Improvements to the Labour Force Survey (LFS)

The 2021 Revisions of the Labour Force Survey (LFS)

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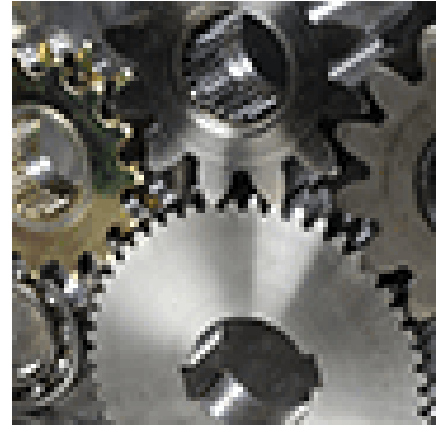
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The 2021 Revisions of the Labour Force Survey (LFS)

1.0 Introduction

The Labour Force Survey (LFS) provides estimates of employment and unemployment, which are among the most timely and important measures of the performance of the Canadian economy. With the release of the survey results only 10 days after the completion of data collection, the LFS estimates are the first of Statistics Canada's major monthly economic data series to be released.

Statistics Canada has an established history of applying a standard revision to LFS estimates following the release of final population estimates from each census. This standard revision process ensures the continued accuracy and quality of LFS information by ensuring that survey estimates reflect the size and composition of Canadian society. Resulting changes to recent and historical LFS data are relatively minor and have little impact on trends in key labour market indicators, such as employment, unemployment, and participation rates.

At the same time as the population rebasing, the LFS estimates are aligned with the most recent classifications for industry (North American Industry Classification System (NAICS) 2017 V3.0), occupation (National Occupational Classification (NOC) 2016 V1.3) and geography (2016 Census of Population boundaries) to better reflect the Canadian labour market.

The purpose of this document is to explain each of these changes. It should be noted that these changes do not involve modifications to the questionnaire nor to the content of the survey.

The following is a summary of each change:

- Population rebasing: Until December 2020, labour force estimates were based on population counts from the 2011 Census of Population. As of January 2021, the estimates have been adjusted to reflect population counts from the 2016 Census. This revision had minor impacts on the LFS estimates, while rates of unemployment, employment and labour force participation were essentially unchanged. Given the minimal changes to the estimates, only revisions back to 2006 were necessary. However, revisions for seasonal adjustment were applied back to 2002 and for trend-line series back to 2001 (see Section 2.0 and Appendix A for more details).
- Geographic boundaries: Census metropolitan areas (CMAs), economic regions (ERs) and census agglomerations (CAs) are now based on 2016 Census boundaries. Two new CMAs were added (Belleville, Ontario and Lethbridge, Alberta). There is no change to the Employment Insurance Economic Regions (EIERs) (see Section 4.0 and Appendix B for more details).
- Industry and occupation classification update: The LFS now uses the North American Industry Classification System (NAICS) 2017 V3.0 and the National Occupational Classification (NOC) 2016 V1.3. The historical series was revised back to 1987. These changes do not impact any published data tables on the website, only the microdata (see Section 5.0 for more details).
- Updates to family type and marital status variables (see Section 9.0 for more details).

2.0 Rebasing of LFS population control totals

The LFS uses population control totals, which are derived independently from the survey, as benchmarks for producing survey estimates. Proper demographic population control totals, in which each individual in the sample is assigned a weight indicating the number of persons in the population that the individual represents, are crucial in calculating estimates from a sample survey like the LFS. In addition, monthly population control totals reduce the sampling variability and the risk of coverage bias of survey estimates.

LFS population control totals are updated each month to reflect births, deaths and net migration using administrative data (for more detailed information, see Appendix A). The starting point for these monthly totals is a population based on the most recently available population estimates.

Beginning with the release of the January 2021 LFS data, LFS estimates will be calculated using population control totals based on 2016 Census rather than 2011 Census population control totals.

## 2.1 Impact of rebasing on LFS population control totals

LFS population control totals have been revised from January 2006 to December 2020. In general, they have been revised downward and the magnitude of the revision varies over the period.

At the national level, for the working-age population (aged 15 and over), the differences are negligible between January 2006 and July 2011 (Chart 1). Over that period, the new population control totals are slightly higher on average by 4,900 (+0.0%), than the previous population counts.

Chart 1
Percent difference between 2011 and 2016 Census-based LFS population control totals, total population 15 and older

percent difference
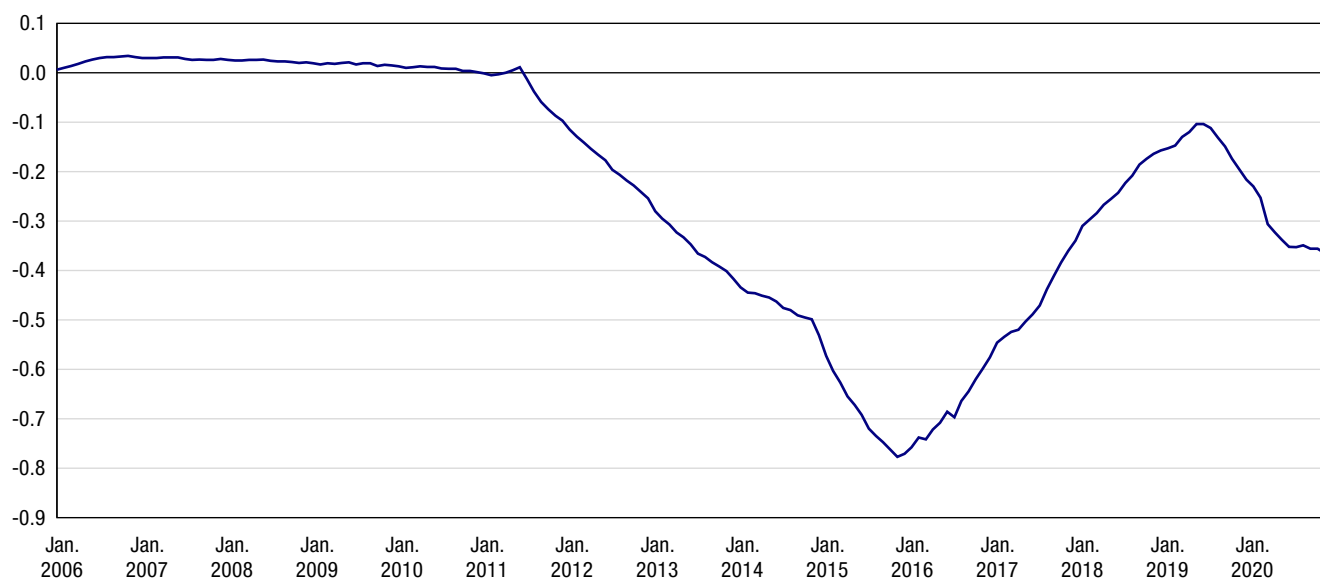
Source: Statistics Canada, Labour Force Survey.

The series diverge the most beginning in August 2011, reaching a maximum difference of 229,000 (-0.8%) in November 2015. The differences are smaller by June 2019 when the new series is 31,800 (-0.1%) lower than the previous series.

From June 2019 onward, the difference starts to increase again, reaching 120,000 (-0.4%) in December 2020. This difference in December 2020 is similar to the difference with the 2015 rebasing when LFS estimates were rebased from the 2006 to 2011 Census population counts. In December 2014, the difference in the population control totals was -73,000 (-0.3%).

Differences by gender and age groups

The population control totals for youth were affected differently by the revision than were the estimates for older age groups (Chart 2). By December 2020, the new population count for youth was higher by 1.7%, while it was 0.5% lower for those aged 55 and over. For men aged 25 to 54, the population estimate was 0.7% lower and for women in the same age group, 1.1% lower.

Youth are particularly affected by slight revisions in the methodology used to estimate stocks of non-permanent residents (NPRs), given that NPRs are more numerous among this age group. This can be explained in two ways. First, the impact of the rebasing of the demographic estimates (*errors of closure*) is usually larger for adults in their twenties. Also, the combined impact of the marked increase in NPR stocks and differences in estimation methods

(interpolation and 12-month moving average) is more important for the population at these ages where NPRs are proportionally more numerous. As a result, the NPR stocks of the revised series are higher than those of the unrevised.

Chart 2
Percent difference between 2011 and 2016 Census-based LFS population control totals, by age and sex

percent difference
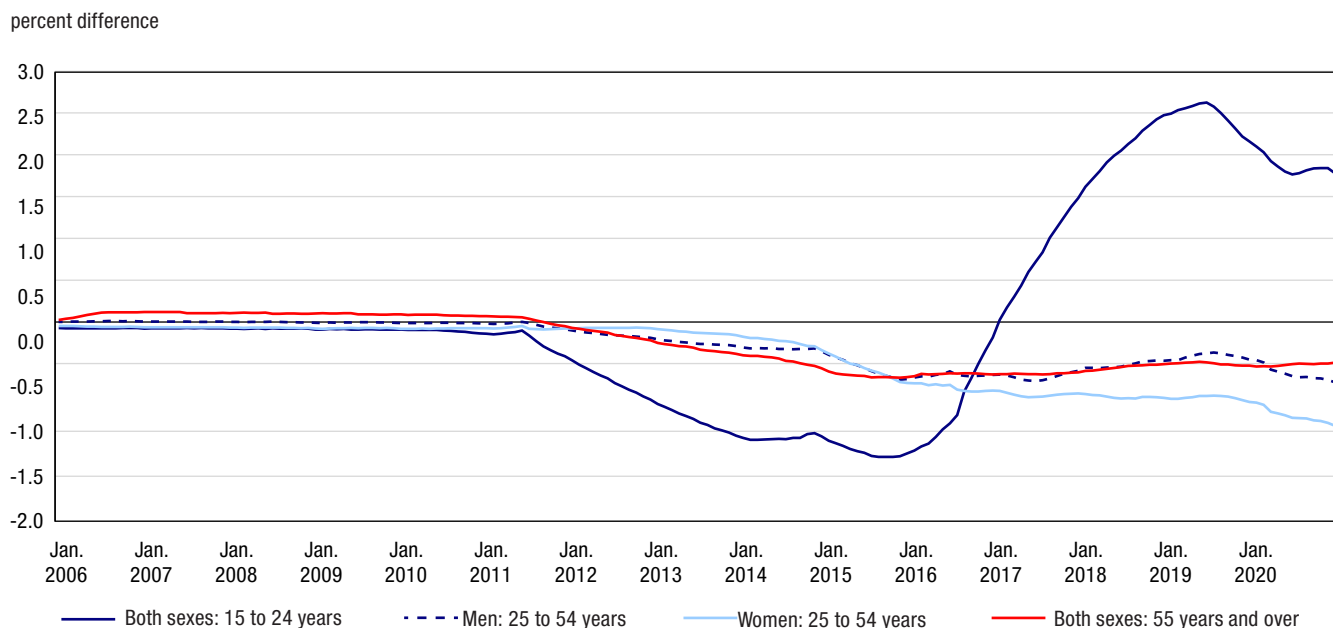
Source: Statistics Canada, Labour Force Survey.

