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Quarterly Demographic Estimates

July to September 2017



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Notice to readers

Estimates released in this publication are based on the 2011 Census counts adjusted for census net undercoverage and incompletely enumerated Indian reserves to which is added the estimated demographic growth for the period going from May 10, 2011 to the date of the estimate.

These estimates are not to be mistaken with the census counts.

Total population estimates based on the 2016 Census counts, adjusted for census net undercoverage and incompletely enumerated Indian reserves, will be available in September 2018.

The analysis in this publication is based on preliminary data. These data will be revised over the coming years, and it is possible that some trends described in this publication will change as a result of these revisions. Therefore, this publication should be interpreted with caution.

Most of the components, used to produce preliminary population estimates, are estimated using demographic models or based on data sources less complete or reliable, albeit more timely, than those used for updated or final estimates.

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Quarterly Demographic Estimates

Highlights

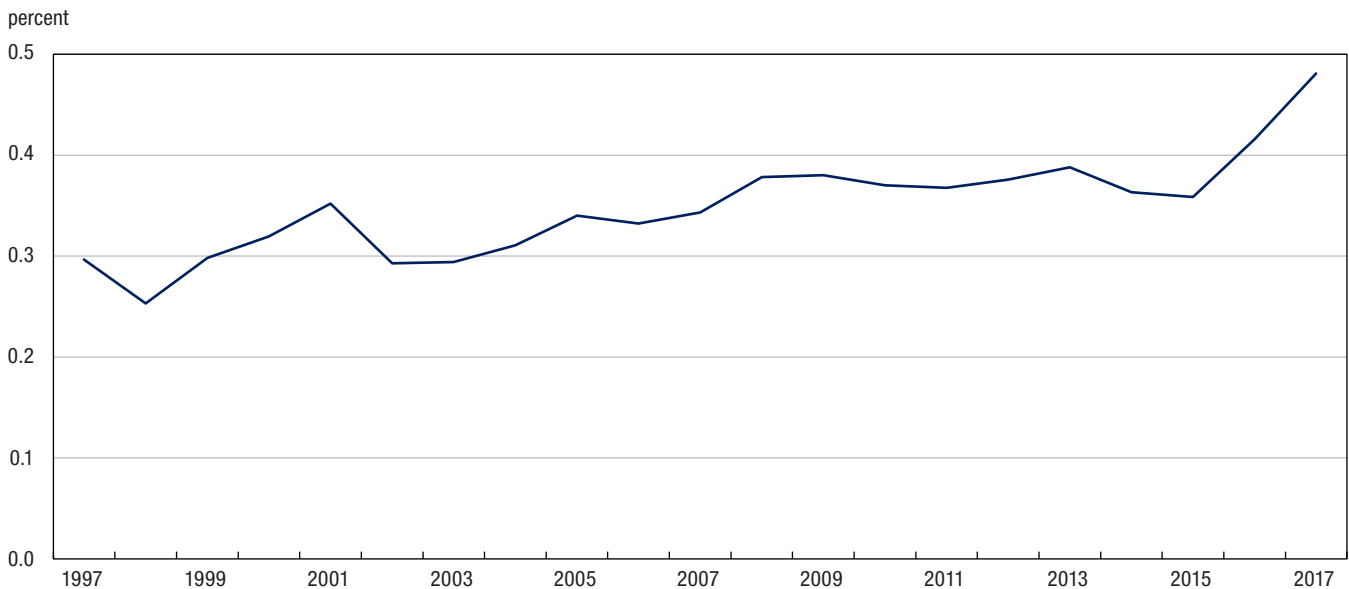
- On October 1, 2017, Canada's population was estimated at 36,885,049.
- Between July 1 and October 1, 2017, Canada's population rose by 176,966 (+0.5%), the highest increase observed for a trimester since 1971.
- Canada's population growth in the third quarter of 2017 was largely due to international migration (+138,315), a level never seen since 1971.
- A major proportion of the international migration growth was attributable to an unprecedented rise in the number of non-permanent residents (+79,804).
- Ontario and Nunavut had the highest rates of population growth during this period (+0.6% each).
- Preliminary estimates for the last quarter indicate that Alberta recorded interprovincial migration gains of 743 people, following eight consecutive negative quarters, and a total increase of 0.5% (+19,905).

Analysis

Canada’s population continues to grow at a steady pace

According to preliminary estimates, Canada’s population was estimated at 36,885,049 on October 1, 2017, up 176,966 from July 1, 2017. This increase in absolute numbers was the highest recorded for any quarter since the beginning of the period covered by the current demographic accounting system (July 1971). In addition, Canada reached a summit in its quarterly demographic estimates with an increase of 0.5%. All quarters considered, it is the second time only that the country recorded such a level since July 1971, the first time being seen on the third quarter of 1988.

Chart A1
Population growth rate, July to September, 1997 to 2017, Canada



Source: Statistics Canada, Demography Division.

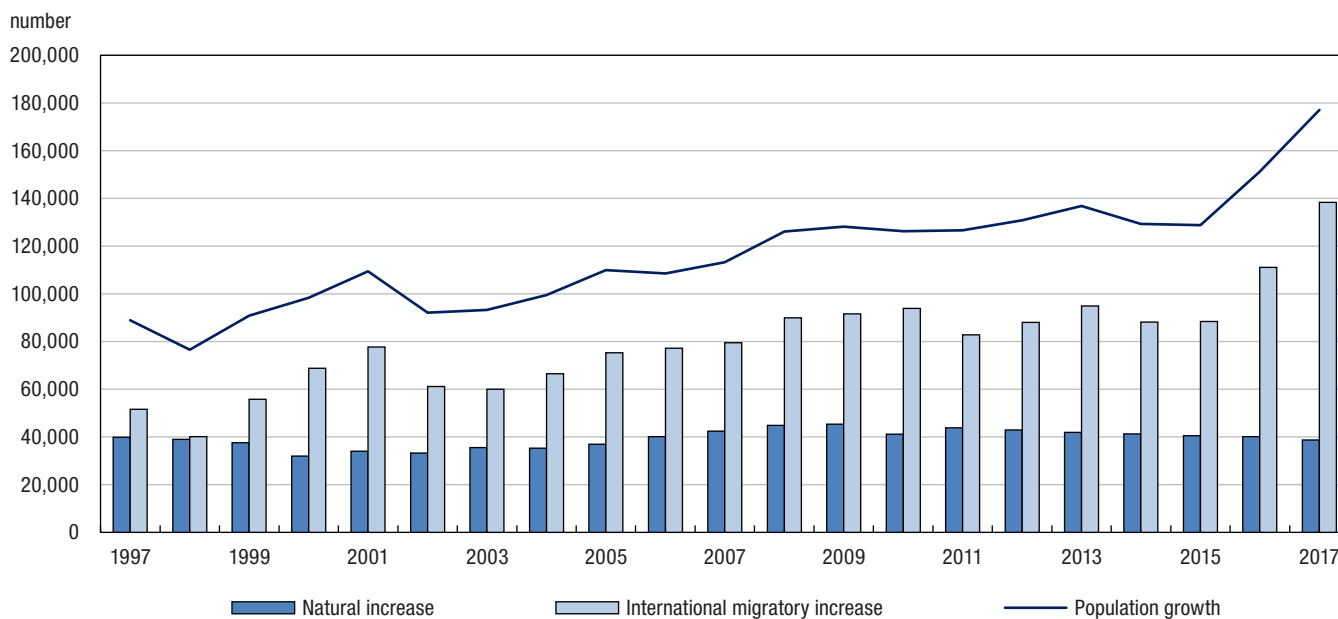
International migration continues to account for most of the population growth

Population growth at the national level is based on two factors: natural increase¹ and international migratory increase,² while provincial and territorial population estimates also factor in interprovincial migratory increase.

International migratory increase remained the main driver of the Canadian population growth, with an estimated increase of 138,315 between July 1 and September 30, 2017. This is the highest gain observed since the beginning of the period covered by the current demographic accounting system (July 1971). In Canada, the last quarter's increase was mainly attributable to an unprecedented gain in the number of non-permanent residents (+79,804),³ a record for any quarter since July 1971. The main source of this increase was a growth in the number of study permit holders, as well as equal gains in the number of work permit holders and refugee claimants. Many of these refugee claimants were born in Haiti, especially those arriving in Quebec. In the third quarter of 2017, the increase in the number of non-permanent residents exceeded the number of immigrants admitted to Canada (+70,132)—a scenario rarely seen in the past. Nevertheless, the number of immigrants was the second highest for a third quarter in the past six years, after the third quarter of 2015 (+78,899). The components of net emigration (emigration, returning emigration and net temporary emigration) remained stable.

According to preliminary estimates, natural increase in the third quarter of 2017 was 38,651, or the difference between 103,730 births and 65,079 deaths. Natural increase fell below the 40,000 mark, a phenomenon not seen in a third quarter since 2005. Due to seasonality, the number of births in Canada is often highest between July and September (the summer months). Seasonality is also observed for deaths, the difference being that there are more deaths during the first quarter, i.e., from January to March (the winter months). In the coming years, natural increase is expected to decrease, mainly under the influence of the population ageing, which results in a growth of the number of deaths observed each year.

Chart A2
Factors of population growth, July to September, 1997 to 2017, Canada



Note: Before 2011, population growth is not equal to the sum of natural increase and international migratory increase because residual deviation must also be considered in the calculation.
Source: Statistics Canada, Demography Division.

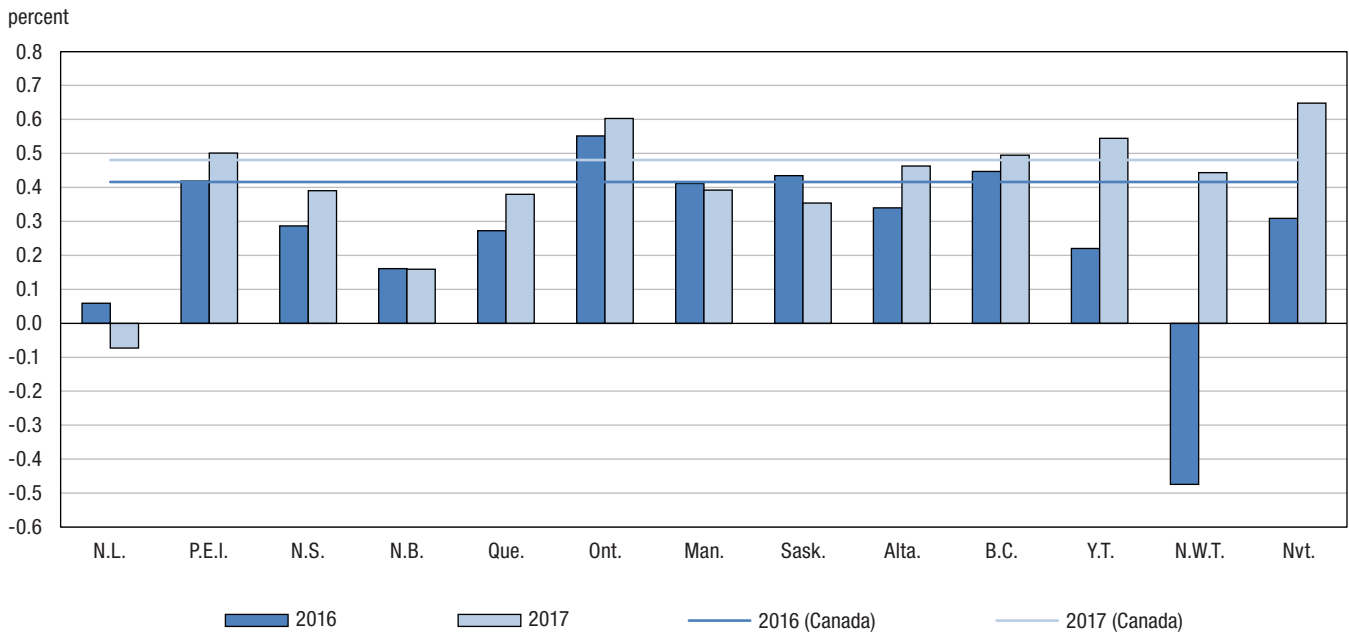
1. Natural increase is the difference between the number of births and deaths.
2. International migratory increase basically refers to the total number of moves between Canada and abroad that result in a change in the usual place of residence. It is calculated by adding immigration, return emigration and net non-permanent residents, then subtracting emigration and net temporary emigration.
3. There are three main categories of non-permanent residents: work permit holders, study permit holders and refugee claimants. Net non-permanent residents is calculated by subtracting the number of non-permanent residents estimated at the beginning of the quarter from the number estimated at the end of the quarter.

Population growth observed everywhere except in Newfoundland and Labrador

During the third quarter of 2017, population growth was positive in all provinces and territories, except Newfoundland and Labrador, where the population growth rate was -0.1%.⁴ Nunavut and Ontario had the highest population growth rate (+0.6% each) in Canada. Elsewhere, the population growth rate reached 0.5% in Prince Edward Island, Alberta, British Columbia and Yukon. Population growth in these provinces and territory was equal to the Canadian rate (+0.5%), of which 19,905 more people in Alberta.

Compared with the same period last year, population growth rate was up in Nova Scotia, Quebec, Alberta and the territories (Chart A3). In the Northwest Territories, growth rates shifted from negative to positive, while the opposite was observed in the Newfoundland and Labrador (although rates approached zero in the latest).

Chart A3
Population growth rate, July to September, 2016 and 2017, Canada, provinces and territories



Source: Statistics Canada, Demography Division.

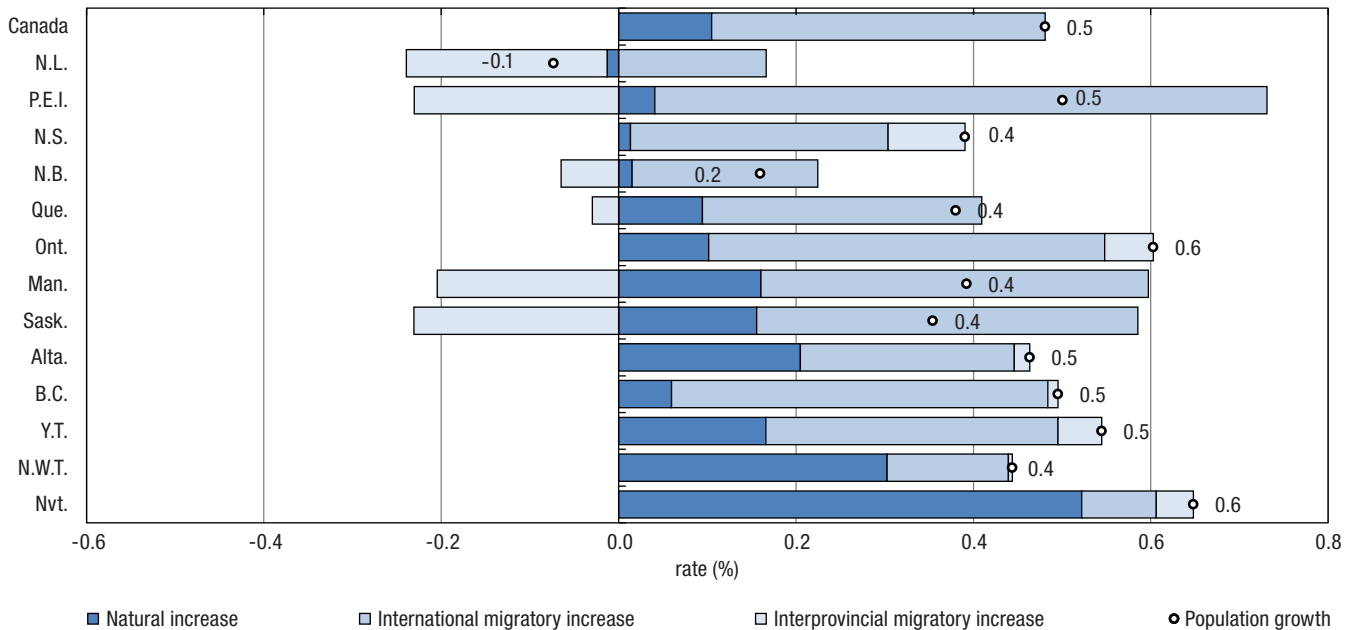
4. A growth rate higher than -0.1% and lower than 0.1% is considered not significant and relatively stable.

