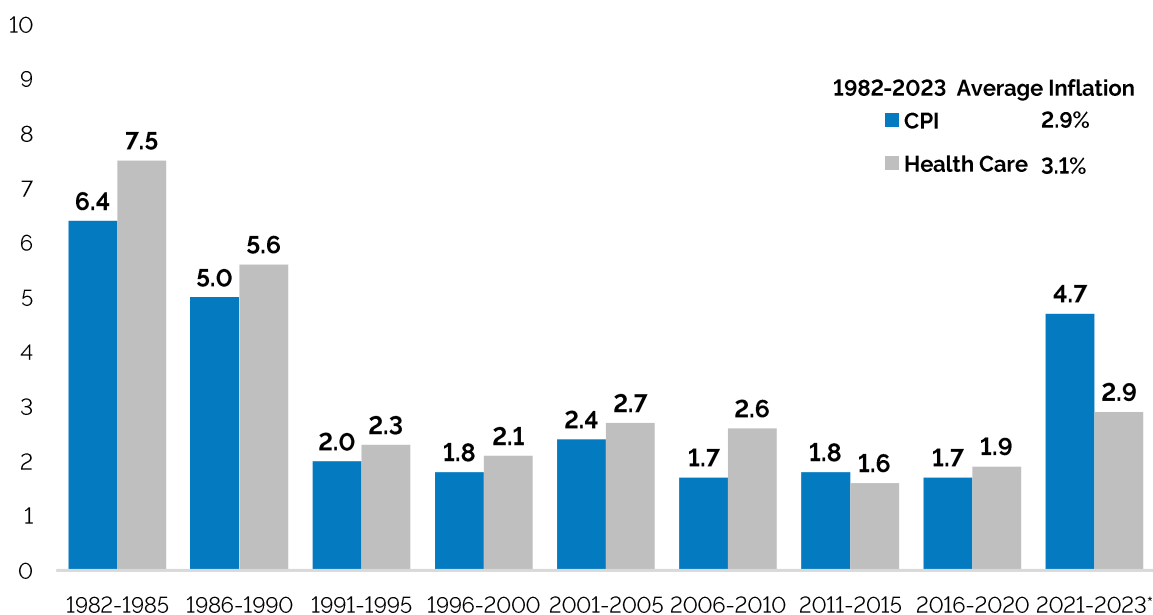
Inflation

Demand for public services is also impacted by cost inflation. Historically, inflation for government goods and services has risen at a slightly faster pace than consumer price index (CPI) inflation. Higher relative government-sector inflation was driven in part by health care costs, generally attributed to labour costs and new technologies.

Inflation is a key driver of health care expenditures. Inflationary pressure tends to be higher in health care than in the rest of the economy because health care services are generally labour intensive and can be affected by the high costs associated with the introduction of new medical technology and drugs. Since 2011, health care inflation has risen at a rate closer to overall CPI, representing more moderate rates of health care inflation compared to the 1982 to 2010 period in which health care inflation significantly outpaced CPI inflation.

Chart 3.11
Ontario Health Care Price Increases Compared to CPI Inflation

Annual Average Growth
(Per Cent)

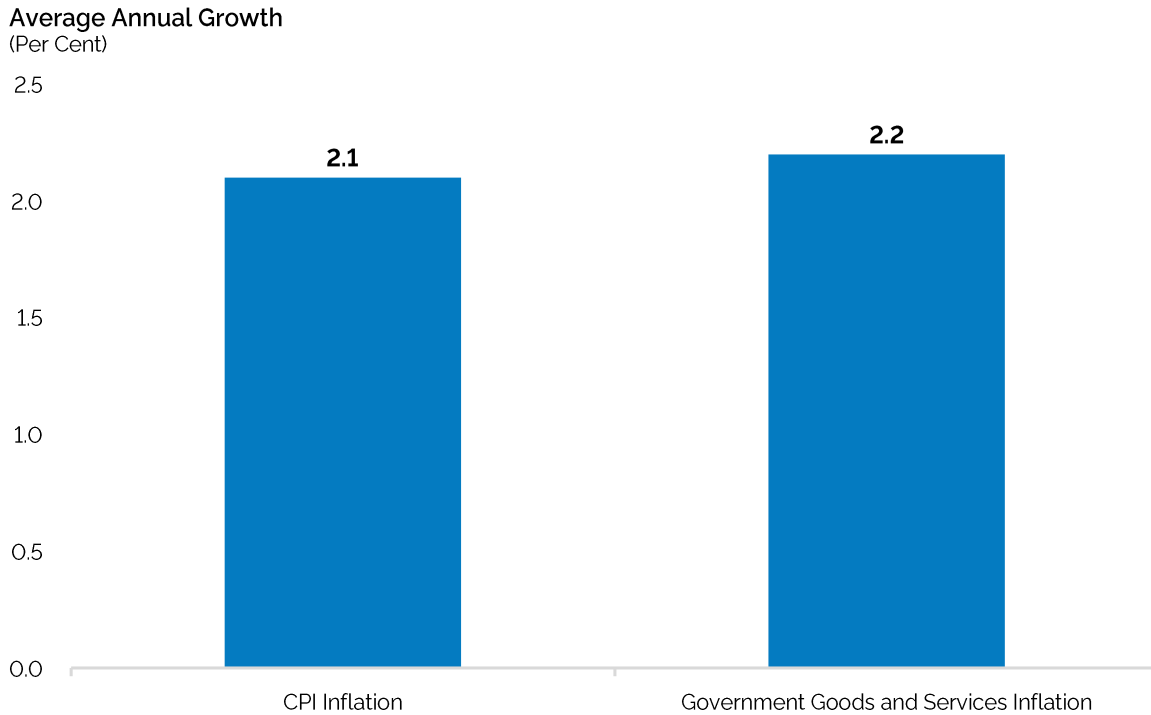


*Data from Canadian Institute for Health Information used to calculate 2022 and 2023 health care price inflation are forecasts.
 Sources: Statistics Canada and Canadian Institute for Health Information.

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Over the projection period, average annual inflation for public services is projected to rise 2.1 per cent, modestly faster than CPI inflation of 2.0 per cent. This reflects the historical difference between CPI inflation, which averaged 2.1 per cent annually between 1993 and 2023, and inflation for government goods and services in Ontario, which averaged 2.2 per cent over the same period.

Chart 3.12
Past Trends in Ontario Government Price Inflation, 1993 to 2023



Sources: Statistics Canada and Ontario Ministry of Finance.

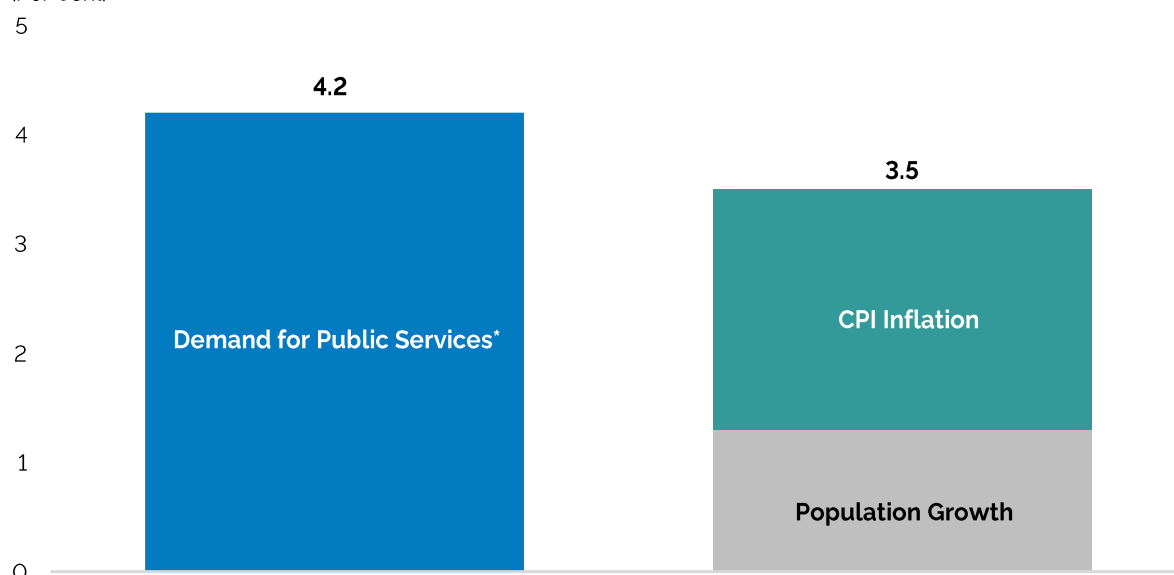
Service Enhancement

Historically, demand for public services has risen faster than overall population growth and inflation. Over the projection period, enhanced demand for public services is projected to rise in line with growth in overall real GDP per capita.

Chart 3.13

Past Trends in Demand for Public Services, 1998-2023

Average Annual Growth
(Per Cent)

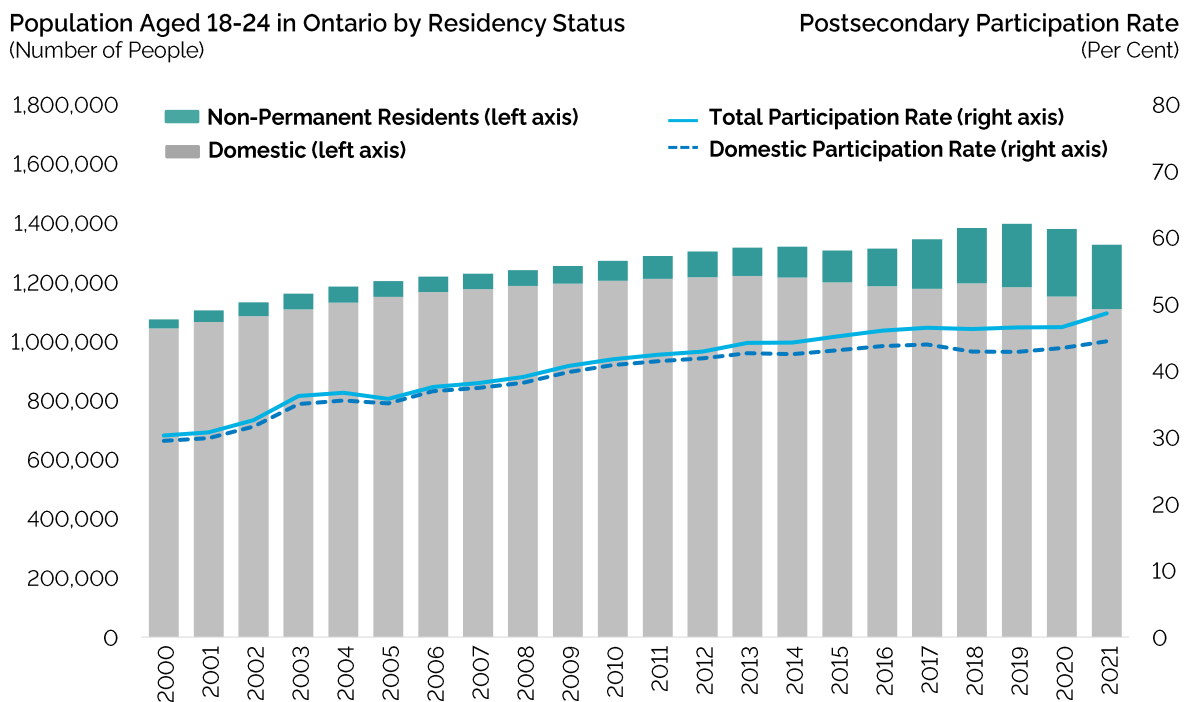


*Historical demand for public services is estimated based on activity in economic sectors which involve significant provincial support: health care and social assistance, K-12 and postsecondary education and provincial public administration.
Sources: Statistics Canada and Ontario Ministry of Finance.

Demand for postsecondary education and training provides an example of historical service enhancement. In the postsecondary sector, demographics play a somewhat smaller role in determining enrolment than in the primary and secondary education system because participation is not universal. In Ontario, the postsecondary education participation rate among the 18 to 24 age group has increased from 30 per cent to 49 per cent from 2000 to 2021. As noted in *Chapter 1: Demographic Trends and Projections*, more recently, there has been a substantial increase in the non-permanent resident population among the 18 to 24 age group driven by an increase in international students. Looking ahead, postsecondary enrolment will continue to be highly influenced by a combination of demographics and demand, reflecting both economic conditions and the skills needed for future employment.

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Chart 3.14
Postsecondary Population and Participation, Ages 18 to 24



Note: The domestic population and participation rate includes Canadian citizens and landed immigrants. The total participation rate includes both domestic (Canadian citizens and landed immigrants) and non-permanent resident populations in Ontario. Participation rates include enrolment in publicly assisted colleges and universities in Ontario and do not include private career colleges.
Sources: Statistics Canada and Ontario Ministry of Finance.

Improvements in medical technology can also lead to higher health expenditures. For instance, more specialized training and resources are required so that individuals can benefit from the new technology.⁴ New medical services also raise the scope of diagnoses and treatments, which were previously unavailable. Finally, consumer preferences and higher incomes may also lead to an increased demand for higher quality health care, hence raising health care costs.⁵

⁴ “He Tirohanga Mokopuna 2021: The Treasury’s combined Statement on the Long-term Fiscal Position and Long-term Insights Briefing”, The New Zealand Treasury, New Zealand Government, 2021.

⁵ “Australia’s Aging Population: Understanding the fiscal impacts over the next decade”, Commonwealth of Australia, Report No. 02/2019.

While advanced medical technology and consumer preferences can raise health care costs, they can also reduce costs through increased efficiencies and better outcomes. Medical progress, which can enhance people's life span and quality of life through investments in research and development (R&D) towards new medical treatments, may offer the potential for long-term savings in the health care system. For example, the dissemination of evidence-based best practices in health care can reduce unnecessary treatments and testing and increase the effectiveness of services for patients.

While hospitals are core to Ontario's health care system, it can be more cost effective and convenient for people to receive care through their family doctors, primary care teams or in their home through home and community care. As well, interprofessional primary care teams enhance the quality of patient care, improve health outcomes, and increase the efficiency of health service delivery by relieving pressures on emergency departments and walk-in clinics. Ultimately, these factors can work towards generating efficiencies that lead to lower costs and a more sustainable health care system.



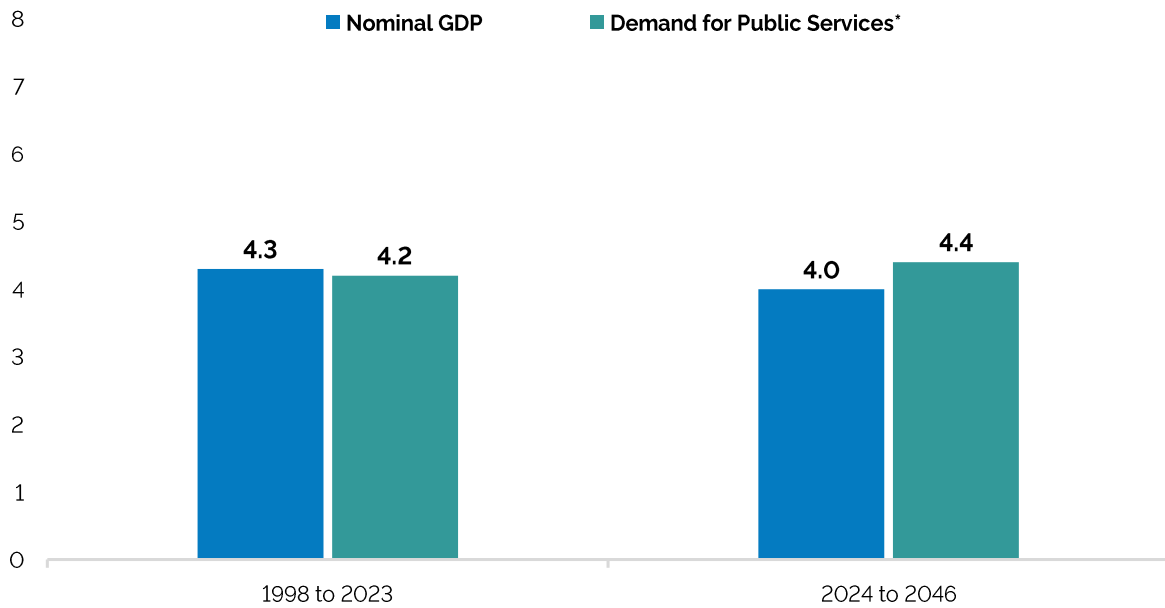
Future Fiscal Considerations

Over the long term, demand for public services is projected to rise at a faster pace than overall economic growth. As outlined earlier in this chapter, this is mainly due to the expected rise in health care demand arising from an aging population and price pressures for government services.