In general, population control totals for both men and women of working age (15 years and older) were revised downward, but more so for women than men (Chart 3).
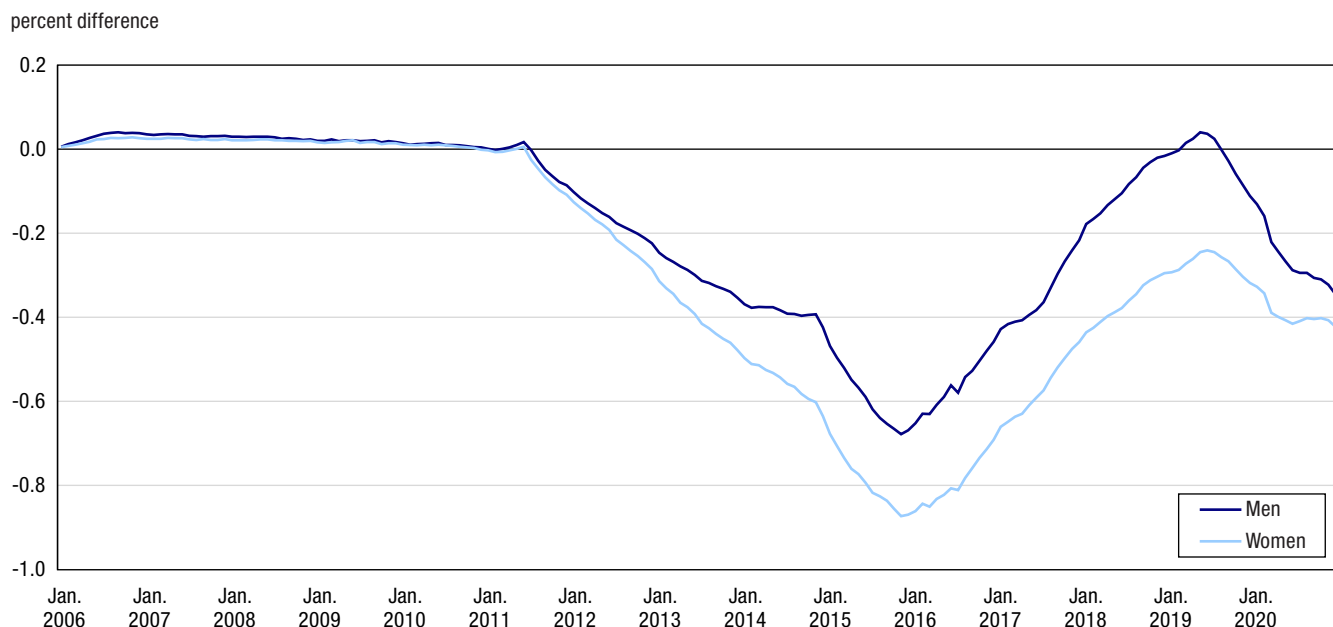
Chart 3
Percent difference between 2011 and 2016 Census-based LFS population control totals, by sex

percent difference

Source: Statistics Canada, Labour Force Survey.

Provincial differences

The magnitude of the population revision differs by province, and the differences are typically greater for the period of 2013 to 2018 (Charts 4, 5 and 6). The changes over this period are mostly the result of NPRs. In 2020, given the pandemic, the number of NPRs increased at a slower pace. The new series takes this into account for the interpolation between July 1, 2019 and July 1, 2020. This weaker increase allows the unrevised series to be closer to the revised series.
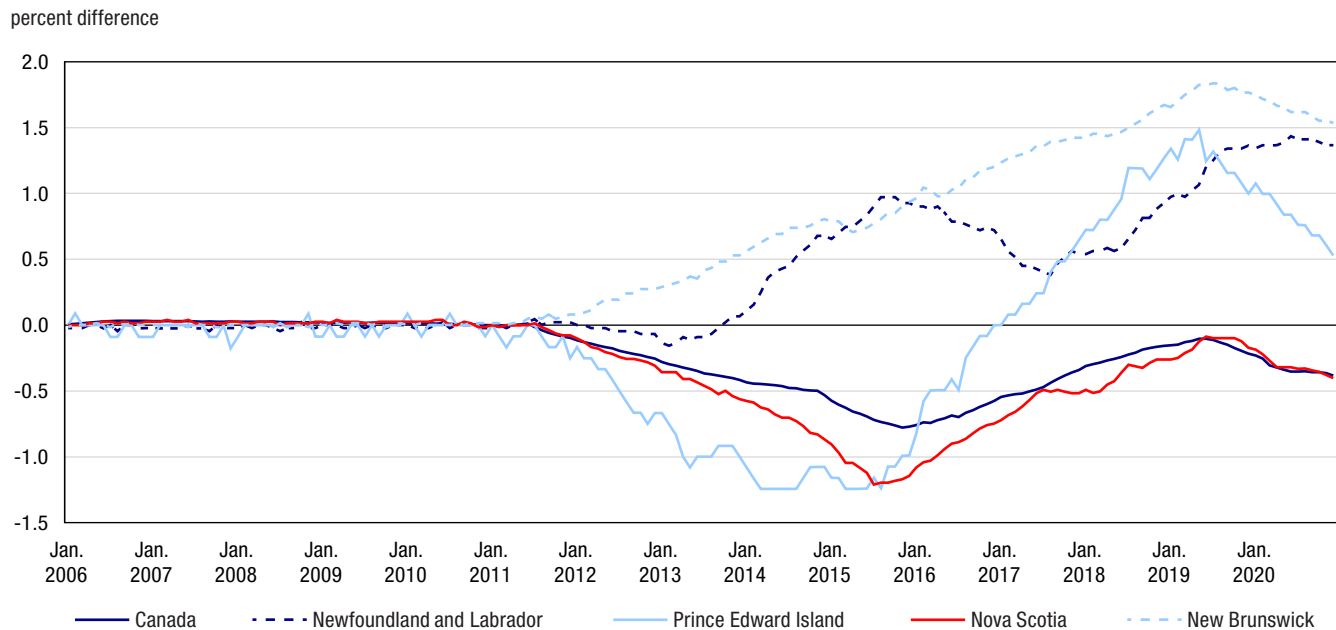
Population control totals for Alberta, Quebec, Ontario, Nova Scotia and Saskatchewan have been revised downward. The magnitude of the revisions varies over the period and followed the national trend, with revised estimates diverging from the unrevised starting in 2011 then converging again by 2018.

Alternatively, population control totals in British Columbia, New Brunswick, and Newfoundland and Labrador were revised upward. Population control totals for both British Columbia and New Brunswick had similar magnitudes of change; increasing from 2011 to 2018 and then remaining stable from 2018 onwards. The results in British Columbia stem from two factors going in the same direction. First, the error of closure for British Columbia was the highest among all provinces and territories. Second, the different methodologies used to estimate the stocks of NPRs pushed the numbers of the new series further upwards. NPRs are overrepresented in British Columbia compared with the rest of the country. For Newfoundland and Labrador, the revised population control totals followed a smoother curve compared with the unrevised estimates, as the population grew from 2014 to late 2017 before declining at a decreased rate, compared with the unrevised estimates.

The population revisions for Manitoba and Prince Edward Island differed slightly from the others. From 2011 through 2016, Manitoba and Prince Edward Island were revised downward, in line with the national estimates. From 2017, the estimates for these two provinces were revised upward, reaching a maximum divergence in mid-2019 before approaching convergence with the original estimates in 2020.

Chart 4
Percent difference between 2011 and 2016 Census-based LFS population control totals, for the Atlantic provinces and Canada

percent difference

Source: Statistics Canada, Labour Force Survey.

Chart 5
Percent difference between 2011 and 2016 Census-based LFS population control totals, for the central provinces and Canada

