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Population Projections for Canada (2023 to 2073), Provinces and Territories (2023 to 2048): Technical Report on Methodology and Assumptions

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Population Projections for Canada (2023 to 2073), Provinces and Territories (2023 to 2048): Technical Report on Methodology and Assumptions

1 Introduction

This document describes the projection assumptions and the various scenarios proposed in the 2024 edition of Statistics Canada's population projections, for the period 2023-2048. Since the previous edition, published in August 2022, Canada's population has changed significantly (Statistique Canada, 2024). In 2022 and 2023, the increase in the number of non-permanent residents was the main driver of demographic growth in the country. The period total fertility rate reached the lowest level ever recorded in more than a century of data (Provencher & Galbraith, 2023), and the number of interprovincial migrants in 2023 reached a 30-year high. Finally, demographic growth has increased significantly. For example, the 3.2% increase in Canada's population from 2022 to 2023 was the highest rate since 1957, a period at the heart of the baby boom characterized by strong natural growth and, to a lesser extent, by the immigration of refugees following the Hungarian Revolution of 1956 (Statistics Canada, 2023).

This changing context increases the uncertainty associated with population projections. As a result, it is necessary to update the assumptions regularly. This is not specific to Canada. In a recent article, demographer Francesco Billari showed that the traditional belief of an inertial, slow-moving demography is increasingly obsolete and that, conversely, at a national or regional level, recent demography tends to move fast, increasingly with migratory movements that are often unpredictable (Billari, 2022). He also stresses that demography does not evolve alongside other factors such as the economy or climate change, but with them. As a result, these factors must be taken into account when developing projection assumptions.

As in the past, the projection assumptions were developed using statistical techniques that can capture past and recent trends in the provinces and territories, as well as the opinion of experts who can pinpoint the factors that could affect the course of Canadian demography in the long term. For each component of population growth, many assumptions are developed, reflecting the variability in experts' opinions regarding its future evolution. A protocol is used to translate expert opinions as probability distributions, ensuring that assumptions are developed in a probabilistic manner. The assumptions are put together to create different projection scenarios that illustrate a cluster of possible paths.[1]

These projections are the first to be published by gender. In the 2021 Census, Statistics Canada introduced a new question on gender and refined the question on sex by adding the concept of sex at birth. These changes were made following a number of amendments to Canadian legislation as well as work by Statistics Canada that led to the publication of new statistical standards on the sex at birth and gender of person in April 2018.[2] All these changes reflect Canadian society's evolution in these dimensions.

The new population projections by age and gender are modelled using the results of population projections by age and sex and by applying ratios calculated based on 2021 Census data. Lastly, the projection assumptions were completed on May 8, 2024. Any events that occurred between that date and the publication date were not considered in their development.

The results of "Population Projections for Canada (2023 to 2073), Provinces and Territories (2023 to 2048)" are available in two tables in the Common Output Data Repository: 17-10-0057-01 (population counts) and 17-10-0058-01 (components of population growth). They can also be accessed in an interactive data visualization tool (Statistics Canada catalogue no. 71-607-X-2022015).

1. See (United Nations Economic Commission for Europe, 2018) for more information on communicating the uncertainty associated with population projections.
2. Gender refers to an individual's personal and social identity as a man, woman, or non-binary person (a person who is exclusively neither male nor female). For more information, see (Statistique Canada, 2021).

2 Caveat

The population projections produced by Statistics Canada's Centre for Demography should in no way be interpreted as predictions of what the future holds. Rather, they should be understood as an exercise of what the Canadian population could look like in the coming years based on certain plausible scenarios of evolution when these projections were completed. For this reason, Statistics Canada always publishes several scenarios and formulates many explicit assumptions about the main components of population growth. Users are therefore asked to consider more than one scenario of evolution when using the projection results.

In addition, the accuracy of the projections produced depends on many different factors. Some events, such as economic crises, wars, pandemics or natural disasters, are difficult—and even impossible—to predict and may affect the growth and composition of the Canadian population. For this reason, Statistics Canada makes sure to revise its population projections regularly, so that the context in which they are developed is taken into account.

3 Assumptions and choice of scenarios

The purpose of having multiple projection scenarios is to reflect the uncertainty associated with the future. The projection scenarios are constructed by combining a number of assumptions about the future evolution of each component of population growth.

Six scenarios (M1, M2, M3, M4, M5 and M6) are designed to illustrate a medium level of increase, essentially reflecting a continuation of current trends in the short term and an evolution considered plausible in the long term. Each of these scenarios is paired with a separate interprovincial migration assumption, to reflect the volatility of this component.

The low-growth (LG) and high-growth (HG) scenarios include assumptions that are consistent with either lower or higher population growth than in the medium-growth scenarios at the Canada level. For example, assumptions that entail high fertility, low mortality, high immigration, low emigration and high numbers of non-permanent residents are the foundation of the high-growth scenario.

The fast-aging (FA) and slow-aging (SA) scenarios include assumptions that are consistent with either faster or slower population aging than in the medium-growth scenarios. For example, assumptions that entail high fertility, high mortality, high immigration, low emigration and high numbers of non-permanent residents are the foundation of the slow-aging scenario.

The 10 scenarios are intended to provide a plausible and sufficiently broad range of projected numbers to take account of the uncertainties inherent in any projection exercise. Note that in the low-growth (LG), high-growth (HG), slow-aging (SA) and fast-aging (FA) scenarios, the interprovincial migration assumption is the same as the one used in the M1 medium-growth scenario. The projection assumptions and scenarios are summarized in Tables 3.1 and 3.2.

Table 3.1
Summary of the projection scenarios

Scenario	Fertility	Mortality	Immigration	Emigration and returning emigration	Non-permanent residents	Internal migration
M1	Medium	Medium	Medium	Medium	Medium	Recent trends (2020/2021 to 2022/2023) transitioning linearly in 10 years to the average of the period 1991/1992 to 2022/2023
M2	Medium	Medium	Medium	Medium	Medium	1995/1996 to 2010/2011
M3	Medium	Medium	Medium	Medium	Medium	2003/2004 to 2008/2009
M4	Medium	Medium	Medium	Medium	Medium	2009/2010 to 2016/2017
M5	Medium	Medium	Medium	Medium	Medium	2014/2015 to 2016/2017
M6	Medium	Medium	Medium	Medium	Medium	2020/2021 to 2022/2023
LG	Low	High	Low	High	Low	Recent trends (2020/2021 to 2022/2023) transitioning linearly in 10 years to the average of the period 1991/1992 to 2022/2023
HG	High	Low	High	Low	High	Recent trends (2020/2021 to 2022/2023) transitioning linearly in 10 years to the average of the period 1991/1992 to 2022/2023
SA	High	High	High	Medium	High	Recent trends (2020/2021 to 2022/2023) transitioning linearly in 10 years to the average of the period 1991/1992 to 2022/2023
FA	Low	Low	Low	Medium	Low	Recent trends (2020/2021 to 2022/2023) transitioning linearly in 10 years to the average of the period 1991/1992 to 2022/2023

Notes: LG (low growth), HG (high growth), SA (slow aging) and FA (fast aging).
Source: Statistics Canada, Centre for Demography.

Table 3.2
Detailed summary of projection scenarios

	Scenario									
Component / Temporal horizon	Low growth	Medium growth						High growth	Slow aging	Fast aging
	LG	M1	M2	M3	M4	M5	M6	HG	SA	FA
Fertility (period total fertility rate (number of children per woman))										
2027/2028	1.13	1.24	1.24	1.24	1.24	1.24	1.24	1.36	1.36	1.13
2047/2048	1.15	1.37	1.37	1.37	1.37	1.37	1.37	1.61	1.61	1.15
2072/2073	1.15	1.37	1.37	1.37	1.37	1.37	1.37	1.61	1.61	1.15
Immigration (rate per thousand)										
2027/2028	10.3	11.9	11.9	11.9	11.9	11.9	11.9	13.8	13.8	10.3
2047/2048	7.0	9.3	9.3	9.3	9.3	9.3	9.3	12.0	12.0	7.0
2072/2073	7.0	9.3	9.3	9.3	9.3	9.3	9.3	12.0	12.0	7.0
Life expectancy at birth, males (in years)										
2027/2028	80.3	80.6	80.6	80.6	80.6	80.6	80.6	80.9	80.3	80.9
2047/2048	83.6	84.3	84.3	84.3	84.3	84.3	84.3	85.0	83.6	85.0
2072/2073	86.5	87.3	87.3	87.3	87.3	87.3	87.3	88.1	86.5	88.1
Life expectancy at birth, females (in years)										
2027/2028	84.5	84.8	84.8	84.8	84.8	84.8	84.8	85.0	84.5	85.0
2047/2048	87.1	87.8	87.8	87.8	87.8	87.8	87.8	88.4	87.1	88.4
2072/2073	89.6	90.3	90.3	90.3	90.3	90.3	90.3	91.0	89.6	91.0
Proportion of non-permanent residents (%)										
2028	4.1	5.0	5.0	5.0	5.0	5.0	5.0	6.1	6.1	4.1
2048	3.1	4.7	4.7	4.7	4.7	4.7	4.7	6.5	6.5	3.1
2073	3.1	4.7	4.7	4.7	4.7	4.7	4.7	6.5	6.5	3.1
Emigration (gross migraproduction rate per thousand)										
2027/2028	2.4	2.0	2.0	2.0	2.0	2.0	2.0	1.7	2.0	2.0
2047/2048	3.0	2.2	2.2	2.2	2.2	2.2	2.2	1.6	2.2	2.2
2072/2073	3.0	2.2	2.2	2.2	2.2	2.2	2.2	1.6	2.2	2.2
Return emigration (gross migraproduction rate per thousand)										
2027/2028	1.7	1.4	1.4	1.4	1.4	1.4	1.4	1.2	1.4	1.4
2047/2048	1.8	1.4	1.4	1.4	1.4	1.4	1.4	1.0	1.4	1.4
2072/2073	1.8	1.4	1.4	1.4	1.4	1.4	1.4	1.0	1.4	1.4
Interprovincial migration										
Reference period	Recent trends (2020/2021 to 2022/2023) transitioning linearly in 10 years to the average of the period 1991/1992 to 2022/2023	Recent trends (2020/2021 to 2022/2023) transitioning linearly in 10 years to the average of the period 1991/1992 to 2022/2023	1995/1996 to 2010/2011	2003/2004 to 2008/2009	2009/2010 to 2016/2017	2014/2015 to 2016/2017	2020/2021 to 2022/2023	Recent trends (2020/2021 to 2022/2023) transitioning linearly in 10 years to the average of the period 1991/1992 to 2022/2023	Recent trends (2020/2021 to 2022/2023) transitioning linearly in 10 years to the average of the period 1991/1992 to 2022/2023	Recent trends (2020/2021 to 2022/2023) transitioning linearly in 10 years to the average of the period 1991/1992 to 2022/2023

Note: The medium growth scenarios M2, M3, M4, M5 and M6 were created in order to reflect distinct interprovincial migration assumptions in comparison with the medium growth scenario M1. For more details, see the section on internal migration.
Source: Statistics Canada, Centre for Demography.