Chart 3.15

Demand for Public Services Expected to Outpace Economic Growth

Average Annual Growth
(Per Cent)

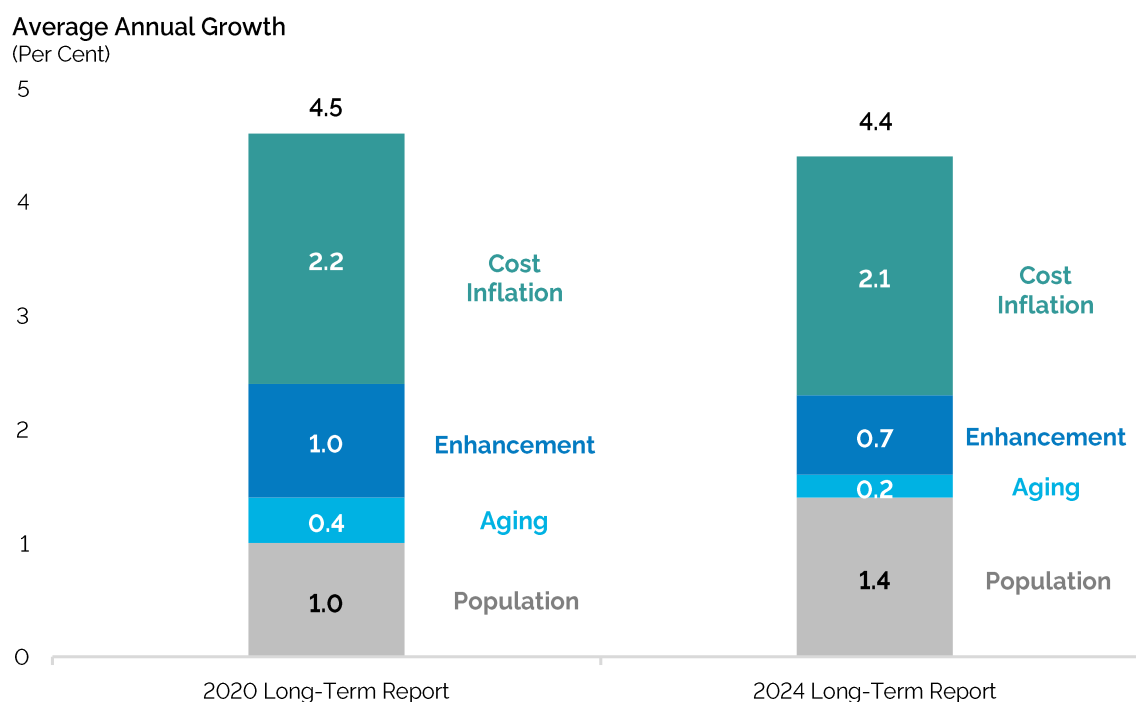


*Historical demand for public services is estimated based on activity in economic sectors which involve significant provincial support: health care and social assistance, K-12 and postsecondary education and provincial public administration.
Sources: Statistics Canada and Ontario Ministry of Finance.

Change in Projected Demand for Public Services Since the 2020 Long-Term Report on the Economy

Compared to the 2020 Long-Term Report on the Economy (Long-Term Report), the projected long-run average annual growth in demand for public services has edged down to 4.4 per cent. The rate of enhancement in public services spending and the increase in demand due to population aging both declined. The overall decline in the growth rate was largely offset by a rise in demand for public services due to faster population growth.

Chart 3.16
Comparing Projections for the Demand for Public Services

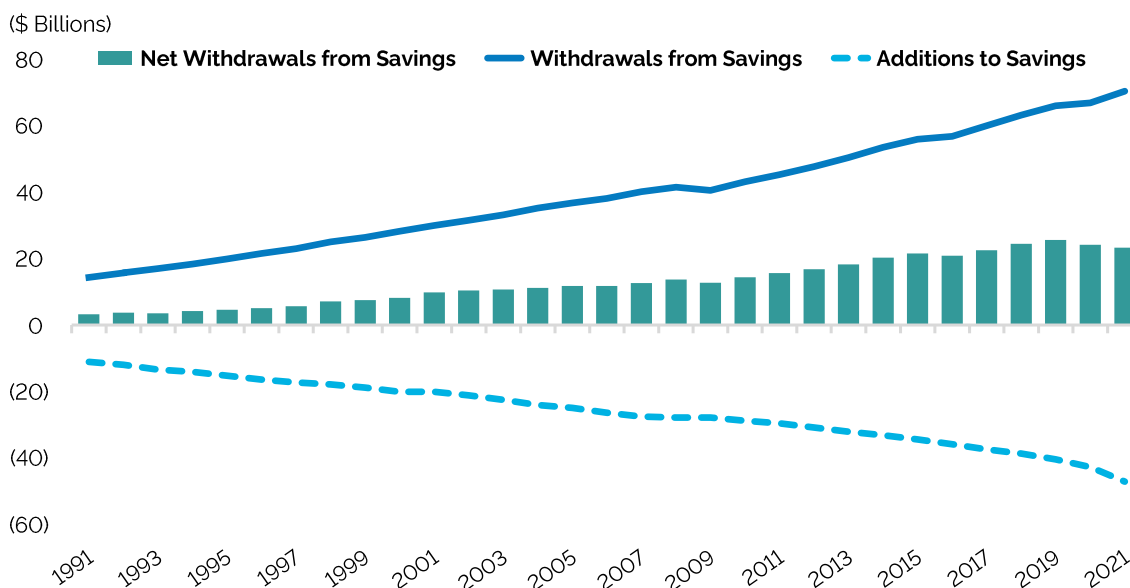


Note: Numbers may not add up due to rounding. The 2020 Long-Term Report did not include a medium-term projection due to uncertainty caused by the COVID-19 pandemic.
Source: Ontario Ministry of Finance.

Implications of Demographic and Economic Trends for Revenue Growth

Taxation revenues accounted for 69.7 per cent of Ontario government revenues in 2023-24, and this share is expected to remain close to 70.0 per cent in the near term. Over the longer term, taxation revenue growth is expected to slow due to the impact of an aging population on Ontario’s economic growth, tax provisions for seniors and generally lower tax rates on retirement incomes. However, favourable tax treatment of contributions to the Canada Pension Plan, workplace Registered Pension Plans and Registered Retirement Savings Plans, along with the deferred tax on income earned in those plans, results in deferred tax for individuals every year. As the population has been aging and a greater number of seniors start drawing on their retirement savings, the province has increasingly experienced a rise in income related to past savings. This trend is expected to continue and will lead to an increasing taxable income base.

Chart 3.17
Select Retirement Savings and Related Income, 1991 to 2021



Notes: Additions to savings include Canada Pension Plan (CPP) contributions made by employees and those self-employed, Registered Retirement Savings Plan (RRSP) income tax deductions and deductions for the employee portion of Registered Pension Plan contributions. Withdrawals from savings are shown as positive amounts and include reported income from CPP/Quebec Pension Plan, RRSP and other pension income.
Source: Ontario Ministry of Finance.

Income from retirement savings withdrawals increased at an average annual rate of 5.4 per cent over the past 30 years, outpacing overall income growth by 1.3 percentage points. This trend is expected to be more pronounced in the long term as seniors, who will make up a larger share of the population, draw on their retirement savings.

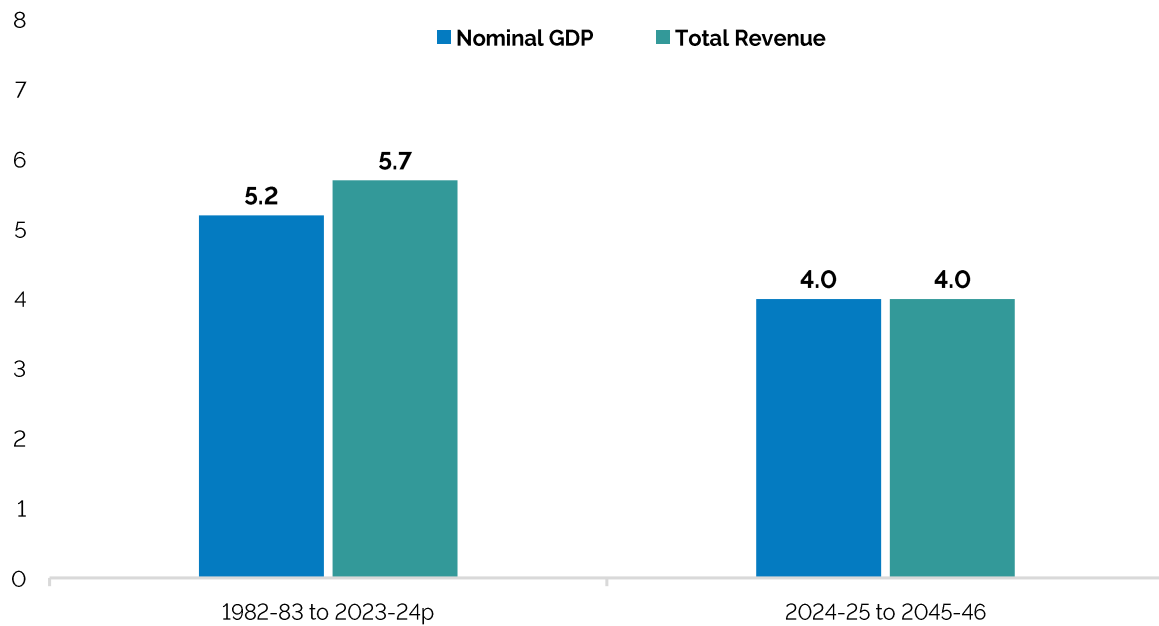
Revenue Growth Driven by Economic Growth

Over the long term, total provincial revenues are projected to grow in line with overall economic growth. Due to the slower projected pace of nominal GDP growth, revenue growth is expected to be slower than in the past.

Chart 3.18

Nominal GDP Growth and Total Provincial Revenue

Average Annual Growth
(Per Cent)



p = 2024 Budget interim estimate.
Sources: Statistics Canada and Ontario Ministry of Finance.

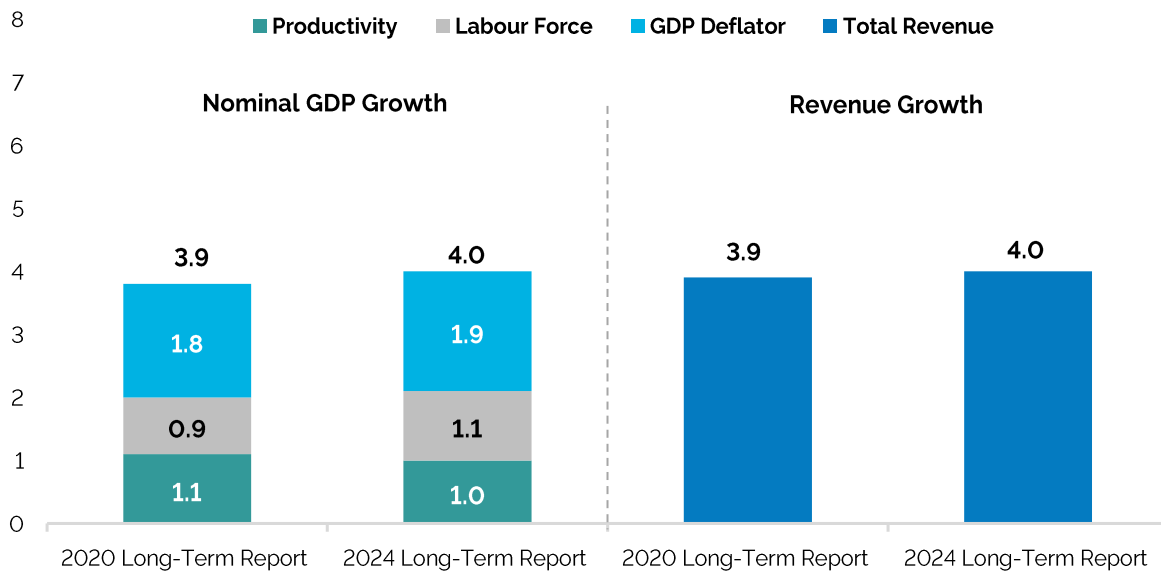
Change in Projected Revenue Growth Since the 2020 Long-Term Report on the Economy

Compared to the 2020 Long-Term Report on the Economy, average annual growth in nominal GDP over the long term is projected to be slightly higher at 4.0 per cent. This stronger nominal GDP growth is mainly attributed to higher labour force growth and GDP inflation, partially offset by slightly lower productivity growth. As a result of the expected stronger nominal GDP growth, projected long-term revenue growth is expected to average 4.0 per cent annually, higher than the projection for average annual revenue growth of 3.9 per cent published in the 2020 Long-Term Report.

Chart 3.19

Comparing Projections for Long-Term Nominal GDP Growth and Total Provincial Revenue Growth

Average Annual Growth
(Per Cent)



Note: Numbers may not add up due to rounding. The 2020 Long-Term Report did not include a medium-term projection due to uncertainty caused by the COVID-19 pandemic.

Source: Ontario Ministry of Finance.

Fiscal Sustainability

A long-term prudent approach to fiscal management will ensure that governments have the resources available to provide effective public services that residents can rely on both now and in the future, the flexibility to manage unexpected changes that may arise, and the capacity to limit the debt burden on future generations.

Prudent fiscal management will require a sustained effort with a continued focus on financial management throughout the medium- to long-term time horizon.

Sustainability of Government Finances

Sound government finances are a cornerstone in ensuring ongoing, sustainable provision of public services over the long term.

A high debt-to-GDP ratio with no plan to reduce the debt burden will lower confidence in the province's finances, impacting business confidence and investment. This results in a higher risk premium on borrowing and contributes to a higher cost of borrowing. Responsible fiscal management will lower the risk premium on government debt and reduce the interest on debt burden, thereby increasing resources available to fund other critical public services.

Sustainable public finances also provide increased fiscal flexibility to allow the government to respond to and mitigate adverse economic and fiscal events, such as an economic downturn, natural disaster or a pandemic. High debt levels increase the public interest burden, reducing money available to invest in public services, particularly when fiscal stimulus may be needed most.

There are also considerations with respect to intergenerational fairness. A high level of debt-funded operating spending now raises the debt burden for future generations, who may not benefit from these public expenditures.

Federal-provincial fiscal arrangements in Canada represent an important source of revenue to Ontario and impact the province's long-term sustainability and its ability to provide public services. As the Parliamentary Budget Officer (PBO)'s long-term Fiscal Sustainability Report notes, provinces face increasing cost pressures associated with demand for services and population aging, while major federal transfers to provinces and territories as a share of GDP are projected to decline. At the same time, the report shows the federal government has long-term fiscal room in part due to declining federal transfers as a share of GDP.

Ontario's Debt Sustainability

Fiscal sustainability, as measured by the sustainability of public debt, represents the ability of a government to manage public finances in a way that ensures resources are available to fund public services over the long term, while maintaining flexibility to address unforeseen circumstances or shocks to the economy and service debt obligations.

In the *2020 Ontario Budget*, the government launched its Debt Burden Reduction Strategy which set out a plan for managing the province's debt burden and restoring fiscal sustainability. The Ontario government reaffirmed its commitment to reducing the debt burden when it provided an updated Debt Burden Reduction Strategy in the *2024 Ontario Budget*. This update included maintaining the targets the Ontario government set in the *2023 Ontario Budget*. These targets are now updated annually based on the latest economic outlook to ensure Ontario is making positive progress towards reducing the debt burden.

Alternative Scenarios and Risks

There are opportunities to more sustainably manage the growth in resources required to provide public services. These include reducing program enhancement growth below historical trends and improving the productivity of service delivery.

As outlined in *Chapter 2: Economic Trends and Projections*, productivity growth plays a significant role in driving overall economic growth. As government revenues are driven by economic growth, future fiscal sustainability could be heavily influenced by productivity.

The base case economic projection assumes average Ontario labour productivity growth of 1.0 per cent annually over the long term. By contrast, the high productivity scenario assumes average annual labour productivity growth of 1.3 per cent and the low productivity scenario assumes growth of 0.7 per cent.

Maintaining and enhancing productivity growth is essential to generating revenues necessary to fund public services. Under a high productivity scenario, Ontario's higher average annual labour productivity growth of 0.3 percentage points compared to the base case projection would be expected to raise annual real GDP growth to 2.4 per cent, providing important support to the projected 4.4 per cent growth in public services demand.

Chapter 4

Delivering Infrastructure for Long-Term Growth



Chapter 4

Delivering Infrastructure for Long-Term Growth

Introduction

Investment in public infrastructure is a critical component to supporting Ontario's future economic prosperity. This chapter explains the importance of infrastructure to help sustain the province's long-term growth, the role the government plays to drive future infrastructure investments, as well the challenges and opportunities that Ontario faces to meet its infrastructure needs in the coming decades.