percent difference
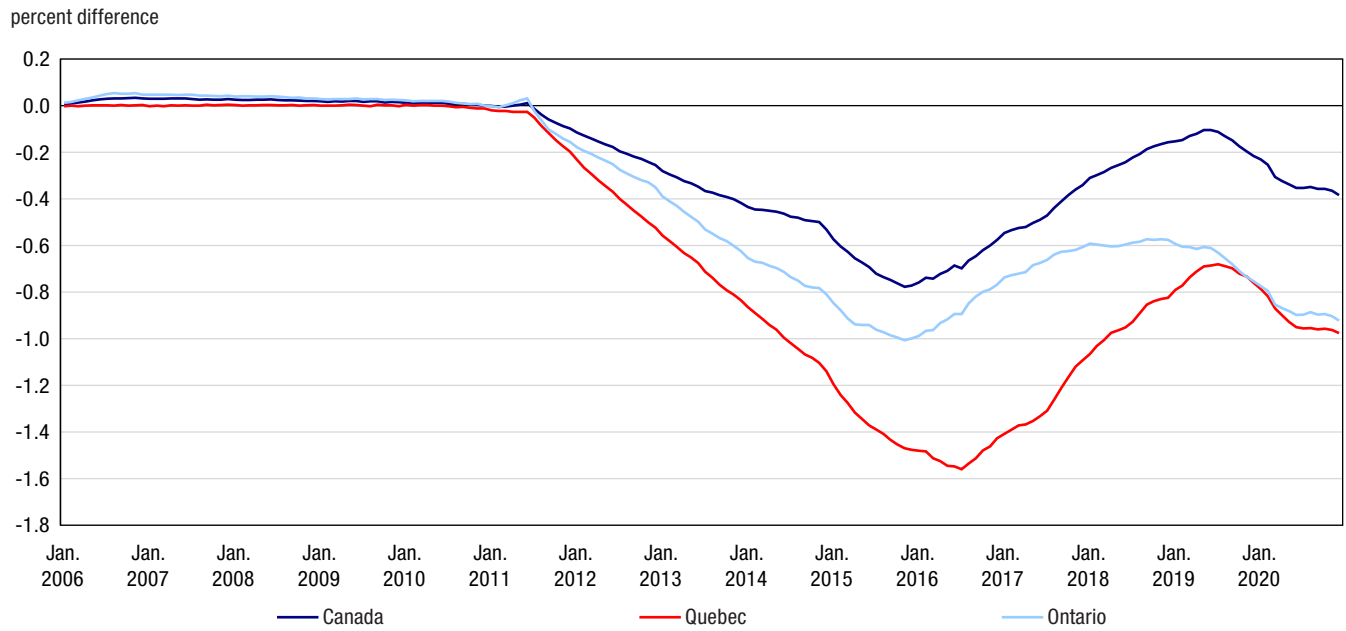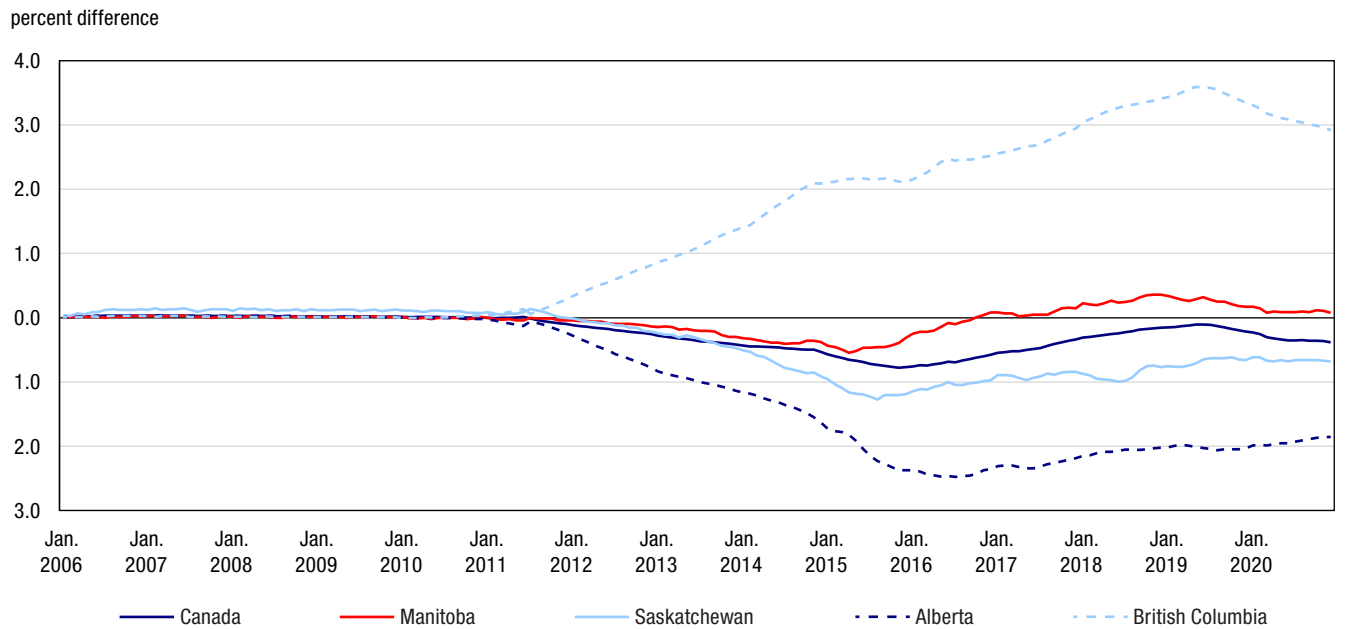

Source: Statistics Canada, Labour Force Survey.

Chart 6
Percent difference between 2011 and 2016 Census-based LFS population control totals, for the western provinces and Canada

percent difference

Source: Statistics Canada, Labour Force Survey.

3.0 Impact on labour market estimates since 2001

While population control totals were revised back to 2006, seasonally adjusted and trend-cycle data for labour market indicators were revised for an additional five years, back to January 2002 and July 2001 respectively, to ensure no break in the series.

Charts 7 (A,B,C,D,E,F), and 8 (A,B,C,D) present comparisons of monthly seasonally adjusted labour market indicators using unrevised and revised data at the national level by age and sex.

## 3.1 Impact at the national level on labour market estimates

Monthly seasonally adjusted employment levels were revised downward slightly, coinciding with the new population control totals (Chart 7-A). These revisions were most notable between 2013 and 2018, where on average employment was lower by 0.7% (-130,000). Between 2019 and 2020, these differences had minimized and the average revision to the number of employed was 0.3% (-64,000) lower than initially published.

The employment rate was also revised downward slightly on average throughout the revision period (Chart 7-B). However, the magnitude of differences did not impact the overall trend observed at the national level over the period. Some of the largest differences were observed in 2013, where it was on average 0.2 percentage points lower. The maximum difference between the revised employment rate and the unrevised rate was 0.3 percentage points (for example, in January 2013 the revised employment rate was 61.6% compared with the originally published 61.9%). By 2020, the revisions had virtually no impact on the employment rate.

Unemployment levels and rates were little changed between the revised and unrevised estimates (Chart 7-C). The national unemployment rate in December 2020 was revised to 8.8%, a difference of +0.2 percentage points from the unrevised rate (Chart 7-D). Over the period of 2002 to 2020, the unemployment rate changed by a maximum of 0.2 percentage points.

The size of the labour force and the rate of participation rate were also little changed (Charts 7-E and 7-F). Throughout most of the revision period, the participation rate was on average 0.1 percentage point lower. One of the largest changes was in March 2012, when it was revised down 0.3 percentage points. However, from 2013 onward the change was no greater than 0.2 percentage points. In 2019 it was revised down, on average, 0.1 percentage points, while for 2020 it was revised up by 0.1 percentage points, on average.

Chart 7-A
Employment: Comparison of revised and unrevised levels, seasonally adjusted from January 2002 to December 2020

thousands
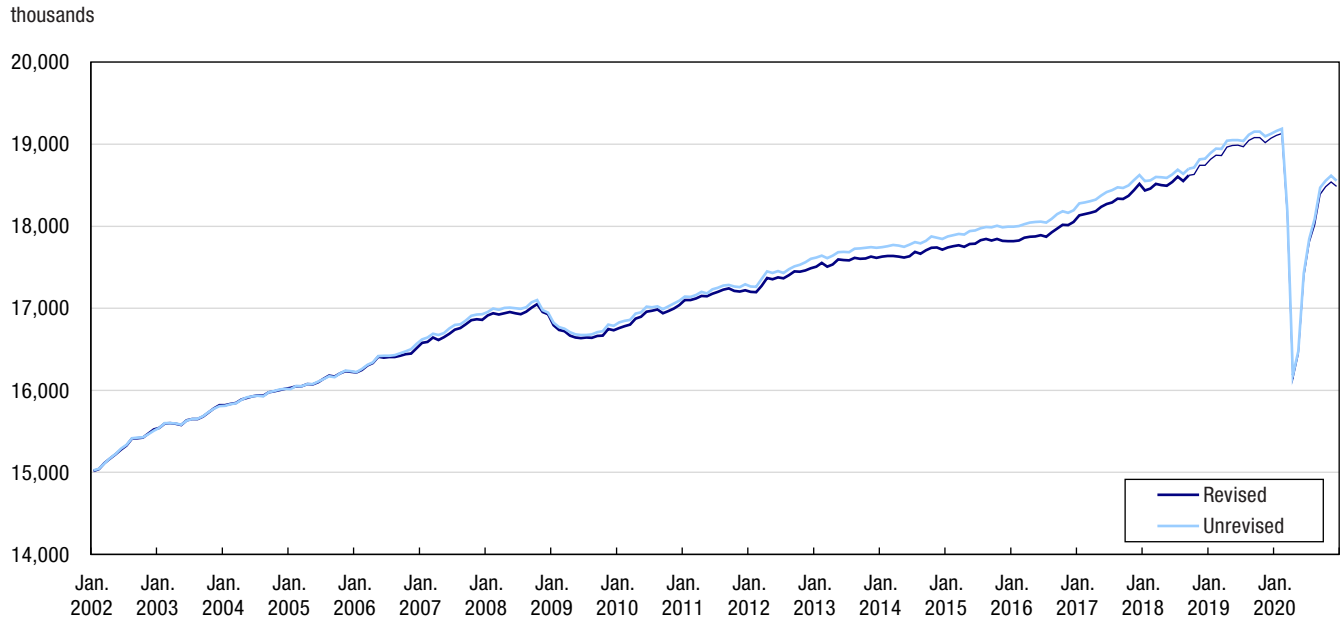
Source: Statistics Canada, Labour Force Survey.

Chart 7-B
Employment rate: Comparison of revised and unrevised levels, seasonally adjusted from January 2002 to December 2020

percent
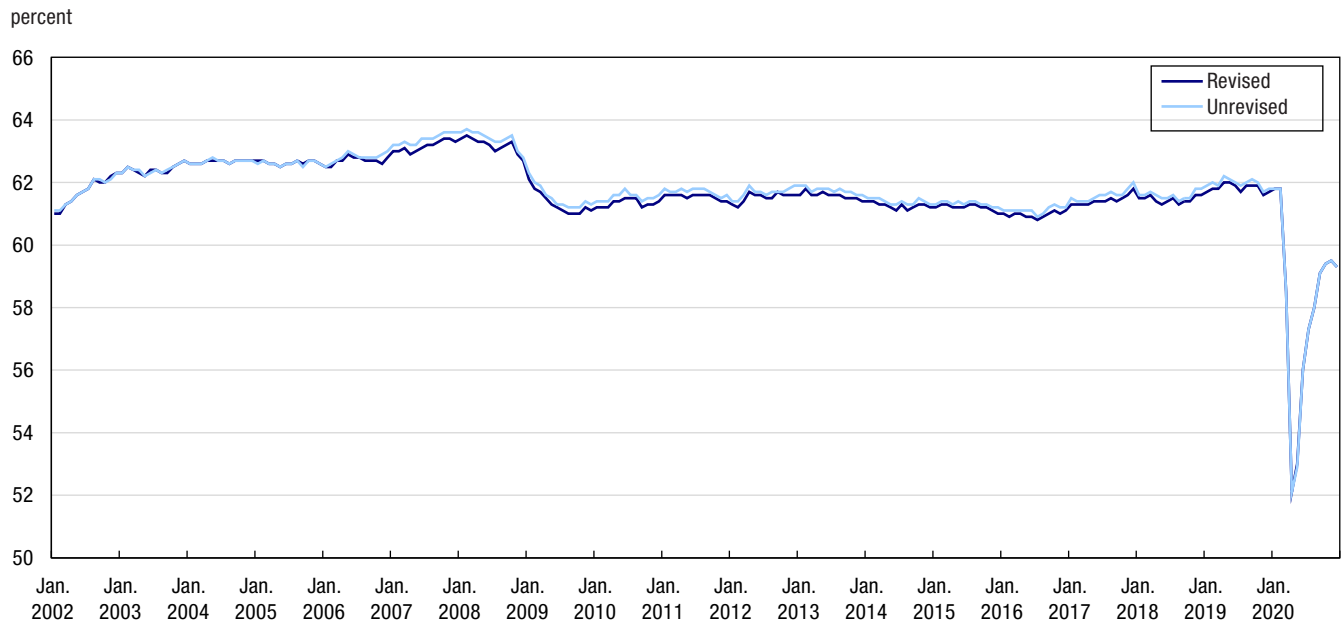
Source: Statistics Canada, Labour Force Survey.