International migration is the main driver of growth in almost all provinces

During the third quarter of 2017, international migratory increase was the main driver of demographic growth in almost all provinces and in Yukon. In fact, six provinces and one territory posted unprecedented gains for a third quarter. In Alberta, however, natural increase and international migratory increase accounted for the population growth in similar proportions. The Northwest Territories and Nunavut continued to post the highest rates of natural increase, which accounted for 68% and 81% of their demographic growth respectively. Statistics show that fertility in these two territories is higher than the rest of Canada⁵.

In most provinces, an increase in the number of non-permanent residents was behind the rise in international migratory increase. Quebec recorded a gain of 14,601 non-permanent residents⁶, a major increase over the third quarter of 2016 (+5,902). In addition, Ontario posted a 39,862 increase in non-permanent residents, compared with 30,821 in the same quarter one year earlier. In British Columbia, the number of non-permanent residents rose 14,702, compared with 9,107 during the same quarter last year.

Chart A4
Factors of population growth, July to September, 2017, Canada, provinces and territories



Source: Statistics Canada, Demography Division.

5. Source: Statistics Canada, CANSIM, table 102-4505. Last modified: 2017-10-18 (<http://www.statcan.gc.ca/cansim/a26?lang=eng&id=1024505&p2=33&retrLang=eng>).

6. The gain in the third quarter of 2017 was mainly due to an increase in the number of refugee claimants born in Haiti.

Table A1
Population on October 1st 2017 and population growth, third quarter, 2016 and 2017, Canada, provinces and territories

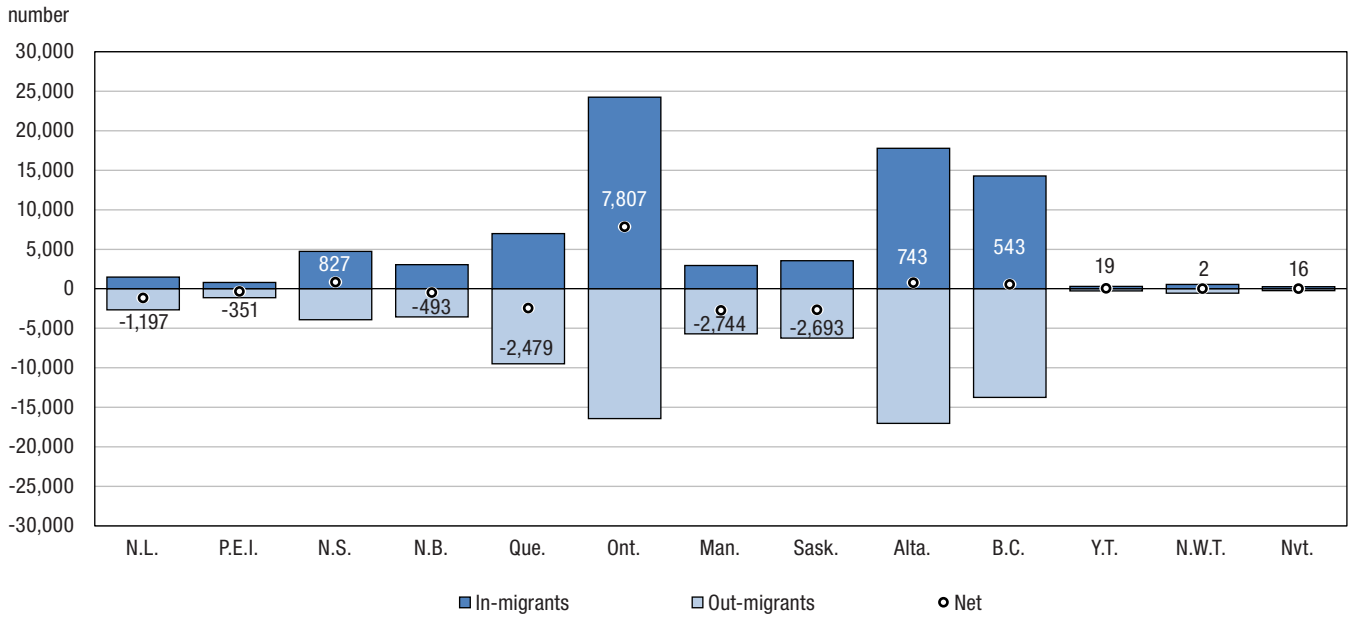
| | Population | Population growth for the third quarter | | | |
|--------|------------|---|----------|---------|----------|
| | | 2016 | | 2017 | |
| | | number | rate (%) | number | rate (%) |
| Canada | 36,885,049 | 151,117 | 0.4 | 176,966 | 0.5 |
| N.L. | 528,430 | 313 | 0.1 | -387 | -0.1 |
| P.E.I. | 152,784 | 627 | 0.4 | 763 | 0.5 |
| N.S. | 957,600 | 2,727 | 0.3 | 3,731 | 0.4 |
| N.B. | 760,868 | 1,222 | 0.2 | 1,213 | 0.2 |
| Que. | 8,425,996 | 22,720 | 0.3 | 31,962 | 0.4 |
| Ont. | 14,279,196 | 77,338 | 0.6 | 85,812 | 0.6 |
| Man. | 1,343,371 | 5,435 | 0.4 | 5,262 | 0.4 |
| Sask. | 1,168,057 | 5,002 | 0.4 | 4,132 | 0.4 |
| Alta. | 4,306,039 | 14,440 | 0.3 | 19,905 | 0.5 |
| B.C. | 4,841,078 | 21,305 | 0.4 | 23,918 | 0.5 |
| Y.T. | 38,669 | 84 | 0.2 | 210 | 0.5 |
| N.W.T. | 44,718 | -211 | -0.5 | 198 | 0.4 |
| Nvt. | 38,243 | 115 | 0.3 | 247 | 0.6 |

Source: Statistics Canada, Demography Division.

According to preliminary demographic estimates, interprovincial migratory increase was up in Alberta (+743), following eight consecutive quarters of interprovincial migratory losses (not shown). Alberta has not recorded this many consecutive quarters with negative results since the second half of the 1980s, when it saw ten consecutive quarters of interprovincial migration losses. In its exchanges with other provinces and territories, Alberta's migratory increases came mainly from Saskatchewan, Manitoba and Newfoundland and Labrador, though the gain was partially offset by losses to Ontario. Ontario (+7,807) continued to post the strongest interprovincial migratory increase in absolute terms. Although the influx came from most provinces, the highest proportion was from Quebec, Manitoba and Alberta. Nova Scotia ranked second for interprovincial gains with 827 people, with migrants coming primarily from Newfoundland and Labrador, Quebec, Ontario and British Columbia. British Columbia also recorded interprovincial migration gains of 543 people.

In Quebec, interprovincial migratory growth remained negative (-2,479). In fact, the last time Quebec experienced an interprovincial migration balance above zero was the fourth quarter of 2009 (+15). The interprovincial migration balance was also negative for Saskatchewan (-2,693) and Manitoba (-2,744), with significant outflows to Ontario, Alberta and British Columbia.

Chart A5
Interprovincial migration, July to September 2017, provinces and territories



Source: Statistics Canada, Demography Division.

Statistical tables

Table 1.1
Quarterly population estimates, Canada, provinces and territories - Population

| | Canada | N.L. | P.E.I. | N.S. | N.B. | Que. | Ont. | Man. | Sask. | Alta. | B.C. | Y.T. | N.W.T. | Nvt. |
|-------------------------|------------|---------|---------|---------|---------|-----------|------------|-----------|-----------|-----------|-----------|--------|--------|--------|
| | number | | | | | | | | | | | | | |
| 2011 | | | | | | | | | | | | | | |
| July 1 st | 34,342,780 | 525,037 | 144,038 | 944,469 | 755,530 | 8,007,656 | 13,263,544 | 1,233,728 | 1,066,349 | 3,790,191 | 4,499,139 | 35,402 | 43,501 | 34,196 |
| October 1 st | 34,469,327 | 525,874 | 144,496 | 945,260 | 755,700 | 8,031,428 | 13,317,140 | 1,237,759 | 1,070,894 | 3,807,046 | 4,520,299 | 35,533 | 43,541 | 34,357 |
| 2012 | | | | | | | | | | | | | | |
| January 1 st | 34,536,389 | 526,211 | 144,575 | 944,901 | 756,278 | 8,044,417 | 13,336,799 | 1,242,058 | 1,075,165 | 3,826,708 | 4,525,605 | 35,637 | 43,597 | 34,438 |
| April 1 st | 34,621,054 | 525,708 | 144,878 | 944,705 | 755,973 | 8,059,380 | 13,366,514 | 1,245,805 | 1,079,490 | 3,851,637 | 4,533,017 | 35,681 | 43,645 | 34,621 |
| July 1 st | 34,750,545 | 526,450 | 145,080 | 944,943 | 756,777 | 8,085,906 | 13,413,702 | 1,250,265 | 1,086,018 | 3,880,755 | 4,546,290 | 36,058 | 43,594 | 34,707 |
| October 1 st | 34,881,369 | 527,296 | 145,195 | 944,933 | 756,738 | 8,103,961 | 13,465,579 | 1,254,664 | 1,092,014 | 3,910,544 | 4,565,665 | 36,244 | 43,650 | 34,886 |
| 2013 | | | | | | | | | | | | | | |
| January 1 st | 34,936,495 | 527,418 | 144,991 | 944,535 | 756,061 | 8,113,237 | 13,480,215 | 1,258,573 | 1,095,283 | 3,932,995 | 4,568,275 | 36,177 | 43,705 | 35,030 |
| April 1 st | 35,019,500 | 527,544 | 144,907 | 943,503 | 755,599 | 8,126,316 | 13,508,005 | 1,261,632 | 1,098,806 | 3,961,496 | 4,576,691 | 36,103 | 43,832 | 35,066 |
| July 1 st | 35,152,370 | 527,399 | 145,198 | 943,049 | 755,710 | 8,151,331 | 13,555,754 | 1,265,588 | 1,104,825 | 3,997,950 | 4,590,081 | 36,298 | 43,773 | 35,414 |
| October 1 st | 35,289,109 | 528,425 | 145,340 | 943,063 | 755,529 | 8,170,222 | 13,608,292 | 1,269,524 | 1,109,502 | 4,029,995 | 4,613,659 | 36,209 | 43,721 | 35,628 |
| 2014 | | | | | | | | | | | | | | |
| January 1 st | 35,334,385 | 528,595 | 145,374 | 943,186 | 755,571 | 8,176,001 | 13,616,797 | 1,272,794 | 1,112,832 | 4,051,281 | 4,616,370 | 36,141 | 43,763 | 35,680 |
| April 1 st | 35,414,073 | 527,682 | 145,475 | 942,397 | 755,094 | 8,187,790 | 13,640,795 | 1,276,016 | 1,116,545 | 4,077,218 | 4,628,990 | 36,399 | 43,776 | 35,896 |
| July 1 st | 35,535,348 | 528,386 | 145,915 | 942,209 | 754,700 | 8,210,533 | 13,680,425 | 1,280,912 | 1,120,639 | 4,108,416 | 4,646,462 | 36,817 | 43,867 | 36,067 |
| October 1 st | 35,664,652 | 528,731 | 146,277 | 942,840 | 755,076 | 8,230,922 | 13,729,236 | 1,285,437 | 1,124,432 | 4,132,646 | 4,671,806 | 36,951 | 44,067 | 36,231 |
| 2015 | | | | | | | | | | | | | | |
| January 1 st | 35,689,014 | 528,825 | 146,253 | 942,404 | 754,866 | 8,233,395 | 13,730,752 | 1,288,862 | 1,126,913 | 4,145,224 | 4,674,209 | 36,840 | 44,121 | 36,350 |
| April 1 st | 35,734,156 | 528,631 | 146,319 | 941,045 | 754,210 | 8,238,013 | 13,747,999 | 1,291,058 | 1,128,274 | 4,159,628 | 4,681,391 | 36,989 | 44,189 | 36,410 |
| July 1 st | 35,832,513 | 528,815 | 146,791 | 941,545 | 753,944 | 8,254,912 | 13,789,597 | 1,295,422 | 1,131,150 | 4,177,527 | 4,694,699 | 37,289 | 44,214 | 36,608 |
| October 1 st | 35,961,311 | 529,469 | 147,238 | 943,690 | 754,499 | 8,274,644 | 13,846,162 | 1,300,749 | 1,135,977 | 4,194,449 | 4,715,872 | 37,380 | 44,417 | 36,765 |
| 2016 | | | | | | | | | | | | | | |
| January 1 st | 36,017,869 | 529,705 | 147,619 | 944,454 | 755,036 | 8,283,266 | 13,868,070 | 1,306,097 | 1,139,371 | 4,206,927 | 4,718,558 | 37,378 | 44,476 | 36,912 |
| April 1 st | 36,122,379 | 529,828 | 148,279 | 946,320 | 756,480 | 8,298,189 | 13,914,611 | 1,311,351 | 1,143,311 | 4,221,311 | 4,733,532 | 37,606 | 44,576 | 36,985 |
| July 1 st | 36,264,604 | 530,305 | 149,472 | 948,618 | 757,384 | 8,321,888 | 13,976,320 | 1,318,115 | 1,148,588 | 4,236,376 | 4,757,658 | 38,086 | 44,617 | 37,177 |
| October 1 st | 36,415,721 | 530,618 | 150,099 | 951,345 | 758,606 | 8,344,608 | 14,053,658 | 1,323,550 | 1,153,590 | 4,250,816 | 4,778,963 | 38,170 | 44,406 | 37,292 |
| 2017 | | | | | | | | | | | | | | |
| January 1 st | 36,474,968 | 530,097 | 150,271 | 950,990 | 758,198 | 8,351,714 | 14,084,797 | 1,327,883 | 1,156,342 | 4,261,116 | 4,783,461 | 38,209 | 44,452 | 37,438 |
| April 1 st | 36,560,776 | 529,204 | 150,769 | 952,016 | 758,148 | 8,366,022 | 14,124,305 | 1,331,960 | 1,159,549 | 4,272,398 | 4,795,891 | 38,273 | 44,584 | 37,657 |
| July 1 st | 36,708,083 | 528,817 | 152,021 | 953,869 | 759,655 | 8,394,034 | 14,193,384 | 1,338,109 | 1,163,925 | 4,286,134 | 4,817,160 | 38,459 | 44,520 | 37,996 |
| October 1 st | 36,885,049 | 528,430 | 152,784 | 957,600 | 760,868 | 8,425,996 | 14,279,196 | 1,343,371 | 1,168,057 | 4,306,039 | 4,841,078 | 38,669 | 44,718 | 38,243 |

Note: Estimates are final postcensal up to July 1, 2013, updated postcensal from October 1, 2013 to April 1, 2017 and preliminary postcensal from July 1, 2017.