The government is continuing to explore strategies that optimize and help deliver infrastructure investment. This will help ensure that Ontario is well-positioned to continue supporting communities, people and businesses and creating a strong foundation for Ontario's long-term economic growth.

Infrastructure Driving Long-Term Economic Growth

Infrastructure helps drive economic activity in all sectors of the economy, supporting the flow of goods and services, linking businesses to markets and connecting people to their communities and lowering costs for people and businesses. Investing in infrastructure is critical to supporting long-term economic growth and sustaining Ontario's overall prosperity.

The rapid growth in Ontario's population means that the province needs to make substantial investments in infrastructure to maintain the condition of existing assets and to build new infrastructure that supports a larger population and growing economy.

According to a study by The Centre for Spatial Economics (C4SE), the return on investment of infrastructure spending in Ontario was between \$3.06 and \$5.98 (in discounted present value of GDP) for every \$1 spent on infrastructure,⁶ highlighting the relationship between infrastructure spending and GDP growth. The C4SE study also showed, based in part from previous analysis, that the investment in public infrastructure helped to reduce costs for private sector businesses (through a variety of mechanisms), which in turn would help to generate additional output from those businesses.

⁶ The Centre for Spatial Economics, "The Economic Benefits of Public Infrastructure Spending in Ontario, (March 2017)," <http://www.c4se.com/documents/Ontario%20Public%20Infrastructure%20Final%20Report.pdf>

Ontario's Infrastructure Portfolio

The effective delivery of infrastructure in Ontario, as in all jurisdictions, requires a close partnership between the public and private sectors. The majority of infrastructure in Ontario is owned by the private sector and includes buildings such as factories and warehouses, rail corridors and rail freight rolling stock, and long-lived assets such as machinery and equipment, among others. Public-sector infrastructure, where ownership is primarily by one of the federal, provincial or local governments, or government business enterprises or corporations, includes roads and bridges, public transit, electricity transmission and distribution, water, wastewater, health care and educational assets, among others. Other infrastructure such as long-term care homes and energy generation, is owned and operated by a mix of public and private sector bodies.

The provincial government is largely responsible for providing urban transit, highway, bridge, hospital and education assets, for which Ontario currently owns (or consolidates) about \$300 billion in infrastructure. This represents one-third of all public infrastructure in Ontario, of which municipal governments, the federal government and other partners own 55 per cent, 7 per cent and 5 per cent respectively.⁷ In addition, the government provides significant investment to municipalities and private partners to support housing-enabling infrastructure and delivery of other public services.

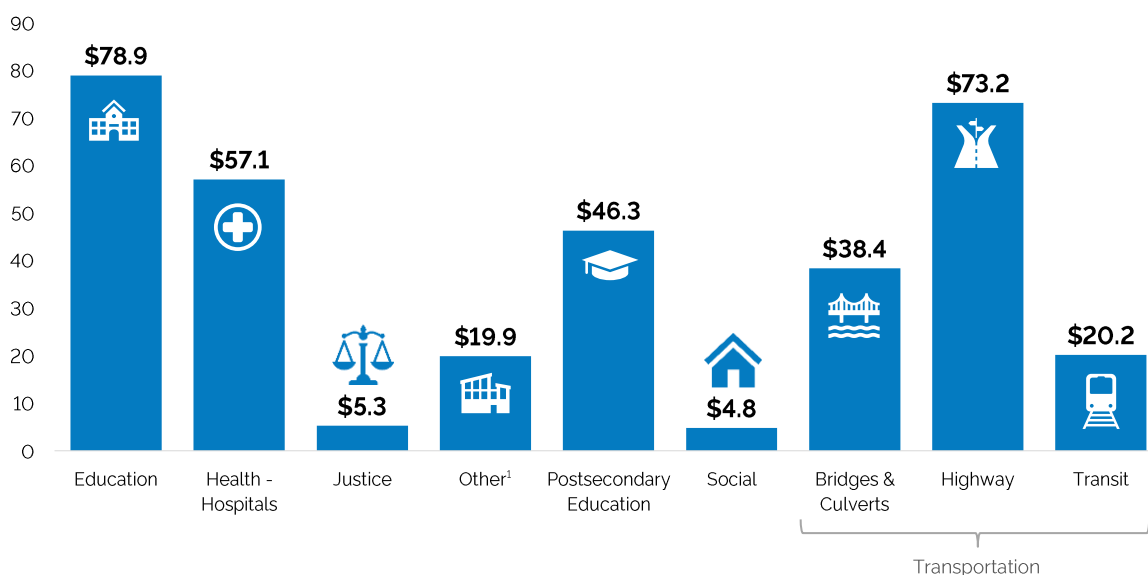


⁷ Other partners include transfer payment partners such as universities and long-term care facilities. All public infrastructure, measured by its replacement value (the cost of rebuilding the infrastructure from scratch in today's dollars) is valued at \$900 billion, for which Ontario owns or consolidates about one-third. Source: Statistics Canada, Ontario Capital Ministries, Ontario Municipal Asset Management Plans, and Ontario Ministry of Infrastructure.

Ontario invests in a large and diverse asset portfolio, either directly or indirectly through partners such as school boards and hospital corporations. Chart 4.1 shows the distribution of provincial public infrastructure's current replacement value by sector, which is defined as the estimated cost of replacing those assets to their existing functional utility at today's prices.⁸

Chart 4.1 Current Replacement Value of Provincially Funded Assets by Sector

Current Replacement Value
(\$ Billions, 2022 Dollars)



¹ Other includes government administration, natural resources, and provincial culture and tourism assets.
Note: Replacement values include the government's owned (or consolidated) and certain non-consolidated assets.
Source: Ontario Ministry of Infrastructure.

⁸ These estimates are primarily derived through engineering assessments conducted for capital ministries, which are in turn inflated to a common base year.

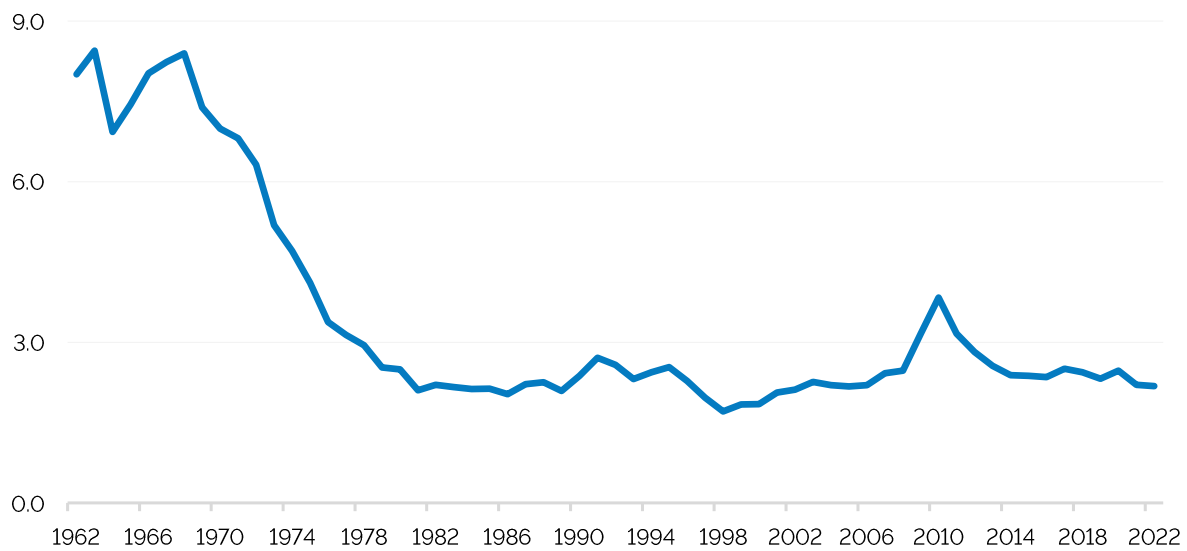
Chapter 4

Following an early peak after World War II, infrastructure investment lagged in Ontario through the 1980s to the early-to-mid 2000s. After a significant spike in response to the 2008 financial crisis, capital investment has since remained stable at an average of about 2.4 per cent of GDP over the last decade. Chart 4.2 shows infrastructure investment trends in Ontario relative to GDP between 1962 and 2022.

Chart 4.2

Government Capital Expenditures on Infrastructure in Ontario as a Per Cent of GDP

Capital Investment as a Per Cent of GDP
(Per Cent)



Sources: Statistics Canada and Ontario Ministry of Infrastructure.

Over Ontario's current 10-year plan, the government's spending on infrastructure is planned to be over \$190 billion to help expand or renew infrastructure in Ontario and strengthen Ontario's economy. These include investments in infrastructure projects to support schools, hospitals, public transit, roads, bridges and access to high-speed internet.

As per the *2024 Ontario Budget*, the largest planned infrastructure expenditure over the next 10 years, starting in 2024-25, is allocated for transit (at 35.5 per cent), followed by health and long-term care (22.5 per cent), highways and other transportation (15.1 per cent), education (10.5 per cent), other sectors including high-speed internet, government administration, natural resources and culture and tourism industries (11.3 per cent), justice (2.2 per cent), social (1.8 per cent) and postsecondary (1.3 per cent).⁹

Recent announcements include Ontario's investment over 10 years of \$67.5 billion in public transit, nearly \$50 billion to support more than 50 hospital projects that would add approximately 3,000 new beds, more than \$1.8 billion in housing-enabling infrastructure funding, and \$1.3 billion to support construction and expansion of 60 schools across the province.

Challenges and Opportunities to Support the Delivery of Infrastructure

The province continually faces pressures to renew and extend the useful life of its infrastructure, as public assets such as buildings, roads, and bridges physically deteriorate or require modernization. Ontario's public infrastructure also needs to expand significantly to meet the needs of Ontario's growing population and ensure its public assets can effectively support the growing economy. Investment in infrastructure is critical as Ontario's population is projected to grow rapidly, rising from 15.6 million in 2023 to 21.7 million in 2046, a 39 per cent increase over the next 23 years. See *Chapter 1: Demographic Trends and Projections*.

In addition to these factors, the following section discusses a number of other considerations and opportunities that could support the delivery of infrastructure needed to sustain long-term growth.



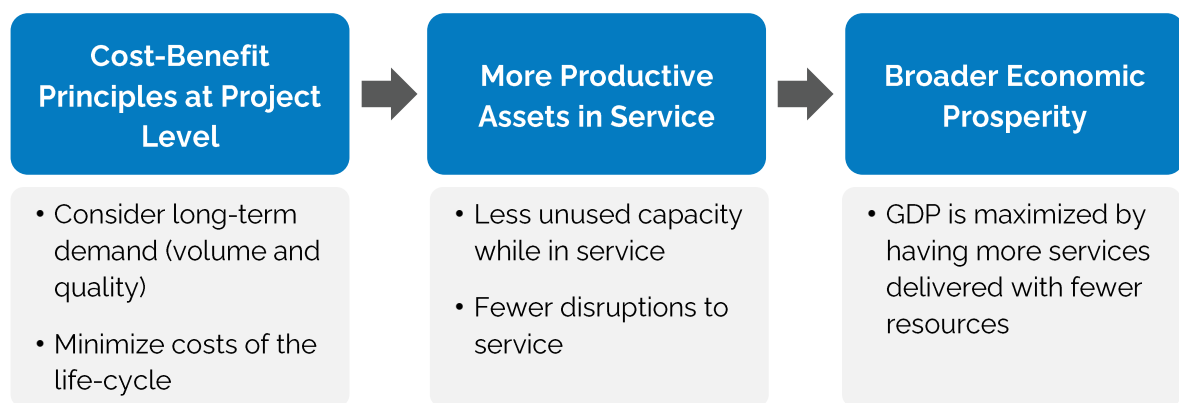
⁹ Includes interest capitalized during construction; third-party investments in hospitals, colleges and schools; federal and municipal contributions to provincially owned infrastructure investments; and transfers to municipalities, universities and non-consolidated agencies.

Increasing Efficiency and Productivity in Infrastructure Planning and Delivery

The Ontario government focuses on number of core guiding cost-benefit principles for infrastructure investments, such as considering asset maintenance, long-term demand and minimizing life-cycle costs. As shown in Chart 4.3, cost-benefit analyses provide guiding principles to help ascertain the broader economic implications of infrastructure investments.

Chart 4.3

Core Cost-Benefit Principles and Economic Prosperity



Source: Ontario Ministry of Infrastructure.





The government is advancing the use of data to inform infrastructure investment decisions by: centralizing relevant data and identifying best practices across government; standardizing data and definitions to make comparisons more meaningful; and building and using models to forecast infrastructure needs. In addition, the government has enabled other innovations in infrastructure planning that help manage infrastructure costs more effectively.

As part of its long-term planning, the government is also exploring alternative opportunities and innovations to help optimize and enhance its infrastructure capacity. As shown in Chart 4.4, alternative strategies can help to lower the cost per unit of output (e.g., cost per passenger-kilometre, patient, case, student, etc.), ultimately realizing cost savings for Ontarians as well as increases to productivity and long-term economic growth.

Chart 4.4

Optimizing Infrastructure Investments

Assessment of capacity needs should consider non-infrastructure solutions that can yield higher return on investment and minimize inequities in service outcomes

Alternative Strategies	Examples
 <p>Demand Management E.g. providing lower-cost alternatives to the use of physical capacity</p>	<ul style="list-style-type: none"> • Alternative accommodations or treatments to manage hospital bed demand (e.g. LTC, homecare) • GPS monitoring low-risk individuals alleviates pressures in correctional facilities
 <p>Productivity Actions E.g. making better use of existing capacity by increasing throughput, consolidating facilities, etc.</p>	<ul style="list-style-type: none"> • Increasing bed velocity/turnover in hospitals • Consolidating underutilized schools, OPP detachments or other facilities • Increasing transit/auto occupancy rates (e.g. higher bus/car load factors where there is existing capacity)
 <p>Divestment/Managing Scope E.g. optimizing the use of assets</p>	<ul style="list-style-type: none"> • Modernizing/densifying space and divesting underutilized, poor condition assets which frees up renewal funding for needs elsewhere in the portfolio • Reducing the overall office space footprint to decrease costs, with a mix of owned and leased locations that provide flexibility to align office space with changing business needs
 <p>Data-Driven Decisions E.g. making better use of data and analysis to direct spending</p>	<ul style="list-style-type: none"> • Targeting renewal and capacity funding to where it is needed most can free up funding for other purposes • Bundling long-term maintenance into large projects where supported by analysis

Note: Non-infrastructure alternatives may also have additional costs but generally are lower cost alternatives than building physical capacity.
Source: Ontario Ministry of Infrastructure

Enhancing Construction Sector Productivity

Labour productivity within the construction sector has remained relatively stagnant, with an annual average growth rate of -0.1 per cent between 1998 and 2022, compared to 1.1 per cent across all business sector industries.¹⁰ There are many other factors that play a role in construction productivity, which may vary depending on the project. These include supply chain constraints and project complexity, among others.¹¹

There are a number of potential opportunities to address the productivity challenges faced by the sector. Higher levels of education and skills have been associated with increases in productivity¹² and there may be room for upskilling within the construction sector. Additional investments in training could include continued efforts to promote opportunities in construction among groups that are underrepresented within the construction labour force, such as women and youth. For example, women represented just 13.0 per cent of construction employment in Ontario in 2023, compared to a 47.4 per cent share of overall employment. Efforts to increase training opportunities and promote employment opportunities within the sector to underrepresented groups may help address potential recruitment challenges and increase productivity.

¹⁰ Statistics Canada. Note that the construction sector includes residential building construction, non-residential building construction, engineering construction, repair construction and other activities of the construction industry. The business sector includes all goods and services producing industries with the exception of the owner-occupied dwellings industry and public administration.

¹¹ McKinsey & Company “Reinventing Construction: A Route to Higher Productivity, (2017),” <https://www.mckinsey.com/~media/mckinsey/business%20functions/operations/our%20insights/reinventing%20construction%20through%20a%20productivity%20revolution/mgi-reinventing-construction-a-route-to-higher-productivity-full-report.pdf>

¹² Égert, B., C. de la Maisonnette and D. Turner, “A new macroeconomic measure of human capital exploiting PISA and PIAAC: Linking education policies to productivity”, (2022), *OECD Economics Department Working Papers*, No. 1709, OECD Publishing, Paris, <https://doi.org/10.1787/a1046e2e-en>

Embracing Technological Change

Technology adoption may also help to address productivity challenges while helping to increase safety and efficiency and address potential recruitment challenges in the construction sector. A 2023 survey of 275 Canadian construction companies found that 86 per cent of companies were considering investments in technology, such as prefabrication and modularization to increase efficiency and address labour challenges.¹³ The same survey showed that companies have significantly increased investments in several technologies since 2020, including demand-driven supply chain, blockchain and smart contracts, additive manufacturing, robotics and building information modelling (BIM) and digital twins (which are digital representations of physical objects or networks). Despite this progress, barriers continue to persist in the integration of new technologies, such as lack of skills and training, costs, concerns about data security, and poor broadband connectivity at construction sites.¹⁴

Next generation technology and innovation can also support the delivery of public services, by creating more efficient and interoperable public infrastructure that can meet the evolving needs of Ontarians. However, disruptive technologies can also alter infrastructure utilization after it is built, providing both opportunities and challenges for infrastructure investment. While disruptive technologies have the potential to boost productivity in other ways, this highlights the need to remain adaptable in Ontario's long-term infrastructure planning.