Chart 7-C
Unemployment: Comparison of revised and unrevised levels, seasonally adjusted from January 2002 to December 2020

thousands

Source: Statistics Canada, Labour Force Survey.

Chart 7-D
Unemployment rate: Comparison of revised and unrevised levels, seasonally adjusted from January 2002 to December 2020

percent

Source: Statistics Canada, Labour Force Survey.

Chart 7-E
Labour force: Comparison of revised and unrevised levels, seasonally adjusted from January 2002 to December 2020
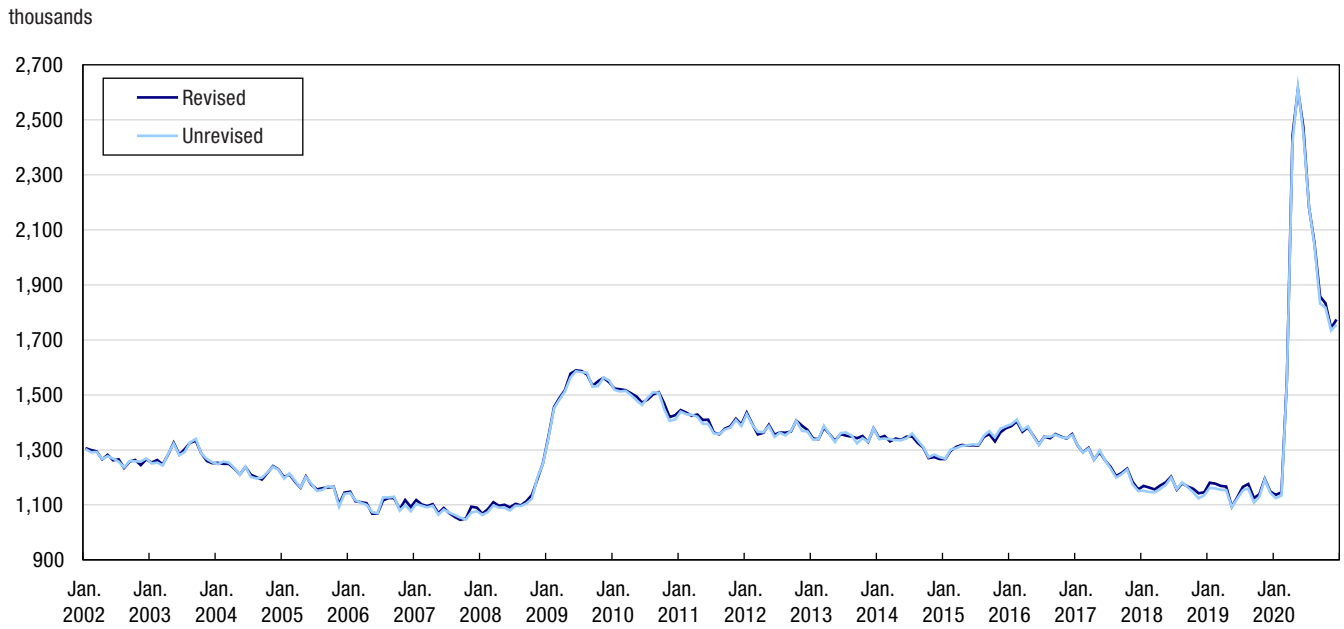
thousands

Source: Statistics Canada, Labour Force Survey.

Chart 7-F
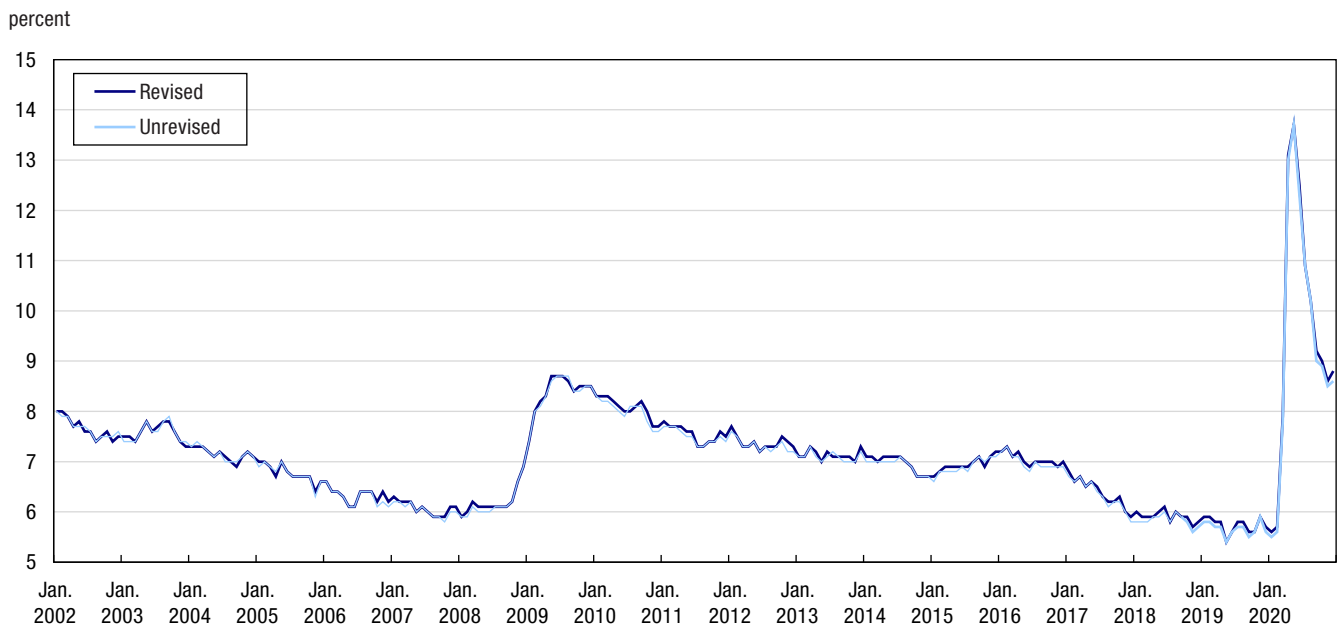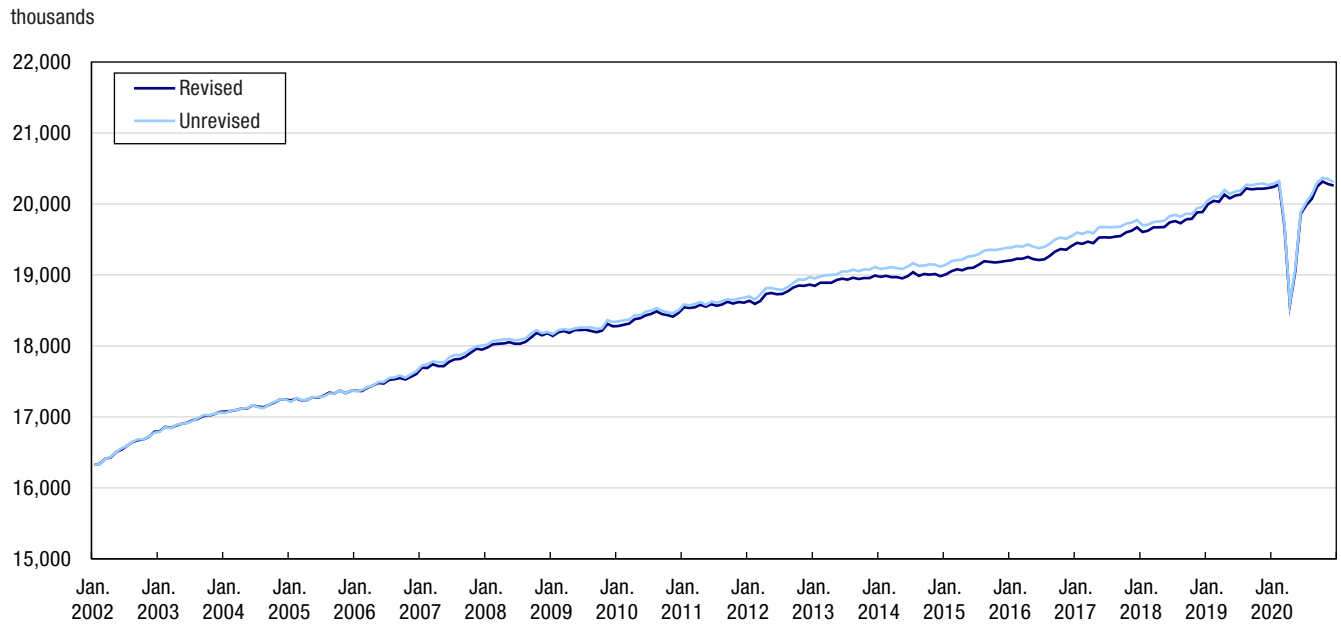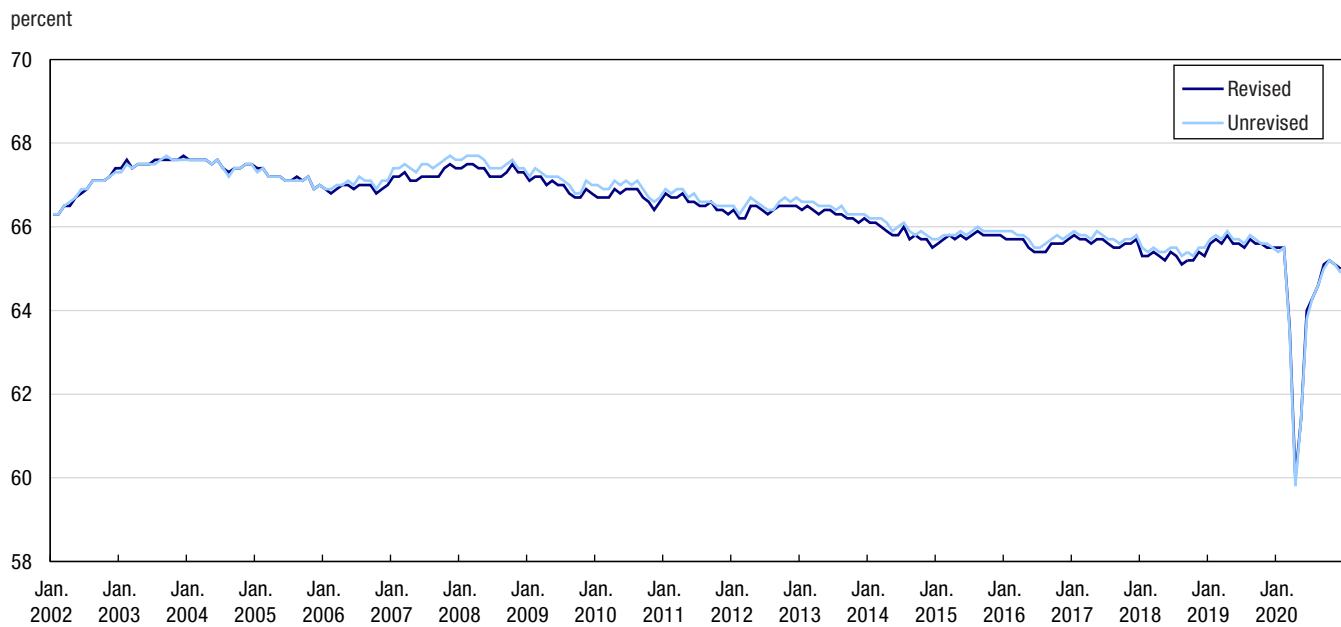**Participation rate: Comparison of revised and unrevised levels, seasonally adjusted from January 2002 to December 2020**