Source: Statistics Canada, Demography Division.

Table 1.2
Quarterly population estimates, Canada, provinces and territories - Total growth in percentage

| | Canada | N.L. | P.E.I. | N.S. | N.B. | Que. | Ont. | Man. | Sask. | Alta. | B.C. | Y.T. | N.W.T. | Nvt. |
|---------------------|---------|-------|--------|-------|-------|------|------|------|-------|-------|------|-------|--------|------|
| | percent | | | | | | | | | | | | | |
| 2011 | | | | | | | | | | | | | | |
| July to September | 0.37 | 0.16 | 0.32 | 0.08 | 0.02 | 0.30 | 0.40 | 0.33 | 0.43 | 0.44 | 0.47 | 0.37 | 0.09 | 0.47 |
| October to December | 0.19 | 0.06 | 0.05 | -0.04 | 0.08 | 0.16 | 0.15 | 0.35 | 0.40 | 0.52 | 0.12 | 0.29 | 0.13 | 0.24 |
| 2012 | | | | | | | | | | | | | | |
| January to March | 0.24 | -0.10 | 0.21 | -0.02 | -0.04 | 0.19 | 0.22 | 0.30 | 0.40 | 0.65 | 0.16 | 0.12 | 0.11 | 0.53 |
| April to June | 0.37 | 0.14 | 0.14 | 0.03 | 0.11 | 0.33 | 0.35 | 0.36 | 0.60 | 0.75 | 0.29 | 1.05 | -0.12 | 0.25 |
| July to September | 0.38 | 0.16 | 0.08 | 0.00 | -0.01 | 0.22 | 0.39 | 0.35 | 0.55 | 0.76 | 0.43 | 0.51 | 0.13 | 0.51 |
| October to December | 0.16 | 0.02 | -0.14 | -0.04 | -0.09 | 0.11 | 0.11 | 0.31 | 0.30 | 0.57 | 0.06 | -0.19 | 0.13 | 0.41 |
| 2013 | | | | | | | | | | | | | | |
| January to March | 0.24 | 0.02 | -0.06 | -0.11 | -0.06 | 0.16 | 0.21 | 0.24 | 0.32 | 0.72 | 0.18 | -0.20 | 0.29 | 0.10 |
| April to June | 0.38 | -0.03 | 0.20 | -0.05 | 0.01 | 0.31 | 0.35 | 0.31 | 0.55 | 0.92 | 0.29 | 0.54 | -0.13 | 0.99 |
| July to September | 0.39 | 0.19 | 0.10 | 0.00 | -0.02 | 0.23 | 0.39 | 0.31 | 0.42 | 0.80 | 0.51 | -0.25 | -0.12 | 0.60 |
| October to December | 0.13 | 0.03 | 0.02 | 0.01 | 0.01 | 0.07 | 0.06 | 0.26 | 0.30 | 0.53 | 0.06 | -0.19 | 0.10 | 0.15 |
| 2014 | | | | | | | | | | | | | | |
| January to March | 0.23 | -0.17 | 0.07 | -0.08 | -0.06 | 0.14 | 0.18 | 0.25 | 0.33 | 0.64 | 0.27 | 0.71 | 0.03 | 0.60 |
| April to June | 0.34 | 0.13 | 0.30 | -0.02 | -0.05 | 0.28 | 0.29 | 0.38 | 0.37 | 0.76 | 0.38 | 1.14 | 0.21 | 0.48 |
| July to September | 0.36 | 0.07 | 0.25 | 0.07 | 0.05 | 0.25 | 0.36 | 0.35 | 0.34 | 0.59 | 0.54 | 0.36 | 0.45 | 0.45 |
| October to December | 0.07 | 0.02 | -0.02 | -0.05 | -0.03 | 0.03 | 0.01 | 0.27 | 0.22 | 0.30 | 0.05 | -0.30 | 0.12 | 0.33 |
| 2015 | | | | | | | | | | | | | | |
| January to March | 0.13 | -0.04 | 0.05 | -0.14 | -0.09 | 0.06 | 0.13 | 0.17 | 0.12 | 0.35 | 0.15 | 0.40 | 0.15 | 0.16 |
| April to June | 0.27 | 0.03 | 0.32 | 0.05 | -0.04 | 0.20 | 0.30 | 0.34 | 0.25 | 0.43 | 0.28 | 0.81 | 0.06 | 0.54 |
| July to September | 0.36 | 0.12 | 0.30 | 0.23 | 0.07 | 0.24 | 0.41 | 0.41 | 0.43 | 0.40 | 0.45 | 0.24 | 0.46 | 0.43 |
| October to December | 0.16 | 0.04 | 0.26 | 0.08 | 0.07 | 0.10 | 0.16 | 0.41 | 0.30 | 0.30 | 0.06 | -0.01 | 0.13 | 0.40 |
| 2016 | | | | | | | | | | | | | | |
| January to March | 0.29 | 0.02 | 0.45 | 0.20 | 0.19 | 0.18 | 0.34 | 0.40 | 0.35 | 0.34 | 0.32 | 0.61 | 0.22 | 0.20 |
| April to June | 0.39 | 0.09 | 0.80 | 0.24 | 0.12 | 0.29 | 0.44 | 0.51 | 0.46 | 0.36 | 0.51 | 1.27 | 0.09 | 0.52 |
| July to September | 0.42 | 0.06 | 0.42 | 0.29 | 0.16 | 0.27 | 0.55 | 0.41 | 0.43 | 0.34 | 0.45 | 0.22 | -0.47 | 0.31 |
| October to December | 0.16 | -0.10 | 0.11 | -0.04 | -0.05 | 0.09 | 0.22 | 0.33 | 0.24 | 0.24 | 0.09 | 0.10 | 0.10 | 0.39 |
| 2017 | | | | | | | | | | | | | | |
| January to March | 0.23 | -0.17 | 0.33 | 0.11 | -0.01 | 0.17 | 0.28 | 0.31 | 0.28 | 0.26 | 0.26 | 0.17 | 0.30 | 0.58 |
| April to June | 0.40 | -0.07 | 0.83 | 0.19 | 0.20 | 0.33 | 0.49 | 0.46 | 0.38 | 0.32 | 0.44 | 0.48 | -0.14 | 0.90 |
| July to September | 0.48 | -0.07 | 0.50 | 0.39 | 0.16 | 0.38 | 0.60 | 0.39 | 0.35 | 0.46 | 0.50 | 0.54 | 0.44 | 0.65 |

Note: Total growth is final up to June 2013, updated from July 2013 to March 2017 and preliminary from April 2017.

Source: Statistics Canada, Demography Division.

Table 1.3
Quarterly population estimates, Canada, provinces and territories - Total growth

| | Canada | N.L. | P.E.I. | N.S. | N.B. | Que. | Ont. | Man. | Sask. | Alta. | B.C. | Y.T. | N.W.T. | Nvt. |
|---------------------|---------|-------|--------|--------|-------|--------|--------|-------|-------|--------|--------|------|--------|------|
| | number | | | | | | | | | | | | | |
| 2011 | | | | | | | | | | | | | | |
| July to September | 126,547 | 837 | 458 | 791 | 170 | 23,772 | 53,596 | 4,031 | 4,545 | 16,855 | 21,160 | 131 | 40 | 161 |
| October to December | 67,062 | 337 | 79 | -359 | 578 | 12,989 | 19,659 | 4,299 | 4,271 | 19,662 | 5,306 | 104 | 56 | 81 |
| 2012 | | | | | | | | | | | | | | |
| January to March | 84,665 | -503 | 303 | -196 | -305 | 14,963 | 29,715 | 3,747 | 4,325 | 24,929 | 7,412 | 44 | 48 | 183 |
| April to June | 129,491 | 742 | 202 | 238 | 804 | 26,526 | 47,188 | 4,460 | 6,528 | 29,118 | 13,273 | 377 | -51 | 86 |
| July to September | 130,824 | 846 | 115 | -10 | -39 | 18,055 | 51,877 | 4,399 | 5,996 | 29,789 | 19,375 | 186 | 56 | 179 |
| October to December | 55,126 | 122 | -204 | -398 | -677 | 9,276 | 14,636 | 3,909 | 3,269 | 22,451 | 2,610 | -67 | 55 | 144 |
| 2013 | | | | | | | | | | | | | | |
| January to March | 83,005 | 126 | -84 | -1,032 | -462 | 13,079 | 27,790 | 3,059 | 3,523 | 28,501 | 8,416 | -74 | 127 | 36 |
| April to June | 132,870 | -145 | 291 | -454 | 111 | 25,015 | 47,749 | 3,956 | 6,019 | 36,454 | 13,390 | 195 | -59 | 348 |
| July to September | 136,739 | 1,026 | 142 | 14 | -181 | 18,891 | 52,538 | 3,936 | 4,677 | 32,045 | 23,578 | -89 | -52 | 214 |
| October to December | 45,276 | 170 | 34 | 123 | 42 | 5,779 | 8,505 | 3,270 | 3,330 | 21,286 | 2,711 | -68 | 42 | 52 |
| 2014 | | | | | | | | | | | | | | |
| January to March | 79,688 | -913 | 101 | -789 | -477 | 11,789 | 23,998 | 3,222 | 3,713 | 25,937 | 12,620 | 258 | 13 | 216 |
| April to June | 121,275 | 704 | 440 | -188 | -394 | 22,743 | 39,630 | 4,896 | 4,094 | 31,198 | 17,472 | 418 | 91 | 171 |
| July to September | 129,304 | 345 | 362 | 631 | 376 | 20,389 | 48,811 | 4,525 | 3,793 | 24,230 | 25,344 | 134 | 200 | 164 |
| October to December | 24,362 | 94 | -24 | -436 | -210 | 2,473 | 1,516 | 3,425 | 2,481 | 12,578 | 2,403 | -111 | 54 | 119 |
| 2015 | | | | | | | | | | | | | | |
| January to March | 45,142 | -194 | 66 | -1,359 | -656 | 4,618 | 17,247 | 2,196 | 1,361 | 14,404 | 7,182 | 149 | 68 | 60 |
| April to June | 98,357 | 184 | 472 | 500 | -266 | 16,899 | 41,598 | 4,364 | 2,876 | 17,899 | 13,308 | 300 | 25 | 198 |
| July to September | 128,798 | 654 | 447 | 2,145 | 555 | 19,732 | 56,565 | 5,327 | 4,827 | 16,922 | 21,173 | 91 | 203 | 157 |
| October to December | 56,558 | 236 | 381 | 764 | 537 | 8,622 | 21,908 | 5,348 | 3,394 | 12,478 | 2,686 | -2 | 59 | 147 |
| 2016 | | | | | | | | | | | | | | |
| January to March | 104,510 | 123 | 660 | 1,866 | 1,444 | 14,923 | 46,541 | 5,254 | 3,940 | 14,384 | 14,974 | 228 | 100 | 73 |
| April to June | 142,225 | 477 | 1,193 | 2,298 | 904 | 23,699 | 61,709 | 6,764 | 5,277 | 15,065 | 24,126 | 480 | 41 | 192 |
| July to September | 151,117 | 313 | 627 | 2,727 | 1,222 | 22,720 | 77,338 | 5,435 | 5,002 | 14,440 | 21,305 | 84 | -211 | 115 |
| October to December | 59,247 | -521 | 172 | -355 | -408 | 7,106 | 31,139 | 4,333 | 2,752 | 10,300 | 4,498 | 39 | 46 | 146 |
| 2017 | | | | | | | | | | | | | | |
| January to March | 85,808 | -893 | 498 | 1,026 | -50 | 14,308 | 39,508 | 4,077 | 3,207 | 11,282 | 12,430 | 64 | 132 | 219 |
| April to June | 147,307 | -387 | 1,252 | 1,853 | 1,507 | 28,012 | 69,079 | 6,149 | 4,376 | 13,736 | 21,269 | 186 | -64 | 339 |
| July to September | 176,966 | -387 | 763 | 3,731 | 1,213 | 31,962 | 85,812 | 5,262 | 4,132 | 19,905 | 23,918 | 210 | 198 | 247 |

Note: Total growth is final up to June 2013, updated from July 2013 to March 2017 and preliminary from April 2017.

Source: Statistics Canada, Demography Division.