Illustrated Examples of How Disruptive Technologies Impact Infrastructure Utilization



Automated Vehicles (AV) have the potential to significantly increase road capacity and, as a result, reduce congestion (even with a corresponding increase in total vehicle activity). One study estimates that the potential congestion cost savings in Canada are in the range of \$5 billion.¹⁵ On the other hand, AVs have the potential to stimulate new vehicle activity thereby adding to, rather than reducing, congestion.



Online service delivery can potentially reduce the need for building space.



Ride sharing applications can help increase efficiency in road infrastructure capacity by increasing the number of people in each automotive vehicle at peak hours. One report showed that the present value of savings of increasing automotive occupancy rates by a relatively small increment in the Greater Toronto Area is in the range of \$9 billion.¹⁶



Smart traffic signal control systems can optimize traffic flow using cameras and artificial intelligence to scan traffic in real time.

¹³ KPMG & Canadian Construction Association "Cue construction 4.0: Make-or-break time: An In-Depth Look at Technology Adoption in Canada's construction industry, (2023)," https://kpmg.pathfactory.com/c/canadian-construction-report?x=z3K_pt&utm_source=KPMG&utm_medium=Web&utm_campaign=cue_construction_en_gated

¹⁴ Ibid.

¹⁵ The Conference Board of Canada, "Automated Vehicles: The Coming of the Next Disruptive Technology, (January 2015)," <http://www.conferenceboard.ca/e-library/abstract.aspx?did=6744>

¹⁶ CPCS "Untapped Road Capacity, (2017)," http://www.cpcs.ca/files/6214/8578/6016/RideSharing_1_19_17.pdf

Addressing the Impact of a Changing Climate

Ontario is not immune to the changing global climate. The evolving climate hazards are expected to raise the costs associated with the upkeep of Ontario's public infrastructure portfolio. Climate hazards are accelerating asset deterioration, which potentially compromises system reliability and threatens health and safety. Ontario's Financial Accountability Office (FAO) studied the financial impact of climate related costs on provincial and municipal infrastructure assets. The FAO's research projects that in the absence of proactive or reactive adaptation, these changing climate hazards will add up to \$4.1 billion per year on average to the cost of maintaining Ontario's portfolio of existing public infrastructure.¹⁷ As such, infrastructure investments need to take account of the impact of climate change and the resulting need for more frequent rehabilitations and earlier renewals to help sustain the delivery of critical services.

Funding and Financing Infrastructure Investments

As demand for infrastructure grows, the challenge of finding new sources of both funding and financing for infrastructure will persist. This has and will continue to require new and more innovative sources of infrastructure funding and financing.

Although related, infrastructure funding and financing are distinct concepts where infrastructure *funding* refers to the source of money that will be used to pay for building, improving, and maintaining infrastructure, and infrastructure *financing* refers to the financial instruments (bonds, equity, etc.) that are used to bridge the gap between the timing of building infrastructure and when infrastructure funding money becomes available.

For public infrastructure, the financing source is typically through government bonds, which are paid back through future government revenues that are generated through general taxation or user fees. More recently, it has become increasingly common for private financing to be used to finance large infrastructure projects.

That is why the government announced the creation of Ontario's new infrastructure bank, the Building Ontario Fund. The Building Ontario Fund is a new arms-length, board-governed agency that will create opportunities for public sector pension plans, other trusted institutional investors and Indigenous communities to further participate in large-scale infrastructure projects across the province.

¹⁷ Financial Accountability Office (FAO), "Costing Climate Change Impacts to Public Infrastructure: Summary Report, (2023)," <https://fao-on.org/web/default/files/publications/EC2302%20CIP1%20Summary/CIP1%20Summary-EN.pdf>

Other jurisdictions have taken a similar approach to support infrastructure investments, such as Canada (Canada Infrastructure Bank), the U.K. (UK Infrastructure Bank), the United States (California Infrastructure and Economic Development Bank (IBank) and Connecticut Green Bank), and Germany (KfW).

The government has allocated an initial \$3 billion to the Building Ontario Fund to support the financing and building of critical infrastructure projects. The Building Ontario Fund is developing a detailed process to ensure there is appropriate criteria for selecting projects and partners in priority areas, including long-term care homes, energy infrastructure, affordable housing, municipal and community infrastructure, and transportation.

Institutional investor participation will help the government deliver more infrastructure faster, while leveraging additional capital from investors and helping to maintain a responsible fiscal plan for today and the future.

Role of Government to Drive Future Infrastructure Investment

Effective infrastructure asset management is needed to improve productivity, enhance resiliency and increase economic growth. The government's focus on improving its asset management provides the basis for guiding infrastructure investments to ensure efficient delivery and sustainability of Ontario's public infrastructure.

The government is making significant investments in transit, highway expansion, health care, education and high-speed internet access across the province. With over \$190 billion in infrastructure investments planned over its current 10-year capital plan, the government is delivering to ensure infrastructure is reliable and resilient to support Ontario's economy and its people's quality of life.

The government is also continuing to optimize infrastructure investments through improved infrastructure planning and delivery practices that will help maximize outcomes. This requires forward-looking policies that are adaptable and responsive to a growing and evolving economy while ensuring Ontario continues to lay the foundation for sustained growth in the years ahead.

Chapter 4



Chapter 5:
**Harnessing
Sector
Strengths to
Support Growth**

Chapter 5

Harnessing Sector Strengths to Support Growth

Introduction

Ontario has a diverse, advanced economy, which accounts for almost 40 per cent of Canada's total GDP. This chapter highlights key sectors in Ontario that have exhibited relatively strong growth in GDP and strong integration in domestic supply chains, making them well positioned to contribute to long-term economic growth and help improve Ontario's productivity performance. These sectors include manufacturing and industries along the automotive and electric vehicle (EV) supply chain, life sciences, information and communications technologies (ICT), financial services and agri-food.

The future of Ontario's economy and its sectors will also rely heavily on innovation. The diversity of Ontario's economy provides opportunities for businesses to further develop collaborative relationships within and across sectors to help grow the industries of the future. In addition, the adoption of innovation and technology, including emerging technologies, will help Ontario businesses accelerate the development and commercialization of ideas to enhance long-term productivity and growth.

Finally, it is crucial to have a reliable, clean electricity grid to help attract investments and ensure Ontario can meet projected electricity demand that supports the continued growth of these sectors while transitioning to the low carbon economy of the future.

Ontario's Productivity Growth Challenge

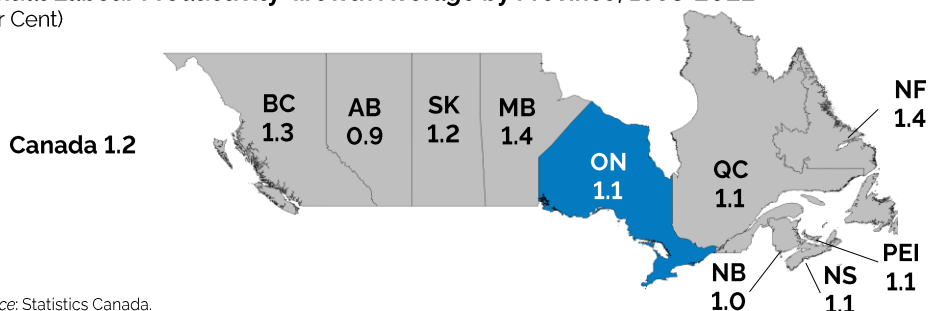
Ontario has the opportunity to capitalize on its sectoral strengths and attain higher levels of long-term economic growth by increasing its productivity, defined as real GDP per hour worked. Currently, the province faces a productivity growth challenge. Between 1998 and 2022, Ontario's labour productivity experienced periods of cyclical variation with an annual average growth of 1.1 per cent, slightly below the national average. During this time, Ontario's productivity growth lagged some other provinces and advanced economies. Labour productivity is expected to grow at 1.0 per cent annually over the projection period from 2024 to 2046. See *Chapter 2: Economic Trends and Projections*.

Chapter 5

Chart 5.1

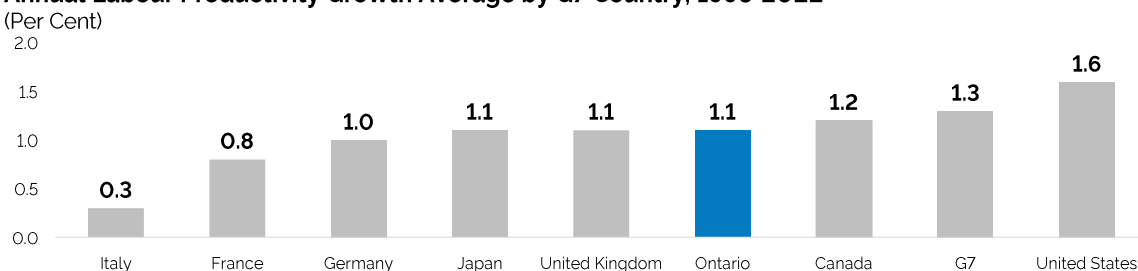
Ontario's Labour Productivity Growth is Below the Canadian and G7 Average

Annual Labour Productivity Growth Average by Province, 1998-2022
(Per Cent)



Source: Statistics Canada.

Annual Labour Productivity Growth Average by G7 Country, 1998-2022
(Per Cent)



Note: Ontario and Canada are based on Chained (2017) CDN dollars per hour while other jurisdictions are based on USD dollars per hour, constant prices, 2015 purchasing power parities. Canada recorded an average growth of 1.1 per cent using USD dollars per hour, constant prices, 2015 purchasing price power parities.

Sources: Organisation for Economic Co-operation and Development (OECD) and Statistics Canada.

Labour productivity growth between sectors and their contribution to aggregate productivity growth varied between 1998 and 2022, with the highest average annual growth recorded in agriculture, forestry, fishing and hunting. Meanwhile, mining and oil and gas extraction recorded the lowest average annual percentage change. Sectoral variations can occur for many reasons, including the use of skilled labour and capital, differences in innovation capacity, as well as exposure to international competition and knowledge sharing.¹⁸

Although not every sector has exhibited a productivity slowdown, Ontario's overall low rate of productivity growth impacts the province's potential economic output. Examining Ontario's sectoral strengths and challenges can help identify potential opportunities to enhance long-term productivity and support prosperity for future generations.

¹⁸ Organisation for Economic Co-operation and Development, "OECD Compendium of Productivity Indicators, (2023)," <https://www.oecd-ilibrary.org/sites/74623e5b-en/index.html?itemId=/content/publication/74623e5b-en>

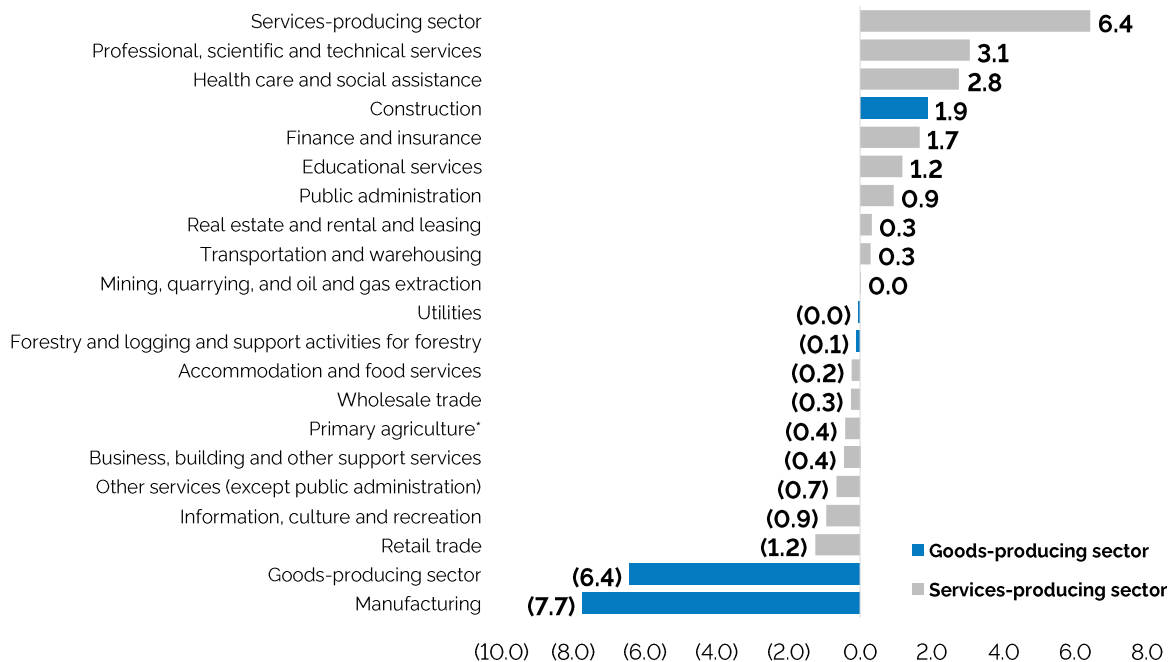
Leveraging Ontario's Sectors for Growth

Over the past two decades, Ontario's economy has undergone a significant transformation, with productivity growth in various sectors shaped in part by shifts in employment and changing labour demands. Factors such as technological advancements and the rise in globalization have altered the nature of production processes and work in society, leading to a shift in employment growth from industries traditionally focused on manual routine tasks, such as labour-intensive manufacturing, to sectors with a prevalence of non-routine work, commonly seen in service and technology-dependent industries.¹⁹

Chart 5.2

Changing Shares in Ontario's Employment

Change in Industry Share of Ontario Employment, 2001 to 2023
(Percentage Points)



*Primary agriculture is crop, animal production, and supporting activities.
Source: Statistics Canada.

¹⁹ Organisation for Economic Co-operation and Development, "OECD Employment Outlook 2017, (2017)," https://www.oecd-ilibrary.org/sites/empl_outlook-2017-7-en/index.html?itemId=/content/component/empl_outlook-2017-7-en

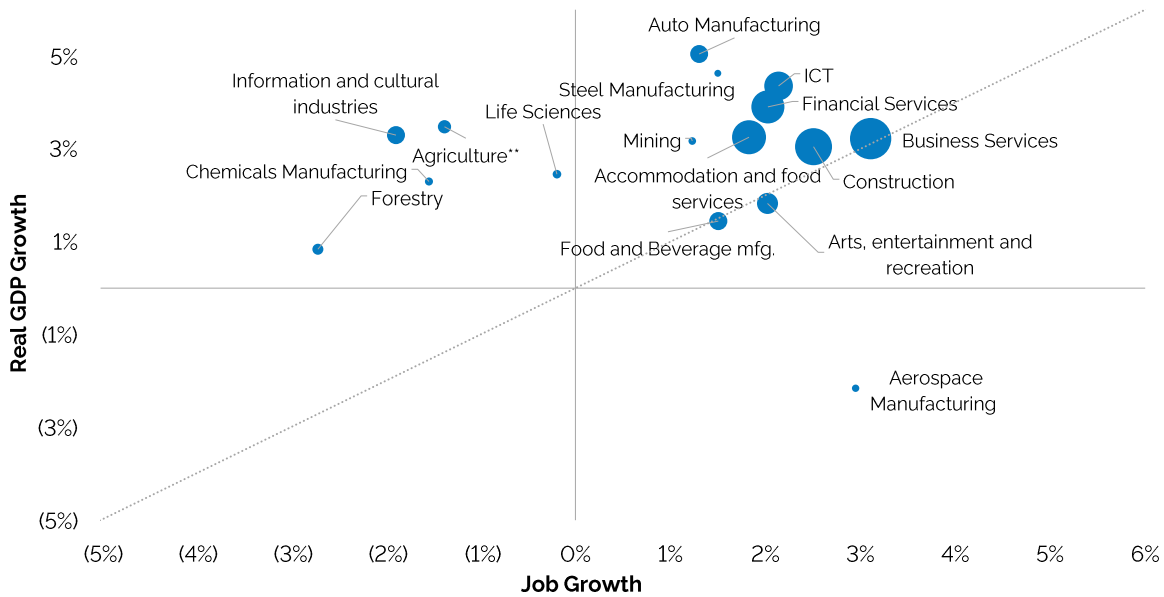
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This transformation has led to the current structure of the provincial economy with many successful sectors that have a strong potential to contribute significantly to the growth in the goods and services that each member of the province’s workforce can produce, both directly and through supply chains. These industries have shown stronger growth in real GDP relative to employment growth over the past decade and are shown above the diagonal line in Chart 5.3 below.