percent

Source: Statistics Canada, Labour Force Survey.

3.2 Impact by age and sex on labour market estimates

Revisions to population control totals affect groups differently based on their underlying labour market characteristics.

Some of the largest employment revisions were for youth aged 15 to 24, reflecting increases in their population control totals (Chart 8-A). Youth employment was revised up by a maximum of 4.2% (+101,000) in December 2018. These differences were 2.9% in 2019 and 2.3% in 2020, on average. As a result of these population control total updates, the rates were revised up for youth participation (+0.5 percentage points) and employment (+0.6 percentage points), on average throughout the revision period. The youth unemployment rate was virtually unchanged. While the revisions to youth population control totals were the largest, their overall impact on national labour market trends was minimized because their participation is relatively low.

For people aged 25 to 54, employment was revised down slightly, more so for women than men (Charts 8-B and 8-C). Reflecting the population control totals, these differences were greatest between 2013 and 2018. The biggest difference for core-age women was a 1.4% (-81,000) downward revision in January 2018. By 2019 and 2020 this difference was minimized at -1.0% and -0.8% on average, respectively. For men, the biggest revision was a reduction of 1.0% (-60,000) in September 2016. By 2019 the proportional downward change was -0.6%, and by 2020 it was -0.8%. Labour force participation rates were revised slightly on average over the revision period, down 0.1 percentage point for core-age men compared with a reduction of 0.2 percentage points for women. The unemployment rate for both core-age men and women was virtually unchanged throughout most of the period.

Among those 55 and older, employment was revised down a maximum of 2.1% (-70,000) in December 2012 (Chart 8-D). The difference was on average lower by 1.1% in 2019, and 0.2% in 2020. As a result, participation rates were revised down slightly in the earlier period of the revision (for example, down 0.7 percentage points in February 2010), but the differences, on average, had minimized by 2019 (-0.2 percentage points) and 2020 (+0.2 percentage points). The unemployment rate was revised up slightly, on average throughout the revision period for the seasonally adjusted data between 2002 and 2020, but for the most part was not significantly different from originally published.

Chart 8-A
Employment, both sexes, 15 to 24 years: Comparison of revised and unrevised levels, seasonally adjusted from January 2002 to December 2020

thousands
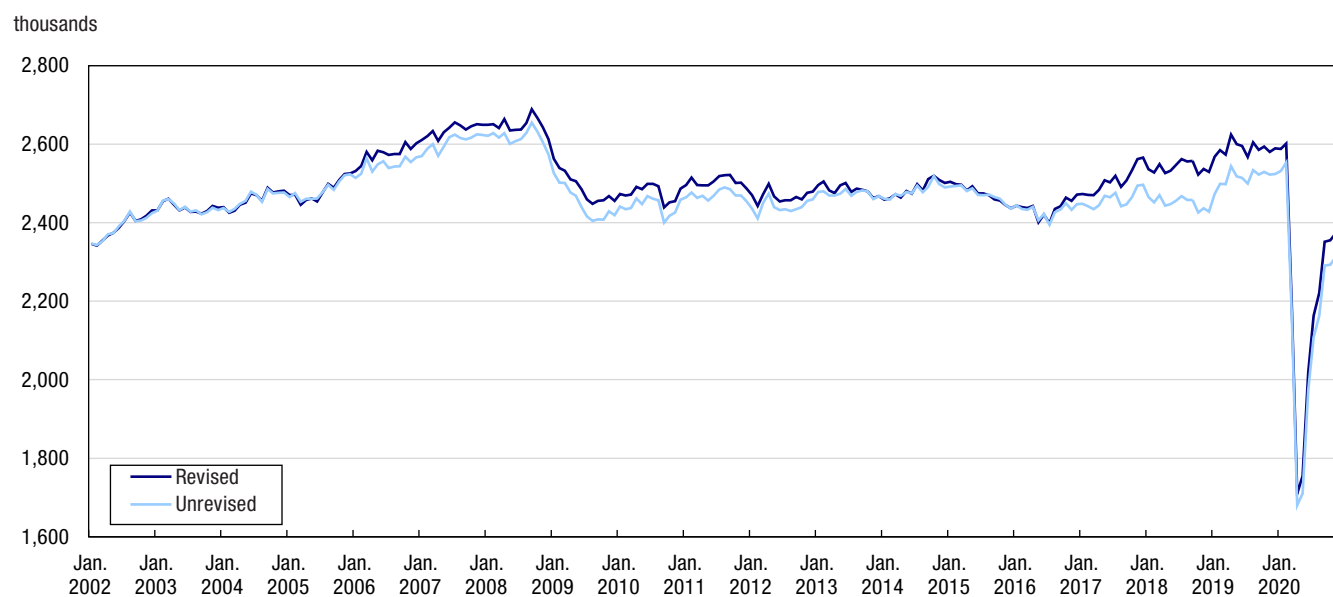
Source: Statistics Canada, Labour Force Survey.

Chart 8-B

Employment, men, 25 to 54 years: Comparison of revised and unrevised levels, seasonally adjusted from January 2002 to December 2020

thousands

Source: Statistics Canada, Labour Force Survey.

Chart 8-C

Employment, women, 25 to 54 years: Comparison of revised and unrevised levels, seasonally adjusted from January 2002 to December 2020