Table 2
Quarterly population estimates and factors of demographic growth - Canada

| | Population at beginning period | Natural increase | Net interprovincial migration number | Net international migration | Total net migration | Total growth | Total growth rate percent |
|---------------------|-----------------------------------|---------------------|---|-----------------------------------|------------------------|-----------------|---------------------------------|
| 2011 | | | | | | | |
| July to September | 34,342,780 | 43,828 | 0 | 82,719 | 82,719 | 126,547 | 0.37 |
| October to December | 34,469,327 | 30,831 | 0 | 36,231 | 36,231 | 67,062 | 0.19 |
| 2012 | | | | | | | |
| January to March | 34,536,389 | 27,101 | 0 | 57,564 | 57,564 | 84,665 | 0.24 |
| April to June | 34,621,054 | 35,580 | 0 | 93,911 | 93,911 | 129,491 | 0.37 |
| July to September | 34,750,545 | 42,836 | 0 | 87,988 | 87,988 | 130,824 | 0.38 |
| October to December | 34,881,369 | 29,756 | 0 | 25,370 | 25,370 | 55,126 | 0.16 |
| 2013 | | | | | | | |
| January to March | 34,936,495 | 22,702 | 0 | 60,303 | 60,303 | 83,005 | 0.24 |
| April to June | 35,019,500 | 34,657 | 0 | 98,213 | 98,213 | 132,870 | 0.38 |
| July to September | 35,152,370 | 41,836 | 0 | 94,903 | 94,903 | 136,739 | 0.39 |
| October to December | 35,289,109 | 28,790 | 0 | 16,486 | 16,486 | 45,276 | 0.13 |
| 2014 | | | | | | | |
| January to March | 35,334,385 | 22,799 | 0 | 56,889 | 56,889 | 79,688 | 0.23 |
| April to June | 35,414,073 | 33,887 | 0 | 87,388 | 87,388 | 121,275 | 0.34 |
| July to September | 35,535,348 | 41,238 | 0 | 88,066 | 88,066 | 129,304 | 0.36 |
| October to December | 35,664,652 | 26,034 | 0 | -1,672 | -1,672 | 24,362 | 0.07 |
| 2015 | | | | | | | |
| January to March | 35,689,014 | 19,203 | 0 | 25,939 | 25,939 | 45,142 | 0.13 |
| April to June | 35,734,156 | 32,219 | 0 | 66,138 | 66,138 | 98,357 | 0.27 |
| July to September | 35,832,513 | 40,495 | 0 | 88,303 | 88,303 | 128,798 | 0.36 |
| October to December | 35,961,311 | 26,022 | 0 | 30,536 | 30,536 | 56,558 | 0.16 |
| 2016 | | | | | | | |
| January to March | 36,017,869 | 20,363 | 0 | 84,147 | 84,147 | 104,510 | 0.29 |
| April to June | 36,122,379 | 31,704 | 0 | 110,521 | 110,521 | 142,225 | 0.39 |
| July to September | 36,264,604 | 40,020 | 0 | 111,097 | 111,097 | 151,117 | 0.42 |
| October to December | 36,415,721 | 24,683 | 0 | 34,564 | 34,564 | 59,247 | 0.16 |
| 2017 | | | | | | | |
| January to March | 36,474,968 | 16,781 | 0 | 69,027 | 69,027 | 85,808 | 0.23 |
| April to June | 36,560,776 | 29,927 | 0 | 117,380 | 117,380 | 147,307 | 0.40 |
| July to September | 36,708,083 | 38,651 | 0 | 138,315 | 138,315 | 176,966 | 0.48 |
| October to December | 36,885,049 | .. | .. | .. | .. | .. | .. |

.. not available for a specific reference period

Note: See "Data quality, concepts and methodology — Explanatory notes for the tables" section.

Source: Statistics Canada, Demography Division.

Table 3
Quarterly estimates of demographic components - Canada

| | Natural increase | | Net interprovincial migration | | Net international migration | | | | |
|---------------------|------------------|--------|-------------------------------|--------------|-----------------------------|-----------|---------------------|-------------------------|-----------------------------|
| | Births | Deaths | In-migrants | Out-migrants | Immigrants | Emigrants | Returning emigrants | Net temporary emigrants | Net non-permanent residents |
| | number | | | | | | | | |
| 2011 | | | | | | | | | |
| July to September | 100,674 | 56,846 | 89,862 | 89,862 | 71,876 | 21,067 | 13,864 | 5,435 | 23,481 |
| October to December | 91,731 | 60,900 | 55,322 | 55,322 | 59,608 | 14,245 | 6,005 | 4,423 | -10,714 |
| 2012 | | | | | | | | | |
| January to March | 91,145 | 64,044 | 69,238 | 69,238 | 55,587 | 13,299 | 6,043 | 4,278 | 13,511 |
| April to June | 95,290 | 59,710 | 90,003 | 90,003 | 73,044 | 13,293 | 10,978 | 4,278 | 27,460 |
| July to September | 101,178 | 58,342 | 85,820 | 85,820 | 66,927 | 19,684 | 15,026 | 5,317 | 31,036 |
| October to December | 94,256 | 64,500 | 47,531 | 47,531 | 62,334 | 12,938 | 5,723 | 4,284 | -25,465 |
| 2013 | | | | | | | | | |
| January to March | 90,860 | 68,158 | 62,699 | 62,699 | 58,256 | 13,803 | 5,566 | 4,414 | 14,698 |
| April to June | 95,313 | 60,656 | 96,253 | 96,253 | 75,639 | 13,669 | 10,703 | 4,394 | 29,934 |
| July to September | 100,839 | 59,003 | 81,855 | 81,855 | 65,338 | 20,072 | 16,139 | 5,184 | 38,682 |
| October to December | 93,311 | 64,521 | 52,761 | 52,761 | 59,789 | 14,500 | 5,580 | 4,384 | -29,999 |
| 2014 | | | | | | | | | |
| January to March | 91,721 | 68,922 | 67,097 | 67,097 | 64,472 | 14,752 | 5,449 | 4,417 | 6,137 |
| April to June | 96,017 | 62,130 | 102,756 | 102,756 | 78,307 | 14,820 | 10,008 | 4,430 | 18,323 |
| July to September | 101,767 | 60,529 | 79,966 | 79,966 | 65,588 | 22,230 | 16,085 | 5,360 | 33,983 |
| October to December | 93,973 | 67,939 | 51,170 | 51,170 | 52,044 | 14,248 | 6,015 | 4,265 | -41,218 |
| 2015 | | | | | | | | | |
| January to March | 92,092 | 72,889 | 74,452 | 74,452 | 51,121 | 15,148 | 5,509 | 4,385 | -11,158 |
| April to June | 96,544 | 64,325 | 108,765 | 108,765 | 72,088 | 15,278 | 11,498 | 4,403 | 2,233 |
| July to September | 102,282 | 61,787 | 87,901 | 87,901 | 78,899 | 22,306 | 16,085 | 5,359 | 20,984 |
| October to December | 94,374 | 68,352 | 47,708 | 47,708 | 69,740 | 14,297 | 6,015 | 4,265 | -26,657 |
| 2016 | | | | | | | | | |
| January to March | 93,276 | 72,913 | 70,384 | 70,384 | 86,245 | 15,206 | 5,509 | 4,386 | 11,985 |
| April to June | 97,584 | 65,880 | 98,130 | 98,130 | 88,289 | 15,335 | 11,498 | 4,404 | 30,473 |
| July to September | 103,718 | 63,698 | 92,800 | 92,800 | 68,239 | 22,347 | 16,085 | 5,359 | 54,479 |
| October to December | 95,296 | 70,613 | 47,366 | 47,366 | 53,611 | 14,327 | 6,015 | 4,266 | -6,469 |
| 2017 | | | | | | | | | |
| January to March | 93,487 | 76,706 | 73,668 | 73,668 | 72,795 | 15,237 | 5,509 | 4,386 | 10,346 |
| April to June | 97,411 | 67,484 | 105,518 | 105,518 | 78,021 | 15,368 | 11,498 | 4,403 | 47,632 |
| July to September | 103,730 | 65,079 | 80,964 | 80,964 | 70,132 | 22,347 | 16,085 | 5,359 | 79,804 |

Note: See "Data quality, concepts and methodology — Explanatory notes for the tables" section.

Source: Statistics Canada, Demography Division.

Table 4
Quarterly estimates of interprovincial migrants by province or territory of origin and destination, Canada, July to September 2017

| Origin | Destination | | | | | | | | | | | | Nvt. |
|---------------------------|-------------|--------|-------|-------|--------|--------|--------|--------|--------|--------|------|--------|------|
| | N.L. | P.E.I. | N.S. | N.B. | Que. | Ont. | Man. | Sask. | Alta. | B.C. | Y.T. | N.W.T. | |
| | number | | | | | | | | | | | | |
| N.L. | ... | 72 | 353 | 177 | 167 | 825 | 94 | 17 | 795 | 169 | 0 | 0 | 0 |
| P.E.I. | 45 | ... | 116 | 75 | 106 | 526 | 0 | 16 | 94 | 155 | 0 | 5 | 0 |
| N.S. | 222 | 137 | ... | 538 | 162 | 1,659 | 78 | 13 | 698 | 370 | 0 | 36 | 8 |
| N.B. | 65 | 93 | 627 | ... | 700 | 1,201 | 48 | 60 | 529 | 209 | 0 | 16 | 0 |
| Que. | 46 | 96 | 332 | 481 | ... | 6,515 | 143 | 104 | 870 | 843 | 10 | 21 | 17 |
| Ont. | 461 | 233 | 1,788 | 801 | 3,618 | ... | 870 | 735 | 4,044 | 3,617 | 13 | 107 | 133 |
| Man. | 48 | 0 | 96 | 80 | 297 | 2,041 | ... | 391 | 1,360 | 1,334 | 0 | 42 | 17 |
| Sask. | 20 | 30 | 103 | 39 | 137 | 1,622 | 437 | ... | 2,722 | 1,061 | 39 | 27 | 0 |
| Alta. | 435 | 64 | 762 | 538 | 889 | 5,409 | 659 | 1,648 | ... | 6,376 | 103 | 119 | 30 |
| B.C. | 104 | 62 | 488 | 310 | 835 | 4,221 | 610 | 517 | 6,272 | ... | 127 | 144 | 39 |
| Y.T. | 0 | 0 | 13 | 12 | 16 | 55 | 0 | 19 | 97 | 52 | ... | 18 | 0 |
| N.W.T. | 5 | 0 | 52 | 4 | 60 | 84 | 0 | 24 | 242 | 70 | 9 | ... | 13 |
| Nvt. | 21 | 0 | 18 | 0 | 12 | 69 | 23 | 0 | 52 | 16 | 0 | 30 | ... |
| In-migrants | 1,472 | 787 | 4,748 | 3,055 | 6,999 | 24,227 | 2,962 | 3,544 | 17,775 | 14,272 | 301 | 565 | 257 |
| Out-migrants | 2,669 | 1,138 | 3,921 | 3,548 | 9,478 | 16,420 | 5,706 | 6,237 | 17,032 | 13,729 | 282 | 563 | 241 |
| Net | -1,197 | -351 | 827 | -493 | -2,479 | 7,807 | -2,744 | -2,693 | 743 | 543 | 19 | 2 | 16 |
| Total number of migrants: | 80,964 | | | | | | | | | | | | |

... not applicable

Note: Preliminary estimates based on data from the Canada child benefit (CCB) program (formerly Canada Child Tax Benefit (CCTB)) and jkF factors calculated using 2013/2014, 2014/2015 and 2015/2016 tax file data from Canada Revenue Agency.

Source: Statistics Canada, Demography Division.

Data quality, concepts and methodology

Methodology

This section describes the concepts, data sources and methodology used to produce the population estimates. Population estimates are produced to measure the population counts according to various characteristics and geographies between two censuses. The demographic estimates are the official population estimates at the national, provincial and territorial levels.

Postcensal estimates are based on the 2011 Census.

Population Estimates

Estimates of the total population

Types of estimates

Population estimates can be either intercensal or postcensal. Intercensal estimates are produced using the counts from two consecutive censuses adjusted for census net undercoverage (CNU)¹ and postcensal estimates. The production of intercensal estimates involves updating the postcensal estimates using the counts from a new census adjusted for CNU.¹

Postcensal estimates are produced using data from the most recent census adjusted for CNU¹ and the components of demographic growth. In terms of timeliness, postcensal estimates are more up-to-date than data from the most recent census adjusted for CNU,¹ but as they get farther from the date of that census, they become more variable.

Levels of estimates

The production of the population estimates between censuses entails the use of data from administrative files or surveys. The quality of population estimates therefore depends on the availability of a number of administrative data files that are provided to Statistics Canada by Canadian and foreign government departments. Since some components are not available until several months after the reference date, three kinds of postcensal estimates are produced preliminary postcensal (PP), updated postcensal (PR) and final postcensal (PD). The time lag between the reference date and the release date is three months for preliminary estimates and two to three years for final estimates. Though it requires more vigilance on the part of users, the production of three successive series of postcensal estimates is the strategy that best satisfies the need for both timeliness and accuracy of the estimates. All tables indicate the level of the estimates they contain.

Calculation of postcensal population estimates

Population estimates – preliminary, updated and final – are produced by the component method. This method consists of taking the population figures from the most recent census, adjusted for the CNU¹ (census undercoverage minus census overcoverage), and adding or subtracting the number of births, deaths, and components of international and interprovincial migration.

A. Provincial / territorial estimates of total population

Population estimates are produced for the provinces and territories first; then they are summed to obtain an estimate of the population of Canada.

The component-method formula for estimating the total provincial / territorial populations is as follows:

$$P_{(t+i)} = P_{(t)} + B_{(t,t+i)} - D_{(t,t+i)} + I_{(t,t+i)} - [E_{(t,t+i)} + \Delta TE_{(t,t+i)}] + RE_{(t,t+i)} + \Delta NPR_{(t,t+i)} + \Delta Ninter_{(t,t+i)} - Resid_{(t,t+i)}$$

where, for each province and territory:

| | |
|-----------------|---|
| (t,t+i) | interval between times t and t+i; |
| $P_{(t+i)}$ | estimate of the population at time t+i; |
| $P_{(t)}$ | base population at time t (census adjusted for (CNU) ¹ or most recent estimate); |
| B | number of births; |
| D | number of deaths; |
| I | number of immigrants; |
| E | number of emigrants; |
| ΔTE | net temporary emigration; |
| RE | number of returning emigrants; |
| ΔNPR | net non-permanent residents; |
| $\Delta Ninter$ | net interprovincial migration; |
| Resid | residual deviation (for intercensal estimates). |

B. Levels of estimates

The difference between preliminary² and final postcensal population estimates lies in the timeliness of the components. When all the components are preliminary, the population estimate is described as preliminary postcensal (PP). When they are all final, the estimate is referred to as final postcensal (PD). Any other combination of levels is referred to as updated postcensal (PR).

Base population and components of demographic growth

A. Base population

The base populations are derived from the quinquennial censuses between 1971 and 2011. The population universe of the 2011³ Census includes the following groups:

- Canadian citizens (by birth or by naturalization) and immigrants with a usual place of residence in Canada;
- Canadian citizens (by birth or by naturalization) and immigrants who are abroad either on a military base or attached to a diplomatic mission;
- Canadian citizens (by birth or by naturalization) and immigrants at sea or in port aboard merchant vessels under Canadian registry or Canadian government vessels;
- persons with a usual place of residence in Canada who are claiming refugee status and the family members living with them;
- persons with a usual place of residence in Canada who hold study permits and the family members living with them;
- persons with a usual place of residence in Canada who hold work permits and the family members living with them.

For census purposes, the last three groups are referred to as non-permanent residents (NPR). They have been included in the census universe since 1991 but foreign residents are not included. Foreign residents are persons who belong to the following groups:

- government representatives of another country attached to the embassy, high commission or other diplomatic body of that country in Canada, and members of their families living with them;
- members of the Armed Forces of another country who are stationed in Canada, and family members living with them;
- residents of another country visiting Canada temporarily (for example, a foreign visitor on vacation or on business, with or without a visitor's permit).