4 Projection of fertility

4.1 Background

In Canada, the period total fertility rate[3] (PTFR) decreased annually by 0.02 children per woman on average (-1.3%) from 2009 to 2019 (Provencher & Galbraith, 2023). There was significant volatility in 2020 and 2022, due in part to the COVID-19 pandemic. As a result, the PTFR decreased by 0.06 children per woman from 2019 to 2020, rebounded slightly to 0.03 children per woman in 2021, then decreased by 0.11 children per woman in 2022, the largest drop since 1971/1972. With a PTFR of 1.33 in 2022, the lowest level ever recorded in over a century of data, Canada is now getting closer to the countries with the lowest fertility rates in the world. In Quebec, available data for the year 2023 show that the PTFR decreased over the last year, from 1.48 to 1.38 (Institut de la Statistique du Québec, 2024a). Sargent (2024) assesses trends in the PTFR in the light of other phenomena such as the rise in the age of marriage or common-law. Finally, women's age at childbirth has been rising steadily since 1977: from 1977 to 2022, it increased by 4.8 years to reach 31.6 years, representing an average increase of 0.1 years per year (Provencher & Galbraith, 2023).

4.2 Projection assumptions

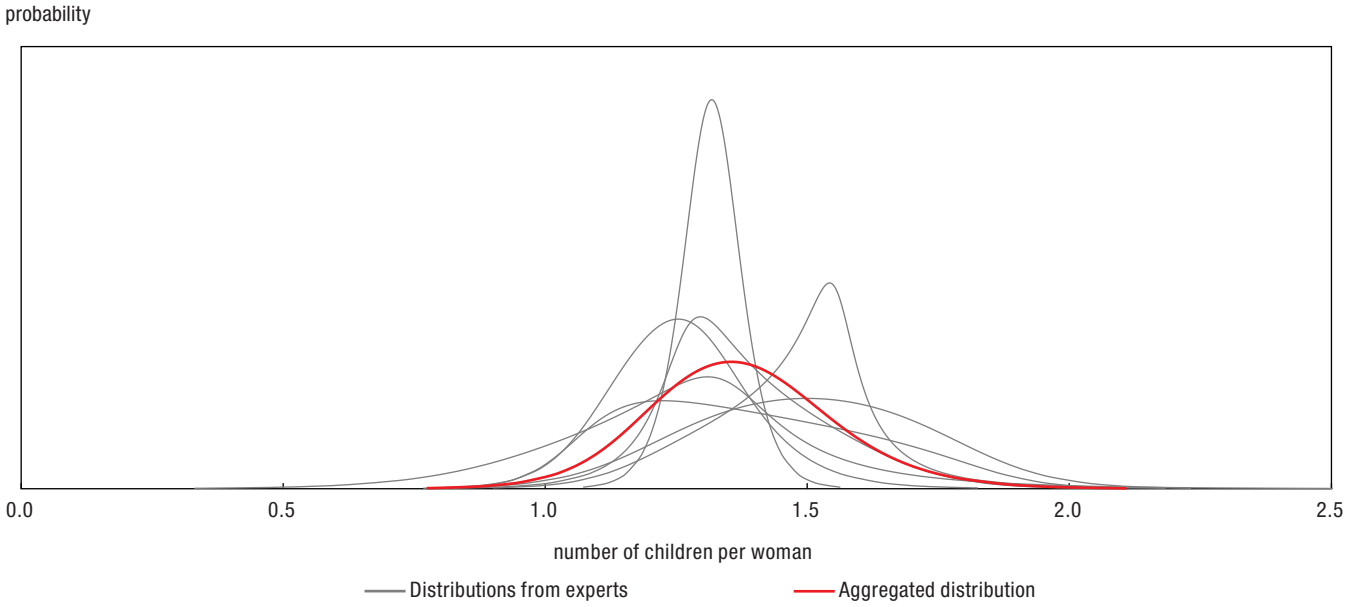
Three different assumptions are proposed: medium, low and high. The medium assumption was developed to reflect current trends in the country and in each province and territory that are likely to persist, especially in the short term, and various factors that may affect the evolution of fertility in the medium and long terms.

Technically, this objective is attained using time series models and a process for seeking expert opinions. More specifically, PTFR targets for year 2028 at the national, provincial and territorial levels are first calculated using double exponential smoothing models with damped trend (Holt model) based on historical data from 1998 to 2022. A damping parameter ensure that trends are mitigated over time.[4] The choice of this model is based on whether a downward trend in the PTFR was observed in recent years, but that over a longer period, the variations often gave rise to a regression toward the average. Another feature of this model is that the weight given to the observations decreases geometrically over time, ensuring that more importance is given to recent observations.

The long-term targets (2048) were first established at the national level by collecting and combining opinions from a group of experts consisting of people from Statistics Canada's Centre for Demography who have some expertise in the study of fertility. One of the advantages of expert opinions is that they consider future potential developments that could differ from past trends. A formal protocol was used to obtain a probability distribution that represents the opinions of all the experts, using a method similar to the one proposed by Dion, Galbraith and Sirag (2020). A target of 1.37 children per woman was set for the medium assumption based on the median of this distribution. In the provinces and territories, targets are set so that the projected change in the PTFR from 2028 to 2048 remains the same as at the national level (in percentage terms). The projected PTFR trajectories are produced using (cubic) interpolations and adjusted to the PTFRs observed in 2022, to the 2028 targets set using time series models, and to the 2048 targets set during the expert opinion-seeking process (Chart 4.2.1).

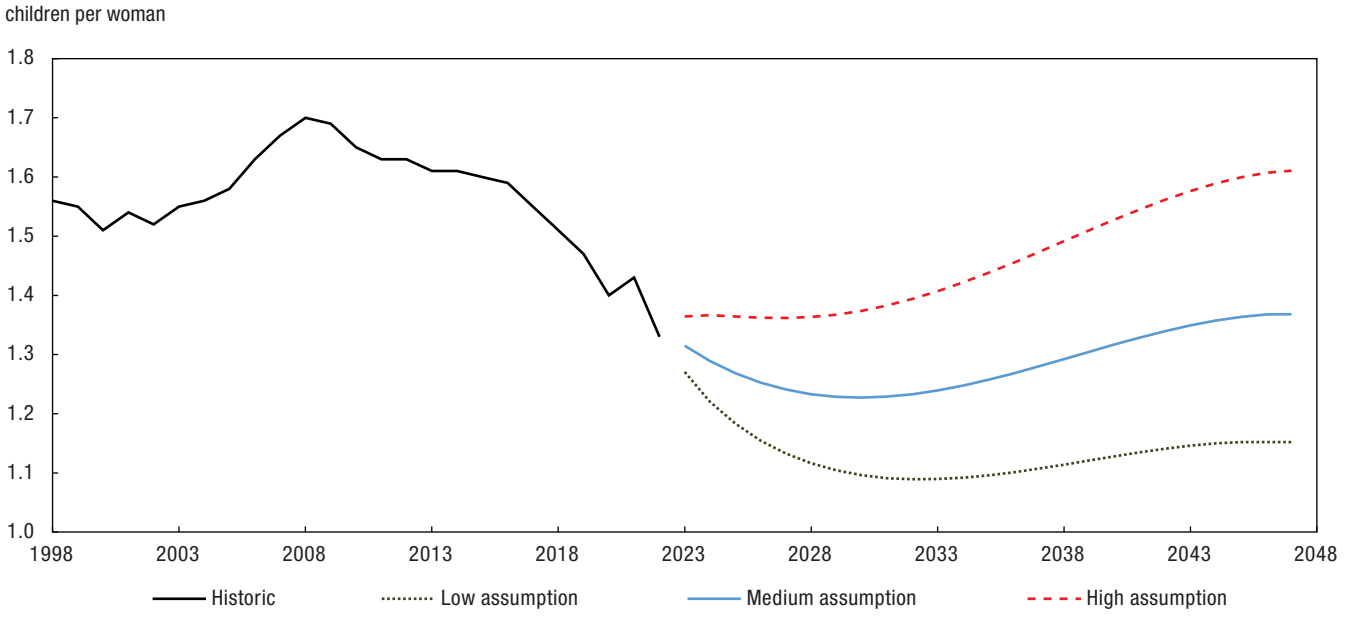
3. The period total fertility rate (PTFR) refers to the number of children that a woman would have over the course of her reproductive life if she experienced the age-specific fertility rates observed in a particular calendar year.
4. The damper can vary from one region to another but is set to be located between 0.80 and 0.95 to ensure that trends are mitigated even in regions where they are notable.

Chart 4.2.1
Probability distribution of plausible values for Canada's period total fertility rate in 2048 produced by each expert, and aggregated probability distribution representing all experts



Source: Statistics Canada, Centre for Demography.

Chart 4.2.2
Period total fertility rate, Canada, historic (1998 to 2022) and projected (2023 to 2047) according to the low, medium and high fertility assumptions



Sources: Statistics Canada, Canadian Vital Statistics - Birth database (CVSB) and Annual Demographic Estimates, Centre for Demography.

The expert opinions also contributed to expressing the uncertainty associated with the fertility projection consistently and intelligibly. Targets for the year 2048 were set for the low and high assumptions based on the 10th and 90th percentiles of the aggregated probability distribution representing the expert opinions (1.15 and 1.61 children per woman, respectively).

Among the factors that could reduce fertility in the future, the experts mentioned rising living costs, housing affordability problems, a lack of confidence in the future—fuelled in particular by global warming, the continuation of certain trends such as the increasing participation of women in the labour market and the lengthening of studies, as well as the desire to rely on immigration to mitigate the impact of an ageing population, potentially at the expense of policies focused on supporting families. Conversely, other factors could promote an increase in fertility, such as favourable economic cycles, the creation of a national daycare program, a return to more traditional or different values among young generations, or new policies promoting work–life balance, such as flexible work conditions or workplace policies.

At the provincial and territorial levels, projected PTFRs for 2028 for the medium assumption were produced as described earlier for Canada. Meanwhile, the long-term targets were established by assuming the same progression from 2028 to 2048 as that projected at the national level. The 2048 targets are therefore based on short-term trends observed in each province and territory and on the experts' vision of how PTFRs will change in the future in Canada. The projected values are then calibrated to reproduce the projected PTFR at the national level (Table 4.2.1). Fertility rates by age are calculated by taking into account recent trends that show an increase in the age at which women give birth.