thousands

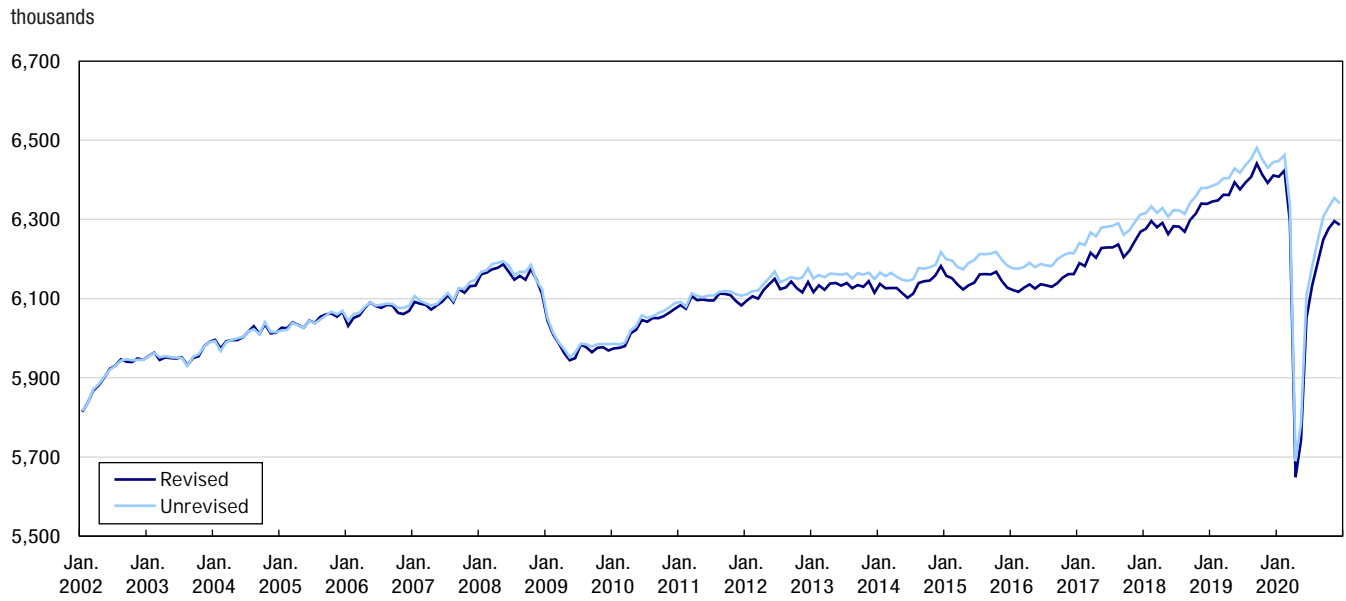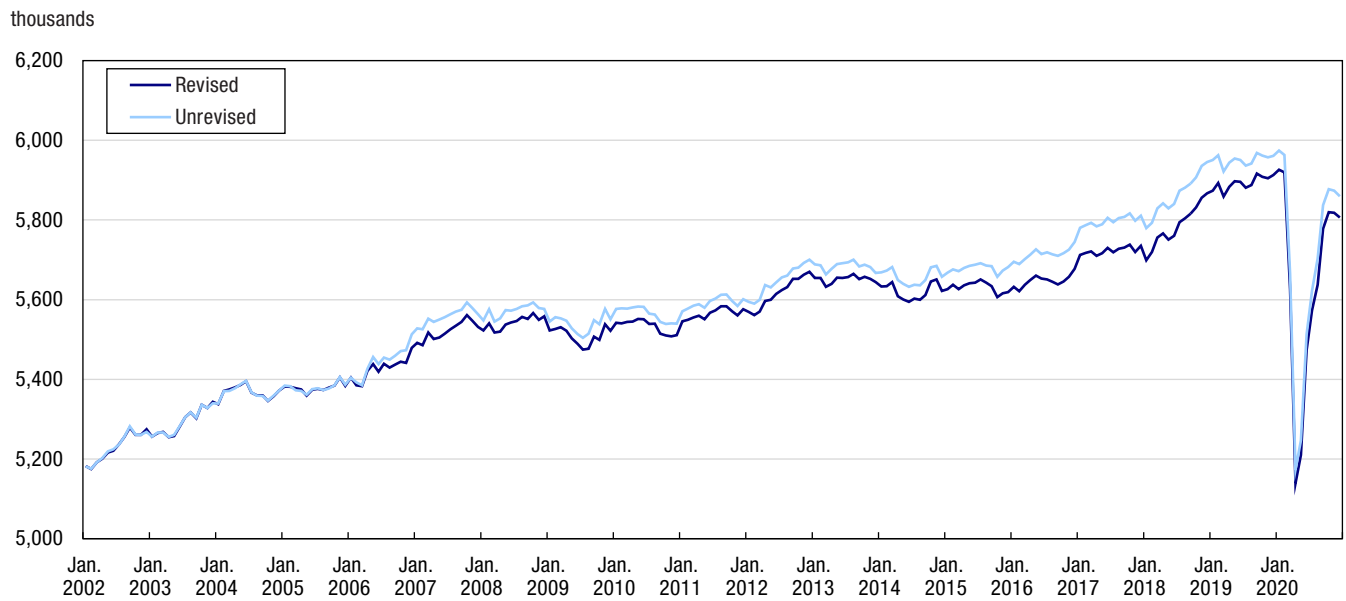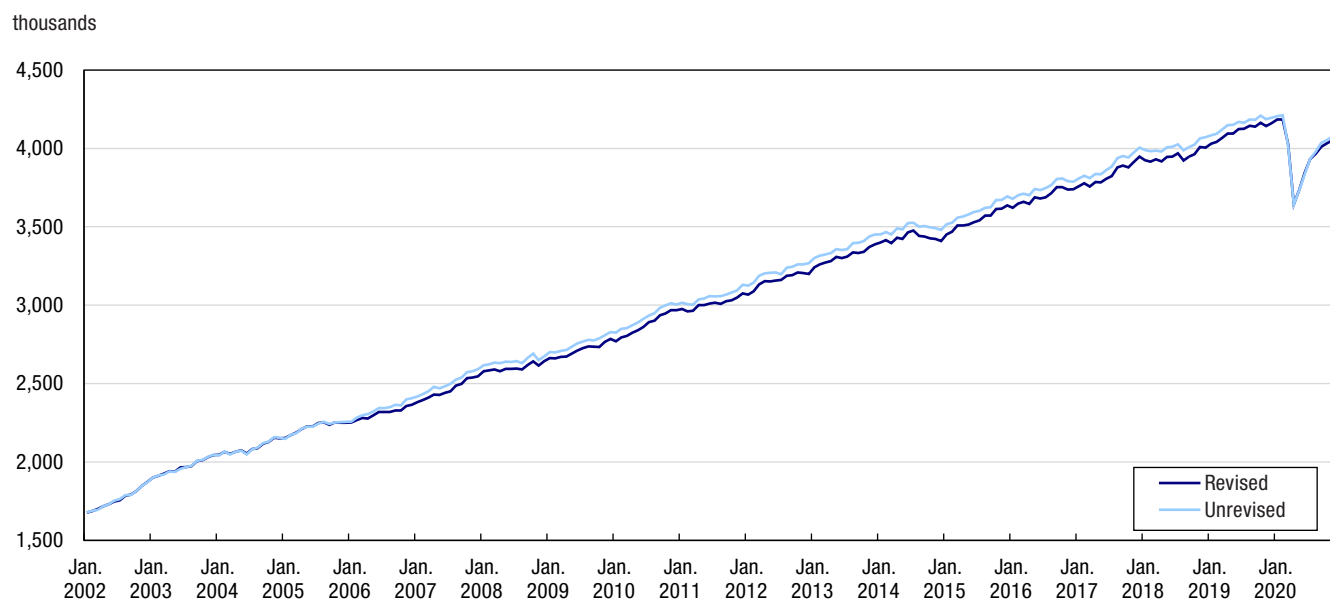**Source:** Statistics Canada, Labour Force Survey.

Chart 8-D
Employment, both sexes, 55 years and over: Comparison of revised and unrevised levels, seasonally adjusted from January 2002 to December 2020

thousands

Source: Statistics Canada, Labour Force Survey.

3.3 Impact by province on labour market estimates

By 2020, the seasonally adjusted monthly employment estimates were on average revised upward for three provinces. British Columbia had the largest difference (+3.8%), followed by Prince Edward Island (+1.2%) and New Brunswick (+1.3%). There was virtually no difference for Newfoundland and Labrador or Manitoba, compared with the unrevised estimates.

Revised employment estimates were lower for five provinces, with Alberta having the largest gap between the revised and unrevised estimates on average in 2020 (-2.1%). Saskatchewan followed with a difference of -1.4%, then Nova Scotia (-1.1%), Quebec (-1.0%), and Ontario (-0.8%).

4.0 Impact on the 2020 labour market trends (COVID-19)

In 2020 the Canadian labour market dramatically changed as a direct result of COVID-19. The rebasing of LFS data has minimal impact on LFS trends for estimates of employment and unemployment for the period from January to December 2020 (Charts 9-A, 9-B and 9-C).

While monthly seasonally adjusted estimates of employment were revised downward by an average of 0.3% over 2020, month-to-month changes in employment (seasonally adjusted) using revised estimates are virtually identical to the originally published estimates (Chart 9-B). For example, the largest monthly employment change published in 2020 was a decline in April of 1,994,000 (-11.0%). With the revised estimates, that decline is 1,992,000 (-11.0%)— a difference of 1,600 from the originally published estimate. The largest difference between revised and unrevised estimates was observed for the month of August: the originally published estimate was an increase of 246,000 (+1.4%) and this monthly change has been revised to 214,000 (+1.2%).

The cumulative employment gains from the employment low point in April to December was originally published as 2,368,000 (+14.6%). Using revised data, this change is 2,343,000 (+14.5%).

Chart 9-A
Employment in 2020, comparison of revised and unrevised levels, seasonally adjusted

thousands
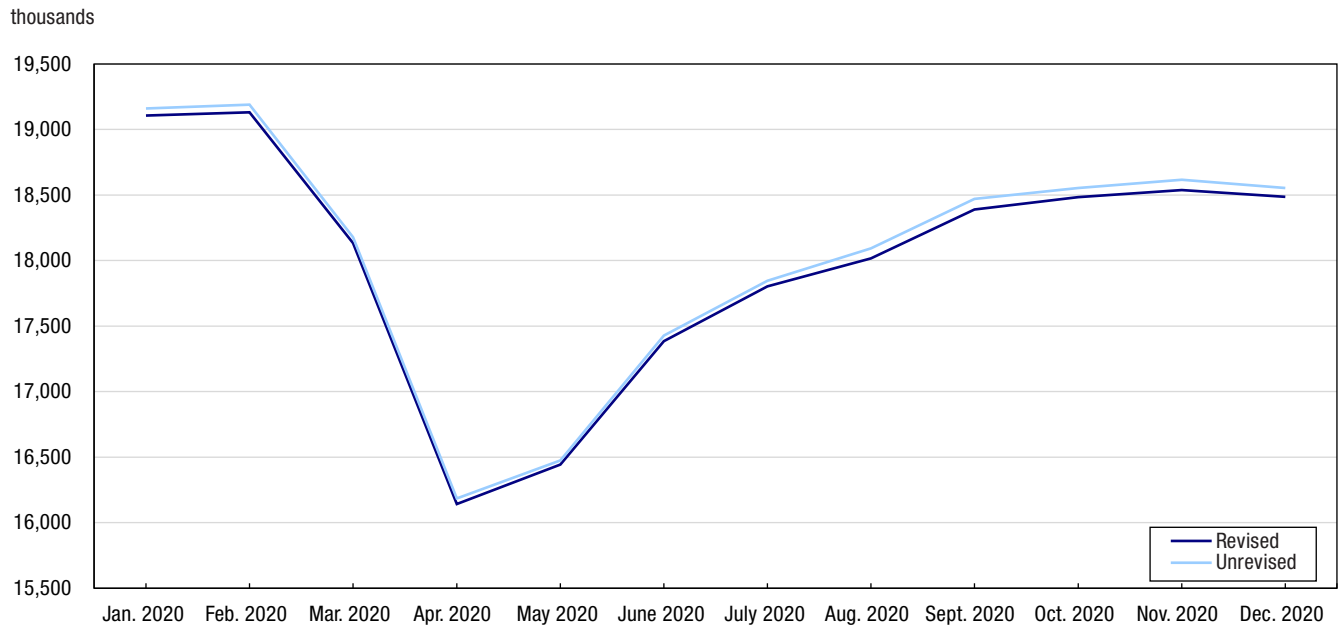
Source: Statistics Canada, Labour Force Survey.

Chart 9-B
Monthly employment change in 2020, comparison of revised and unrevised levels, seasonally adjusted

thousands
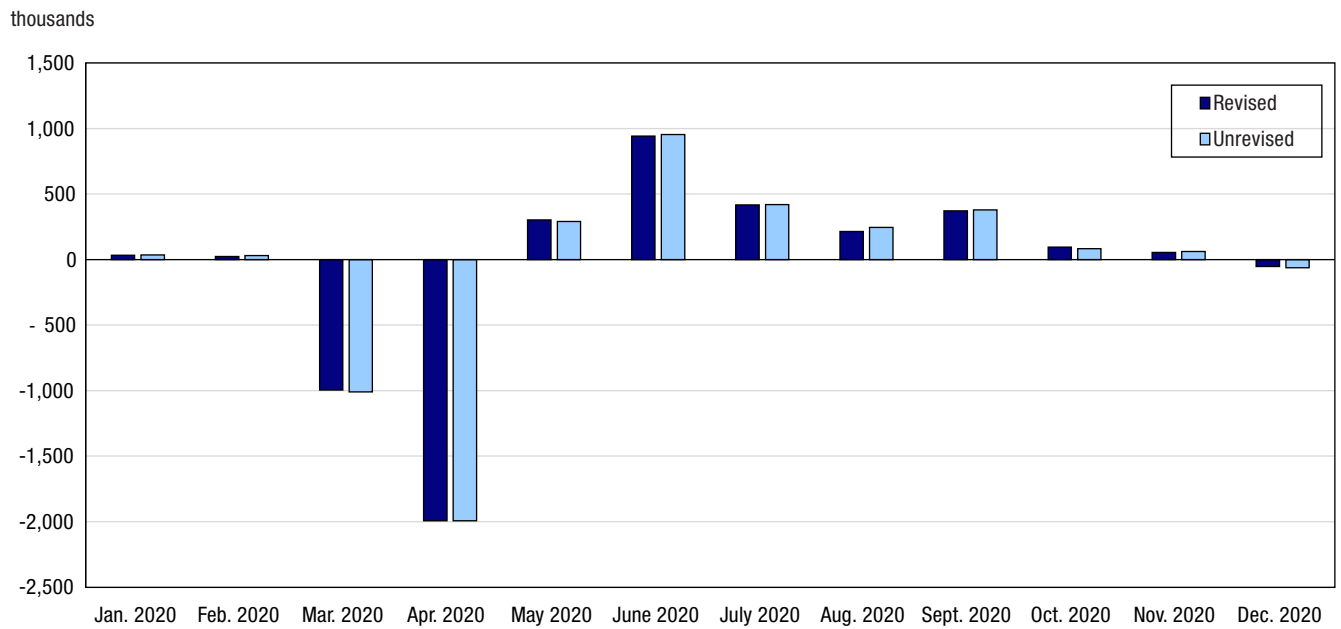
Source: Statistics Canada, Labour Force Survey.