These base populations are adjusted as follows:

- adjustment of the population for CNU;
- addition of independent estimates for incompletely enumerated Indian reserves in 1991, 1996, 2001, 2006 and 2011;
- adjustment for early enumeration in 1991 and 1996 in parts of Northern Quebec, Newfoundland and Labrador, the Yukon and the Northwest Territories;
- addition of estimates of NPRs in 1971, 1976, 1981 and 1986. Since 1991, NPRs are included in the census universe;
- estimation of the July 1 base population by addition or subtraction of the components of growth between Census Day and June 30;
- demographic adjustment for old age population is an age structure adjustment of census estimates for 2001, 2006 and 2011 by sex for each province and territory. These adjustments were performed from age 85 in 2001, from age 90 in 2006 and from age 95 in 2011.

Adjustment for the census net undercoverage (CNU)

The adjustment for CNU is important. CNU is the difference between the number of persons who should have been enumerated but were missed (undercoverage) and the number of persons who were enumerated but should not have been or who were counted more than once (overcoverage).

Coverage studies provide undercoverage estimates for the 1991, 1996 (www.statcan.gc.ca/c1996-r1996/tech-eng.htm), 2001 (www12.statcan.ca/english/census01/Products/Reference/tech_rep/coverage/index.cfm), 2006 (www12.statcan.gc.ca/census-recensement/2006/ref/rp-guides/rp/coverage-couverture/cov-couv_index-eng.cfm) and 2011 (www12.statcan.gc.ca/census-recensement/2011/ref/guides/98-303-x/index-eng.cfm) censuses at the provincial and territorial levels, and for the 1971, 1976, 1981 and 1986 censuses at the provincial level only. Estimates of overcoverage at the provincial and territorial levels are available only for the last five censuses (1991, 1996, 2001, 2006 and 2011). Overcoverage for previous censuses was estimated by assuming that the overcoverage-to-undercoverage ratio for each census between 1971 and 1986 was the same as in 1991. The CNU for the Yukon and the Northwest Territories prior to 1991 was estimated by assuming that the ratio between the CNU for each territory and the 10 provinces for each census between 1971 and 1986 was the same as in 1991.

For consistency, the 1991 Census undercoverage and overcoverage were revised in 1998 to take into account the methodological improvements made in the 1996 Census coverage studies. This revision altered CNU in all censuses between 1971 and 1986. Similarly, the 1996 Census undercoverage and overcoverage were revised in 2003.

B. Births and deaths

The numbers of births and deaths are derived directly from the vital statistics database of Statistics Canada's Health Statistics Division. Although Statistics Canada manages the National system of vital statistics, the central vital statistics registries of the provinces and territories are responsible for collecting and processing the information from those administrative files. Under provincial / territorial vital statistics statutes (or similar legislation), all live births and all deaths must be registered, and all provinces and territories provide this information to Statistics Canada.

The vital statistics universe closely parallels the census universe. Both universes include the births and deaths of all Canadians, immigrants and non-permanent residents (NPR) and exclude foreign residents.

Vital statistics by province or territory of residence are used to produce our final estimates of births and deaths. However, before 2011, the final estimates may differ from the data released by the Health Statistics Division due to the imputation of certain unknown values. In addition, for estimates of deaths, the age represents age at the beginning of the period (July 1st) and not the age at the time of occurrence, as with the Health Statistics Division data.

When there are no vital statistics, the number of births is estimated using fertility rates by the mother's age. The number of deaths is estimated by using mortality rates by age and sex. These methods are used to calculate preliminary² estimates.

Special treatment for preliminary² estimates for Quebec and British Columbia

Quebec and British Columbia provide their most recent estimates of births and deaths. The figures are used to produce preliminary² estimates. For the final estimates, the two provinces' births and deaths are derived from the vital statistics compiled by Health Statistics Division.

Levels of estimates

For information on the differences between preliminary² and final estimates, see sections **B. Births and Deaths**, above.

C. Immigration

Like the numbers of births and deaths, Canadian immigration statistics must be kept by law. In Canada, immigration is regulated by the Immigration and Refugee Protection Act (IRPA) of 2002. This statute superseded the Immigration Act, which was passed in 1976 and amended more than 30 times in the years thereafter. Immigration, Refugees and Citizenship Canada (IRCC) collects and processes immigrants' administrative files. It then provides Statistics Canada with information from Global Case Management System (GCMS) files. The information is used to estimate the number and characteristics of people granted permanent resident status by the federal government on a given date. For Demography Division, the terms immigrant and permanent resident are equivalent.

An immigrant is a person who is not a Canadian citizen by birth, but has been granted the right to live in Canada permanently by Canadian immigration authorities. The number of immigrants does not include persons born abroad to Canadian parents who are only temporarily outside the country.

Immigrants are usually counted on or after the date on which they are granted permanent resident status or the right to live in Canada.

Levels of estimates

The difference between preliminary² and final postcensal estimates lies in the timeliness of the source used to estimate this component. Since the GCMS files are continually being updated, new calculations are carried out each year to update the immigration estimates. Immigration estimates are preliminary the first year, updated the second year and final in the third year.

D. Net non-permanent residents

Like the numbers of births and deaths, Canadian immigration statistics must be kept by law. In Canada, the non-permanent residents (NPR) are regulated by the *Immigration and Refugee Protection Act* (IRPA) of 2002. This statute superseded the *Immigration Act*, which was passed in 1976 and amended more than 30 times in the years thereafter. Immigration, Refugees and Citizenship Canada (IRCC) collects and processes the administrative files of immigrants and NPRs in Canada. It then provides Statistics Canada with information from Global Case Management System (GCMS) files. The information is used to estimate the number and characteristics of people granted non-permanent resident status by the federal government.

NPRs are persons who are lawfully in Canada on a temporary basis under the authority of a temporary resident permit, along with members of their family living with them. NPRs include foreign workers, foreign students, the humanitarian population and other temporary residents. The humanitarian population includes refugee claimants

and temporary residents who are allowed to remain in Canada on humanitarian grounds and are not categorized as either foreign workers or foreign students. For Demography Division, the terms non-permanent resident and temporary resident are equivalent.

NPR estimates are based on the number of NPRs, not on the net. The number of people in IRCC's administrative system is estimated on a specific date in each period of observation. First, the end-of-period number of NPR is estimated, and then the start-of-period number of NPR is subtracted from that estimate. That yields the net number of NPR.

Anyone who received non-permanent resident status prior to the observation date is counted. For refugee claimants, the date of their application is used. Permit holders and refugee claimants are excluded from the population if their permit has expired, if they receive permanent resident status, or if they are deported. In addition, refugee claimants are excluded if their file has been inactive for two years.

Since GCMS files are continually being updated, the figures are recalculated each year until the estimates of net NPR are final.

Levels of estimates

The difference between preliminary² and final estimates lies in the timeliness of the source used to estimate this component. Since the GCMS files are continually being updated, the figures are recalculated each year to update the estimates of the net number of NPRs. Non-permanent resident (NPR) estimates are preliminary the first year and updated the following year. They become final two to three years after the reference year, when all other components are also final.

E. Emigration

The number of emigrants is estimated using data from the Office of Immigration Statistics, U.S. Department of Homeland Security, data collected by the Canada child benefit (CCB) program (formerly Canada child tax benefit (CCTB)), and data from the T1 Family File (T1FF).⁴ The first source is used to estimate emigration to the United States. CCB data are used to estimate emigration to other countries. The estimates of the number of child emigrants have to be adjusted because the CCB is not universal and does not provide direct information on the number of adult emigrants. As a result, four adjustment factors are taken into account:

- incomplete coverage due to a delay in the receipt and processing of the files of children eligible for the CCB. Since it seems to take four years after the reference period for CCB administrative files to become complete, the adjustment is made when the estimates are used before this date. The factor is derived from the two-year ratios of emigrant children based on two versions of the CCB files;
- the program's partial coverage, that is, people who do not apply for the CCB or who are not eligible. This factor is obtained by comparing the estimated number of children in the population with the number of children in CCB files;
- the differential propensity to emigrate between children who are eligible for the CCB and children who are not. This factor is obtained by comparing the emigration rates of CCB-eligible children with the rates for all children (aged 0 to 17). This factor is calculated for each province and territory and is based on the last three available years of T1FF;⁴
- the differential propensity to emigrate between adults and children. This factor generates the emigration rate for the population aged 18 and over. It is obtained by (1) calculating the average ratio over three years of the adult and child emigration rates based on T1FF⁴ data, (2) calculating the average ratio over three years of the adult and child emigration rates based on data from the Office of Immigration Statistics, U.S. Department of Homeland Security, and (3) taking the average of the two rates. This factor is calculated for Canada only.

The adult emigration rate is applied to the adult population. Adult emigration is distributed by province and territory using data from the T1FF⁴ file. We calculate a ratio of the number of emigrant adults to the number of emigrant children from the T1FF⁴ file. We then apply this ratio to the number of emigrant children from the CCB by province, which yields the number of adult emigrants whose provincial distribution will differ from that of the children.

The number of adult emigrants combined with the number of child emigrants (once adjusted for the coverage and differential emigration factors) generate the number of emigrants for the entire population.

Emigration is disaggregated by province and territory based on the number of child emigrants adjusted for coverage and differential emigration.

Please note that the estimates for the most recent periods are expected to be identical or very similar. In the absence of more up-to-date data sources, the assumption is made that levels remain similar.

Levels of estimates

The difference between preliminary² and final estimates lies in the timeliness of the sources used to estimate this component. The same estimation method is used.

F. Net temporary emigration

Some people leave Canada to live temporarily in another country while others who were temporarily outside of Canada return. The net result of those departures and returns is the component known as “net temporary emigration”. Estimates of the number of departures are derived from the Reverse Record Check (RRC), the most important census coverage study. The RRC provides an estimate of the number of people who left Canada temporarily during an intercensal period and are still out of the country at the end of the period. Estimates of the number of returns are based on two sources: the census and Demography Division’s estimates of returning emigrants. The census provides the number of people who were outside Canada at the time of the previous census and returned during the intercensal period. That number includes all returning emigrants. Then Demography Division’s estimate of the returning emigrants component is subtracted to produce the number of returning temporary emigrants. The estimated numbers of departures (RRC) and returns (census and Demography Division) yield an estimate of net temporary emigration.

This estimate is for the whole intercensal period; it is disaggregated into estimates for each of the five years in the period and then into monthly estimates using a seasonal adjustment that is an average between zero seasonality and the seasonality of emigration.

Net temporary emigration is calculated first for the national level. It is then disaggregated by province or group of provinces based on RRC estimates of temporary emigration. For the Atlantic provinces and the territories, the estimate for the group is disaggregated on the basis of each province / territory’s proportion of the group’s total population.

Net temporary emigration can be estimated only for the intercensal period preceding the most recent census.

Net temporary emigration in the current period is assumed to be the same as in the previous period for each province and territory.

Levels of estimates

The difference between preliminary² and final estimates lies in the timeliness of the emigration estimate used to calculate the seasonal adjustment for the net temporary emigration. The same estimation method is used.

G. Returning emigrants

A returning emigrant is a person who returns to Canada after having been classified as an emigrant. In a manner similar to the procedure used to calculate the number of emigrants, data from the Canada child benefit (CCB) file (formerly Canada child tax benefit (CCTB)) from Canada Revenue Agency (CRA) and T1FF⁴ file are used to estimate the number of returning emigrants. Adjustment factors are applied to compensate for the fact that the CCB program is not universal, and an adult/child ratio is used to estimate the number of adult returning emigrants. As a result, four adjustment factors are used to take into account:

- incomplete coverage due to a delay in the receipt and processing of the files of children eligible for the CCB. Since it seems to take four years after the reference period for CCB administrative files to become complete, the adjustment is made when the estimates are used before this date. The factor is derived from the two-year ratios of returning emigrant children based on two versions of the CCB files;

- the program's partial coverage, that is, people who do not apply for the CCB or who are not eligible. This factor is obtained by comparing the estimated number of children in the population with the number of children in CCB files;
- the differential propensity to emigrate between children who are eligible for the CCB and children who are not. This factor is obtained by comparing the emigration rates of CCB-eligible children with the rates for all children (aged 0 to 17). This factor is calculated for each province and territory and is based on the last three available years of T1FFs;⁴
- the adult/child ratio, which is based on the 2011 National Household Survey.

Please note that the estimates for the most recent periods are expected to be identical or very similar. In the absence of more up-to-date data sources, the assumption is made that levels remain similar.

Levels of estimates

The difference between preliminary² and final estimates lies in the timeliness of the sources used to estimate this component. The same estimation method is used.

H. Interprovincial migration

Interprovincial migration represents movements from one province or territory to another, involving a change in usual place of residence. As is the case for emigration, there is no provision for recording interprovincial migration in Canada. Consequently, such movements have to be estimated using data from the Canada child benefit (CCB) (formerly Canada child tax benefit (CCTB)) of Canada Revenue Agency (CRA) and T1FF.⁴

Final estimates of interprovincial migration are obtained by comparing addresses indicated on personal income tax returns over two consecutive tax years. However, the migration status of tax filers' dependants has to be imputed. An adjustment is also required to take into account migrants who do not file income tax returns. From 2001/2002 to 2005/2006, the adjustment was slightly modified (for further information, see Wilkinson, 2004) (www.statcan.gc.ca/pub/91f0015m/91f0015m2004006-eng.pdf). From 2006/2007, this adjustment has been slightly modified (Cyr, 2008 – Internal document).

Since income tax returns are not available at the time preliminary estimates are produced, the estimation of preliminary² interprovincial migration is based on CCB administrative files, which provide counts of child migrants (aged 0 to 17) registered to the program. The estimates have to be adjusted later for children who are not registered to the CCB program. Finally, the number of adult migrants is calculated using the number of child migrants and factors derived from the T1FF.⁴ As a result, three adjustment factors are used to take into account:

- the program's partial coverage, that is, people who are not registered to the CCB program. This factor is obtained by comparing the estimated number of children in the population with the number of children in CCB files;
- the differential propensity to migrate between children who are registered to the CCB program and children who are not. This factor is obtained by comparing the out-migration rates of children registered to the CCB program with the rates for all children (aged 0 to 17). This factor is calculated for each province and territory and is based on the last available year of T1FF;⁴
- the differential propensity to migrate between adults and children. This factor generates the out-migration rate of the population aged 18 and over for each province / territory of origin and destination. It is obtained by calculating the ratio of the central migration rate for adults to the rate for children. It is estimated using data from the last three available years of T1FF.⁴

The adult migration rate is then applied to the estimated adult population. The number of adult migrants is then added to the number of child migrants to produce the number of interprovincial migrants for the entire population.

Since 2015, the method to estimate the interprovincial migration has been modified. This new method is applied from July 2011 onward. In order to reduce the differences between the preliminary annual series (which was derived from the sum of 12 monthly migration matrices) and the final annual series, CCB microdata have been used. Using microdata is allowing estimating migration for various periods (monthly, quarterly and annually). It also allows improving the comparability between preliminary and final estimates. Final annual estimates (T1FF)

are now distributed by quarter on the basis of preliminary quarterly estimates derived from CCB microdata. It is important to note that, as a result of using CCB microdata, it is not possible to add the quarterly interprovincial in-migrants and out-migrants estimates to get the annual estimates. It is however possible to add the quarterly net interprovincial migration estimates to get the annual estimates.