Chart 5.3

Ontario GDP and Employment Growth Trends: 2009-2019

Average Real GDP (2017 Chained Dollars) and Employment Growth between 2009-2019* (Per Cent)



*Circles size represents the percentage of total employment the sector represents in 2019.

**Agriculture includes crop production, animal production, supporting activities for crop production and supporting activities for animal production.

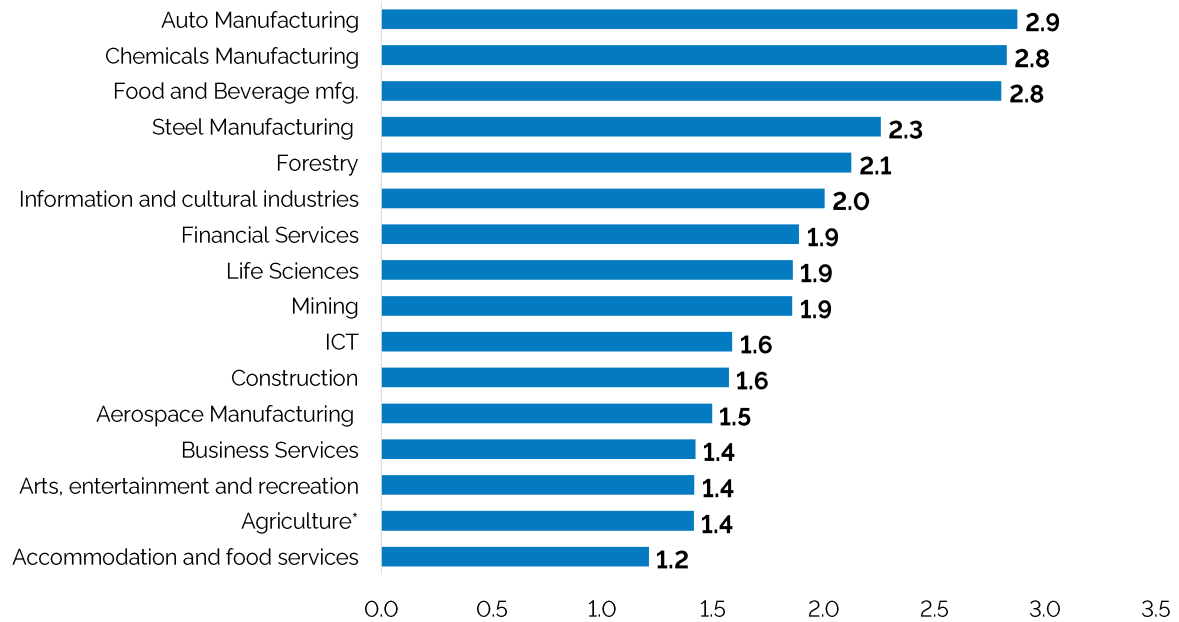
Sources: Statistics Canada and Ontario Ministry of Finance.

In addition, Chart 5.4 shows the linkages of selected industries to the rest of the domestic economy with a higher number signifying a stronger supply chain connection.²⁰ This bodes well for robust and wide spread future growth.

Chart 5.4

Ontario: Supply Chain Jobs Created for Each Direct Job

Weighted Type I Jobs Multiplier by Industry, 2019



*Agriculture includes crop production, animal production, supporting activities for crop production and supporting activities for animal production.

Sources: Statistics Canada and Ministry of Finance.

²⁰ A Type I multiplier indicates the direct and indirect impacts of the output of a given industry across the whole economy; for instance, for one job created in a given industry, how many jobs are created across the whole economy.

Ontario's Existing and Emerging Sectoral Strengths

This section highlights some of the sectors of the economy that are well positioned to drive the future growth and prosperity of the province.

Transformation in Ontario's Manufacturing Sector

Over the past 20 years, leading up to the COVID-19 pandemic, Ontario, along with many advanced industrialized countries, experienced a decline in the output and number of jobs in the manufacturing sector. This was driven by competitive pressures from the spread of global supply chains and from productivity gains by firms that outsourced their non-core functions abroad.²¹

Manufacturing employment declined significantly from over 1.1 million jobs in 2004 to 766,400 jobs in 2010 before averaging 777,800 jobs between 2010 and 2019. Real GDP in the sector saw a similar decline before experiencing a modest rebound in growth until 2019, reflecting an increase in productivity. A similar phenomenon was observed in the U.S. and the European Union.

Despite these challenges, manufacturing in the province has shown recent progress with employment in the sector increasing by 75,400 between 2020 and 2023. Manufacturing also continues to be a source of good-paying jobs with the potential for spillovers into other sectors and opportunities to improve overall productivity.²² The introduction of new technologies in production processes increases productivity and reduces relative employment shares, pointing to a sector growing through productivity gains²³ that will help maintain Ontario's competitive advantages.



²¹ Trillium Network for Advanced Manufacturing, "Canada's Manufacturing Sector: A Decade in Review, (2020)," https://trilliummfg.ca/wp-content/uploads/2020/08/Trillium_CanadasManufacturingSector-ADecadeinReview-August2020_FA-justify.pdf

²² Ontario 360, "Made in Ontario: A Provincial Manufacturing Strategy, (2021)," <https://on360.ca/policy-papers/made-in-ontario-a-provincial-manufacturing-strategy/>

²³ Ibid.

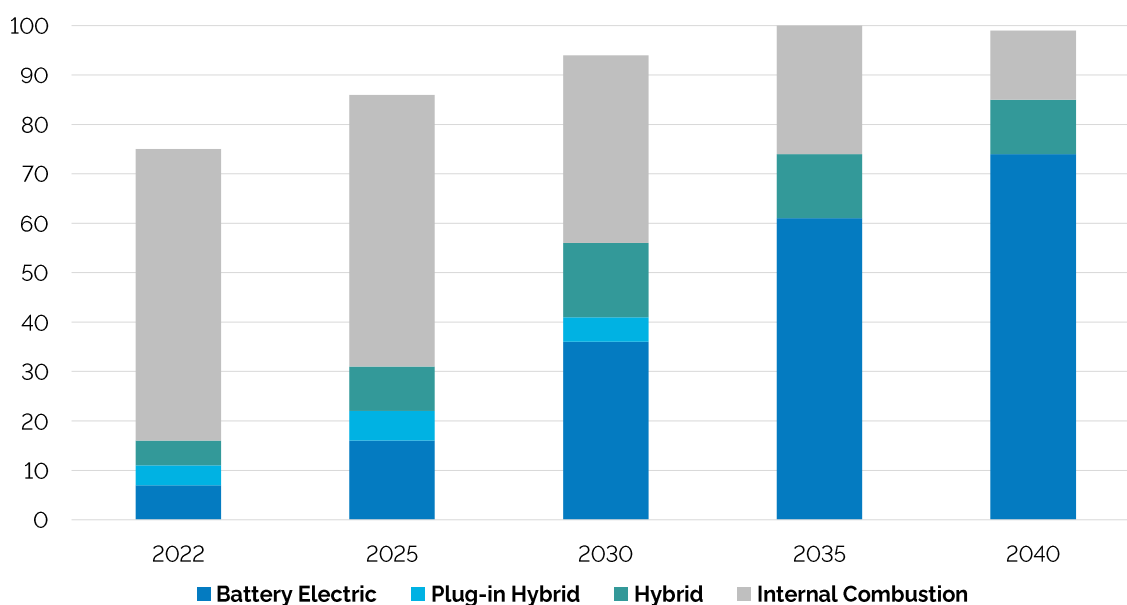
Opportunities for Growth in the Electric Vehicle Supply Chain

Within manufacturing, the automotive sector is undergoing a period of profound transformation. It is estimated that electric vehicles will reach 44 per cent of global passenger vehicle sales by 2030 and 75 per cent by 2040. Technological change is at the core of this transition, with battery prices falling by as much as 90 per cent in the last decade. Annual global lithium battery demand is also expected to grow rapidly, approaching 5.7 terawatt hours (TWh) annually by 2035.²⁴

Chart 5.5

Global Passenger Vehicles Sales by Type

Vehicles Sold
(Millions)



Sources: Bloomberg New Energy Finance, Global EV Outlook, 2023.

EVs and batteries are now a central part of many countries' industrial policy and competition to attract these investments is likely to increase in the coming years. In particular, the passage of the *Inflation Reduction Act* (IRA) by the United States in 2022 has had a significant impact on industrial policy.

²⁴ Bloomberg New Energy Finance, "Electric Vehicle Outlook 2023, (2023)," <https://about.bnef.com/electric-vehicle-outlook/>

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However, the competitive advantage of Ontario's automotive sector, the province's critical mineral resources and the strategic financial support from the government have helped the province attract over \$43 billion in investments from global automakers, parts suppliers, and manufacturers of electric vehicle batteries and battery materials since 2020. Support for these investments is part of the Government of Ontario's automotive plan, *Driving Prosperity*, which was launched in 2019 and includes goals to reposition the province's vehicle and parts production for the cars of the future and establish and support a battery supply chain ecosystem.

As the EV supply chain grows, there will also likely be gaps between supply and demand for critical mineral inputs such as lithium, nickel, graphite and copper.²⁵ While demand is increasing rapidly, opening a new mine can require significant time and resources, typically taking 10 to 15 years of consultation, exploration, planning, and construction. There are currently 10 mines in Ontario that produce critical minerals. In Northern Ontario, several significant advanced stage mineral projects are active for critical minerals, including lithium, cobalt, copper, nickel and graphite. Additionally, the Ring of Fire region, located approximately 500 kilometres northeast of Thunder Bay, is being explored for several critical minerals, including chromite, cobalt, nickel and copper.

The province's supply of critical minerals and proximity to North American manufacturing hubs make the province a competitive location for mineral exploration and investment. To help leverage these opportunities the Ontario government released a *Critical Minerals Strategy* in 2022. The Strategy is a five-year roadmap to support better connections between the mines in the North with the manufacturing sector in the South; particularly, with Ontario-based EV and EV battery manufacturing.

²⁵ Ernst & Young, "Critical minerals supply and demand challenges mining companies face, (April 2022)," https://www.ey.com/en_ca/mining-metals/critical-minerals-supply-and-demand-challenges

Ontario's steel industry is also becoming an important part of the province's EV supply chain, in addition to supporting industries such as construction, metal product manufacturing and machinery manufacturing. The province represents half of the primary metal manufacturing employment in the country, with steel making up a significant share of the industry.²⁶ Industry output in Ontario is expected to grow in response to a rising demand for steel, including low carbon steel, for manufacturing, residential housing and infrastructure projects. The province is positioning itself as a strong North American supplier of low carbon, clean steel. Since 2021, large global metal manufacturers in the province, ArcelorMittal Dofasco and Algoma Steel, have invested \$2.5 billion to develop low-emission steelmaking plants.

Strengths and Opportunities

- Increasing global demand for clean technologies.
- Rising geopolitical tensions increase the interest in strengthening supply chains with Ontario's closest trading partners.
- Increasing automation and the integration of advanced manufacturing technologies.
- Ontario is near major markets and has strong environmental, social and governance (ESG) practices that could support increasing demand for critical minerals to support the EV transition.
- Skilled manufacturing workforce recognized for production quality (e.g., nearly 40 J.D. Power Plant Quality Awards won by Ontario auto plants).

Potential Future Risks

- Persistence of weak business capital spending.
- Competition for investment driven by U.S. industrial policy initiatives (CHIPS and Science Act and IRA, 2022).
- Expected wave of retirements in the coming decade, which will increase pressure on the labour force and may exacerbate the skills shortage.
- Significant costs to achieve net-zero emissions in the manufacturing sector.²⁷
- Ontario's mining sector will need to attract investment to increase production and address several mid-stream bottlenecks in processing and refinement.

²⁶ Government of Canada, "Primary Metal Manufacturing: Ontario 2022-2024," <https://www.jobbank.gc.ca/trend-analysis/job-market-reports/ontario/sectoral-profile-primary-metal-manufacturing>

²⁷ Canadian Manufacturers and Exporters, "Canada's Net Zero Industrial Strategy, (June 2022)," https://cme-mec.ca/wp-content/uploads/2022/06/Final_CME-Net-Zero-Report_June-2022-.pdf

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Life Sciences

The province's life sciences sector includes pharmaceutical production, production of medical devices and equipment, and research and development, as well as companies engaged in pharmaceutical and professional equipment wholesaling.

Ontario has a long history of life sciences discoveries and innovations, including blood-forming stem cells; cancer stem cells in leukemia; neuroleptic receptors; early-onset Alzheimer's genes; external cardiac pacemakers; identification of the gene for cystic fibrosis; and insulin.

While these discoveries significantly improve the quality of life, the sector also generates important economic benefits for Ontario. The province's life sciences sector is the largest in Canada with approximately 2,000 firms and more than 72,800 workers in 2022.

The industry also has strong supply chain linkages with the rest of the economy. For each direct manufacturing job created in life sciences, nearly two jobs are created across the Ontario economy. Furthermore, in pharmaceutical production, over 40 per cent of all purchases of intermediate inputs are sourced from other industries in the Ontario economy.

Within the last decade, the province has become a hub for clinical trial activity and employment in pharmaceutical production and in the production of medical devices and equipment has increased by nearly 50 per cent in the past two decades. In 2022, the sector exported \$8 billion in goods, representing about 57 per cent of the total for Canadian life sciences.

Key factors for the continued long-term growth of the life sciences industry include a pool of experienced talent, a collaborative ecosystem,²⁸ and a competitive business environment that is supported by modern regulations and increased access to investment opportunities.

The sector also stands to benefit from stronger engagement with the venture capital (VC) community, especially in the later stages of the pre-commercialization process that can help boost manufacturing readiness of life sciences companies.

²⁸ For example, OmniaBio, located at the McMaster Innovation Park in Hamilton, Ontario, will be a commercial-scale cell and gene therapy facility operating as a contract development and manufacturing organization (CDMO). A CDMO works with other life sciences companies to commercialize and manufacture their products, allowing companies to focus on research for new therapies and medical breakthroughs and on growing their business.

In 2021, Ontario attracted more than half of all venture capital investments in Canada, including \$847 million in life sciences.²⁹ However, to better utilize venture capital investments and to continue to harness future opportunities in Ontario’s life sciences, the sector will require a mix of leading research talent as well as executive and managerial talent to help with raising capital, commercialization, marketing, and growing exports.

To further develop the key growth factors noted above, the Ontario government released the *Taking Life Sciences to the Next Level* strategy in 2022 to help establish Ontario as a global biomanufacturing and life sciences hub. The Strategy aims to boost the capacity of the province’s life science companies and start-ups by strengthening talent, advancing research and improving access to the venture capital ecosystem. This would help life science companies lead in the development, commercialization, and early adoption of innovative health products and services.

Strengths and Opportunities

- A thriving life sciences sector has spillover benefits to other industries, given its strong linkages to rest of the economy.
- Transformative technologies, including genomics, synthetic biology, AI and data science, are presenting new growth opportunities for Ontario to help fuel innovation.
- Other niche strengths and opportunities include regenerative medicine, biochips, mRNA, and applications in nuclear medicine, oncology, and rare diseases.

Potential Future Risks

- Insufficient access to capital in early stages, with commercialization most at risk.
- Specialized talent gaps at executive and management levels may limit scale-up and commercialization prospects for the sector.
- Lack of wet-lab space is a risk to retaining talent, intellectual property (IP) and longer-term growth in life sciences.