The revised monthly seasonally adjusted unemployment rate was little changed throughout 2020, compared with the originally published estimates (Chart 9-C). In about half of the months in 2020, the unemployment rate was revised upward by 0.1 percentage points as a result of LFS rebasing. A maximum upward revision of 0.2 percentage points was observed for June, September and December 2020. The unemployment rate in May 2020 was the highest on record at 13.7% and remained unchanged after the revision.

Chart 9-C
Unemployment rate in 2020, comparison of revised and unrevised levels, seasonally adjusted

percent
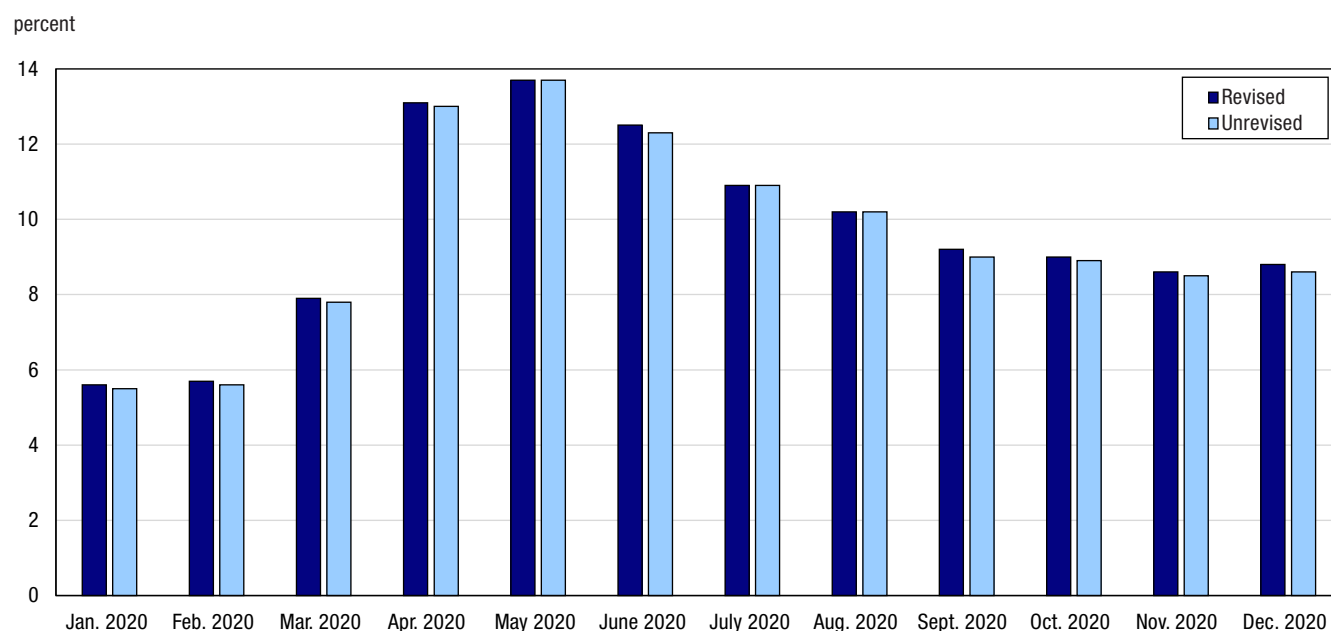
Source: Statistics Canada, Labour Force Survey.

5.0 The territories

Population control totals for Yukon, the Northwest Territories and Nunavut were revised back to 2006. For both Yukon and the Northwest Territories, population control totals were largely unchanged from 2006 to 2011, then revised upward through 2020. A change was made to the calibration methodology for the Northwest Territories, with estimates calibrated separately for Yellowknife and the rest of the territory. In Nunavut, rebased population control totals were unchanged from 2006 to 2011 and were lower than the previous estimates through 2019.

The revisions to population control totals had little impact on the labour market indicators. For 2020, the annual average revised employment estimates were higher for Yukon (+1,500; +7.4%), and the Northwest Territories (+1,200; +5.9%), and lower in Nunavut (-900; -6.9%).

Unemployment levels for 2020 were little changed between the revised and unrevised estimates for the three territories. The revised annual average unemployment rate for the Northwest Territories was 8.5%, 0.1 percentage points lower; while it was 14.3% for Nunavut (+0.3 percentage points) and 5.2% for Yukon (unchanged), compared with the originally published rate for 2020.

6.0 Estimates for the Indigenous population

The weights applied to the Indigenous working-age population were also updated to reflect population changes.

The revised LFS working-age population estimate for the Indigenous population in 2020 was 11.4% higher (+118,000) than the unrevised estimate. Revised population estimates were higher than the unrevised estimates for the three Indigenous groups: First Nations, Métis and Inuit. Revised Indigenous population control totals were higher than unrevised in all provinces; led by the Atlantic provinces (+29,000; +39.6%), Quebec (+25,000; +22.5%), Ontario (+23,000; +8.6%) and British Columbia (+18,000; +10.0%).

There was no difference between the revised and unrevised unemployment rates for the Indigenous population at the national level (remained 14.2% in 2020). Revised participation and employment rates were lower than the unrevised rates in most provinces, with the exception of British Columbia and Quebec.

Definitions in published tables and documentation were also updated to refer to Indigenous identity rather than Aboriginal group or Aboriginal Status.

7.0 Geographic boundary changes

Changes to the Standard Geographical Classification (SGC) introduced in conjunction with the 2016 Census resulted in the modification of boundaries for some of the sub-provincial areas such as census metropolitan areas (CMA), economic regions (ER), and census agglomerations (CA).

All LFS data tables for sub-provincial areas have been revised back to 2006, to reflect 2016 Census boundaries. A concordance table for the new and old tables published on the website is available in Table B-1 of Appendix B.

7.1 Census metropolitan areas (CMAs)

Two new CMAs were added to the census geography in 2016: Lethbridge, Alberta; and Belleville, Ontario. As well, 11 existing CMAs had boundary modifications between the 2011 SGC and the 2016 SGC. These are: Moncton and Saint John (New Brunswick); Saguenay, Québec, Montréal and Ottawa—Gatineau (Quebec part) (Quebec); Ottawa—Gatineau (Ontario part) Kitchener—Cambridge—Waterloo and Greater Sudbury (Ontario); and Regina and Saskatoon (Saskatchewan).

The most significant change to the existing CMA boundaries is that the Montréal CMA has annexed the Saint-Jean-sur-Richelieu CA. Among the CMAs with boundary changes, the largest increase between the revised and unrevised population control totals on average for 2020 was observed in Kitchener—Cambridge—Waterloo (+8.0%). The boundaries of the Kitchener CMA changed between the 2011 and 2016 censuses to include the census subdivision (CSD) of Wilmot. There were also notable increases for Greater Sudbury (+3.1%), and Saguenay (+2.1%), while the largest decline was in Saskatoon (-4.4%). The other CMAs had population changes of less than 2.0% for the same time period. The boundaries of most CMAs tend to increase over time as a result of urban growth. Estimates published for CMAs are three-month moving averages, and the population control totals and boundaries were revised back to 2006; therefore, the new series begins in March 2006.

7.2 Census agglomerations (CAs)

The changes to the 2016 SGC had a minor impact on CAs published by the LFS. Most CAs will continue to be published with updated Census 2016 boundaries; however, Saint-Jean-sur-Richelieu, Quebec and Lethbridge, Alberta will no longer be published as CAs. As noted in Section 7.1, Saint-Jean-sur-Richelieu has been annexed to the Montréal CMA, and Lethbridge has become a CMA.

7.3 Economic regions (ERs)

As a result of the move to the 2016 SGC, there were small boundary changes for two ERs: South Central and Southeast in Manitoba. South Central has been combined with North Central for publication since the previous revision because of the small population size of the economic region.

8.0 Industry and occupation classification update

Consistent with the standard practice of adopting the most recent industry and occupation classification structures when data are rebased, LFS historical series have been revised to the North American Industry Classification System (NAICS) Canada 2017 V3.0 and National Occupation Classification (NOC) 2016 V1.3. LFS was previously using industry classification NAICS 2012 and occupational classification NOC 2016 V1.0.

8.1 Industry classification

For data from 1987 onwards, the LFS has been revised to the NAICS Canada 2017 Version 3.0 from the 2012 NAICS. The NAICS has been developed by the statistical agencies of Canada, Mexico and the United States as a standard industry classification.

Differences between NAICS 2012 and NAICS 2017 classifications are observed only at the detailed level and will have no impact on published LFS tables. Differences in 4-digit NAICS codes will be observed in LFS microdata for new cannabis-related industries and the other information services industries, including Internet publishing, and wired and wireless telecommunications carriers.

A correction has also been applied to the industry classification for those working in the "Other wood product manufacturing" (NAICS 3219) and "Household and institutional furniture and kitchen cabinet manufacturing industries" (NAICS 3371). A subset of cases in these industries were recoded to resolve an inconsistency in the series resulting from the NAICS 2012 update introduced in January 2015.

8.2 Occupation classification

The LFS historical series, starting in 1987, have been revised from National Occupation Classification (NOC) 2016 V1.0 to NOC 2016 V1.3. Differences between the two versions of the classification were minor; there were no changes to the NOC codes; only to some of the descriptions.