Table 4.2.1
Period total fertility rate, Canada, provinces and territories, historic (2022) and projected (2028 and 2048) according to the low, medium and high fertility assumptions

		Projected (2028)			Projected (2048)		
	Historic (2022)	Low	Medium	High	Low	Medium	High
Region	children per woman						
Canada[1]	1.33	1.13	1.24	1.36	1.15	1.37	1.61
Newfoundland and Labrador	1.23	1.13	1.24	1.36	1.15	1.37	1.61
Prince Edward Island	1.25	1.11	1.22	1.34	1.13	1.35	1.59
Nova Scotia	1.21	1.02	1.12	1.23	1.04	1.23	1.45
New Brunswick	1.34	1.17	1.28	1.41	1.19	1.41	1.66
Quebec	1.48	1.27	1.39	1.53	1.29	1.53	1.81
Ontario	1.28	1.07	1.17	1.29	1.09	1.29	1.52
Manitoba	1.46	1.14	1.25	1.37	1.16	1.38	1.62
Saskatchewan	1.72	1.54	1.69	1.85	1.57	1.86	2.19
Alberta	1.46	1.27	1.39	1.52	1.29	1.53	1.80
British Columbia	1.08	0.89	0.98	1.07	0.91	1.08	1.27
Yukon[2]	1.39	1.22	1.34	1.47	1.24	1.48	1.74
Northwest Territories	1.48	1.29	1.41	1.55	1.31	1.56	1.84
Nunavut	2.22	2.41	2.64	2.89	2.46	2.92	3.43

1. The calculation for Canada in 2022 excludes Yukon.
2. Data on births by age of mother that occurred in Yukon and the births by age of mother of residents of Yukon in another province or another territory are not available after 2016. Therefore, the period total fertility rate for Yukon is calculated using the average of births by age of mother observed between 2012 to 2016.
Note: The 2022 data are considered preliminary.
Sources: Statistics Canada, Canadian Vital Statistics - Birth database (CVSB) and Annual Demographic Estimates, Centre for Demography.

5 Projection of mortality

5.1 Background

In Canada, life expectancy decreased for three consecutive years (from 2019 to 2022) (Statistique Canada, 2023). The causes of this decrease include deaths from COVID-19 and an increase in the number of deaths from unintentional injuries, including toxicity deaths. In Canada, life expectancy at birth fell for a third consecutive year in 2022, reaching 81.3 years for men and women combined (Statistics Canada, 2023). Among the causes of this decrease are deaths attributable to COVID-19 and an increase in deaths from unintentional injuries, including substance-related toxicity. Although there are still deaths caused by COVID-19 in Canada in 2024, most national activity indicators are at low levels (Government of Canada, 2024a). However, the most recent data show an increase in the number of deaths linked to opioid intoxication from January to September 2023 compared with the same period in 2022 (Government of Canada, 2024b). During this period, most (88%) of these deaths occurred in British Columbia, Alberta and Ontario, among men (72%) and people aged 20 to 59 (88%).

Preliminary data for the year 2023 show an increase in life expectancy compared to 2022 in some places. In Quebec, life expectancy rose by 0.3 years to 82.5 years, but remains below the value recorded in 2019 (82.8 years) (Institut de la Statistique du Québec, 2024b). Elsewhere in the world, life expectancy at birth for all European Union member countries reached 81.5 years in 2023, representing increases of 0.9 years in comparison with 2022, and 0.2 years compared with 2019 (Eurostat, 2024). Many of these European countries are less affected by the opioid crisis than North America.

5.2 Projection assumptions

Projections of mortality rates by age and sex were carried out in the previous edition of population projections for the provinces and territories, using a probabilistic model to extrapolate past trends. The model used is a variant of the Lee-Carter model (Lee & Carter, 1992), developed by Li and Lee (2005) to produce consistent projections between various population groups, in this case between the two sexes and between the provinces and territories. The method is described in detail in the technical report of the previous projections (Statistics Canada, 2022). That edition of the projections included an adjustment to account for the potential impacts of COVID-19 in the future. However, in the years since this edition was published, life expectancy in Canada has seen three uninterrupted years of decline. For this reason, the projected rates of the medium assumption for the first ten years have been recalculated using an interpolation between the rates observed in 2022 (the most recent year available) and the projected rates in 2032. From 2033 to 2073, the projected rates are the same as those assumed in the 2022 edition of the projections. The mortality rates for the low and high assumptions have been calculated in such a way as to keep the percentage differences with the average assumption rates identical to those of the previous edition. Tables 5.2.1, 5.2.2 and 5.2.3 show projected life expectancies at birth for each mortality assumption.

Table 5.2.1
Life expectancy at birth, by sex, Canada, provinces and territories, historic (1987 to 2022) and projected (2022/2023 to 2072/2073) according to the medium mortality assumption

Sex / Region	1987	1992	1997	2002	2007	2012	2017	2022	2022/ 2023	2027/ 2028	2032/ 2033	2037 /2038	2042/ 2043	2047/ 2048	2052/ 2053	2057/ 2058	2062/ 2063	2067/ 2068	2072/ 2073
	in years																		
Males																			
Canada	73.5	74.8	75.7	77.2	78.3	79.6	79.8	79.1	79.3	80.6	82.0	82.9	83.6	84.3	84.9	85.6	86.2	86.8	87.3
N.L.	72.8	74.4	74.4	75.6	76.2	76.9	77.9	77.0	77.1	78.6	80.3	81.3	82.0	82.7	83.4	84.1	84.7	85.4	86.0
P.E.I.	72.7	73.1	74.5	75.3	77.5	78.5	79.8	79.4	79.5	80.3	81.0	81.8	82.4	83.1	83.7	84.4	85.0	85.6	86.2
N.S.	72.8	73.8	75.1	76.5	77.3	78.5	78.2	77.5	77.6	79.0	80.5	81.4	82.1	82.8	83.5	84.2	84.8	85.4	86.0
N.B.	73.0	74.2	75.3	76.6	77.3	78.6	78.7	77.8	77.9	79.2	80.6	81.5	82.2	82.9	83.6	84.2	84.9	85.5	86.0
Que.	72.3	74.1	74.7	76.6	78.3	79.6	80.6	80.8	80.9	81.7	82.7	83.4	84.0	84.6	85.2	85.8	86.3	86.8	87.3
Ont.	74.1	75.1	76.2	77.7	78.7	80.1	80.2	79.6	79.7	80.9	82.2	83.0	83.7	84.3	85.0	85.6	86.1	86.7	87.2
Man.	73.6	74.6	75.6	76.2	76.7	78.0	77.7	76.7	76.9	78.6	80.5	81.5	82.3	83.1	83.8	84.4	85.1	85.7	86.3
Sask.	74.4	75.9	75.8	76.4	77.3	77.9	77.9	76.1	76.3	78.3	80.5	81.6	82.4	83.2	83.9	84.6	85.3	85.9	86.4
Alta.	74.1	75.3	76.4	77.3	78.2	79.1	79.1	77.9	78.1	79.7	81.5	82.4	83.1	83.8	84.5	85.1	85.7	86.3	86.8
B.C.	74.6	75.4	76.5	78.2	79.0	80.5	79.6	78.8	78.9	80.4	82.1	83.0	83.7	84.3	85.0	85.6	86.1	86.7	87.2
Y.T.	69.4	73.6	72.0	73.8	74.4	76.0	..	..	75.3	77.2	79.4	80.5	81.3	82.1	82.8	83.5	84.1	84.7	85.3
N.W.T.	70.2	69.9	71.9	73.4	74.7	75.5	75.2	73.2	73.3	75.3	77.5	78.5	79.4	80.1	80.9	81.6	82.3	83.0	83.6
Nvt.	..	..	..	67.0	68.8	69.4	70.3	68.9	69.0	70.8	73.1	74.4	75.4	76.4	77.4	78.4	79.3	80.2	81.1
Females																			
Canada	80.2	81.1	81.3	82.0	82.9	83.3	84.0	83.6	83.7	84.8	85.9	86.6	87.2	87.8	88.4	88.9	89.4	89.9	90.3
N.L.	79.6	79.4	79.6	80.8	80.7	82.0	81.8	80.6	80.7	82.4	84.2	85.1	85.8	86.4	87.0	87.6	88.1	88.6	89.1
P.E.I.	80.3	80.7	81.4	81.6	82.6	83.1	83.7	83.8	83.9	84.6	85.3	85.9	86.5	87.1	87.6	88.2	88.7	89.1	89.6
N.S.	79.8	80.3	80.3	81.4	81.9	82.5	82.4	82.0	82.1	83.3	84.7	85.4	86.0	86.6	87.2	87.7	88.2	88.7	89.2
N.B.	80.3	81.0	81.2	81.9	82.5	83.2	82.9	81.8	81.9	83.3	84.8	85.6	86.2	86.8	87.3	87.9	88.3	88.8	89.2
Que.	79.8	81.1	81.0	82.0	83.0	83.7	84.3	84.2	84.2	85.0	85.9	86.6	87.1	87.6	88.1	88.5	89.0	89.4	89.8
Ont.	80.2	81.1	81.5	82.2	83.2	84.2	84.4	84.1	84.1	85.1	86.0	86.7	87.2	87.7	88.2	88.7	89.1	89.5	89.9
Man.	80.0	81.1	80.5	81.0	81.7	82.2	82.1	81.7	81.8	83.0	84.3	85.1	85.8	86.4	87.0	87.6	88.1	88.5	89.0
Sask.	80.9	82.0	81.4	81.9	81.9	82.7	82.8	81.0	81.2	82.8	84.5	85.3	86.0	86.6	87.1	87.6	88.1	88.5	88.9
Alta.	80.6	81.1	81.3	81.9	82.7	83.5	83.7	82.6	82.7	84.0	85.4	86.1	86.6	87.2	87.7	88.1	88.5	89.0	89.3
B.C.	81.0	81.7	82.0	82.8	83.5	84.6	84.6	84.3	84.3	85.2	86.2	86.8	87.3	87.8	88.2	88.6	89.0	89.4	89.7
Y.T.	77.4	75.9	78.5	78.6	79.5	81.4	..	..	81.1	82.3	83.6	84.4	85.0	85.7	86.2	86.7	87.2	87.7	88.1
N.W.T.	77.0	75.9	76.3	78.6	80.5	80.1	79.2	77.6	77.7	79.3	80.8	81.6	82.3	83.0	83.6	84.2	84.9	85.4	85.9
Nvt.	..	..	..	71.1	75.4	74.4	73.2	74.4	74.4	75.2	76.0	77.2	78.2	79.2	80.1	81.0	81.8	82.6	83.4

.. not available for a specific reference period

Notes: Historical values of life expectancy in Prince Edward Island, Yukon, Northwest Territories and Nunavut are based on three-year reference period. In these regions, each stated year refers to the last of the three-year period. Data for the Yukon are not available from 2017. The calculation for Canada for years 2017 to 2022 excludes the Yukon.

Sources: Statistics Canada. 2023. *Life Tables, Canada, Provinces and Territories*. Catalogue number 84-537 and Centre for Demography.