²⁹ Venture Ontario, “2021-22 Annual Report, (2022),” <https://www.ventureontario.ca/assets/images/partners/OCGC-Annual-Report-2021-22.pdf>

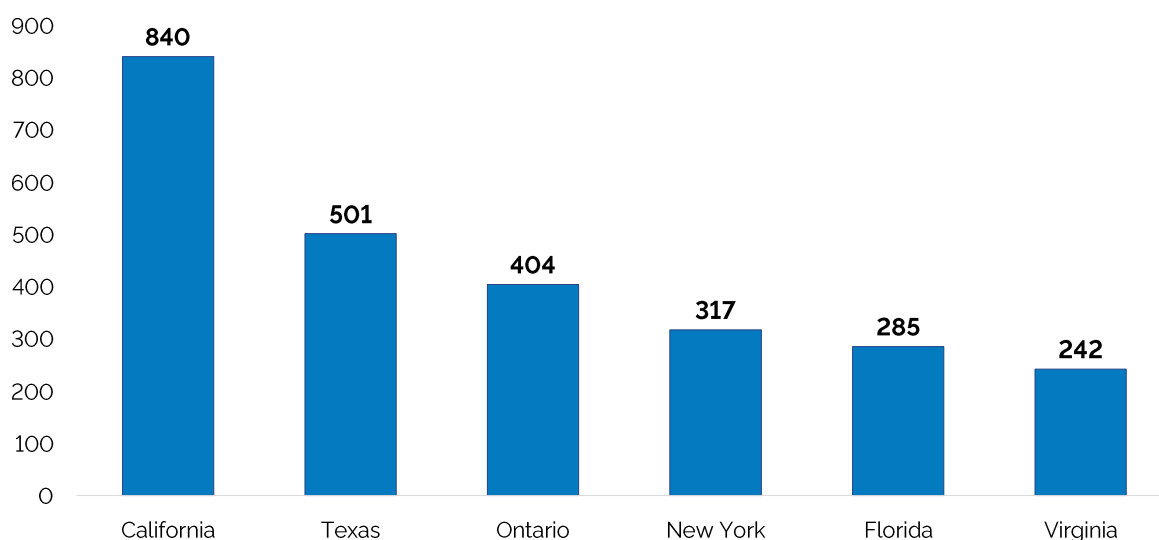
Information and Communication Technologies

Ontario is one of Canada’s leading technology regions and is home to a robust and diversified digital economy. With over 400,000 information and communication technology (ICT) workers employed in Ontario, the province is one of the largest information technology clusters in North America.³⁰ The province’s digital economy has a long history of homegrown business success and capacity for investment attraction.³¹

Chart 5.6

Top Destinations for the ICT Workforce, North America

Jobs, 2022
(Thousands)



Source: Ministry of Economic Development, Job Creation and Trade.

The sector’s domestic accomplishments include the BlackBerry, the world’s first Geographical Information System (GIS) software, the invention of the smart thermostat, IMAX film technology, ground-breaking two-way wireless technology and breakthroughs in 3D animation. Made-in-Ontario technologies have also been on board 80 per cent of the commercial communications satellites ever launched.

³⁰ Ministry of Economic Development, Job Creation and Trade.

³¹ Information & Communications Technology Council, “Ontario’s Next Gen Industry, (April 19, 2023),” <https://ictc-tic.ca/reports/ontarios-next-gen-industry>

Ontario is also home to some of the most cutting-edge cloud computing and big data analysis in the world, with established players such as IBM, OpenText, Oracle and SAP conducting business-critical research and development across the province. Within the province, Waterloo has a strong quantum technologies hub,³² known as the Quantum Valley, which includes the Perimeter Institute, Institute of Quantum Computing, Quantum NanoFab Facility, Quantum Valley Ideas Laboratories and Quantum Valley Investment.³³ Additionally, over 90 per cent of Canada's industrial telecommunications research takes place in Ottawa and includes industry leaders such as Nokia and Ericsson.³⁴

Telecommunications services in the province continue to evolve with new technology and changing consumer demands. The pandemic rapidly accelerated this shift as broadband internet and mobile services have become essential to participate in the economy and in society. The sector has been rapidly shifting toward 5G technology and the Internet of Things (IoT), with a focus on developing applications for this rapid increase in internet speed for industry and home use.³⁵

Artificial intelligence (AI) is also changing the landscape for businesses and the economy. The recent breakthroughs that have enabled the rise of generative AI were pioneered in Ontario more than 30 years ago and today the industry is growing rapidly because of significant levels of investment in recent years.³⁶ In 2022-23, more than 20,500 AI jobs were created in Ontario, 27 new AI companies were established, and the sector attracted over \$1.1 billion in venture capital investments on an annual basis. Generative AI is expected to have a significant impact globally across all industry sectors. Banking, high tech, and life sciences are among the industries that could see the largest impact.³⁷ Estimates show that generative AI could add the equivalent of \$2.6 trillion to \$4.4 trillion to the global economy, potentially enabling labour productivity growth of 0.1 to 0.6 per cent annually through to 2040.³⁸

³² Quantum technologies include computing hardware and software, communications and sensors all based on the principles of quantum science.

³³ Ministry of Economic Development, Job Creation and Trade.

³⁴ Invest Ottawa, "Communications Technology," <https://whyottawa.ca/communications-technology/#:~:text=Ottawa%20has%20the%20highest%20concentration,the%20Canadian%20Photonics%20Fabrication%20Centre>

³⁵ Unifor, "Telecommunications Sector Profile," <https://www.unifor.org/resources/our-resources/telecommunications-sector-profile>

³⁶ Ministry of Economic Development, Job Creation and Trade.

³⁷ McKinsey & Company, "The Economic Potential of Generative AI, (2023)," <https://www.mckinsey.com/capabilities/mckinsey-digital/our-insights/the-economic-potential-of-generative-ai-the-next-productivity-frontier#introduction>

³⁸ Ibid.

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Through the Critical Technologies Initiative, the Ontario government is supporting programs that accelerate the use of critical technologies such as 5G and AI to improve productivity and support innovation and long-term economic growth. The initiative also supports the development, commercialization, and adoption of technology by Ontario companies.

Strengths and Opportunities

- Innovation and ICT adoption will boost demand for highly skilled talent.
- Local postsecondary institutions produce highly skilled and dependable graduates for Ontario businesses.
- Ontario is North America’s third largest market for tech talent.

Potential Future Risks

- The rapid growth of the industry globally creates recruitment and retention challenges for tech employers.
- Long-term skills challenges include cybersecurity, advanced networks, quantum and semiconductor subsectors.
- Insufficient domestic capital for companies, which can also contribute to the loss of intellectual property in the province.
- Increased cybersecurity threats from advances in ICT, leading to higher costs in the sector.

Financial Services

The financial services sector plays an important role in supporting economic growth and productivity in Ontario by facilitating investments and supporting the financial needs of consumers and large and small businesses.

The financial services sector³⁹ in Ontario generated \$83.1 billion in GDP and made up 8.9 per cent of the economy in 2023. The sector employed 517,600 workers in 2023, accounting for over half of Canada’s financial services employment. Over the past 10 years, employment in the sector grew at an average 3.2 per cent, while GDP grew at 3.8 per cent, on average.

Ontario’s financial services companies are concentrated in downtown Toronto, close to IT, professional and other services. This concentration provides a strategic advantage that gives businesses an edge in global competition, as they are easily connected to leading financial institutions, innovative ICT technologies and talent. The province supplies a pool of more than 67,000 business graduates a year and has the largest Chartered Financial Analyst society in the world.⁴⁰

³⁹ The financial services sector refers to NAICS Code 52 – Finance and Insurance, which includes establishments primarily engaged in financial transactions, i.e., transactions involving the creation, liquidation, or change in ownership of financial assets or in facilitating financial transactions.

⁴⁰ Invest Ontario, Financial Services, Financial services | Invest Ontario.

A strong financial services sector has the capacity to contribute to productivity growth by raising its own output per labour and capital input. According to the OECD, average productivity growth in Canada's financial services sector has been the fastest relative to other non-agriculture business sectors since 2008.⁴¹

Equally important, however, is the capacity of a strong financial services sector to help improve productivity in the rest of the economy as a by-product of the services it provides.⁴² A strong financial services sector typically correlates with high productivity in other sectors of the economy, as increased access to capital provides sectors with resources to invest and innovate.⁴³

One way the financial services sector can further contribute to productivity growth is by increasing innovation and competition within the sector. For example, improved access to FinTech solutions may facilitate the ability of Ontario firms to access the capital needed to invest. The introduction of an open banking environment in Canada has the potential to enable further development and use of FinTech, which may increase innovation and competition by allowing smaller financial services firms to provide increased access to capital.⁴⁴

Similarly, Ontario's strengths in other emerging technologies⁴⁵ such as generative AI could further boost productivity within the financial sector as well as the sector's contributions to productivity growth in other sectors of Ontario's economy. AI is currently supporting a diverse range of financial services processes, including improving the efficiency and accuracy of operational processes, detecting market irregularities, and potentially improving the efficiency of customer services.⁴⁶

⁴¹ Organisation for Economic Co-operation and Development, "Productivity and ULC by main economic activity (ISIC Rev.4)", https://stats.oecd.org/Index.aspx?DataSetCode=PDBI_I4

⁴² CD Howe Institute, "Productivity and the Financial Sector – What's Missing? (April 2018)," https://www.cdhowe.org/sites/default/files/2021-12/Commentary_508.pdf, p. 1.

⁴³ Ibid., p. 7

⁴⁴ Bank of England, "Customer data access and fintech entry: early evidence from open banking," Staff Working Paper No. 1,059, (February 2024), p. 4; PwC Canada, "What open banking means for Canada's financial landscape, (2019)," <https://www.pwc.com/ca/en/industries/banking-capital-markets/canadian-banks-2019/what-open-banking-means-for-canada-financial-landscape.html>

⁴⁵ Deloitte, "Canada leads the world in AI talent concentration, (2023)," <https://www2.deloitte.com/ca/en/pages/press-releases/articles/impact-and-opportunities.html>; Invest Ontario, "14 AI companies to watch," <https://www.investontario.ca/spotlights/14-ai-companies-watch-2022-23>

⁴⁶ Ontario Securities Commission, "Artificial Intelligence in Capital Markets: Exploring Use Cases in Ontario, (2023), p. 6," <https://oscinnovation.ca/resources/Report-20231010-artificial-intelligence-in-capital-markets.pdf>

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The Ontario government continues to support the financial services sector facilitating further access to capital to further innovation and improve productivity. The *2023 Ontario Economic Outlook and Fiscal Review* and the *2024 Ontario Budget* put forward several initiatives designed to modernize Ontario’s capital markets in support of these goals. These include working with the Ontario Securities Commission (OSC) to facilitate greater early-stage financing of Ontario startups and medium-sized companies. In addition, the government is also working with the OSC to enhance capital formation through investor access to investment opportunities in capital-intensive assets.

Strengths and Opportunities

- A highly educated, skilled and multicultural financial services workforce.
- Clustering of strong financial and professional institutions and concentration of skills and talent.
- Accelerated move to digitization and the ability to embrace new technologies.

Potential Future Risks

- Potential excesses and instability in unregulated financial markets.
- Cybersecurity vulnerabilities such as in the digital storage of financial information, monetary transactions, and personally identifiable information.

Agri-Food

The Ontario agri-food sector includes primary agriculture; food manufacturing; parts of wholesale and retail trade; and food services and drinking places. Between 2012 and 2023, the sector employed an average of 803,000 workers, representing 11.2 per cent of jobs in Ontario over this period. The sector also contributed an average of 6.3 per cent to Ontario’s real GDP from 2012 to 2022.⁴⁷

Since 2000, total farm product output, farm cash receipts and global exports have increased due to productivity improvements in the sector. In the medium term, GDP in the broader sector is projected to continue growing faster than employment, at an average annual rate of 1.4 per cent through the early 2030s.⁴⁸

As Ontario’s population expands, the demand for agri-food products is expected to grow as well and local food production will need to rise to support the diverse needs and preferences of the province’s growing population. At the same time, as efficiencies in production accrue, the opportunity to expand exports will increase, contributing to overall growth in the economy.

⁴⁷ Ontario Ministry of Agriculture, “Food and Rural Affairs,” <https://www.ontario.ca/page/ontario-agriculture-and-food-statistics>

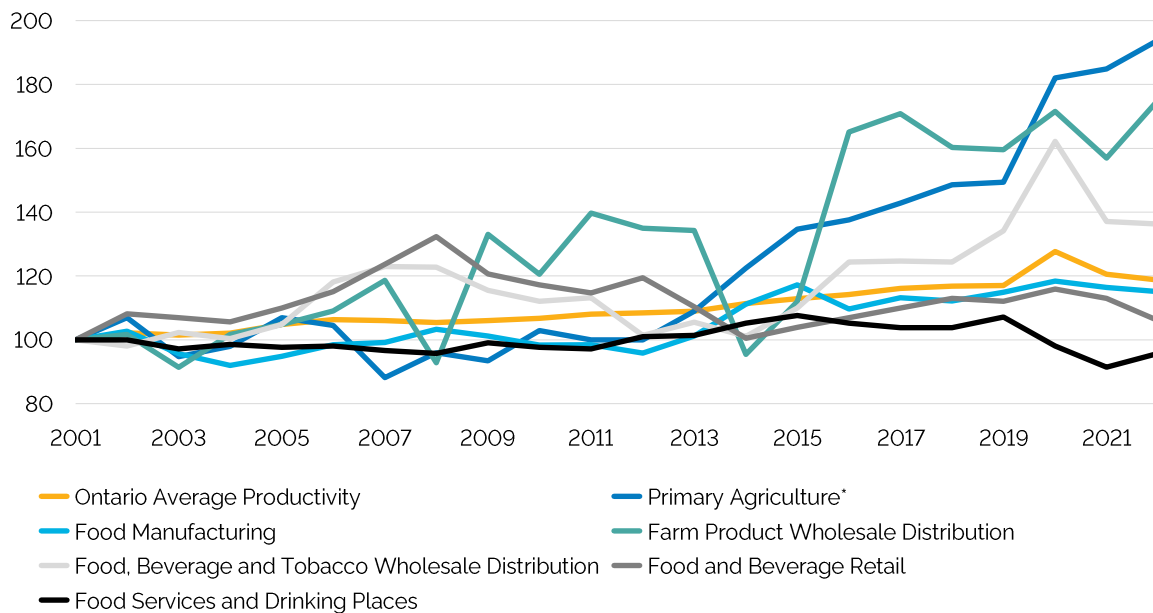
⁴⁸ Ontario Ministry of Agriculture, Food and Rural Affairs.

The agri-food sector has shown robust output and productivity growth, but challenges remain, including volatile input costs, labour shortages, the need to increase farmland yields, and climate/weather hazards. In addition, the sector is experiencing shifts in consumer and global market expectations such as verifiable, sustainable, and ethical production practices.

Chart 5.7

Labour Productivity in the Agri-Food Sector

Index of Chained (2017) Dollars Per Hour Worked
(2001 = 100)



*Primary agriculture is crop, animal production, and supporting activities.
Source: Statistics Canada.

Continued automation and the participation of international workers will help mitigate the impact of an aging and declining workforce at the farm. International agri-food workers play an essential role in maintaining a strong provincial food system. The use of advanced technologies such as new sensors, robotics and artificial intelligence will enable farm operators to continue to automate tasks traditionally reliant on human decision making to increase resiliency and farm efficiency.⁴⁹ The sector's continued adoption of productivity-enhancing technologies should bolster its ability to navigate these challenges.

Improving capital investment in the sector also continues to be part of the strategy for growth and integrating advanced technological solutions across the agri-food value chain will support streamlined operations, reduce input costs and enhance output.

⁴⁹ McKinsey & Company, "Trends Driving Automation on the Farm, (May 31, 2023)," <https://www.mckinsey.com/industries/agriculture/our-insights/trends-driving-automation-on-the-farm>

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The strategic long-term growth prospects for the sector are supported by government policies such as the Grow Ontario agri-food strategy, developed in collaboration with farmers, food sector leaders, businesses, and Indigenous representatives.⁵⁰ The province's goal is to increase the consumption and production of food grown and prepared in Ontario by 30 per cent by 2032, while also aiming to grow food and beverage manufacturing GDP and agri-food sector employment by 10 per cent by the same year.

The strategy aims to support research and to encourage innovation, sustainability, and profitability in agri-food industries, as well as increasing the commercialization and adoption of innovative technologies. The strategy also focuses on attracting and growing Ontario's academic and technical expertise, including robotics, automation, and genomics.

Strengths and Opportunities

- Opportunities for innovation and productivity improvements to increase production and reduce the reliance on labour.
- Growing production and expanded access to markets through trade agreements have the potential to increase Ontario's exports for certain food and beverage products.
- A diversified and resilient sector with a reputation for quality, sustainability and food safety.

Potential Future Risks

- Commodity price shocks, changing market conditions and geopolitically induced supply-chain disruptions.
- Labour shortages and an aging labour force could hold back growth.
- Aging infrastructure and lower levels of capital and R&D investment relative to competitors.
- Potential use of non-tariff trade barriers by Ontario's trading partners to limit access to markets.

⁵⁰ Ontario Ministry of Agriculture, "Food and Rural Affairs, (November 28, 2022)," <https://www.ontario.ca/page/grow-ontario-provincial-agri-food-strategy>

Driving Growth in Sectors Through Innovation

Over the longer term, the sustained growth of Ontario's sectoral strengths will rely heavily on innovation and the development, commercialization and adoption of technology. Fostering linkages in the innovation ecosystem that support the diffusion of new knowledge and technologies across the economy, as well as emphasizing the importance of new innovations, will play a key role in increasing productivity and advancing long-term economic growth.