Levels of estimates

For information on the differences between preliminary² and final estimates of total interprovincial migration, see section **H. Interprovincial migration** above.

Intercensal population estimates

Intercensal estimates – population estimates for reference dates between two censuses – are produced following each census. They reconcile previous postcensal estimates with the new census counts.

There are two main steps in the production of intercensal estimates:

- calculation of the error of closure;
- linear distribution of the error of closure.

The error of closure is defined as the difference between the postcensal population estimates on Census Day and the population enumerated in that census adjusted for CNU.¹

The error of closure is spread uniformly over the intercensal period of days within each month.

Quality of demographic data

The estimates contain certain inaccuracies stemming from two types of errors:

- errors in the census data;
- imperfections in other data sources and the method used to estimate the components.

Census data

A. Coverage, response and imputation errors

The errors attributable to census data can be divided into two groups: response and processing errors, and coverage errors. The first group implies non-response error, misinterpretation by respondents, incorrect coding and non-response imputation. Errors in the second group primarily result from undercoverage and, to a lesser extent, overcoverage. It should be noted that both types of errors are intrinsic to any survey data.

The coverage errors occur when dwellings and/or individuals are missed, incorrectly included (except for the 2006 and 2011 censuses, where people incorrectly included were not considered in the Census Overcoverage Study) or counted more than once. Following each census, Statistics Canada undertakes coverage studies to measure these errors. The main studies are the Reverse Record Check Survey (RRC) and the Census Overcoverage Study (COS). Based on these studies, estimates of census undercoverage and overcoverage are produced. Demography Division adjusts the population enumerated in the census by province and territory using these estimates.

When creating base populations, the Estimates Program corrects the census populations only for coverage errors. This correction, which is based on the findings of coverage studies, is primarily subject to sampling errors, and to a lesser extent, processing errors. Statistical tests indicate that coverage adjustments improve the quality of census data. The Estimates Program uses the estimates from coverage studies for the provinces and territories. However, given the size of the samples in these studies, estimates by age and sex are modelled. Furthermore, it is assumed that the coverage rates estimated for a province or territory apply to the regions within that geographic area. Prior to 1991, the Estimates Program used census data that was unadjusted for coverage errors. Coverage studies had been done to measure undercoverage, but none measured overcoverage. Following the decision to integrate a correction for the coverage to the enumerated population in 1991, the Program had to revise the population estimates for the period from 1971 to 1986. The correction is based on the findings of the coverage studies conducted during this period and on hypotheses regarding the ratio between the overcoverage and undercoverage levels based on the findings of subsequent coverage studies.

The corrections to the census data due to CNU improved, in general, the quality of the estimates by compensating for the differential undercoverage by age, sex and by province/territory across censuses.

Table D1
Estimated census net undercoverage, Canada, provinces and territories, 2001, 2006 and 2011 Censuses

| Geography | Census population | Census net undercoverage | Incompletely enumerated Indian reserves | Adjusted population | Rate |
|---------------------------|-------------------|--------------------------|---|---------------------|-------------|
| | A | B | C | D=A+B+C | (B+C)/D*100 |
| | number | | | | percent |
| 2011¹ | | | | | |
| Canada | 33,476,688 | 759,125 | 37,392 | 34,273,205 | 2.32 |
| Newfoundland and Labrador | 514,536 | 10,192 | 0 | 524,728 | 1.94 |
| Prince Edward Island | 140,204 | 3,386 | 0 | 143,590 | 2.36 |
| Nova Scotia | 921,727 | 21,911 | 0 | 943,638 | 2.32 |
| New Brunswick | 751,171 | 3,930 | 0 | 755,101 | 0.52 |
| Quebec | 7,903,001 | 73,240 | 16,882 | 7,993,123 | 1.13 |
| Ontario | 12,851,821 | 369,874 | 14,926 | 13,236,621 | 2.91 |
| Manitoba | 1,208,268 | 21,698 | 608 | 1,230,574 | 1.81 |
| Saskatchewan | 1,033,381 | 29,580 | 768 | 1,063,729 | 2.85 |
| Alberta | 3,645,257 | 128,584 | 4,094 | 3,777,935 | 3.51 |
| British Columbia | 4,400,057 | 91,280 | 114 | 4,491,451 | 2.03 |
| Yukon | 33,897 | 1,356 | 0 | 35,253 | 3.85 |
| Northwest Territories | 41,462 | 1,977 | 0 | 43,439 | 4.55 |
| Nunavut | 31,906 | 2,117 | 0 | 34,023 | 6.22 |
| 2006¹ | | | | | |
| Canada | 31,612,897 | 868,658 | 40,115 | 32,521,670 | 2.79 |
| Newfoundland and Labrador | 505,469 | 5,046 | 0 | 510,515 | 0.99 |
| Prince Edward Island | 135,851 | 1,903 | 0 | 137,754 | 1.38 |
| Nova Scotia | 913,462 | 24,558 | 0 | 938,020 | 2.62 |
| New Brunswick | 729,997 | 16,059 | 0 | 746,056 | 2.15 |
| Quebec | 7,546,131 | 60,751 | 16,600 | 7,623,482 | 1.01 |
| Ontario | 12,160,282 | 465,824 | 15,391 | 12,641,497 | 3.81 |
| Manitoba | 1,148,401 | 34,330 | 0 | 1,182,731 | 2.90 |
| Saskatchewan | 968,157 | 22,594 | 739 | 991,490 | 2.35 |
| Alberta | 3,290,350 | 111,353 | 7,272 | 3,408,975 | 3.48 |
| British Columbia | 4,113,487 | 121,551 | 113 | 4,235,151 | 2.87 |
| Yukon | 30,372 | 1,805 | 0 | 32,177 | 5.61 |
| Northwest Territories | 41,464 | 1,620 | 0 | 43,084 | 3.76 |
| Nunavut | 29,474 | 1,264 | 0 | 30,738 | 4.11 |
| 2001¹ | | | | | |
| Canada | 30,007,094 | 924,430 | 34,539 | 30,966,063 | 3.10 |
| Newfoundland and Labrador | 512,930 | 9,401 | 0 | 522,331 | 1.80 |
| Prince Edward Island | 135,294 | 1,325 | 0 | 136,619 | 0.97 |
| Nova Scotia | 908,007 | 24,521 | 0 | 932,528 | 2.63 |
| New Brunswick | 729,498 | 20,095 | 0 | 749,593 | 2.68 |
| Quebec | 7,237,479 | 140,232 | 12,648 | 7,390,359 | 2.07 |
| Ontario | 11,410,046 | 436,349 | 15,960 | 11,862,355 | 3.81 |
| Manitoba | 1,119,583 | 30,903 | 110 | 1,150,596 | 2.70 |
| Saskatchewan | 978,933 | 21,231 | 581 | 1,000,745 | 2.18 |
| Alberta | 2,974,807 | 69,857 | 4,977 | 3,049,641 | 2.45 |
| British Columbia | 3,907,738 | 164,542 | 263 | 4,072,543 | 4.05 |
| Yukon | 28,674 | 1,423 | 0 | 30,097 | 4.73 |
| Northwest Territories | 37,360 | 3,295 | 0 | 40,655 | 8.10 |
| Nunavut | 26,745 | 1,256 | 0 | 28,001 | 4.49 |

1. The levels and rates are based on the Reverse Record Check (RRC) and the Overcoverage Study and include non-permanent residents.

Source: Statistics Canada, Demography Division.

The adjustment also incorporates the results of a study on the estimates of the number of people living on incompletely enumerated Indian reserves to complete the corrections for coverage errors in the census. The results of the coverage studies contain mainly sampling errors.

These adjustments have a direct impact on:

- the error of closure and its distribution by age and sex within a province or a territory as well as by province/territory as the CNU¹ and its distribution vary from one census to another;

- within-cohort consistency of population estimates. If for example, the male cohort in age group 0 to 4 in 1981 was tracked up to the 2001 Census (unadjusted for CNU)¹ the age group 20 to 24 would be noticeably smaller in 2001 than the age group 15 to 19 in 1996. Since Canada receives many immigrants within these age groups, the opposite would be expected. However, only after adjustment for CNU,¹ the cohort size increases from 1996 to 2001.

For further information regarding the main coverage studies, please see the following document on Statistics Canada's web site: 1996 (www.statcan.gc.ca/c1996-r1996/tech-eng.htm), 2001 (www12.statcan.ca/english/census01/Products/Reference/tech_rep/coverage/index.cfm), 2006 (www12.statcan.gc.ca/census-recensement/2006/ref/rp-guides/rp/coverage-couverture/cov-couv_index-eng.cfm) and 2011 (www12.statcan.gc.ca/census-recensement/2011/ref/guides/98-303-x/index-eng.cfm) Census Technical Report on Coverage.

Components

Errors due to estimation methodologies and data sources other than the census can also be significant.

A. Births and deaths

Since the law requires the recording of vital statistics, the final estimates for births and deaths data meet very high standards. Nevertheless, since preliminary estimates are derived, they can be slightly different from final estimates.

B. Immigration and non-permanent residents

With respect to immigrants and non-permanent residents, Immigration, Refugees and Citizenship Canada (IRCC) administers special data files on both of these components. Since immigration is controlled by law, data on immigrants and NPRs are compiled upon arrival in Canada. These data represent only "legal" immigration and exclude illegal immigrants. Thus, for the "legal" part of international movement into Canada, the data are considered to be of high quality. However, some biases such as the difference between the stated province of intended residence at the time of arrival and the actual province of residence, may persist. Finally, since information provided by the Visitor Data System (VDS) from IRCC is not complete (age and sex of dependents, province of residence for certain groups of permit holders), estimates of NPRs are more prone to error than data on immigrants.

C. Emigration, returning emigration and net temporary emigration

Of all the demographic components that are used in the population estimates program, the emigration, returning emigration and net temporary emigration are the most difficult to estimate with precision. Canada does not have a complete border registration system. While immigration and non-permanent residents (NPRs) are well documented by the federal government, Statistics Canada has always used indirect techniques for the estimation of the number of persons leaving the country. For this reason, available statistics regarding these three components have historically been of a lower quality than other components.

Estimates of the number of emigrants and returning emigrants are both derived using Canada child benefit (CCB) data (formerly Canada child tax benefit (CCTB)) provided by Canada Revenue Agency (CRA). Estimates must be adjusted to take into account the incomplete coverage of the program and to derive the emigration and returning emigration of adults.

These adjustments and the delay in obtaining the data are the two main sources of errors. As current information on the number of persons living temporarily abroad does not exist, estimates are based on the Reverse Record Check (RRC) and the census. Estimates for the intercensal period, distributed equally among the five years, are maintained constant for the postcensal period. Moreover, assumptions were made to allow for the distribution of annual estimates to a quarterly level. Any geographical or quarterly variation may introduce error in the estimation of these components.

D. Interprovincial migration

Since July 1993, preliminary² interprovincial migration estimates have been based on Canada child benefit (CCB) files (formerly Canada child tax benefit (CCTB)). As this program covers only children, various adjustments must be done in order to derive the migration of adults. Consequently, preliminary CCB based estimates are subject to larger error than final estimates derived from Canada Revenue Agency (CRA) tax files.

Quality assessment

In order to assess the quality of our estimates, two evaluation measures are used: precocity errors and errors of closure.

A. Precocity error

The quality of preliminary estimates of components is analyzed using precocity errors. Precocity error is defined as the difference between preliminary and final estimate in terms of its relative proportion of the total population most up to date postcensal population estimate. It can be calculated for both population and component estimates.

The precocity error allows for useful comparisons between components, as well as between provinces and territories of different population size. Note that when compared to the total population for an area, the differences between preliminary and final estimates of the components are quite small. There are, however, differences in the amount of impact on the population estimates between components and between provinces and territories.

Generally speaking, net interprovincial migration yields the greatest precocity errors. This is the result of the use of different data sources for preliminary and final estimates. In most years and for most provinces/territories, births, deaths and immigration estimates yield the smallest precocity errors. For immigration estimates, this reflects the completeness of the data source and the availability of data for the more timely preliminary estimates. In the case of births and deaths, small precocity errors can be explained by the use of a different method (method of ratios) for preliminary estimates.

According to the analysis of the most recent precocity errors and assuming that the quality of the basic data remains constant, the present postcensal estimates should have an acceptable degree of reliability.

For more information on annual precocity error analysis, see publication 91-215-XWE 2017000 (Quality of demographic data section, <http://www.statcan.gc.ca/pub/91-215-x/2017000/dq-qd-eng.htm>).

Table D2
Quarterly precocity errors for components, Canada, provinces and territories