Table 5.2.2
Life expectancy at birth, by sex, Canada, provinces and territories, historic (1987 to 2022) and projected (2022/2023 to 2072/2073) according to the low mortality assumption

Sex / Region	1987	1992	1997	2002	2007	2012	2017	2022	2022/ 2023	2027/ 2028	2032/ 2033	2037/ 2038	2042/ 2043	2047/ 2048	2052/ 2053	2057/ 2058	2062/ 2063	2067/ 2068	2072/ 2073
	in years																		
Males																			
Canada	73.5	74.8	75.7	77.2	78.3	79.6	79.8	79.1	79.3	80.9	82.6	83.5	84.3	85.0	85.6	86.3	86.9	87.5	88.1
N.L.	72.8	74.4	74.4	75.6	76.2	76.9	77.9	77.0	78.1	79.8	81.6	82.5	83.2	84.0	84.7	85.3	86.0	86.6	87.1
P.E.I.	72.7	73.1	74.5	75.3	77.5	78.5	79.8	79.4	80.2	81.1	82.0	82.7	83.4	84.1	84.7	85.3	85.9	86.5	87.0
N.S.	72.8	73.8	75.1	76.5	77.3	78.5	78.2	77.5	78.0	79.6	81.2	82.0	82.8	83.6	84.3	84.9	85.6	86.2	86.8
N.B.	73.0	74.2	75.3	76.6	77.3	78.6	78.7	77.8	78.4	79.8	81.3	82.2	83.0	83.7	84.4	85.1	85.7	86.3	86.9
Que.	72.3	74.1	74.7	76.6	78.3	79.6	80.6	80.8	81.6	82.7	83.7	84.6	85.3	85.9	86.5	87.1	87.7	88.3	88.8
Ont.	74.1	75.1	76.2	77.7	78.7	80.1	80.2	79.6	80.3	81.6	83.1	83.9	84.7	85.4	86.0	86.7	87.3	87.8	88.4
Man.	73.6	74.6	75.6	76.2	76.7	78.0	77.7	76.7	78.1	80.0	81.9	82.8	83.7	84.5	85.2	85.7	86.4	87.0	87.5
Sask.	74.4	75.9	75.8	76.4	77.3	77.9	77.9	76.1	77.7	79.8	82.2	83.3	84.1	84.9	85.6	86.3	86.9	87.4	88.0
Alta.	74.1	75.3	76.4	77.3	78.2	79.1	79.1	77.9	78.8	80.4	82.3	83.2	84.0	84.8	85.5	86.1	86.8	87.3	87.9
B.C.	74.6	75.4	76.5	78.2	79.0	80.5	79.6	78.8	79.5	81.1	82.9	83.8	84.5	85.3	85.9	86.6	87.2	87.9	88.4
Y.T.	69.4	73.6	72.0	73.8	74.4	76.0	..	..	76.6	78.4	80.8	81.9	82.8	83.6	84.5	85.2	86.0	86.7	87.3
N.W.T.	70.2	69.9	71.9	73.4	74.7	75.5	75.2	73.2	75.2	76.9	79.0	80.0	80.7	81.5	82.3	83.0	83.6	84.3	84.9
Nvt.	..	..	..	67.0	68.8	69.4	70.3	68.9	70.8	73.0	75.2	76.3	77.2	78.3	79.4	80.2	81.2	82.0	82.8
Females																			
Canada	80.2	81.1	81.3	82.0	82.9	83.3	84.0	83.6	83.7	85.0	86.4	87.2	87.9	88.4	89.0	89.5	90.0	90.5	91.0
N.L.	79.6	79.4	79.6	80.8	80.7	82.0	81.8	80.6	81.9	83.7	85.6	86.5	87.2	87.9	88.4	89.0	89.6	90.1	90.5
P.E.I.	80.3	80.7	81.4	81.6	82.6	83.1	83.7	83.8	84.3	85.2	86.0	86.6	87.3	87.9	88.5	89.0	89.5	90.0	90.4
N.S.	79.8	80.3	80.3	81.4	81.9	82.5	82.4	82.0	82.8	84.3	85.6	86.5	87.2	87.8	88.3	88.9	89.4	89.9	90.4
N.B.	80.3	81.0	81.2	81.9	82.5	83.2	82.9	81.8	82.7	84.2	85.7	86.6	87.2	87.7	88.3	88.9	89.4	89.9	90.4
Que.	79.8	81.1	81.0	82.0	83.0	83.7	84.3	84.2	84.7	85.7	86.7	87.4	88.0	88.6	89.1	89.6	90.1	90.6	91.0
Ont.	80.2	81.1	81.5	82.2	83.2	84.2	84.4	84.1	84.7	85.7	86.9	87.6	88.2	88.7	89.3	89.8	90.3	90.7	91.2
Man.	80.0	81.1	80.5	81.0	81.7	82.2	82.1	81.7	82.9	84.4	85.9	86.8	87.6	88.2	88.9	89.4	90.0	90.6	91.0
Sask.	80.9	82.0	81.4	81.9	81.9	82.7	82.8	81.0	82.3	84.2	86.2	87.2	88.1	88.7	89.4	90.0	90.5	91.0	91.5
Alta.	80.6	81.1	81.3	81.9	82.7	83.5	83.7	82.6	83.5	84.8	86.2	87.0	87.7	88.2	88.8	89.4	89.9	90.3	90.8
B.C.	81.0	81.7	82.0	82.8	83.5	84.6	84.6	84.3	84.9	85.9	87.0	87.8	88.4	88.9	89.4	90.0	90.4	90.9	91.3
Y.T.	77.4	75.9	78.5	78.6	79.5	81.4	..	..	81.9	83.1	84.7	85.6	86.4	87.2	87.8	88.6	89.2	89.8	90.3
N.W.T.	77.0	75.9	76.3	78.6	80.5	80.1	79.2	77.6	79.4	80.5	82.0	82.7	83.4	84.1	84.7	85.3	85.9	86.4	87.0
Nvt.	..	..	..	71.1	75.4	74.4	73.2	74.4	76.3	77.7	78.6	79.8	81.2	82.3	83.4	84.3	85.1	86.0	86.6

.. not available for a specific reference period

Notes: Historical values of life expectancy in Prince Edward Island, Yukon, Northwest Territories and Nunavut are based on three-year reference period. In these regions, each stated year refers to the last of the three-year period. Data for the Yukon are not available from 2017. The calculation for Canada for years 2017 to 2022 excludes the Yukon.

Sources: Statistics Canada. 2023. *Life Tables, Canada, Provinces and Territories*. Catalogue number 84-537 and Centre for Demography.

Table 5.2.3
Life expectancy at birth, by sex, Canada, provinces and territories, historic (1987 to 2022) and projected (2022/2023 to 2072/2073) according to the high mortality assumption

Sex / Region	1987	1992	1997	2002	2007	2012	2017	2022	2022/2023	2027/2028	2032/2033	2037/2038	2042/2043	2047/2048	2052/2053	2057/2058	2062/2063	2067/2068	2072/2073
	in years																		
Males																			
Canada	73.5	74.8	75.7	77.2	78.3	79.6	79.8	79.1	79.2	80.3	81.5	82.2	82.9	83.6	84.2	84.8	85.4	86.0	86.5
N.L.	72.8	74.4	74.4	75.6	76.2	76.9	77.9	77.0	76.0	77.3	79.0	79.8	80.6	81.3	82.0	82.7	83.4	84.0	84.6
P.E.I.	72.7	73.1	74.5	75.3	77.5	78.5	79.8	79.4	78.7	79.0	79.8	80.5	81.2	81.9	82.6	83.3	84.0	84.6	85.2
N.S.	72.8	73.8	75.1	76.5	77.3	78.5	78.2	77.5	77.2	78.4	79.8	80.6	81.3	82.0	82.7	83.3	83.9	84.5	85.0
N.B.	73.0	74.2	75.3	76.6	77.3	78.6	78.7	77.8	77.4	78.6	80.0	80.7	81.5	82.2	82.8	83.4	84.0	84.6	85.2
Que.	72.3	74.1	74.7	76.6	78.3	79.6	80.6	80.8	80.3	80.8	81.6	82.2	82.7	83.3	83.9	84.4	85.0	85.6	86.0
Ont.	74.1	75.1	76.2	77.7	78.7	80.1	80.2	79.6	79.2	80.2	81.4	82.1	82.7	83.4	84.0	84.5	85.1	85.7	86.2
Man.	73.6	74.6	75.6	76.2	76.7	78.0	77.7	76.7	75.8	77.3	79.0	80.1	80.8	81.6	82.3	83.2	83.9	84.5	85.0
Sask.	74.4	75.9	75.8	76.4	77.3	77.9	77.9	76.1	75.1	76.6	78.9	79.7	80.7	81.6	82.3	83.1	83.8	84.5	85.2
Alta.	74.1	75.3	76.4	77.3	78.2	79.1	79.1	77.9	77.5	79.0	80.7	81.6	82.3	83.0	83.7	84.3	84.9	85.5	86.1
B.C.	74.6	75.4	76.5	78.2	79.0	80.5	79.6	78.8	78.4	79.8	81.5	82.3	83.0	83.7	84.3	85.0	85.6	86.1	86.7
Y.T.	69.4	73.6	72.0	73.8	74.4	76.0	..	..	73.8	75.9	78.2	79.4	80.1	80.8	81.7	82.5	83.2	83.9	84.6
N.W.T.	70.2	69.9	71.9	73.4	74.7	75.5	75.2	73.2	71.5	73.5	75.8	76.9	77.7	78.6	79.2	80.0	80.8	81.5	82.1
Nvt.	..	..	..	67.0	68.8	69.4	70.3	68.9	66.8	68.5	70.8	72.0	73.0	74.2	75.3	76.2	77.3	78.3	79.1
Females																			
Canada	80.2	81.1	81.3	82.0	82.9	83.3	84.0	83.6	83.7	84.5	85.4	86.0	86.6	87.1	87.7	88.2	88.7	89.2	89.6
N.L.	79.6	79.4	79.6	80.8	80.7	82.0	81.8	80.6	79.6	81.0	82.9	83.7	84.3	85.0	85.7	86.2	86.8	87.3	87.9
P.E.I.	80.3	80.7	81.4	81.6	82.6	83.1	83.7	83.8	83.4	83.9	84.6	85.1	85.7	86.3	86.8	87.4	87.8	88.3	88.8
N.S.	79.8	80.3	80.3	81.4	81.9	82.5	82.4	82.0	81.4	82.5	83.7	84.5	85.2	85.8	86.3	86.9	87.4	87.9	88.4
N.B.	80.3	81.0	81.2	81.9	82.5	83.2	82.9	81.8	81.3	82.5	84.1	84.9	85.4	86.0	86.6	87.1	87.7	88.2	88.7
Que.	79.8	81.1	81.0	82.0	83.0	83.7	84.3	84.2	84.0	84.7	85.5	86.1	86.7	87.2	87.7	88.2	88.7	89.1	89.6
Ont.	80.2	81.1	81.5	82.2	83.2	84.2	84.4	84.1	83.8	84.6	85.6	86.1	86.6	87.2	87.7	88.1	88.6	89.1	89.6
Man.	80.0	81.1	80.5	81.0	81.7	82.2	82.1	81.7	80.9	81.8	83.1	83.8	84.4	85.3	85.9	86.5	87.1	87.6	88.2
Sask.	80.9	82.0	81.4	81.9	81.9	82.7	82.8	81.0	80.3	81.5	83.4	84.1	84.8	85.4	86.0	86.7	87.3	88.0	88.5
Alta.	80.6	81.1	81.3	81.9	82.7	83.5	83.7	82.6	82.3	83.6	85.0	85.6	86.2	86.8	87.3	87.8	88.3	88.8	89.2
B.C.	81.0	81.7	82.0	82.8	83.5	84.6	84.6	84.3	84.1	84.9	86.0	86.6	87.1	87.6	88.1	88.6	89.1	89.5	90.0
Y.T.	77.4	75.9	78.5	78.6	79.5	81.4	..	..	80.7	81.8	83.1	83.8	84.5	85.1	85.7	86.3	86.9	87.4	87.9
N.W.T.	77.0	75.9	76.3	78.6	80.5	80.1	79.2	77.6	76.2	77.8	79.5	80.2	81.1	81.6	82.4	83.0	83.7	84.3	84.8
Nvt.	..	..	..	71.1	75.4	74.4	73.2	74.4	72.8	72.9	73.8	74.6	75.6	76.4	77.4	78.3	78.9	79.7	80.4

.. not available for a specific reference period

Notes: Historical values of life expectancy in Prince Edward Island, Yukon, Northwest Territories and Nunavut are based on three-year reference period. In these regions, each stated year refers to the last of the three-year period. Data for the Yukon are not available from 2017. The calculation for Canada for years 2017 to 2022 excludes the Yukon.