9.0 Family variables and same-sex couples

Changes have been introduced to LFS microdata back to 2006, to reflect updated rules used in the derivation of some family-type variables, largely related to same-sex couples. As a result of these changes, table 14-10-0119-01 (Labour force characteristics by family age composition, monthly, unadjusted for seasonality), and table 14-10-0120-01 (Labour force characteristics by family age composition, annual) have been discontinued starting in January 2021. New family composition tables will be developed and released in spring 2021 to better align with the updated concepts and improve the relevance of the data for all users. Users interested in family composition tables in the interim should contact us (toll-free 1-800-263-1136; 514-283-8300; STATCAN.infostats-infostats.STATCAN@canada.ca) for custom tabulations.

9.1 Economic family type

Starting with the 2006 data, the "husband-wife" category has been removed from economic family type variables. The following table shows a concordance between the unrevised and revised economic family types.

Table 1
Revised economic family type categories

Unrevised (before 2006)	Revised (starting in 2006)
Unattached individual	Person not in an economic family
Husband-wife, dual earner couple, no children or none under 25	Dual-earner couple, no children or none under 25
Husband-wife, dual earner couple, youngest child 0 to 17	Dual-earner couple, youngest child 0 to 17
Husband-wife, dual earner couple, youngest child 18 to 24	Dual-earner couple, youngest child 18 to 24
Husband-wife, single earner couple, husband employed, no children or none under 25	Single-earner couple, male employed, no children or none under 25
Husband-wife, single earner couple, husband employed, youngest child 0 to 17	Single-earner couple, male employed, youngest child 0 to 17
Husband-wife, single earner couple, husband employed, youngest child 18 to 24	Single-earner couple, male employed, youngest child 18 to 24
Husband-wife, single earner couple, wife employed, no children or none under 25	Single-earner couple, female employed, no children or none under 25
Husband-wife, single earner couple, wife employed, youngest child 0 to 17	Single-earner couple, female employed, youngest child 0 to 17
Husband-wife, single earner couple, wife employed, youngest child 18 to 24	Single-earner couple, female employed, youngest child 18 to 24
Husband-wife, non-earner couple, no children or none under 25	Non-earner couple, no children or none under 25
Husband-wife, non-earner couple, youngest child 0 to 17	Non-earner couple, youngest child 0 to 17
Husband-wife, non-earner couple, youngest child 18 to 24	Non-earner couple, youngest child 18 to 24
Single-parent family, parent employed, youngest child 0 to 17	Lone-parent family, parent employed, youngest child 0 to 17
Single-parent family, parent employed, youngest child 18 to 24	Lone-parent family, parent employed, youngest child 18 to 24
Single-parent family, parent not employed, youngest child 0 to 17	Lone-parent family, parent not employed, youngest child 0 to 17
Single-parent family, parent not employed, youngest child 18 to 24	Lone-parent family, parent not employed, youngest child 18 to 24
Other families	Other families

Source: Statistics Canada, Labour Force Survey.

9.2 Parent variables

LFS microdata files include variables that describe the labour force status, highest level of education, industry and occupation of parents.

Microdata have been revised back to 2006, so that the variable "parent 1" refers to the male parent in an opposite-sex couple; the reference person in a household with two male parents; and the spouse in a household with two female parents. Similarly, the variable "parent 2" refers to the female parent in an opposite-sex couple; the reference person in a household with two female parents; and the spouse in a household with two male parents. Variables that previously referred to the "father" and the "mother" have been discontinued in microdata beginning in 2006. The following table illustrates the change:

Table 2
Revised parent variables

	Unrevised (before 2006)		Revised (starting in 2006)	
Variable (prefix)	Father (DAD)	Mother (MOM)	Parent 1 (PT1)	Parent 2 (PT2)
Opposite-sex couple	Male parent	Female parent	Male parent	Female parent
Male-male couple	Reference person	BLANK	Reference person	Spouse
Female-female couple	BLANK	Reference person	Spouse	Reference person

Source: Statistics Canada, Labour Force Survey.

9.3 Marital status

LFS data have been revised, back to 2006, to reflect the marital status reported by respondents. Prior to this change, for the period from 2006 to 2018, the marital status of a same-sex couples who reported being "married" was changed to "common-law" during LFS data processing. This change increases the number of respondents who are married by less than 1%.

Appendix A: Component changes in the population rebasing

The target or sampled population for the LFS includes the population aged 15 and over, and excludes people belonging to the following categories: population living on reserves, institutional residents, Canadians living abroad and full-time members of the Canadian Armed Forces.

The components of demographic growth include births, deaths, immigration, emigration, interprovincial migration, and non-permanent residents (NPRs). The component method of producing population estimates involves the monthly addition and subtraction of components of demographic growth from a base population. LFS rebasing involves adopting a base population based on the 2016 Census rather than the 2011 Census.

Differences between 2011-based LFS population control totals (unrevised series) and 2016-based totals (revised series) can be attributed to a series of changes introduced over three distinct periods: 1) 2006 to 2011, 2) 2011 to 2016 and, 3) 2016 to 2019.

The 2006 to 2011 period

From 2006 to 2011, differences between the unrevised and revised series are small for all provinces and territories. They mainly result from minor methodological improvements retrospectively performed to some components of the demographic growth.

The 2011 to 2016 period

The differences between the 2011-based and 2016-based population totals come from three main factors.

First, and most importantly, LFS population control totals for this period are based for the first time on the series of Statistics Canada population estimates introduced following the 2016 Census (released in September 2018).

Second, the methodology used to estimate stocks of NPRs for the revised series slightly differs from the unrevised series. NPR stocks from the revised series are linearly interpolated between the July 1 stocks surrounding the reference dates. NPR stocks of the unrevised series are calculated based on a 12-month moving average. As NPR data from 2011 to 2014 were available when the unrevised series was created, the moving average was centered on the reference month. However, the 2015 data of the unrevised series are based on a moving average of the 12 months preceding the reference month. As NPR stocks were slightly lower in 2015 when compared to 2014, the 2015 stocks of NPRs are lower for the revised series.

Third, differences observed between the two series also come from the revisions performed to the estimates of the populations excluded from the LFS universe. This is particularly true for the estimates of the institutional population and of the on-reserve population which are derived from the 2016 Census for the revised series and on the 2011 Census for the unrevised series.

The 2016 to 2019 period

As was the case for the previous period, differences between the revised and unrevised series mainly come from the revisions to the demographic estimates and the different methodologies used to estimate stocks of NPR. Adding to the impact of the 2016 Census rebasing, differences for the 2016 to 2019 period are also impacted by the timeliness of the demographic estimates. While the unrevised series involves the use of preliminary estimates of the components, the revised series, because it is calculated at a later time, was based on updated information. As the series approaches the most recent reference dates, the differences decrease as the information becomes more similar.

The fact that the two series are not calculated at the same time also impacted the estimation of the NPR stocks, especially in the context of the NPR stock strongly increasing since 2016. While the linear interpolation used for the revised series immediately took into account the increase, the method used (a moving average calculated from the 12 months preceding the reference date) for the unrevised series took the increase in a shifted fashion. For that reason, estimates of NPR stocks of the revised series are larger for the whole 2016 to 2019 period.

Extent of revisions according to provinces and territories

Differences between the two series are not the same from one province or territory from another.

From 2011 to 2016, the extent of the revision was slightly larger in Alberta, British Columbia and in the territories. The rebasing of the demographic estimates (*errors of closure*) and the revisions performed to NPR stocks explain the larger gap observed in Alberta. In British Columbia, the larger gap is mainly explained by the demographic estimates rebasing. In addition to the above mentioned factors, revisions performed to the excluded populations explain the differences observed in the territories.

From 2016 to 2019, differences between the revised and unrevised series tend to become larger in British Columbia, Yukon and Nunavut. In British Columbia and Yukon, the impacts of the revisions performed to the NPR stocks are adding to those of the 2011 to 2016 period. In Nunavut, revisions performed to the estimates of interprovincial migration mainly explain the observed differences.

Impact of revisions on the age and sex structure

Differences between the revised and unrevised series fluctuate according to age and sex.

Differences are somewhat larger for the population aged 15 to 24. They can be explained in two ways. First, the impact of the rebasing of the demographic estimates (*errors of closure*) is usually larger for adults in their twenties. Also, the combined impact of the marked increase in NPR stocks and differences in estimation methods (interpolation and 12-month moving average) are more important for the youth population because NPRs comprise a greater share of this group. As a result, the NPR stocks of the revised series are higher than those of the unrevised series.

Appendix B: Concordance between previous and new data tables for sub-provincial regions

Table B-1
Concordance between previous and new data tables for sub-provincial regions

Previous table number	New table number	Table title
14100090	14100393	Labour force characteristics by province, territory and economic region, annual
14100091	14100388	Employment by industry, three-month moving average, unadjusted for seasonality, provinces and economic regions
14100092	14100392	Employment by industry, annual, provinces and economic regions
14100095	14100378	Labour force characteristics by census metropolitan area, three-month moving average, unadjusted for seasonality
14100096	14100385	Labour force characteristics by census metropolitan area, annual
14100097	14100379	Employment by industry, three-month moving average, unadjusted for seasonality, census metropolitan areas
14100098	14100384	Employment by industry, annual, census metropolitan areas
14100102	14100391	Labour force characteristics by census agglomeration, annual
14100105	14100374	Employment and unemployment rate, monthly, unadjusted for seasonality, population centres and rural areas
14100106	14100375	Employment and unemployment rate, annual, population centres and rural areas
14100107	14100376	Employment by class of worker and industry, monthly, unadjusted for seasonality, population centres and rural areas
14100108	14100377	Employment by class of worker and industry, annual, population centres and rural areas
14100190	14100390	Work absence of full-time employees by geography, annual
14100293	14100387	Labour force characteristics by economic region, three-month moving average, unadjusted for seasonality, last 5 months
14100294	14100380	Labour force characteristics by census metropolitan area, three-month moving average, seasonally adjusted and unadjusted, last 5 months
14100295	14100383	Labour force characteristics by Montréal, Toronto and Vancouver census metropolitan areas, seasonally adjusted and unadjusted, last 5 months
14100311	14100386	Employment by economic regions and occupation, three-month moving average, unadjusted for seasonality
14100312	14100389	Employment by economic regions and occupation, annual
14100313	14100381	Employment by census metropolitan areas and occupation, three-month moving average, unadjusted for seasonality
14100314	14100382	Employment by census metropolitan areas and occupation, annual

Source: Statistics Canada, Labour Force Survey.