| Year/Component | 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 | | | | | | | | | | | | | |
| Births | | | | | | | | | | | | | | |
| 2013Q01 | 0.07 | 0.09 | 0.01 | 0.08 | 0.08 | 0.06 | 0.08 | 0.07 | 0.12 | 0.12 | -0.01 | 0.30 | 0.53 | 0.23 |
| 2013Q02 | 0.06 | 0.07 | 0.08 | 0.18 | -0.03 | 0.00 | 0.10 | -0.10 | 0.15 | 0.17 | -0.01 | 0.75 | -0.32 | -0.14 |
| 2013Q03 | 0.04 | -0.16 | 0.17 | 0.04 | 0.01 | 0.00 | 0.08 | -0.01 | 0.09 | 0.10 | -0.01 | 0.47 | 0.30 | -1.13 |
| 2013Q04 | 0.02 | -0.08 | -0.01 | 0.10 | 0.06 | 0.00 | 0.05 | -0.05 | 0.01 | 0.02 | -0.01 | 0.00 | 0.23 | -0.17 |
| Deaths | | | | | | | | | | | | | | |
| 2013Q01 | 0.07 | -0.20 | 0.45 | -0.08 | 0.13 | 0.03 | 0.14 | 0.07 | -0.08 | 0.08 | -0.01 | -0.33 | 0.21 | -0.06 |
| 2013Q02 | 0.04 | 0.11 | -0.05 | 0.10 | 0.14 | 0.01 | 0.07 | 0.02 | 0.18 | 0.01 | -0.01 | -0.06 | -0.21 | 0.06 |
| 2013Q03 | 0.03 | 0.09 | 0.15 | -0.02 | 0.03 | -0.02 | 0.05 | 0.18 | 0.04 | 0.03 | -0.01 | 0.06 | 0.32 | 0.00 |
| 2013Q04 | -0.01 | -0.07 | -0.19 | -0.05 | -0.08 | 0.00 | 0.01 | 0.06 | -0.03 | -0.03 | -0.01 | 0.39 | -0.14 | -0.20 |
| Immigration | | | | | | | | | | | | | | |
| 2016Q01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2016Q02 | -0.06 | -0.03 | -0.05 | -0.05 | -0.03 | -0.03 | -0.05 | -0.13 | -0.12 | -0.10 | -0.08 | 0.00 | -0.02 | 0.00 |
| 2016Q03 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2016Q04 | 0.06 | 0.03 | 0.05 | 0.06 | 0.03 | 0.03 | 0.05 | 0.13 | 0.12 | 0.11 | 0.08 | 0.00 | 0.00 | 0.00 |
| Emigration | | | | | | | | | | | | | | |
| 2012Q03 | -0.01 | -0.16 | -0.39 | -0.12 | 0.11 | 0.05 | -0.02 | 0.23 | 0.10 | -0.05 | -0.08 | -0.25 | -0.11 | 0.14 |
| 2012Q04 | -0.04 | -0.09 | -0.19 | -0.09 | 0.07 | 0.02 | -0.05 | 0.07 | 0.02 | 0.03 | -0.21 | -0.19 | -0.02 | 0.09 |
| 2013Q01 | -0.12 | -0.10 | -0.19 | -0.08 | 0.05 | -0.02 | -0.15 | 0.10 | -0.03 | -0.05 | -0.38 | -0.22 | -0.07 | 0.09 |
| 2013Q02 | -0.02 | -0.06 | 0.04 | 0.03 | 0.03 | 0.00 | -0.02 | 0.05 | 0.01 | -0.05 | -0.04 | -0.22 | 0.09 | 0.09 |
| Returning emigration | | | | | | | | | | | | | | |
| 2012Q03 | -0.09 | -0.02 | -0.28 | -0.03 | 0.07 | -0.07 | -0.12 | -0.15 | 0.02 | -0.15 | -0.05 | 0.08 | -0.11 | 0.06 |
| 2012Q04 | 0.00 | 0.00 | -0.10 | 0.01 | 0.05 | 0.00 | 0.00 | -0.02 | 0.03 | -0.02 | 0.03 | 0.03 | -0.07 | 0.00 |
| 2013Q01 | 0.00 | 0.00 | -0.10 | 0.01 | 0.05 | 0.00 | 0.00 | -0.02 | 0.02 | -0.02 | 0.03 | 0.00 | -0.07 | 0.00 |
| 2013Q02 | 0.01 | 0.02 | -0.12 | 0.01 | 0.03 | -0.01 | 0.01 | -0.03 | 0.05 | 0.03 | -0.01 | 0.08 | -0.09 | 0.00 |
| Net temporary emigration | | | | | | | | | | | | | | |
| 2012Q03 | 0.11 | 0.15 | 0.15 | 0.16 | 0.16 | 0.08 | 0.17 | 0.11 | 0.06 | 0.10 | -0.01 | 0.06 | 0.11 | 0.06 |
| 2012Q04 | 0.08 | 0.11 | 0.11 | 0.12 | 0.11 | 0.06 | 0.12 | 0.08 | 0.04 | 0.07 | -0.02 | 0.06 | 0.07 | 0.06 |
| 2013Q01 | 0.06 | 0.10 | 0.10 | 0.10 | 0.10 | 0.05 | 0.10 | 0.07 | 0.03 | 0.05 | -0.05 | 0.06 | 0.05 | 0.06 |
| 2013Q02 | 0.02 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.02 | 0.01 | 0.01 | 0.02 | 0.05 | 0.06 | 0.02 | 0.00 |
| Net non-permanent residents | | | | | | | | | | | | | | |
| 2012Q03 | 0.01 | 0.33 | 0.39 | 0.16 | 0.14 | 0.62 | -0.34 | 0.13 | 0.22 | 0.10 | -0.26 | 0.28 | -0.60 | 0.20 |
| 2012Q04 | 0.02 | -0.12 | 0.08 | -0.07 | -0.13 | -0.05 | 0.31 | -0.09 | -0.11 | -0.20 | -0.38 | 0.03 | 0.44 | -0.11 |
| 2013Q01 | 0.01 | 0.13 | -0.30 | -0.08 | -0.19 | 0.05 | -0.21 | 0.00 | 0.14 | 0.43 | 0.19 | 0.47 | 0.39 | -0.06 |
| 2013Q02 | -0.02 | -0.19 | 0.91 | -0.24 | 0.27 | 0.17 | -0.57 | 0.05 | 0.19 | 0.79 | 0.50 | -0.89 | 0.07 | -0.17 |
| In-migrants | | | | | | | | | | | | | | |
| 2015Q03 | 0.07 | 0.19 | -0.18 | -0.06 | 0.10 | 0.03 | -0.01 | 0.09 | 0.17 | 0.51 | -0.04 | -0.78 | 1.18 | 2.16 |
| 2015Q04 | 0.03 | 0.06 | -0.15 | -0.07 | 0.12 | 0.01 | -0.01 | 0.03 | 0.07 | 0.26 | -0.03 | 0.11 | 0.88 | 1.82 |
| 2016Q01 | 0.05 | 0.21 | -0.07 | -0.08 | 0.11 | 0.01 | -0.01 | 0.05 | 0.11 | 0.39 | -0.05 | 0.27 | 1.87 | 4.63 |
| 2016Q02 | 0.08 | 0.50 | 0.03 | -0.13 | 0.23 | 0.01 | -0.01 | 0.10 | 0.12 | 0.55 | -0.07 | -0.32 | 1.17 | 4.73 |
| Out-migrants | | | | | | | | | | | | | | |
| 2015Q03 | 0.07 | 0.36 | 1.59 | 0.42 | 0.77 | 0.04 | 0.04 | 0.31 | -0.08 | -0.26 | 0.14 | 5.26 | 2.04 | 2.49 |
| 2015Q04 | 0.03 | 0.22 | 0.99 | 0.19 | 0.30 | 0.01 | 0.02 | 0.17 | -0.02 | -0.16 | 0.08 | 2.22 | 1.62 | 1.77 |
| 2016Q01 | 0.05 | 0.48 | 1.10 | 0.33 | 0.46 | 0.01 | 0.03 | 0.25 | 0.00 | -0.23 | 0.13 | 3.93 | 3.24 | 3.41 |
| 2016Q02 | 0.08 | 0.31 | 1.81 | 0.45 | 0.68 | 0.05 | 0.06 | 0.33 | 0.01 | -0.36 | 0.16 | 5.56 | 2.60 | 4.35 |
| Net interprovincial migration | | | | | | | | | | | | | | |
| 2015Q03 | ... | -0.17 | -1.77 | -0.48 | -0.67 | -0.01 | -0.05 | -0.23 | 0.24 | 0.77 | -0.18 | -6.03 | -0.86 | -0.33 |
| 2015Q04 | ... | -0.16 | -1.14 | -0.26 | -0.18 | 0.00 | -0.03 | -0.15 | 0.09 | 0.41 | -0.11 | -2.11 | -0.74 | 0.05 |
| 2016Q01 | ... | -0.27 | -1.17 | -0.41 | -0.35 | 0.00 | -0.04 | -0.20 | 0.11 | 0.62 | -0.18 | -3.67 | -1.37 | 1.22 |
| 2016Q02 | ... | 0.19 | -1.77 | -0.58 | -0.45 | -0.04 | -0.07 | -0.23 | 0.10 | 0.91 | -0.23 | -5.88 | -1.44 | 0.38 |

... not applicable

Source: Statistics Canada, Demography Division.

B. Error of closure

The error of closure measures the exactness of the final postcensal estimates. It is defined as the difference between the final postcensal population estimates on Census Day and the enumerated population of the most recent census adjusted for census net undercoverage (CNU¹). A positive error of closure means that the postcensal population estimates have overestimated the population.

The error of closure comes from two sources: errors primarily due to sampling when measuring census coverage and errors related to the components of population growth over the intercensal period. For each five-year intercensal period, the error of closure can only be calculated following the release of census data and estimates of CNU.¹ The error of closure can be calculated for the total population of each province and territory as well as by age and sex.

Table D3 shows postcensal population estimates on May 10, 2011 and census counts adjusted for CNU¹ and the errors of closure for Canada, provinces and territories for 2001, 2006 and 2011.

For Canada as a whole, the error of closure was estimated at 171,115 or 0.50% in 2011. This is an increase over the errors for 2001 (0.16%) and 2006 (0.14%).

The population estimates overestimated the population of six provinces, two territories and Canada as a whole. Four provinces and two territories posted errors of closure greater than 1% or less than -1%. Of these jurisdictions, only Newfoundland and Labrador's estimated population differed from the adjusted census population by more than 2% (-2.09%). In 2006, two provinces and three territories posted errors of closure greater than 1% or less than -1%, while this was the case for three provinces and two territories in 2001.

By considering the variance in CNU, it is possible to identify errors of closure that are statistically significant. Table D3 shows the results of this analysis.

The error of closure is statistically significant for Canada, five provinces and one territory. This means that the population estimates significantly overestimated or underestimated the adjusted census population in these jurisdictions. As noted above, these results are due to both the sampling for census coverage studies and errors in the components of population growth over the intercensal period. Among these components, interprovincial migration and emigration are mostly associated with large errors of closure.

Table D3
Error of closure of the population estimates, Canada, provinces and territories, 2001, 2006 and 2011

| Geography | Postcensal estimate on Census Day | Census adjusted for CNU ¹ | Error of closure | | CNU standard error ² | t value ³ |
|---------------------------|-----------------------------------|--------------------------------------|------------------|-------------|---------------------------------|----------------------|
| | A | B | C=A-B | D=C/B*100 | E | F=C/E |
| | number | | | % | number | |
| 2011 | | | | | | |
| Canada | 34,444,320 | 34,273,205 | 171,115 | 0.50 | 57,546 | 2.97 |
| Newfoundland and Labrador | 513,745 | 524,728 | -10,983 | -2.09 | 2,912 | -3.77 |
| Prince Edward Island | 145,745 | 143,590 | 2,155 | 1.50 | 923 | 2.33 |
| Nova Scotia | 948,697 | 943,638 | 5,059 | 0.54 | 5,346 | 0.95 |
| New Brunswick | 756,630 | 755,101 | 1,529 | 0.20 | 3,335 | 0.46 |
| Quebec | 7,972,672 | 7,993,123 | -20,451 | -0.26 | 23,660 | -0.86 |
| Ontario | 13,360,099 | 13,236,621 | 123,478 | 0.93 | 44,121 | 2.80 |
| Manitoba | 1,252,662 | 1,230,574 | 22,088 | 1.79 | 6,104 | 3.62 |
| Saskatchewan | 1,055,988 | 1,063,729 | -7,741 | -0.73 | 6,306 | -1.23 |
| Alberta | 3,776,676 | 3,777,935 | -1,259 | -0.03 | 18,046 | -0.07 |
| British Columbia | 4,548,383 | 4,491,451 | 56,932 | 1.27 | 19,494 | 2.92 |
| Yukon | 35,364 | 35,253 | 111 | 0.31 | 303 | 0.37 |
| Northwest Territories | 44,113 | 43,439 | 674 | 1.55 | 323 | 2.09 |
| Nunavut | 33,546 | 34,023 | -477 | -1.40 | 608 | -0.78 |
| 2006 | | | | | | |
| Canada | 32,565,797 | 32,521,670 | 44,127 | 0.14 | 53,926 | 0.82 |
| Newfoundland and Labrador | 508,881 | 510,515 | -1,634 | -0.32 | 2,710 | -0.60 |
| Prince Edward Island | 137,748 | 137,754 | -6 | 0.00 | 701 | -0.01 |
| Nova Scotia | 933,827 | 938,020 | -4,193 | -0.45 | 4,885 | -0.86 |
| New Brunswick | 748,785 | 746,056 | 2,729 | 0.37 | 3,105 | 0.88 |
| Quebec | 7,646,288 | 7,623,482 | 22,806 | 0.30 | 24,077 | 0.95 |
| Ontario | 12,664,181 | 12,641,497 | 22,684 | 0.18 | 41,363 | 0.55 |
| Manitoba | 1,176,919 | 1,182,731 | -5,812 | -0.49 | 6,469 | -0.90 |
| Saskatchewan | 987,735 | 991,490 | -3,755 | -0.38 | 4,805 | -0.78 |
| Alberta | 3,358,568 | 3,408,975 | -50,407 | -1.48 | 16,091 | -3.13 |
| British Columbia | 4,299,225 | 4,235,151 | 64,074 | 1.51 | 16,591 | 3.86 |
| Yukon | 31,151 | 32,177 | -1,026 | -3.19 | 194 | -5.29 |
| Northwest Territories | 42,165 | 43,084 | -919 | -2.13 | 236 | -3.89 |
| Nunavut | 30,324 | 30,738 | -414 | -1.35 | 176 | -2.35 |
| 2001 | | | | | | |
| Canada | 31,016,011 | 30,966,063 | 49,948 | 0.16 | 44,749 | 1.12 |
| Newfoundland and Labrador | 533,712 | 522,331 | 11,381 | 2.18 | 1,782 | 6.39 |
| Prince Edward Island | 138,102 | 136,619 | 1,483 | 1.09 | 775 | 1.91 |
| Nova Scotia | 941,533 | 932,528 | 9,005 | 0.97 | 4,170 | 2.16 |
| New Brunswick | 754,180 | 749,593 | 4,587 | 0.61 | 3,555 | 1.29 |
| Quebec | 7,390,137 | 7,390,359 | -222 | 0.00 | 21,033 | -0.01 |
| Ontario | 11,873,643 | 11,862,355 | 11,288 | 0.10 | 33,472 | 0.34 |
| Manitoba | 1,149,561 | 1,150,596 | -1,035 | -0.09 | 5,423 | -0.19 |
| Saskatchewan | 1,016,762 | 1,000,745 | 16,017 | 1.60 | 4,333 | 3.70 |
| Alberta | 3,051,245 | 3,049,641 | 1,604 | 0.05 | 11,308 | 0.14 |
| British Columbia | 4,068,196 | 4,072,543 | -4,347 | -0.11 | 15,598 | -0.28 |
| Yukon | 29,737 | 30,097 | -360 | -1.20 | 372 | -0.97 |
| Northwest Territories | 41,152 | 40,655 | 497 | 1.22 | 362 | 1.37 |
| Nunavut | 28,051 | 28,001 | 50 | 0.18 | 411 | 0.12 |

1. Census net undercoverage includes the incompletely enumerated Indian reserves.

2. Census net undercoverage excludes the incompletely enumerated Indian reserves.

3. An error of closure with a t value greater than 1.96 or less than -1.96 is statistically significant at the 95% confidence level.

Source: Statistics Canada, Demography Division.