Ontario's Innovation Performance in R&D and Intellectual Property

There are several key metrics to measure the level of innovation in a jurisdiction, including business expenditures on R&D and intellectual property products (IPP).⁵¹

As shown in Chart 5.8, Ontario's business R&D expenditure as a percentage of GDP, also known as R&D intensity, has demonstrated an upward trend over the last decade. Business R&D is typically concentrated among a small number of large companies. In 2022-23, Ontario was home to 46 of the top 100 Canadian R&D spenders, which accounted for \$9.2 billion of total R&D spending nationwide.⁵² The province also accounted for 49 per cent of all Canadian business R&D in 2021, followed by Quebec with 24 per cent. However, internationally, Ontario continued to lag leading OECD countries. While Ontario had a business R&D intensity of 1.4 per cent in 2021, it was significantly lower than leading countries such as Israel and South Korea which had business R&D intensities of 5.3 per cent and 3.9 per cent, respectively. This suggests that while Ontario is a leader of R&D in Canada, further business investment is needed to be competitive on the international stage.⁵³

⁵¹ According to Statistics Canada, IPP includes three components: mineral exploration and evaluation; research and development; and software products.

⁵² Research InfoSource Inc.

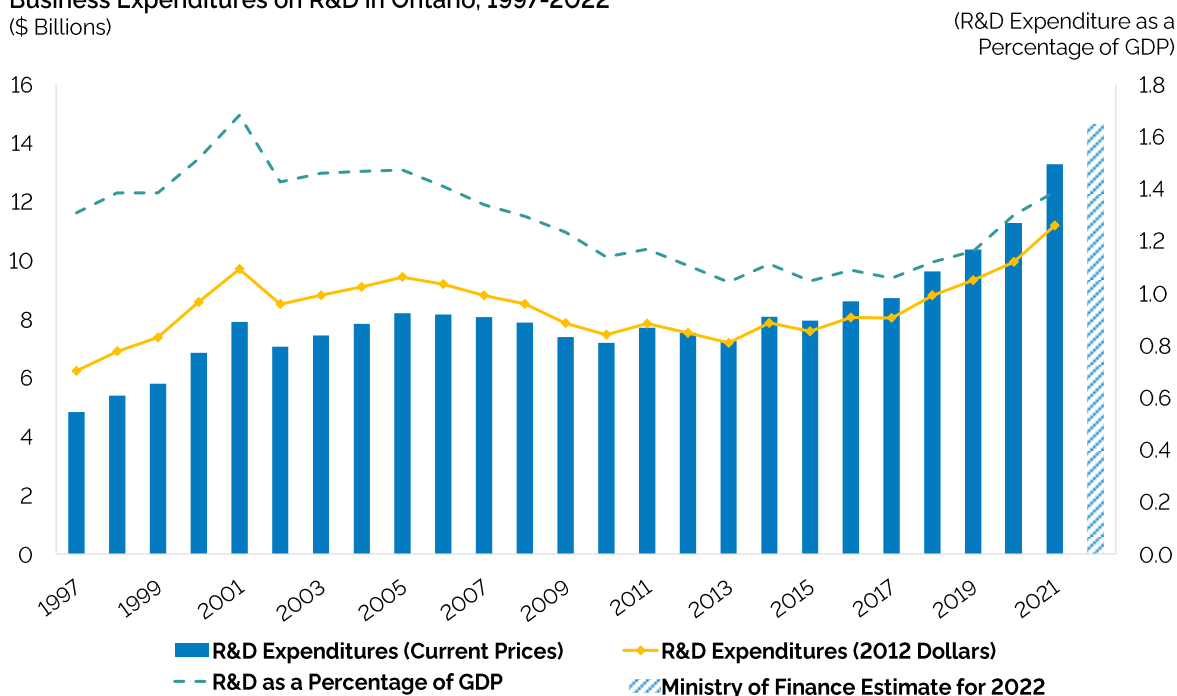
⁵³ Statistics Canada and Organisation for Economic Co-operation and Development.

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Chart 5.8

Ontario's Business Expenditures on R&D Increased to \$13.3 Billion in 2021

Business Expenditures on R&D in Ontario, 1997-2022
(\$ Billions)



Sources: Statistics Canada and the Ministry of Finance estimate.

In addition to R&D investments, IPPs (such as copyrights, trademarks, trade secrets and industrial design) are becoming an increasingly important contributor to long-term economic growth. Forward-looking firms recognize the role of IPPs and are able to gain a competitive advantage from these assets, while contributing to overall knowledge creation rather than solely focusing on lowering costs in production supply chains.⁵⁴

Despite the importance of IPPs, Ontario and Canada continue to face challenges in producing innovative outputs, such as IPPs, and scaling up firms.⁵⁵ Ontario's business investment in IPPs has been relatively slow and lagged growth when compared to the U.S. over the past decade, suggesting a widening innovation gap.⁵⁶

⁵⁴ Expert Panel on Intellectual Property "Intellectual Property in Ontario's Innovation Ecosystem, (2020)," https://files.ontario.ca/books/expert-panel-report-intellectual-property-2020-02-20_0.pdf

⁵⁵ WIPO, "Global Innovation Index 2023, (2023)," <https://www.wipo.int/edocs/pubdocs/en/wipo-pub-2000-2023/ca.pdf>

⁵⁶ Statistics Canada and U.S. Bureau of Economic Analysis.

To harness the full value of IPPs, Ontario's intellectual property agency, Intellectual Property Ontario (IPON), focuses on educating and supporting innovators throughout their IP journey to maximize IP value, enhance research outcomes and enable them to compete globally. Ontario also offers R&D tax credit programs to encourage business expenditures on scientific research and experimental development and continues to make key investments in research and research projects at universities, colleges, research hospitals and research institutes.

Fostering Ontario's Innovation Ecosystem for Long-Term Economic Growth

Ontario is endowed with diverse advantages, including a highly skilled labour force, locational advantage to North American markets, and high-value economic actors such as businesses, investors and academic institutions. Focusing on the diversity and collaboration of actors will help drive valuable innovation as well as stimulate investment and business activity.

There are several benefits that stem from promoting robust networks, such as spillover effects through knowledge transfers and the reinforcement of innovative clusters. Firms also reap additional productive advantages through mutual proximity, integration of supply chains, and specialization, which benefit sectors and regional economies.⁵⁷ Strong linkages among economic actors, paired with modern regulations, advanced infrastructure and skilled labour, help contribute to greater competitiveness. Cultivating this dynamic ecosystem will help foster the next wave of high-value innovations and entrepreneurs to drive long-term economic growth.

To create and support these linkages in Ontario, the government supports industry collaborators such as the province's Regional Innovation Centres (RICs) and the Ontario Centre of Innovation (OCI). These organizations help connect industry, academic, and government partners to drive investments in collaborative R&D, technology development and commercialization opportunities.

⁵⁷ Porter, M. E. "Clusters and the new economics of competition" (1998), Vol. 76, No. 6, pp. 77-90, Boston: Harvard Business Review.

Adopting Artificial Intelligence to Help Transform Ontario's Sectors and Increase Productivity

The adoption of emerging technologies has accelerated across sectors. Ongoing uptake of new technologies will help support the diffusion of technology across key sectors, reduce barriers to innovation adoption, and build capacity in domestic companies. One example of an emerging technology is AI, which can have potentially transformative impacts on sectors. AI has the potential to significantly reduce firm costs, drive innovation performance through higher levels of R&D, and address labour shortages.

Select Sector	Examples of AI Applications in the Sector ⁵⁸
Manufacturing	<ul style="list-style-type: none"> Automating and streamlining labour-intensive activities through robotics (including use of machine vision for automated inspection and autonomous mobile robots) to reduce firm costs and increase efficiency. Increasing productivity through predictive maintenance and self-optimization of machine and processes, as well as enhancing process flexibility through advanced demand forecasting, improved network optimization or advanced production planning or scheduling.
Agriculture	<ul style="list-style-type: none"> Optimizing farming through computer vision and machine learning to help identify soil deficiencies and provide planting recommendations. Utilizing AI to analyze weather patterns to predict optimal planting schedules, measure soil conductivity and pH, and address pest attacks.
Financial Services	<ul style="list-style-type: none"> Improving customer service by providing 24/7 support through the use of chatbots and conversational agents to answer questions and retrieve banking information or activity. Monitoring changes in transaction patterns to detect fraudulent activity.
Life Sciences	<ul style="list-style-type: none"> Accelerating the discovery of new pharmaceuticals, drugs and other products by using AI to analyze historical and modern data. Assisting in medical diagnoses by tracking health using wearable devices and indicating problems before patients are aware.
Construction	<ul style="list-style-type: none"> Increasing worksite safety by using AI to detect and analyse potential hazards, monitor and flag unsafe activities and ensure compliance with protocols. Improving sustainability and reducing waste during projects by using AI to forecast materials needed.

⁵⁸ Forbes "Applications of Artificial Intelligence Across Various Industries, (2023)," <https://www.forbes.com/sites/qai/2023/01/06/applications-of-artificial-intelligence/?sh=709ed4ec3be4>; World Economic Forum, "4 Ways Artificial Intelligence Could Transform Manufacturing, (2023)," <https://www.weforum.org/agenda/2023/01/4-ways-artificial-intelligence-manufacturing-davos2023/>; World Economic Forum, (2023), "4 ways AI is revolutionising the construction industry," <https://www.weforum.org/agenda/2023/06/4-ways-ai-is-revolutionising-the-construction-industry/>

Canada is a leading source of AI talent, with the growth of AI talent outpacing several G7 countries and ranks high globally in venture capital investments per capita. Despite these advantages, Canadian firms face challenges in AI adoption, including firm size, financial costs and aggressive competition.⁵⁹

As previously noted, Ontario's Critical Technologies Initiative supports the development, adoption and commercialization of critical technologies, including AI, to encourage further innovation across the province. This includes support for the Vector Institute for Artificial Intelligence to help businesses increase their competitiveness and accelerate the safe and responsible adoption of ethical AI. Building Ontario's innovation capacity can help cultivate a strong entrepreneurial culture, encourage innovation and investment, and improve productivity, which has a significant advantage in today's ever-changing global economy.



⁵⁹ Deloitte, "Canada leads the world in AI talent concentration, (2023)," <https://www2.deloitte.com/ca/en/pages/press-releases/articles/impact-and-opportunities.html>

Leveraging Ontario's Clean Energy Advantage to Support Economic Growth

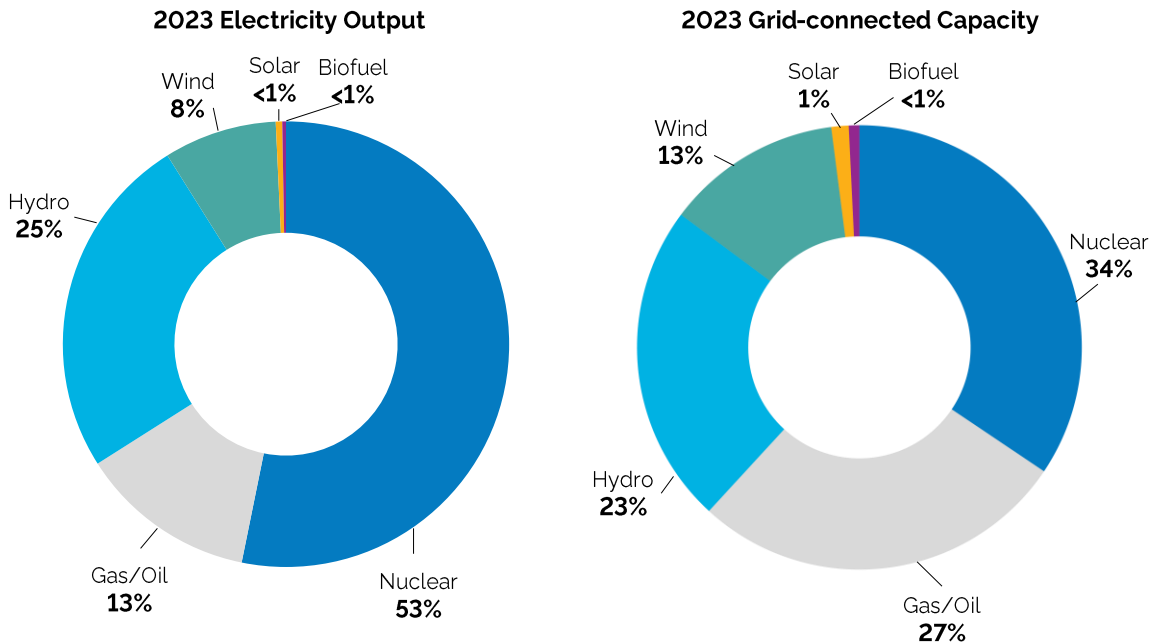
Planning for Energy Transition and Future Energy Needs

Ontario's clean electricity grid continues to be a competitive advantage in attracting investments and jobs to the province. The provincial government is continuing to support clean energy, which is essential for Ontario's competitiveness and transition to a cleaner economy.

Electricity Supply

Ontario has a diverse electricity supply mix, with nuclear generation providing a large portion of its capacity and energy needs (see Chart 5.9). Ontario's electricity system benefits from diverse resources, including hydroelectric, nuclear, natural gas, solar, wind and bioenergy, with each having specific operating characteristics, supporting ongoing reliability, as no single type of resource can meet all of the system's needs at all times. Ontario's clean electricity grid, which is about 90 per cent emissions-free, provides Ontario a global competitive advantage.

Chart 5.9
Ontario's Electricity Supply Mix



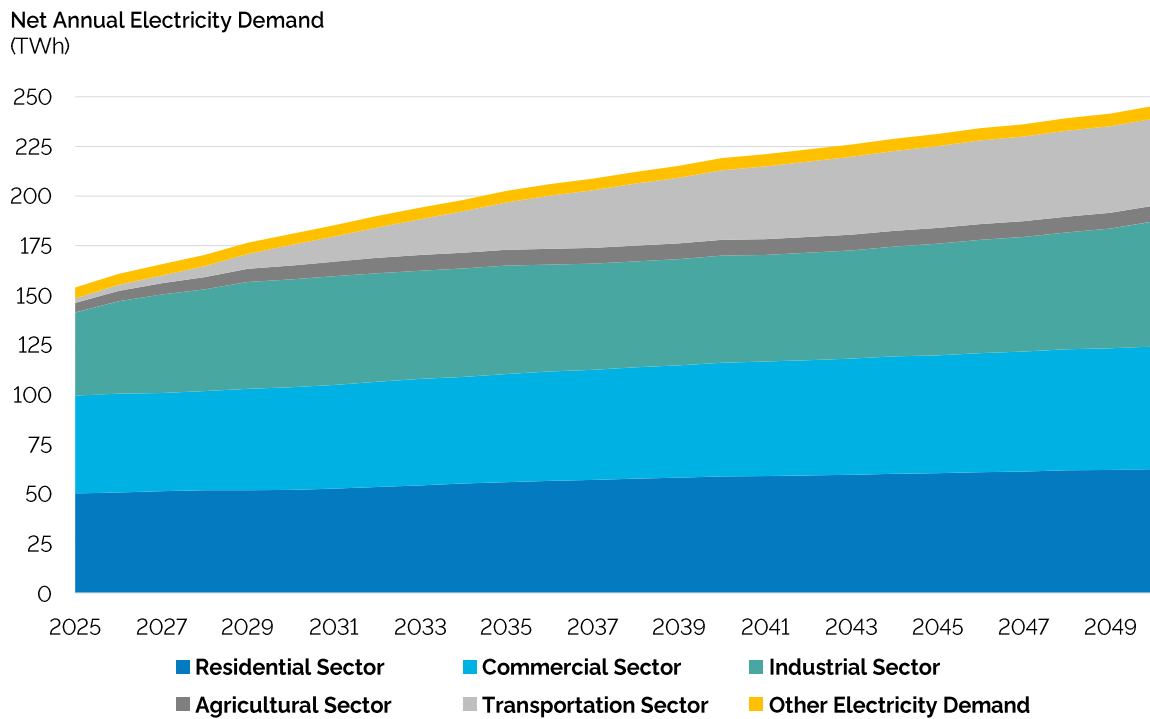
Notes: The province's shares of total capacity by generation type does not correlate to the amount of electricity generated. Ontario's baseload nuclear and hydroelectric fleets tend to run most often, while natural gas plants fulfil a reliability role providing electricity at times of peak demand when other generators cannot.
Sources: Independent Electricity System Operator's (IESO) Website, <https://www.ieso.ca/en/Corporate-IESO/Media/Year-End-Data>

Electricity Demand

As electricity generation resources and transmission can take five to fifteen years to develop, early planning is increasingly critical as electricity demand growth is forecasted to increase. Released in March 2024, the Independent Electricity System Operator’s (IESO) *2024 Annual Planning Outlook* (APO), provides a long-term view of Ontario’s electricity system, including forecasting system needs and exploring the province’s ability to meet them. The government also released its report, *Powering Ontario’s Growth: Ontario’s Plan for a Clean Energy Future* in July 2023, which includes plans for new zero-emissions electricity generation, storage and transmission lines. During the transition, natural gas-fired generation continues to provide the province with the capacity to meet electricity demand and maintain system reliability.