Sources: Statistics Canada. 2023. *Life Tables, Canada, Provinces and Territories*. Catalogue number 84-537 and Centre for Demography.

6 Projection of immigration

6.1 Background

From January 1, 2023, to January 1, 2024, Canada's population increased by 1,271,872 people to 40,769,890 (Statistique Canada, 2024). The growth rate over this period was 3.2%, the highest rate observed in Canada since 1957 (+3.3%). Almost all (98%) the growth was due to international migration (permanent and temporary immigration), while the rest (2%) came from natural growth, i.e. the balance of births and deaths.

Labour shortages in certain sectors of the economy and an aging population continue to exert pressure for sustained immigration. However, Canada's strong demographic growth in recent years and issues such as lack of affordable housing and inflationary pressures have led some observers to question immigration levels (Marion & Ducharme, 2024; Young & Lalonde, 2024).

Every year, the government revises its immigration targets. For example, in its most recent immigration levels plan, Immigration, Refugees and Citizenship Canada recognizes both the Canadian business community's preferences for increased economic immigration (Immigration, Refugees and Citizenship Canada, 2024b) and the concerns expressed about the immigration system and issues related to Canada's carrying capacity, including the availability of affordable housing, access to health care and infrastructures (Immigration, Refugees and Citizenship Canada, 2024a).[5] The most recent immigration plan calls for 485,000 new immigrants in 2024, followed by a stable level of 500,000 in 2025 and 2026.

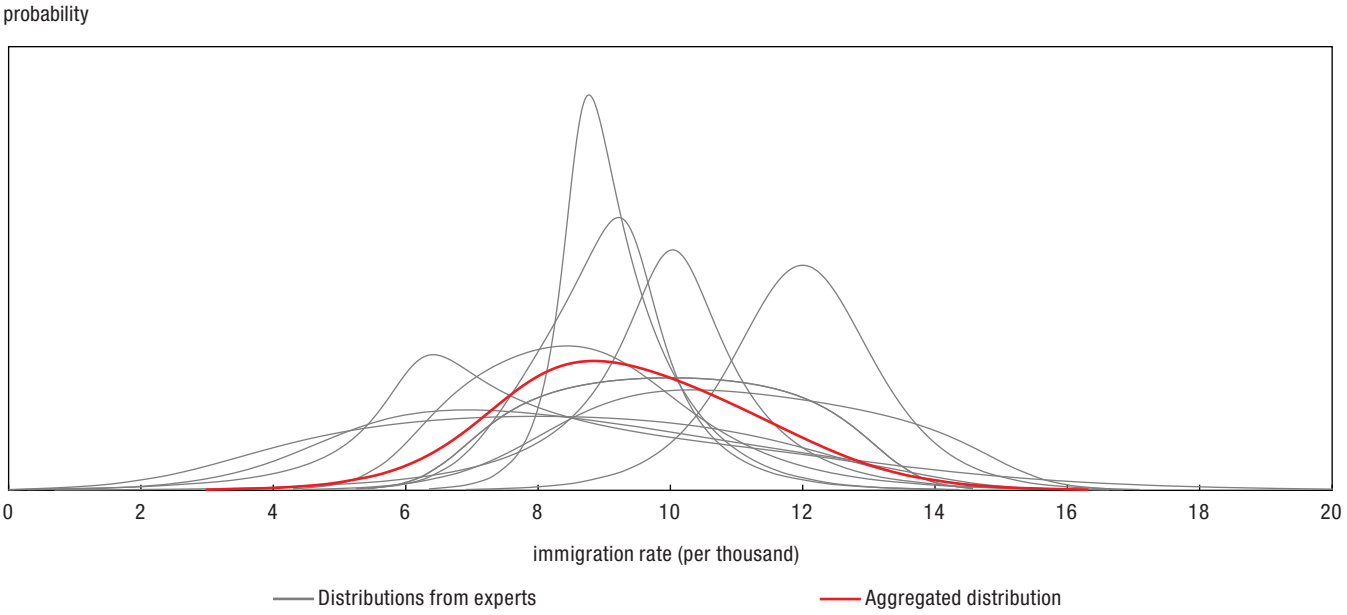
6.2 Projection assumptions

Three projection assumptions were established: medium, low and high, formulated in terms of national immigration rates and distributions by age, sex, and province or territory. For the first three projection years, the medium assumption projects immigration rates corresponding to the targets in the multi-year 2024-2026 Immigration Levels Plan.

The long-term targets (2048) were established based on the opinions of a group of immigration estimate and projection experts from Statistics Canada's Centre for Demography. As with the fertility projection, a formal protocol was used to obtain a probability distribution that represents the opinions of all the experts, using a method similar to the one proposed by Dion, Galbraith and Sirag (2020) (Chart 6.2.1). A target of 9.3 per thousand was set for the medium assumption based on the median of this distribution (Chart 6.2.2). Projected immigration rates from 2026/2027 to 2047/2048 are obtained through interpolation. The rates remain stable after 2047/2048. Targets for the 2047/2048 period were established for the low and high assumptions based on the 10th and 90th percentiles of the aggregated probability distribution representing the expert opinions (7.0 and 12.0 per thousand, respectively) (Table 6.2.1). A trajectory for the low assumption was established by interpolating the gap between the low and medium assumption targets for 2048 using a logarithmic function in order to obtain a quick divergence and to better reflect the uncertainty early in the projection. The same method was used to produce a trajectory for the high assumption.

5. Immigration, Refugees and Citizenship Canada held consultations on the targets for permanent resident admissions in 2023. It appears that a greater proportion of stakeholders mentioned that these targets were too high compared to the previous year. Similarly, more stakeholders than in the past favoured stabilizing immigration levels beyond 2025 rather than increasing them. These results are consistent with others from surveys showing slightly less favourable public opinion towards immigration than in the past (Léger, 2024a; 2024b; Association for Canadian Studies, 2024; Environics Institute, 2023).

Chart 6.2.1
Probability distribution of plausible values for Canada's immigration rate in 2048 produced by each expert, and aggregated probability distribution representing all experts

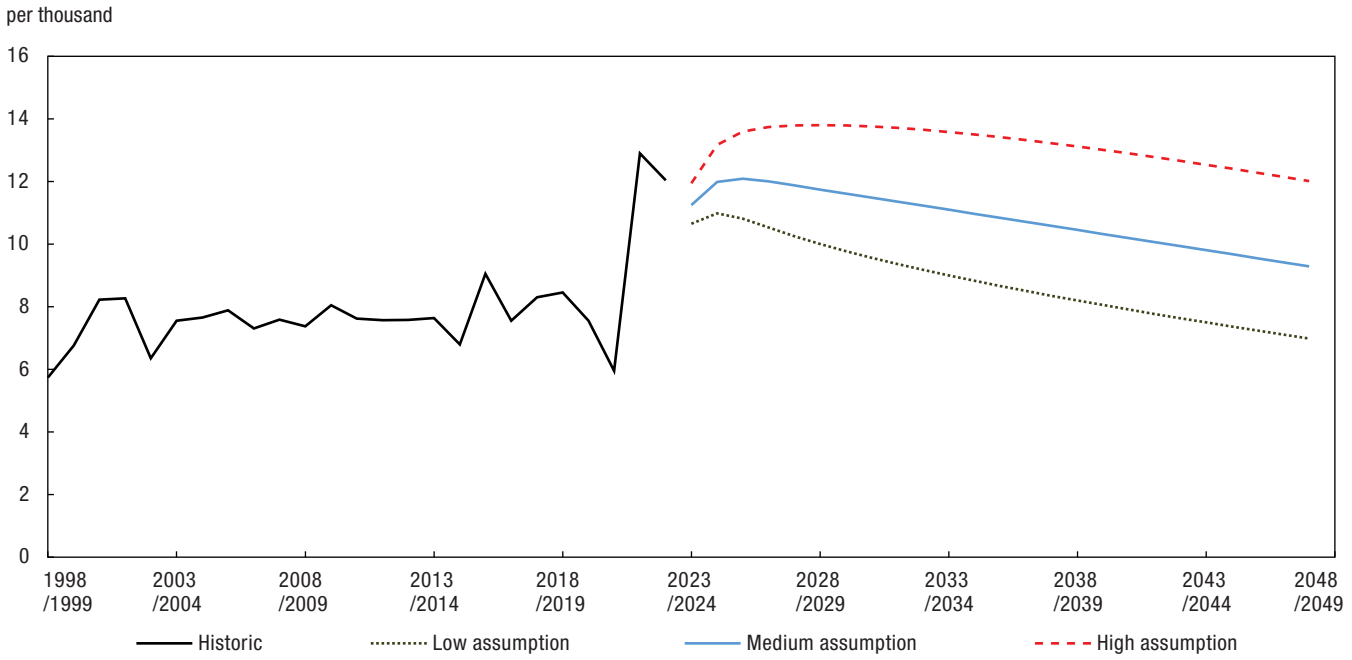


Source: Statistics Canada, Centre for Demography.

Among the factors that could influence future immigration levels, experts mentioned: the evolution of housing-related issues, pressure from certain influential groups in favour of strong demographic growth, the development of policies aimed at increasing productivity in the country, climate change, conflicts and natural disasters occurring elsewhere in the world, the capacity of infrastructures to respond to demographic growth, as well as public opinion, including the way in which the population reacts to a rapid transformation of society brought about by high immigration. Again, according to the experts, in the short to medium term, the retirement of the large baby-boom generation will continue to create pressure for high levels of immigration to meet labour shortage challenges. That said, in the longer term (e.g., from 2030 on), this pressure may fade once the exit of baby boomers from the labour market has slowed.

The proportion of immigrants that each province and territory welcomes was determined using a projection based on an exponential smoothing model adjusted to the data from the period of 2012/2013 to 2022/2023. This type of smoothing model provides a single forecast based on past observations, assigning weights that decrease exponentially over time. The proportions from the model are reached in five years and follow a logarithmic curve from 2023/2024 to 2027/2028 that suggests a quick convergence to the target values. The proportions remain identical after 2027/2028. Lastly, within each province or territory, immigrants are distributed by age and sex based on the proportions observed between 2014/2015 and 2022/2023.

Chart 6.2.2
Immigration rate, Canada, historic (1998/1999 to 2022/2023) and projected (2023/2024 to 2047/2048) according to the low, medium and high immigration assumptions



Sources: Immigration, Refugees and Citizenship Canada and Statistics Canada, Centre for Demography.