Explanatory notes for the tables

Table D4
Quarterly population estimates and factors of demographic growth

| Quarter | Population at beginning period | Natural increase | Net interprovincial migration | Net international migration | Total net migration | Total growth |
|-----------------------------|--------------------------------|------------------|-------------------------------|-----------------------------|---------------------|--------------|
| Q3 2011 | PD | D | D | D | D | D |
| Q4 2011 | PD | D | D | D | D | D |
| Q1 2012 | PD | D | D | D | D | D |
| Q2 2012 | PD | D | D | D | D | D |
| Q3 2012 | PD | D | D | D | D | D |
| Q4 2012 | PD | D | D | D | D | D |
| Q1 2013 | PD | D | D | D | D | D |
| Q2 2013 | PD | D | D | D | D | D |
| Q3 2013 | PD | D | D | R | R | R |
| Q4 2013 | PR | D | D | R | R | R |
| Q1 2014 | PR | R | D | R | R | R |
| Q2 2014 | PR | R | D | R | R | R |
| Q3 2014 | PR | R | D | R | R | R |
| Q4 2014 | PR | R | D | R | R | R |
| Q1 2015 | PR | R | D | R | R | R |
| Q2 2015 | PR | R | D | R | R | R |
| Q3 2015 | PR | R | D | R | R | R |
| Q4 2015 | PR | R | D | R | R | R |
| Q1 2016 | PR | R | D | R | R | R |
| Q2 2016 | PR | R | D | R | R | R |
| Q3 2016 | PR | R | R | R | R | R |
| Q4 2016 | PR | R | R | R | R | R |
| Q1 2017 | PR | R | R | R | R | R |
| Q2 2017 | PR | P | P | P | P | P |
| Q3 2017 | PP | P | P | P | P | P |
| Q4 2017 | PP | .. | .. | .. | .. | .. |
| Modified since ¹ | .. | .. | .. | .. | .. | .. |

.. not available for a specific reference period

1. Modified since indicates the quarter from which the data were revised since the last release. Last quarter's data were not modified as they are released for the first time.

Note: D: Final estimates. PD: Final postcensal estimates. R: Updated estimates. PR: Updated postcensal estimates. P: Preliminary estimates. PP: Preliminary postcensal estimates. Q1: January to March. Q2: April to June. Q3: July to September. Q4: October to December.

Table D5
Quarterly estimates of components of demographic growth

| Quarter | Births | Deaths | In-migrants | Out-migrants | Immigrants | Emigrants | Returning emigrants | Net temporary emigrants | Net non-permanent residents |
|-----------------------------|--------|--------|-------------|--------------|------------|-----------|---------------------|-------------------------|-----------------------------|
| Q3 2011 | D | D | D | D | D | D | D | D | D |
| Q4 2011 | D | D | D | D | D | D | D | D | D |
| Q1 2012 | D | D | D | D | D | D | D | D | D |
| Q2 2012 | D | D | D | D | D | D | D | D | D |
| Q3 2012 | D | D | D | D | D | D | D | D | D |
| Q4 2012 | D | D | D | D | D | D | D | D | D |
| Q1 2013 | D | D | D | D | D | D | D | D | D |
| Q2 2013 | D | D | D | D | D | D | D | D | D |
| Q3 2013 | D | D | D | D | D | R | R | R | R |
| Q4 2013 | D | D | D | D | D | R | R | R | R |
| Q1 2014 | R | R | D | D | D | R | R | R | R |
| Q2 2014 | R | R | D | D | D | R | R | R | R |
| Q3 2014 | R | R | D | D | D | R | R | R | R |
| Q4 2014 | R | R | D | D | D | R | R | R | R |
| Q1 2015 | R | R | D | D | D | R | R | R | R |
| Q2 2015 | R | R | D | D | D | R | R | R | R |
| Q3 2015 | R | R | D | D | D | R | R | R | R |
| Q4 2015 | R | R | D | D | D | R | R | R | R |
| Q1 2016 | R | R | D | D | D | R | R | R | R |
| Q2 2016 | R | R | D | D | D | R | R | R | R |
| Q3 2016 | R | R | R | R | D | R | R | R | R |
| Q4 2016 | R | R | R | R | D | R | R | R | R |
| Q1 2017 | R | R | R | R | R | R | R | R | R |
| Q2 2017 | P | P | P | P | P | P | P | P | P |
| Q3 2017 | P | P | P | P | P | P | P | P | P |
| Modified since ¹ | .. | .. | .. | .. | .. | .. | .. | .. | .. |

.. not available for a specific reference period

1. Modified since indicates the quarter from which the data were revised since the last release. Last quarter's data were not modified as they are released for the first time.

Note: D : Final estimates. R : Updated estimates. P : Preliminary estimates. Q1 : January to March. Q2 : April to June. Q3 : July to September. Q4 : October to December.

Endnotes

1. In this case, the adjustment for the census net undercoverage also includes the incompletely enumerated Indian reserves (IEIR).
2. Unless otherwise noted, the term preliminary include both preliminary and updated estimates.
3. From 1991 to 2001 Census, “persons with a usual place of residence in Canada who hold Minister’s permits (including extensions) and members of their families living with them” were included in the census universe.
4. The T1 family file (T1FF) is derived from the Canada Revenue Agency (CRA) T1 file by Income Statistics Division of Statistics Canada.

Appendix 1: Glossary

Census coverage

Census net undercoverage: Difference between undercoverage and overcoverage.

Overcoverage: Number of persons who should not have been counted in the census or who were counted more than once.

Undercoverage: Number of persons who were intended to be enumerated in a census but were not.

Components of demographic growth

Any of the classes of events generating population movement variations. Births, deaths and migrations are the components responsible for the variation since they alter the total population.

Emigrant

Canadian citizen or **immigrant** who has left Canada to establish a residence in another country, involving a change in usual place of residence. Emigration may be either temporary or permanent. Where the term is used alone, it references to a person's permanent emigration which involves severing residential ties with Canada and acquiring permanent residency in another country.

Error of closure

Difference between the **postcensal estimate** at the census date and the results of the census adjusted for **census net undercoverage** (including adjustment for incompletely enumerated Indian reserves).

Immigrant

Within the framework of this publication, the terms immigrant, landed immigrant and permanent resident are equivalent. An immigrant refers to a person who is or has ever been a landed immigrant (permanent resident) and who has been granted the right to live in Canada permanently by immigration authorities. Immigrants are either Canadian citizens by naturalization (the citizenship process) or permanent residents under Canadian legislation. Some immigrants have resided in Canada for a number of years, while others have arrived recently. Most immigrants are born outside Canada, but a small number are born in Canada. Also, children born in other countries to parents who are Canadian citizens that reside temporarily in another country are not included in the category as they become Canadian citizens at birth.

International migration

International migration represents movement of population between Canada and a foreign country which involves a change in the usual place of residence. A distinction is made with regard to **immigrants, emigrants, returning emigrants, net temporary emigration** and **net non-permanent residents**.

Interprovincial migration

Interprovincial migration represents all movements from one province or territory to another involving a change in the usual place of residence. A person who takes up residence in another province or territory is an **out-migrant** with reference to the province or territory of origin and an **in-migrant** with reference to the province or territory of destination.

Natural increase

Variation in the population size over a given period as a result of the difference between the numbers of births and deaths.

Net international migration

Net international migration is obtained according to the following formula:

Immigrants + returning emigrants + net non-permanent residents – (emigrants + net temporary emigrants).

Net interprovincial migration

Net interprovincial migration represents the difference between **in-migrants** and **out-migrants** for a given province or territory.

Net non-permanent residents

Net non-permanent residents represent the variation in the number of non-permanent residents between two dates.

Non-permanent residents

A non-permanent resident is a person who is lawfully in Canada on a temporary basis under the authority of a valid document (work permit, study permit, Minister's permit or refugee) issued for that person along with members of his family living with them. This group also includes individuals who seek refugee status upon or after their arrival in Canada and remain in the country pending the outcome of processes relative to their claim. Note that Immigration, Refugees and Citizenship Canada (IRCC) uses the term temporary resident rather than non-permanent resident.

Net temporary emigration

Net temporary emigration represents the variation in the number of temporary emigrants between two dates. Temporary emigration includes Canadian citizens and *immigrants* living temporarily abroad who have not maintained a usual place of residence in Canada.

Population

Estimated population and population according to the census are both defined as being the number of Canadians whose usual place of residence is within that area, regardless of where they happened to be on Census Day. Also included are any Canadians staying in a dwelling in that area on Census Day and having no usual place of residence elsewhere in Canada, as well as those considered **non-permanent residents**.

Population estimate

- a. **Postcensal:** Population estimate produced by using data from the most recent available census adjusted for **census net undercoverage** (including adjustment for incompletely enumerated Indian reserves) and estimate of the **components of demographic growth** since that last census. This estimate can be preliminary, updated or final.
- b. **Intercensal:** Population estimate derived by using **postcensal estimates** and data adjusted for **census net undercoverage** (including adjustment for incompletely enumerated Indian reserves) of censuses preceding and following the year in question.

Population growth or total growth

Variation of population size between two dates. It can also be obtained by summing the natural increase, total net migration and if applicable, subtract residual deviation. It can be positive or negative.

Precocity error

Difference between preliminary and final estimate of a particular component in terms of its relative proportion of the total population for the relevant geographical area. It can be calculated for either population estimates or components of population growth.

Rate

Refers to the ratio of the number of events estimated in a year (t , $t+i$) to the average populations at the beginning and the end of the period. In this regard, births, deaths, immigration rates, etc. are calculated. Generally, the rates are expressed in per 1,000.

Census net undercoverage of population rate: Difference between the census undercoverage rate and the census overcoverage rate.

Demographic growth rate or population growth rate: Ratio of population growth between the year t and $t+i$, to the average **population** of both these years. The rate is generally expressed in per 1,000.

Overcoverage of population rate: The ratio of the number of persons who should not have been counted in the census or who were counted more than once to the total number of persons that should have been enumerated in the census. Generally, the rate is expressed in percentage.

Undercoverage of population rate: The ratio of the estimated number of persons not enumerated in the census (who were intended to have been enumerated) to the total number of persons that should have been enumerated in the census. Generally, the rate is expressed in percentage.

Residual deviation

Difference between demographic population growth calculated using intercensal estimates of population between two dates and that obtained by the sum of the components for the same period. This deviation results from the

distribution of the error of closure between years within the quinquennial period. This distribution is calculated by taking into account the number of days within each month.

Returning emigrant

Canadian citizen or *immigrant* having previously emigrated from Canada and subsequently returned to the country.

Total net migration

Sum of *net international* and *net interprovincial* migration.

Vital statistics

Includes all the demographic events (births, deaths, marriages and divorces) for which there are a legal requirement to inform the Provincial or Territorial Registrar's Office.

Appendix 2: Sources and remarks

Base population:

May 10, 2011 Census of Population adjusted for census net undercoverage and incompletely enumerated Indian reserves.

2011 Census: Statistics Canada, Census of Canada, 2011, Catalogue no. 98-310-X (<http://www12.statcan.gc.ca/census-recensement/2011/dp-pd/hlt-fst/pd-pl/Index-eng.cfm?Lang=Eng>).

Census net undercoverage: See The Daily, September 26, 2013.

Incompletely enumerated Indian reserves: See The Daily, September 26, 2013.

Births and deaths

Statistics Canada, Health Statistics Division.

Statistics Canada, Demography Division, Catalogue no. 91 002 X, Quarterly.

Births

Fertility rates for 2013 based on births by age of mother provided by Health Statistics Division applied to the female population estimates at the beginning of the quarter. Births for Quebec and British Columbia were provided by their respective agencies.

Deaths

Mortality rates for 2013 based on deaths by age group and sex provided by Health Statistics Division applied to the population estimates by age group and sex at the beginning of the quarter. Deaths for Quebec and British Columbia were provided by their respective agencies.

Immigration

Estimates are based on the immigrant files provided by Immigration, Refugees and Citizenship Canada (IRCC) received on November 14, 2017.

Emigration

The estimates are produced by Demography Division using:

- data from Canada Revenue Agency (CRA) Canada child benefit (CCB) program (formerly Canada child tax benefit (CCTB)). From 2015/2016, we used 2014/2015 data;
- tax data calculated using T1FF file provided by the Income Statistics Division of Statistics Canada. From 2015/2016, we used 2014/2015 data;
- data provided by the U.S. Department of Homeland Security, Office of Immigration Statistics. From 2016/2017, we used 2015/2016 data;
- data on the number of adult and children emigrants from T1FF file used for the provincial distribution of adults. From 2015/2016, we used 2014/2015 data.

Please note that for the emigration, the returning emigration and the net temporary emigration, the estimates for the most recent periods are expected to be identical or very similar. In the absence of more up-to-date data sources, the assumption is made that levels remain similar.

Returning emigration

The estimates are produced by Demography Division using:

- data from Canada Revenue Agency (CRA) Canada child benefit (CCB) program (formerly Canada child tax benefit (CCTB)). From 2015/2016, we used 2014/2015 data;
- 2011 National Household Survey – question on the place of residence one year ago.

Please note that for the emigration, the returning emigration and the net temporary emigration, the estimates for the most recent periods are expected to be identical or very similar. In the absence of more up-to-date data sources, the assumption is made that levels remain similar.

Net temporary emigration

The estimates are produced by Demography Division using:

- data from the Reverse Record Check (RRC) of the 2011 Census;
- 2011 National Household Survey – question on the place of residence 5 years ago;
- estimates of returning emigrants for 2006 to 2011 intercensal period;
- distribution by age and sex of emigrants.

Please note that for the emigration, the returning emigration and the net temporary emigration, the estimates for the most recent periods are expected to be identical or very similar. In the absence of more up-to-date data sources, the assumption is made that levels remain similar.

Non-permanent residents

The estimates are produced by Demography Division using the Global Case Management System (GCMS) files from IRCC. These files, received on November 14, 2017, document the number of persons holding permits/authorizations or claiming refugee status.

Interprovincial migration

The estimates are produced by Demography Division using:

- data from Canada Revenue Agency (CRA) Canada child benefit (CCB) program (formerly Canada child tax benefit (CCTB)) adjusted migration data for children;
- factors (${}_jG$) corresponding to the ratio of the migration rate of all children to the migration rate of children who are registered to the CCB program calculated using 2015/2016 tax file data;
- factors (${}_jF$) used to calculate adult migration and corresponding to the ratio of the adult to child migration rates, calculated on a three-year basis using tax file data for 2013/2014, 2014/2015 and 2015/2016.

Note: We remind you that it is normal for the sum of the monthly in- and out- interprovincial migrants not to be equal to the number of quarterly or yearly interprovincial in- and out- migrants.

Related products

Publications

| | |
|----------|---|
| 91-003-X | Canadian Demographics at a Glance |
| 91-209-X | Report on the Demographic Situation in Canada |
| 91-214-X | Annual Demographic Estimates: Subprovincial Areas |
| 91-215-X | Annual Demographic Estimates: Canada, Provinces and Territories |
| 91-520-X | Population Projections for Canada, Provinces and Territories |
| 91-528-X | Population and Family Estimation Methods at Statistics Canada |

CANSIM tables

| | |
|----------|---|
| 051-0001 | Estimates of population, by age group and sex for July 1, Canada, provinces and territories, annual |
| 051-0002 | Estimates of deaths, by sex and age group, Canada, provinces and territories, annual |
| 051-0004 | Components of population growth, Canada, provinces and territories, annual |
| 051-0005 | Estimates of population, Canada, provinces and territories, quarterly |
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