The IESO’s APO forecast shows electricity demand increasing by two per cent a year, on average, over the coming decades, from 154 terawatt hours (TWh) in 2025 to 245 TWh by 2050.

Chart 5.10
Annual Electricity Demand



Sources: Independent Electricity System Operator’s (IESO) 2024 Annual Planning Outlook (APO).
<https://www.ieso.ca/-/media/Files/IESO/Document-Library/planning-forecasts/apo/Mar2024/2024-Annual-Planning-Outlook.pdf>

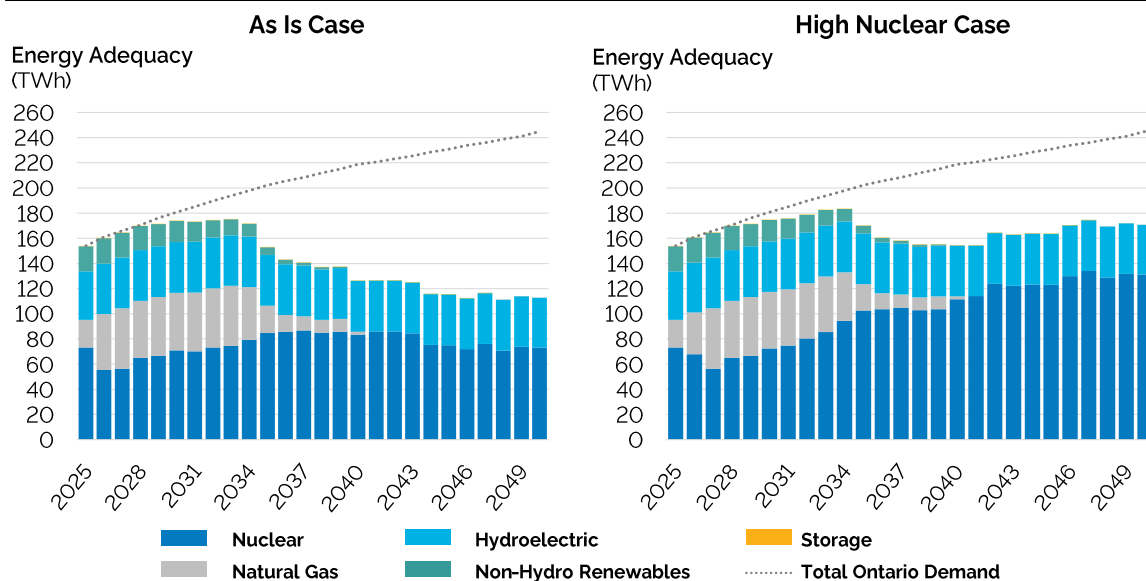
Chapter 5

The forecasted increased demand is driven primarily by projected economic and population growth,⁶⁰ mining and steel industry electrification, and growth in electric vehicle industries. This projected increase in electricity demand is a shift from the trend in recent years. Between 2009 and 2023, annual grid-level demand was lower than the demand in the early 2000s, primarily as a result of changes in the economy, conservation program savings and embedded generation, all of which reduced the need for grid-supplied energy.

The IESO recognizes that the forecasting of electricity demand is subject to various dependencies and uncertainties, which increase with the length of the outlook period. This includes economic and demographic growth, technology, energy prices, fuel choices, conservation and demand management efforts, policies, and incentives at various levels of government, and consumer preference trends, among others.

The IESO’s APO also reports that an energy gap is expected to emerge in 2029, consistent with previous outlooks. While the energy gap outlook diminishes in the long term with the return to service of refurbished nuclear units, an energy shortfall continues to be driven by increases in demand.⁶¹ The extent to which an electricity adequacy need emerges will depend on the availability of existing resources after contract expiry (see Chart 5.11).

Chart 5.11
Electricity Supply Adequacy Outlook



Sources: Independent Electricity System Operator’s (IESO) 2024 Annual Planning Outlook (APO), March 2024, <https://www.ieso.ca/-/media/Files/IESO/Document-Library/planning-forecasts/apo/Mar2024/2024-Annual-Planning-Outlook.pdf>

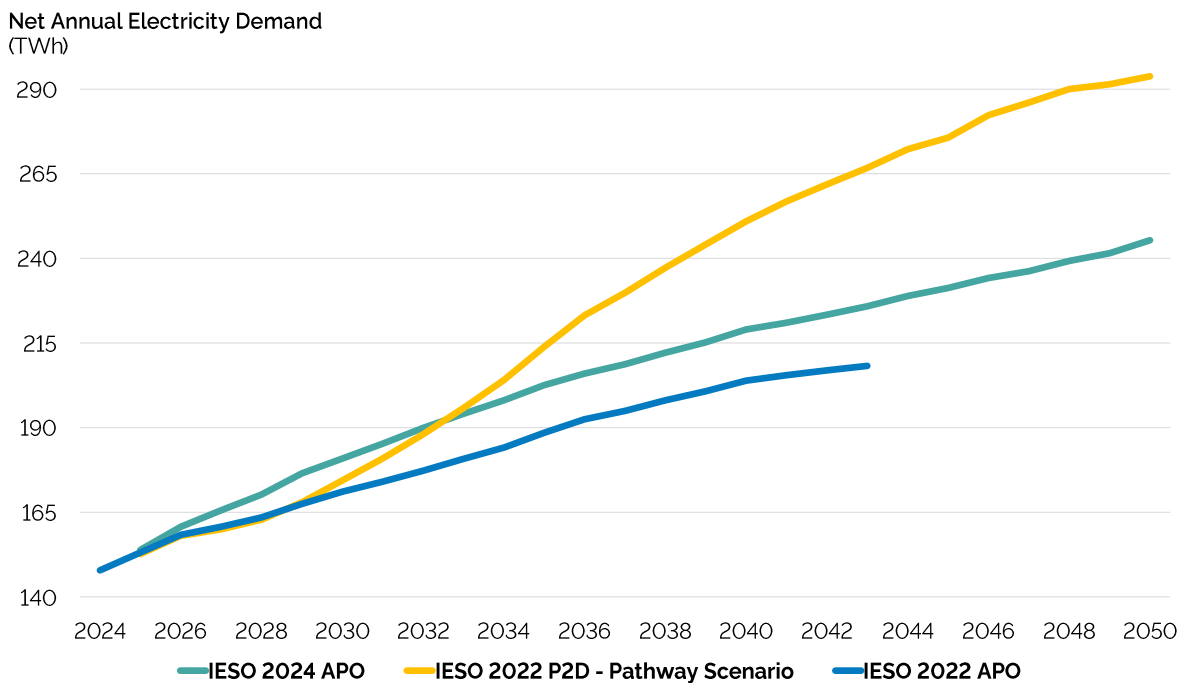
⁶⁰ The APO’s population growth assumptions are informed by bi-annual provincial and Ontario regional economic outlooks provided by Stokes Economics.

⁶¹ IESO, “IESO Annual Planning Outlook, March 2024,” <https://www.ieso.ca/en/Sector-Participants/Planning-and-Forecasting/Annual-Planning-Outlook>, p.51.

The IESO also explored a theoretical, aggressive decarbonization scenario in its *Pathways to Decarbonization* (P2D) report, released in December 2022. Compared to the APO forecast, which projects demand increasing by 60 per cent by 2050, the P2D electricity demand in the aggressive decarbonization scenario is higher and could more than double by 2050, as shown in Chart 5.12. This shows that Ontario would be required to more than double its electricity generating capacity by 2050, from 42,000 megawatts (MW) today to 88,000 MW.⁶² Up to 20,000 MW of new capacity may be needed just to replace generation that will come to the end of its life or be phased out over the next three decades. This underscores the challenges that Ontario faces in fulfilling its energy demand over the medium and long term.

Chart 5.12

Electricity Demand: IESO 2024 Annual Planning Outlook Compared to Pathways to Decarbonization



Sources: Independent Electricity System Operator's (IESO) 2024 Annual Planning Outlook (APO).
<https://www.ieso.ca/-/media/Files/IESO/Document-Library/planning-forecasts/apo/Mar2024/2024-Annual-Planning-Outlook.pdf>

⁶² IESO, "Pathways to Decarbonization, (December 15, 2022)," <https://www.ieso.ca/en/Learn/The-Evolving-Grid/Pathways-to-Decarbonization>

Meeting Projected Electricity Demand

The government continues with electricity infrastructure initiatives to help ensure the province is able to meet its long-term energy needs. In October 2022, the Minister of Energy directed the IESO to acquire 4,000 MW of new electricity generation and storage resources, including up to 1,500 MW of natural gas generation through multiple competitive procurements, which would help cover the electricity needs of this decade and support a growing population and economy while nuclear reactors are taken temporarily offline for refurbishment.⁶³

The IESO concluded two of these procurements to acquire approximately 880 MW of new electricity storage capacity and 586 MW of new capacity from expansions and upgrades at existing natural gas generation facilities. In addition, to help address longer-term requirements, Ontario is working towards expanding storage and non-emitting electricity generation capacity, including leveraging the Ontario nuclear sector, a world leader in experience and expertise. Examples of efforts to help address the forecasted shortfall and contribute to the transition to a decarbonized electricity system include:

- Procuring 2,500 MW of standalone clean energy storage. This is in addition to the 250 MW Oneida Energy Storage Project.
- Directing the IESO to begin planning for an additional round of energy procurements, including non-emitting electricity technologies. Increasing funding for energy-efficiency programs by \$342 million, bringing total funding to more than \$1 billion over the current 2021-2024 period.
- Refurbishing the Bruce and Darlington Nuclear Generating Stations, providing about 6,550 MW and 3,500 MW of capacity respectively; and supporting next steps toward the refurbishment of the four “B” units of the Pickering Nuclear Generating Station, which could provide more than 2,000 MW of capacity.
- Planning for North America’s first grid-scale Small Modular Reactor (SMR) and the development of three additional SMRs at the Darlington site, for a total of 1,200 MW, subject to regulatory approvals.
- Starting pre-development work for the first large-scale nuclear build since 1993 at the Bruce nuclear site locating up to 4,800 MW of new nuclear generation.

⁶³ IESO, “Pathways to Decarbonization, (December 15, 2022),” <https://www.ieso.ca/en/Learn/The-Evolving-Grid/Pathways-to-Decarbonization>, p. 3.

Expanding Electricity Transmission

Together with the expansion of generation capacity, the Ontario government is also working with the IESO to address existing transmission bottlenecks by identifying transmission projects that should proceed with early planning and development work. These initiatives will help ensure that Ontario's growth is supported by a reliable and sustainable energy supply.

In 2022, Ontario acted to ensure the efficient and timely development of five new electricity transmission infrastructure projects in Southwestern Ontario, to be developed in phases through 2030, representing an investment of more than \$1 billion. These transmission lines also present significant economic opportunities for Indigenous communities, through potential equity partnerships or other forms of participation.

Transmission infrastructure in the North is also being expanded, supporting community and economic development opportunities and improving reliability. This includes the East-West Tie from Wawa to Thunder Bay, which went into service in March 2022; the Wataynikaneyap Power Transmission Project connecting 16 remote First Nations communities to Ontario's electricity grid; and the Waasigan Transmission Line project between Shuniah (near Thunder Bay), to Atikokan and then to Dryden.

In addition, the IESO has recommended three new transmission lines that will support the growing electricity demand in Northeastern and Eastern Ontario. The new lines in the Northeast are critical to supplying Algoma Steel's transition to electric arc furnaces and supporting additional load connections. The new line in Eastern Ontario will help improve transmission capability in the Peterborough to Quinte West area and Ottawa area.

Continuing to Power Ontario

The government is continuing to support the build out of Ontario's clean electricity grid. With the *Powering Ontario's Growth* plan and the advice provided by the Electrification and Energy Transition Panel in its report released in January 2024, the government is moving toward an integrated energy plan for Ontario to help meet the growing demand for electricity in the province. Working in partnership with Indigenous leaders and communities, as well as ensuring meaningful opportunities for consultation and Indigenous community participation in energy planning and projects, will be key to achieving these goals.

Conclusion

This report presents an evaluation of Ontario's future demographic, economic and fiscal environment. Each of the five chapters focuses on a specific aspect of this long-term assessment.

In *Chapter 1: Demographic Trends and Projections*, demographic trends observed in the province during the past 50 years are presented, along with projected changes in Ontario's population to 2046, which are in many ways different from those anticipated in most other economically developed jurisdictions around the world.

Over the long term, Ontario's population is projected to continue growing rapidly, driven by immigrants and non-permanent residents. There will also be a further concentration of population growth in the metropolitan areas of the province, particularly the Greater Toronto Area.

The proportion of seniors in Ontario's population is projected to continue increasing, but at a slower pace than in the recent past. However, significant aging will take place within the 65+ age group over the coming decades.

The wide-ranging implications of these demographic trends for Ontario's economy and for the provision of public services were also discussed, along with alternative scenarios.

Chapter 2: Economic Trends and Projections presents a long-range outlook of Ontario's economy. The economic projection is based on the demographic outlook and the evolving global economic environment, which will impact future economic growth in the province through trade and other important external factors.



Ontario's economy is projected to grow at a slower pace over the long term when compared to its historical trend. This deceleration reflects an anticipated slowdown in labour force growth driven in part by an aging population. Immigration will continue to support increases in Ontario's working-age population over the outlook and help offset some of this slowdown. Productivity growth is projected to be slightly slower over the outlook, a challenge which can be met by further enhancing the productive capacity of the labour force through innovation, skills training and increases in investment.

Past trends in Ontario government spending and revenue are presented in **Chapter 3: Fiscal Trends and Projections**, along with the potential impacts of demographic and economic trends on the public sector and Ontario's fiscal policy.

Over the past four decades in Ontario, government spending on goods and services by all levels of government has grown faster than total population due to rising demand for public services and increasing service delivery costs. Over this timeframe, the province's finances were in a fiscal deficit situation in most years, resulting in a rising net debt-to-GDP ratio. Since the 2008-09 recession, relative debt service costs in Ontario have been moderated by historically low interest rates. Consequently, despite rising net debt as a share of GDP, the ratio of interest on debt to total revenues has continued to trend downward.



Over the long term, demand for public services will be driven by underlying demographic demand reflecting population growth and aging, enhancements to programs, and cost inflation. Demand for public services is projected to rise at a faster pace than overall economic growth, mainly due to population aging driving the demand for health care, and price pressures on government services. At the same time, slower projected economic growth is expected to result in slower growth in government revenues. A long-term prudent approach to fiscal management will ensure that governments have the resources available to provide effective public services that residents can rely on both now and in the future.

Chapter 4: Delivering Infrastructure for the Long Term explains the importance of infrastructure to grow and sustain the province's economy, the role the government plays in driving future infrastructure investments, as well as the challenges and opportunities that Ontario faces to meet its infrastructure needs in the coming decades.

The province continually faces pressures to renew and extend the useful life of its infrastructure, as public assets such as buildings, roads, and bridges physically deteriorate or require modernization. Ontario's public infrastructure also needs to expand significantly to meet the needs of Ontario's growing population and ensure its public assets can effectively support the growing economy. Factors impacting the government's delivery of infrastructure for long-term growth include considerations related to effective infrastructure planning and delivery, enhancing construction sector productivity, embracing technological change, addressing climate change, and opportunities through funding and financing infrastructure investments.



The government is continuing to explore strategies that optimize and deliver infrastructure investment. This ensures that Ontario is well-positioned to continue supporting communities, people and businesses and creating a strong foundation for long-term economic growth.

Chapter 5: Harnessing Sector Strengths to Support Growth highlights how key sectors in Ontario's economy are well positioned to contribute to long-term economic growth and help improve Ontario's productivity performance. Insights on the strengths and opportunities as well as growth challenges and risks for specific industrial sectors, including manufacturing and industries along the automotive and EV supply chain, life sciences, ICT, financial services and agri-food are also detailed.

The high degree of diversity in Ontario's economy creates opportunities for businesses within and across sectors to develop collaborative relationships that will help grow the industries of the future. The adoption of innovation and technology will also help sectors accelerate the development and commercialization of ideas to enhance long-term productivity and economic growth.

Ontario's clean electricity grid will continue to be a competitive advantage in attracting investments to the province and supporting the continued growth of the province's sectors.

The long-term perspectives presented in each of the five chapters of this report provide important context on Ontario's future demographic, economic and fiscal situation, which will inform planning towards the opportunities and challenges likely to face the province in the coming decades.



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