Table 6.2.1
Projected distribution of immigrants to Canada by province and territory, 2023/2024 and 2027/2028

Region	2023/2024	2027/2028
	percent	
Newfoundland and Labrador	0.94	0.56
Prince Edward Island	0.52	0.52
Nova Scotia	2.34	1.97
New Brunswick	2.05	1.51
Quebec	12.49	12.92
Ontario	44.27	45.43
Manitoba	5.02	4.60
Saskatchewan	5.19	4.14
Alberta	12.22	12.67
British Columbia	14.77	15.49
Yukon	0.10	0.09
Northwest Territories	0.08	0.09
Nunavut	0.01	0.01

Source: Statistics Canada, Centre for Demography.

7 Projection of emigration

7.1 Background

The emigration component is the net amount of two elements: people leaving the country (emigration) and Canadians returning to the country (return emigration). Permanent emigrants, referred to simply as emigrants, are defined as Canadian citizens or permanent residents who left Canada to settle in another country. Return emigrants are defined as Canadian citizens or immigrants who have returned to Canada to re-establish permanent residence after having previously emigrated. After a decline in 2019-2020 and 2020-2021, caused in part by international travel restrictions in connection with the Covid-19 pandemic, the numbers of emigrants and returning emigrants returned close to pre-pandemic values in 2022 and 2023 (Table 7.1.1).

Table 7.1.1
Estimates of the number of emigrants and returning emigrants and gross migraproduction rate of the emigration and returning emigration components, Canada, 2016/2017 to 2022/2023

	Emigrants		Returning emigrants	
Period	number	rate (per thousand)	number	rate (per thousand)
2016/2017	119,964	2.89	63,484	1.52
2017/2018	98,271	2.35	58,406	1.39
2018/2019	92,204	2.17	57,238	1.35
2019/2020	77,591	1.80	45,922	1.07
2020/2021	66,627	1.55	40,901	0.95
2021/2022	92,876	2.14	58,176	1.39
2022/2023	94,576	2.16	59,239	1.40

Note: The number of emigrants and returning emigrant are final up to 2020/2021, updated for 2021/2022 and preliminary for 2022/2023.
Source: Statistics Canada. *Table 17-10-0008-01. Estimates of the components of demographic growth, annual.*

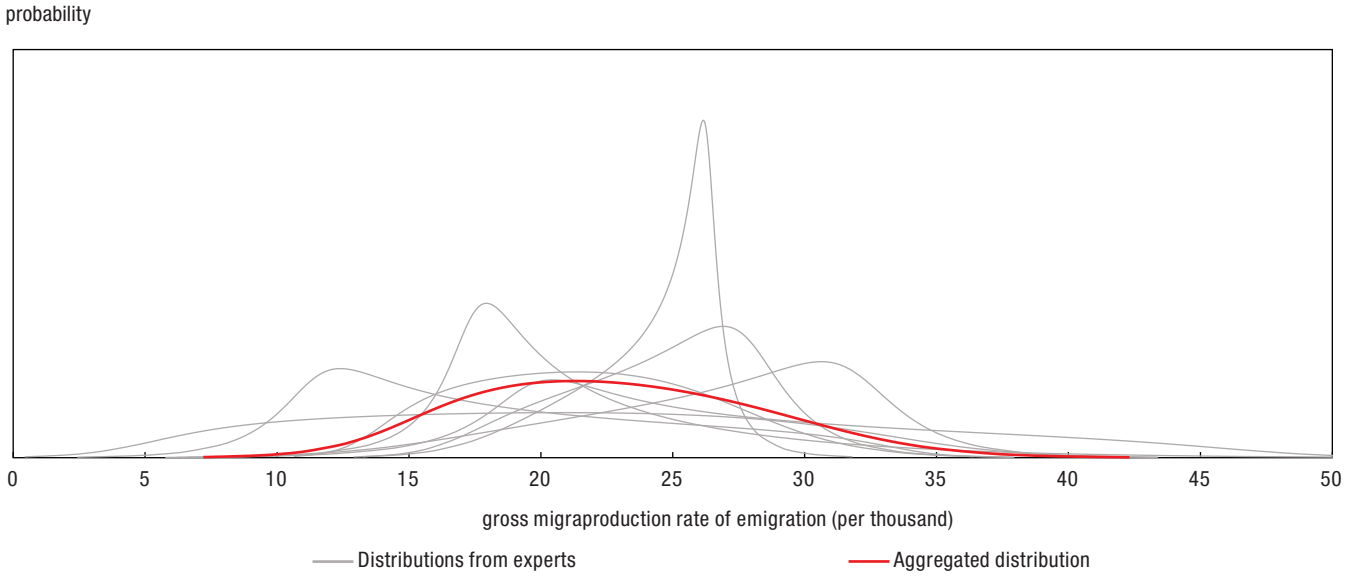
7.2 Projection assumptions

Three projection assumptions (medium, low and high) for emigration were established, formulated in terms of the gross migraproduction rate (GMPR) and distributions by age, gender, province and territory.

The medium assumption was developed with a concern to reflect the historical trends in each province and territory and the possible long-term developments. Thus, a GMPR trajectory is created for each province and territory for the 2023/2024 to 2047/2048 period by combining recent GMPR trends observed over the 2016/2017 to 2022/2023 period and reaching a target value in 2047/2048. Using logarithmic interpolation instead of linear interpolation, for example, ensures that the short-term trajectory fades relatively quickly in favour of the long-term trajectory. After 2048, assumptions are held constant for the remainder of the projection (to 2073).

The target long-term GMPR was established based on the opinions of experts working at Statistics Canada's Centre for Demography in the field of immigration estimation or projection. The long-term TBMP target was established on the basis of the opinions of a group of experts working at Statistics Canada's Demography Centre in the field of emigration estimates or projections. As for the fertility and immigration components, the experts' opinions were encoded in the form of a formal protocol that was used to obtain a probability distribution representing the opinions of all the experts, following a method similar to that proposed by Dion, Galbraith and Sirag (2020) (Chart 7.2.1). A target of 2.25 per thousand was set nationally for the medium assumption according to the median of this distribution. At the provincial and territorial levels, the target long-term GMPR is set so that each region has the same percentage variation over the next 25 years as the variation projected at the national level (Table 7.2.1).

Chart 7.2.1
Probability distribution of plausible values for the gross migraproduction rate of emigration in Canada in 2048 produced by each expert and aggregated probability distribution representing all experts



Source: Statistics Canada, Centre for Demography.

Table 7.2.1
Gross migrationproduction rate, emigration and return emigration components, Canada, provinces and territories, historic (2022/2023) and projected (2027/2028 and 2047/2048)

Component / Assumption / Period	Canada	N.L.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T.	N.W.T.	Nvt.
	per thousand													
Emigration														
Low assumption														
2022/2023	2.16	0.63	1.36	1.05	0.73	1.47	2.51	1.53	1.25	2.22	3.15	0.91	0.05	0.00
2027/2028	1.67	0.49	1.19	0.71	0.55	1.14	1.95	1.16	1.07	1.71	2.35	0.77	0.05	0.01
2047/2048	1.57	0.46	0.99	0.77	0.53	1.07	1.83	1.12	0.91	1.62	2.29	0.66	0.04	0.01
Medium assumption														
2022/2023	2.16	0.63	1.36	1.05	0.73	1.47	2.51	1.53	1.25	2.22	3.15	0.91	0.05	0.00
2027/2028	2.00	0.59	1.43	0.85	0.67	1.37	2.34	1.39	1.29	2.05	2.82	0.92	0.05	0.01
2047/2048	2.25	0.66	1.42	1.10	0.76	1.53	2.62	1.60	1.30	2.32	3.28	0.95	0.06	0.01
High assumption														
2022/2023	2.16	0.63	1.36	1.05	0.73	1.47	2.51	1.53	1.25	2.22	3.15	0.91	0.05	0.00
2027/2028	2.39	0.70	1.70	1.02	0.79	1.64	2.80	1.66	1.54	2.45	3.36	1.10	0.06	0.02
2047/2048	3.04	0.89	1.92	1.48	1.03	2.07	3.54	2.16	1.76	3.13	4.43	1.28	0.08	0.02
Returning emigration														
Low assumption														
2022/2023	1.40	0.36	1.22	0.66	0.47	0.94	1.73	1.20	0.78	1.50	1.74	0.42	0.24	0.00
2027/2028	1.16	0.29	1.16	0.45	0.35	0.78	1.42	1.05	0.67	1.28	1.43	0.34	0.20	0.03
2047/2048	0.95	0.25	0.83	0.45	0.32	0.64	1.18	0.82	0.53	1.02	1.19	0.28	0.16	0.03
Medium assumption														
2022/2023	1.40	0.36	1.22	0.66	0.47	0.94	1.73	1.20	0.78	1.50	1.74	0.42	0.24	0.00
2027/2028	1.39	0.35	1.39	0.54	0.42	0.93	1.70	1.26	0.81	1.54	1.72	0.41	0.24	0.04
2047/2048	1.36	0.35	1.19	0.64	0.46	0.92	1.69	1.18	0.76	1.47	1.70	0.41	0.23	0.04
High assumption														
2022/2023	1.40	0.36	1.22	0.66	0.47	0.94	1.73	1.20	0.78	1.50	1.74	0.42	0.24	0.00
2027/2028	1.65	0.41	1.66	0.64	0.50	1.11	2.03	1.50	0.96	1.83	2.05	0.49	0.28	0.05
2047/2048	1.85	0.47	1.61	0.87	0.62	1.24	2.29	1.59	1.03	1.98	2.30	0.55	0.32	0.05

Table 7.2.1
Gross migrationproduction rate, emigration and return emigration components, Canada, provinces and territories, historic (2022/2023) and projected (2027/2028 and 2047/2048)

Component / Assumption / Period	Canada	N.L.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T.	N.W.T.	Nvt.
	per thousand													
Net emigration														
Low assumption														
2022/2023	0.76	0.27	0.14	0.39	0.26	0.53	0.78	0.33	0.47	0.72	1.41	0.50	-0.19	0.00
2027/2028	0.51	0.20	0.03	0.26	0.21	0.37	0.54	0.11	0.40	0.43	0.91	0.42	-0.15	-0.02
2047/2048	0.62	0.21	0.16	0.32	0.21	0.43	0.65	0.30	0.38	0.59	1.10	0.38	-0.12	-0.02
Medium assumption														
2022/2023	0.76	0.27	0.14	0.39	0.26	0.53	0.78	0.33	0.47	0.72	1.41	0.50	-0.19	0.00
2027/2028	0.62	0.24	0.04	0.32	0.25	0.44	0.64	0.14	0.48	0.52	1.10	0.51	-0.18	-0.03
2047/2048	0.88	0.31	0.23	0.45	0.30	0.62	0.93	0.42	0.54	0.85	1.58	0.54	-0.18	-0.02
High assumption														
2022/2023	0.76	0.27	0.14	0.39	0.26	0.53	0.78	0.33	0.47	0.72	1.41	0.50	-0.19	0.00
2027/2028	0.74	0.29	0.05	0.38	0.30	0.52	0.77	0.16	0.57	0.62	1.31	0.60	-0.22	-0.03
2047/2048	1.20	0.42	0.31	0.61	0.40	0.83	1.25	0.57	0.73	1.15	2.14	0.74	-0.24	-0.03

Source: Statistics Canada, Centre for Demography.

Long-term GMPR targets for low and high assumptions were set based on the 10th and 90th percentiles of the distribution of experts. A trajectory for the low assumption was established by interpolating the difference between the low and medium assumption targets in 2048 using a logarithmic function to obtain a quick divergence and to better reflect the uncertainty early in the projection. The same method was used to produce a trajectory for the high assumption (Table 7.2.1).

Among the factors that could affect the number of future emigrants, experts identified worse or improved living conditions in Canada and elsewhere in the world, economic cycles, and the future number of new immigrants (as immigrants are more likely to emigrate than people born in Canada). Lastly, composition by age and gender of projected emigrants is established based on the proportions and trends observed in each province and territory from 2016/2017 to 2022/2023.

The assumptions for return emigration were derived directly from the emigration assumptions. More specifically, the projected long-term target of the medium return emigration assumption consists of a ratio of the medium emigration assumption target—that is, the average of the ratio of returning emigrants to permanent emigrants observed over the period from 2016/2017 to 2022/2023 (60.7%). The same ratio is used for the low and high assumptions. This assumption of a fixed ratio of the return emigration rate to permanent emigration rate appears plausible in that it tends to remain relatively stable over time, having fluctuated, for example, between 53% and 65% over the reference period. The short-term assumptions were obtained the same way as for emigration: by extrapolating return emigration trends by age for the period from 2016/2017 to 2022/2023. As with emigration, composition by age and gender of the projected returning emigrants is established based on the proportions and trends observed in each province and territory over the period from 2016/2017 to 2022/2023.

8 Projection of non-permanent residents

8.1 Background

In recent years, Immigration, Refugees and Citizenship Canada has introduced several measures that have significantly increased the number of non-permanent residents[6] (NPRs) living in the country.[7] Many of these measures have been taken to address labour shortages in a few critical sectors of the Canadian economy, resulting in the growth of temporary foreign workers (Employment and Social Development Canada, 2022)[8,9]. The number of study permit holders has also risen, almost tripling from 350,300 in 2015 to 1,041,000 in 2023. (Immigration, Refugees and Citizenship Canada, 2024c). Finally, programs have also been designed to welcome Ukrainians fleeing war (Immigration, Refugees and Citizenship Canada, 2022b) and, to a lesser extent, people affected by the conflict between Israel and Hamas (Immi/gration, Refugees and Citizenship Canada, 2023b).

Table 8.1.1
Estimate of the number of non-permanent residents by type, Canada, quarterly from July 1, 2021 to January 1, 2024

	2021		2022				2023				2024
Non-permanent resident types	July 1	October 1	January 1	April 1	July 1	October 1	January 1	April 1	July 1	October 1	January 1
	number										
Total, non-permanent residents	1,305,206	1,375,907	1,356,622	1,370,985	1,500,978	1,706,747	1,856,883	1,965,318	2,198,679	2,511,437	2,661,784
Total, asylum claimants, protected persons and related groups	166,286	160,739	159,531	165,347	177,281	192,914	217,925	238,186	256,958	289,047	328,898
Work permit only	94,343	88,863	74,370	66,803	75,298	90,398	108,042	124,394	144,091	166,938	190,120
Study permit only	1,480	1,232	1,360	1,796	1,627	1,222	1,381	1,601	1,600	1,998	2,845
Work and study permits	4,092	3,414	3,204	3,021	3,500	3,776	4,489	5,451	6,767	7,678	9,216
Work or study permits	66,371	67,230	80,597	93,727	96,856	97,518	104,013	106,740	104,500	112,433	126,717
Total, permit holders and their family members	1,138,920	1,215,168	1,197,091	1,205,638	1,323,697	1,513,833	1,638,958	1,727,132	1,941,721	2,222,390	2,332,886
Work permit holders only	559,105	569,971	524,557	525,388	599,810	698,522	766,690	853,221	1,001,479	1,165,478	1,229,660
Study permit holders only	365,228	427,839	454,911	456,292	477,491	537,581	575,431	559,428	582,201	659,601	679,352
Work and study permit holders	165,789	165,289	167,162	173,286	189,862	213,758	227,937	240,653	273,850	300,894	322,762
Other	48,798	52,069	50,461	50,672	56,534	63,972	68,900	73,830	84,191	96,417	101,112

Notes: The estimates of the number of non-permanent residents are updated from July 1, 2021 to April 1, 2023 and preliminary as of July 1, 2023.
Statistics Canada collaborates closely with Immigration, Refugees and Citizenship Canada (IRCC) and other federal departments to estimate the number of non-permanent residents (NPRs) living in Canada. The demographic estimates from Statistics Canada are updated on an ongoing basis, as new or revised data become available from its partners. Caution should be exercised before comparing data on non-permanent residents from Statistics Canada's Demographic Estimates Program with those from IRCC, due to the different objectives of the two data sources.
The non-permanent resident types are mutually exclusive and are derived in the following order of classification: asylum claimant, protected person and related groups then permit holders. Consequently, there are no asylum claimant, protected person and related groups among the permit holders types.
At Statistics Canada, an asylum claimant refers to a foreign national who has made a refugee claim while in Canada on a temporary basis and whose claim is pending decision. Protected person refers to a person who has made a claim in Canada and received a positive decision. For population estimates, protected persons leave this population if they obtain permanent residence. Related groups include those who received a negative decision, or withdrew or abandoned their claim and have not yet regularized their status or departed Canada. Estimates for asylum claimants, protected persons and related groups separately are not available.
Source: Statistics Canada. *Table 17-10-0121-01 Estimates of the number of non-permanent residents by type, quarterly.* DOI: https://doi.org/10.25318/1710012101-eng

6. A non-permanent resident refers to a person from another country with a usual place of residence in Canada and who has a work or study permit or who has claimed refugee status (asylum claimant, protected person and related group). Family members living with work or study permit holders are also included unless these family members are already Canadian citizens, landed immigrants (permanent residents), or non-permanent residents themselves.
7. Note that based on asylum claimants', work and study permit holders' and temporary resident permit holders' administrative records gathered and processed by Immigration, Refugees and Citizenship Canada and other government departments, Statistics Canada sets the number and characteristics of people to whom the government grants temporary resident status or who are asylum claimants. Statistics Canada then applies different methodological adjustments, mainly derived from comparisons between census and Immigration, Refugees and Citizenship Canada data used to obtain estimates of the number of non-permanent residents.
8. From 2015 to 2022, the number of permit holders under the International Mobility Program more than quadrupled from 176,280 to 766,520 (Immigration, Refugees and Citizenship Canada, 2024d), and the number of permit holders under the Temporary Foreign Workers Program increased by two and a half, from 73,000 to 184,200 (Immigration, Refugees and Citizenship Canada, 2024e).
9. Some of these measures also affect students and visitors who can apply for work permits (Immigration, Refugees and Citizenship Canada, 2022a).

NPRs generally contribute to the country's economic prosperity through employment and participation in post-secondary programs. Canada also welcomes asylum claimants, protected persons and related groups,[10] a category of NPRs, in order to meet its humanitarian obligations. An ageing population, sectoral labour shortages and international crises are factors supporting an increase in the number of NPRs in the country in the future. Conversely, issues such as housing shortages, high housing costs and low productivity growth are leading some observers to propose a cap on non-permanent resident admissions in the future.[11]

The Government of Canada announced, early in 2024, measures aimed at decreasing the number of NPRs in the country over the next few years and acknowledged that admitting international students and foreign workers has its impacts on the housing shortage in the country (Woolf, 2023). A first step consists in limiting the number of new study permit holders in 2024 to about 360,000, down 35% compared to 2023. (Immigration, Refugees and Citizenship Canada, 2024f). This step does not affect students with valid permits, graduate students (master's and doctoral), or elementary or high school students. A second step affects NPRs. Thus, for the first time, the Government of Canada announced a target: a workforce with NPRs representing 5% of the Canadian population for about the next three years (Immigration, Refugees and Citizenship Canada, 2024g)—a population of about two million given the current size of the population.

The 5% target risks making fluctuations in the number of NPRs in the country more predictable insofar as these fluctuations are an anchor point. Note also that a consequence of a proportional target is an increase in the number of NPRs if population growth is positive, which is expected. However, long-term uncertainty remains high. Because NPRs are in the country on a temporary permit with an expiry date, their numbers are likely to fluctuate rapidly over time. In theory, if no new permits or renewals were granted, the non-permanent resident population would fall to zero after a few years.

8.2 Projection assumptions

Previously established by first considering the net annual variations in the number of NPRs nationwide, the projection assumptions in this edition of the Population Projections for Canada, Provinces and Territories were established based on proportions of Canada's population, as per the targets set by Immigration, Refugees and Citizenship Canada.

Three distinct assumptions are proposed: medium, low and high. In the medium assumption, a non-permanent resident employment size was projected for July 2024, based on information currently available for the period from July 2023 to January 2024. This was up from July 2022. The net changes for January to July 2024 were extrapolated by assuming similar quarterly growth to what was observed in 2022 and 2023, a bullish time. The medium assumption thus proposes, in the very short term, a certain continuation of very recent trends, in part because some permits were previously granted and others are in the process of being so. However, regarding the number of study permit holders, a decrease is projected from January to July 2024, following the government's announcement of the reduction in the number of new permits granted in 2024. The projected number of NPRs in the country on the basis of a study permit was still up from 2023 to 2024. In the end, the medium assumption proposes a total of 2,737,000 NPRs up to July 1, 2024,—a near 25% increase compared to July 2023 (2,199,000). From 2024 to 2027, the medium projection assumption suggests a decrease in the proportion of NPRs in the country that will reach 5% in 2027, again following the targets announced by the government in March 2024.

To set long-term targets, a group of experts working at the Statistics Canada Centre for Demography in estimates or projections of the number of NPRs was formed. A formal protocol was used to obtain a probability distribution representing all of the experts' opinions, using a method similar to that proposed by Dion, Galbraith and Sirag (2020). A target of 4.7% was set for the medium assumption according to the median of this distribution. The 2028 to 2047 proportions are obtained by using an interpolation between the projected 2027 and 2048 values.

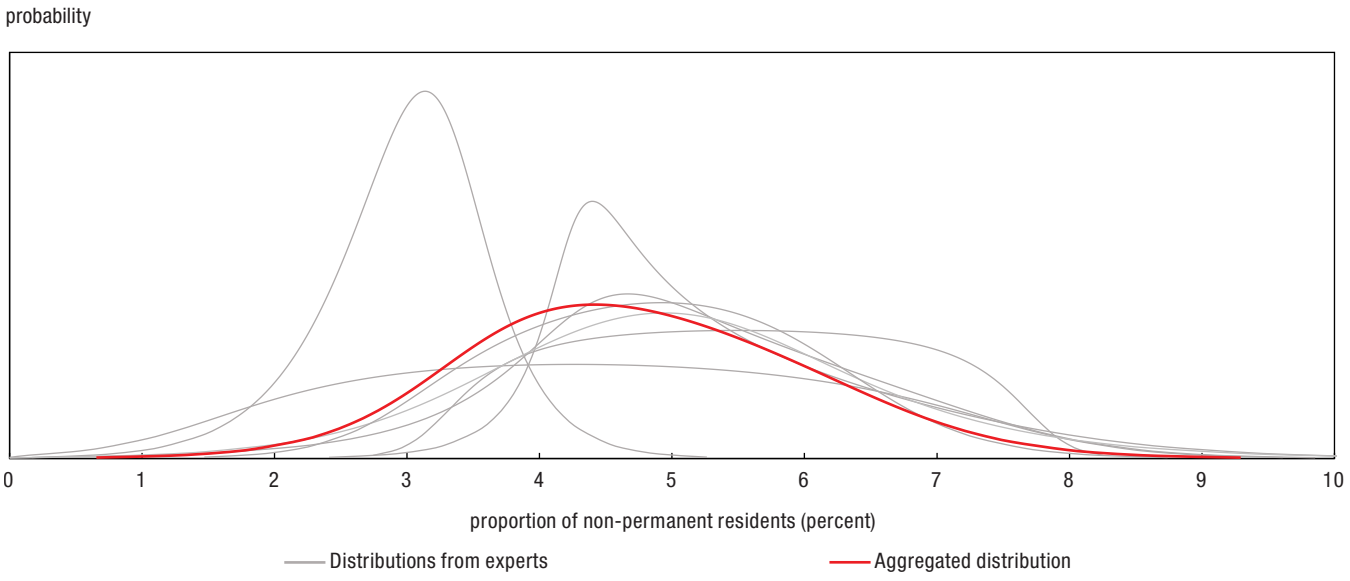
Targets for the year 2048 were set for the low and high assumptions according to the 10th and 90th percentiles of the aggregated probability distribution representing the expert opinions: 3.2% and 6.5%, respectively (Chart 8.2.1). A trajectory for the low assumption is established by interpolating, for the years 2024 to 2047, the gap separating

10. At Statistics Canada, an asylum claimant refers to a foreign national who has made a refugee claim while in Canada on a temporary basis and whose claim is pending decision. Protected person refers to a person who has made a claim in Canada and received a positive decision. Related groups include those who received a negative decision, or withdrew or abandoned their claim and have not yet regularized their status or departed Canada.
11. For exemple, see: Marion & Ducharme (2024), Mahboubi & Skuterud (2023), Young & Lalonde (2024) et Skuterud & Mahboubi (2024).

the 2048 low and medium assumption targets set. The interpolation is done by using a logarithmic function to create a quick divergence early in the projection, giving an accurate reflection of the uncertainty present early in the projection (Chart 8.2.3). The same method was used to produce a trajectory for the high assumption.

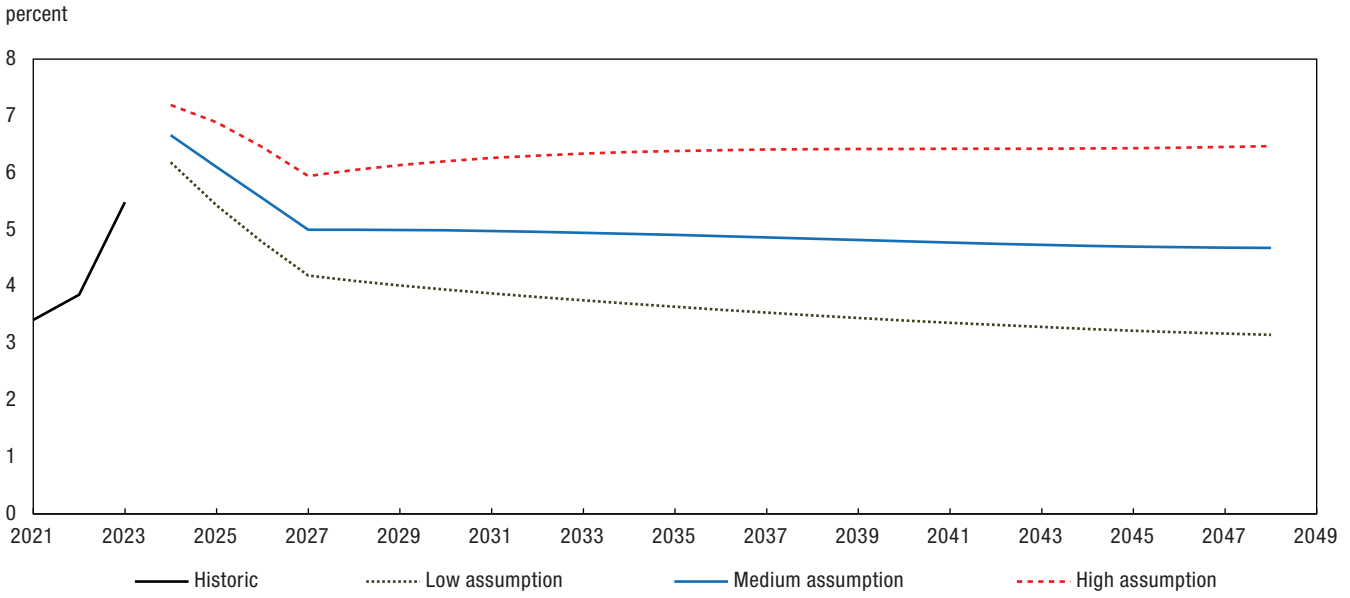
The experts mentioned a number of factors that could influence the proportion of NPRs in the country in the future. International events, such as conflicts or disasters linked to climate change, could result in Canada admitting more asylum seekers in the future. The pressures of an ageing population and labour shortages in certain sectors of the economy could also lead some players to call for more immigrants and temporary workers in the future. Similarly, post-secondary educational institutions could call for an increase in the number of international students, for whom they represent an important source of revenue. Conversely, the government could reduce admissions of NPRs to better balance supply and demand for services and housing in the country, and stimulate higher productivity.

Chart 8.2.1
Probability distribution of plausible values for the proportion of non-permanent residents in the total population in Canada in 2048 produced by each expert and aggregated probability distribution representing all experts



Source: Statistics Canada, Centre for Demography.

Chart 8.2.2
Proportion of non-permanent residents, Canada, historic (2021 to 2023) and projected (2024 to 2048) according to the low, medium and high non-permanent residents assumptions



Source: Statistics Canada. *Table 17-10-0121-01 Estimates of the number of non-permanent residents by type, quarterly* (DOI: https://doi.org/10.25318/1710012101-eng) and Centre for Demography.

The number of NPRs that each province and territory welcomes annually is set based on the proportions observed from 2021 to 2023. These proportions are adjusted during projection to reflect the changing sizes of the provincial and territorial populations. Thus, the proportion received in a given region changes compared to the relative population size in this region of the country. Lastly, distribution by age and gender of NPRs matches the distribution observed on July 1, 2023. The underlying assumption is that NPRs who leave the country are being replaced by others with the same characteristics.

Table 8.2.1
Projected distribution of non-permanent residents by province and territory, 2023 and 2033

Region	2023	2033
	percent	
Newfoundland and Labrador	0.59	0.56
Prince Edward Island	0.45	0.54
Nova Scotia	2.08	2.07
New Brunswick	1.25	1.13
Quebec	21.42	21.58
Ontario	44.88	44.80
Manitoba	2.76	2.71
Saskatchewan	1.40	1.43
Alberta	6.84	6.17
British Columbia	18.24	18.91
Yukon	0.07	0.07
Northwest Territories	0.03	0.03
Nunavut	0.00	0.01

Source: Statistics Canada, Centre for Demography.

9 Projection of internal migration

9.1 Background

Interprovincial migration is the movement of people between the provinces and territories in Canada. The COVID-19 pandemic and the work world changes that followed upset interprovincial migration trends in the country. In 2023, about 333,000 Canadians migrated to another province or territory (Statistique Canada, 2024). This is the second highest number recorded since the 1990s and the third consecutive year in which it reached a level not seen in 30 years.

9.2 Projection assumptions

Internal migration parameters consist of interprovincial migration rates by origin and destination. Rates are calculated based on historical data, with the various scenarios reflecting distinct historical periods. An adjustment is made to the projected migration rates to account for the fact that migration flows change only according to the sizes and characteristics of the populations of origin, regardless of the populations of the regions of destination, and to keep the projected net migration rates close to the values observed during the selected reference periods (Dion, 2017).

In order to account for the magnitude of the uncertainty associated with the projection of internal migration, six assumptions are proposed, constituting as many scenarios. Assumption M1, which can be considered in some way as a medium assumption, is developed from the longest period for which data are available for all provinces and territories (from 1991/1992 to 2022/2023). In the short term, however, it takes into account the recent changes described above. Thus, the migration rates of assumption M1 over the first 10 years consist of a linear interpolation of the average migration rates observed between 2020/2021 and 2022/2023 toward the average rates observed between 1991/1992 and 2022/2023, rates that remain constant thereafter (after 2032/2033).

Assumptions M2 to M5 reflect situations observed over shorter periods, selected so that each province and territory had at least one assumption representative of a relatively favourable period (in terms of population growth) and another reflecting a relatively unfavourable period. Assumption M6 reflects the situation observed over the very recent period (2020/2021 to 2022/2023).

Adjustments to the multiregional migration rates mean that the projected average net migration rates will be fairly close, but not necessarily identical, to the rates observed over the selected reference periods. The adjustments help reduce the gaps related to the effect of population growth (unequal) in the provinces and territories, but express the effect of the changes in the structure by population age. Moreover, the adjustments cannot mathematically guarantee a perfect match with the observed net migration rates, and are instead a compromise to significantly reduce the gaps in all regions equally.

Table 9.2.1
Average net interprovincial migration rates observed during various reference periods, by province and territory

	Average net migration rates for each scenario					
	M1	M2	M3	M4	M5	M6
	1991/1992 to 2022/2023	1995/1996 to 2010/2011	2003/2004 to 2008/2009	2009/2010 to 2016/2017	2014/2015 to 2016/2017	2020/2021 to 2022/2023
Region	percent					
Newfoundland and Labrador	-0.44	-0.65	-0.42	0.04	-0.07	0.18
Prince Edward Island	0.07	-0.06	-0.28	-0.25	-0.05	0.91
Nova Scotia	0.02	-0.14	-0.24	-0.09	0.04	0.96
New Brunswick	-0.06	-0.17	-0.23	-0.19	-0.15	0.80
Quebec	-0.11	-0.12	-0.10	-0.12	-0.14	-0.06
Ontario	-0.04	-0.01	-0.11	-0.03	0.03	-0.20
Manitoba	-0.42	-0.36	-0.42	-0.38	-0.43	-0.48
Saskatchewan	-0.41	-0.32	-0.21	-0.12	-0.43	-0.65
Alberta	0.44	0.68	0.75	0.31	-0.07	0.38
British Columbia	0.26	0.07	0.25	0.22	0.46	0.28
Yukon	0.04	-0.29	0.29	0.65	0.81	0.52
Northwest Territories	-0.86	-1.05	-1.13	-0.81	-0.64	-0.78
Nunavut	-0.39	-0.37	-0.54	-0.24	-0.46	-0.61

Source: Statistics Canada, Centre for Demography.

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