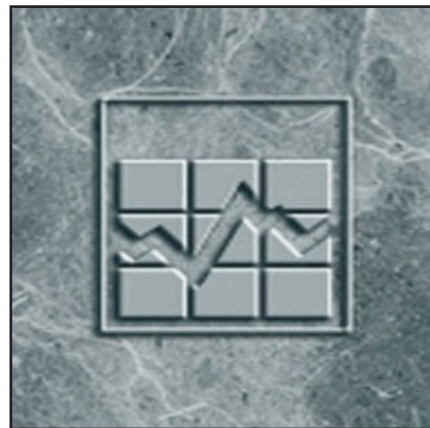


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## Income Research Paper Series

# Revisions to 2006 to 2011 income data



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- <sup>r</sup> revised
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## Summary

In December 2014, Statistics Canada released data from the new Canadian Income Survey (CIS), based on income from the 2012 reference year. Information for the 2013 reference year was released in July 2015.

The annual CIS reports on many of the same statistics as the Survey of Labour and Income Dynamics (SLID), which last reported on income for the 2011 reference year. With the first release of CIS results, Statistics Canada reported that comparisons of CIS and SLID revealed differences in estimates between 2011 and 2012 that were attributable to the two surveys having different methods, rather than a true change in the characteristics of the population.

To make it possible to compare results from the CIS to earlier years, Statistics Canada released revised estimates for SLID from 2006 to 2011. This note describes the revision, and illustrates how revised income estimates for 2006 to 2011 compare to pre-revision results, as well as to estimates from CIS for 2012 and 2013. It also provides advice to users for comparing these results with those from years prior to 2006. Income estimates before 2006 remain suitable for use with revised estimates from 2006 and onwards for analyzing long term, cyclical trends.

In revising the data, the objective was to make SLID estimates as comparable as possible to the new CIS data for 2012 and onward. Nonetheless, for some characteristics, the data trends could reveal a “break” due to the change in methodology. Such a break may appear as a noticeable upward or downward shift in the data coinciding with the change in methodology. These breaks may be more prevalent in some estimates for small domains such as by family type or region.

## 1.0 Introduction

Income statistics provide valuable information on the economic well-being of Canadians. These statistics are used by all levels of government as well as by non-government organizations to develop income support programs and social services, by academics and research organizations interested in labour market and social policy issues, as well as by the general public.

Income statistics are more informative when comparisons can be made over time. For example, there is a need to monitor year to year developments in household income to observe the effect of a change in the business cycle, or the introduction of a new government program. There is also the need to study longer-term trends in income, for example, to better understand differences in regional growth patterns, low income or income inequality.

Statistics Canada provides a range of income statistics that are produced using both administrative data sources such as the T1 Family File (T1FF)<sup>1</sup> and survey-based sources such as the Canadian Income Survey (CIS). While administrative data provide detailed income estimates for families and individuals, survey data provide richer information at the household level that more fully reflect the economic circumstances faced by Canadians.

Over time Statistics Canada has made methodological changes to the way in which annual survey-based income data are collected and processed. However, efforts are made to ensure that income statistics produced by these data remain as comparable as possible from year to year. The most recent change was introduced in the 2012 reference year when income statistics were first reported by the CIS. The CIS reports on many of the same statistics as the Survey of Labour and Income Dynamics (SLID), which last reported on income for the 2011 reference year<sup>2</sup>.

Statistics Canada has advised users that as a result of methodological differences between CIS and SLID, statistics produced by the two surveys are not comparable. These differences were described in “Note to Users of Data from the 2012 Canadian Income Survey” published with the initial CIS release in December 2014<sup>3</sup>.

An important difference between the two surveys is in their design; SLID was a longitudinal survey in which the same respondents were interviewed each year for a six year period, while CIS is a cross-sectional survey where respondents are only interviewed once. SLID estimates can differ from those of CIS as a result of coverage and response differences. Coverage issues include an undercoverage of recent immigrants in SLID, as new immigrants to Canada were only added to SLID when a fresh panel was introduced. Response differences include the effects of sample attrition over the length of the SLID panel. Sample attrition refers to the fact that, in a longitudinal survey, fewer and fewer members of the original sample are interviewed each year due to refusal to continue participating, or inability to find respondents following a move. As a cross-sectional survey, neither of these issues are present in CIS.

To ensure continued comparability of income statistics over time, Statistics Canada released revised historical estimates for 2006 to 2011 that allow for the comparison of CIS data to earlier years. This note presents these revised estimates and discusses how they compare to pre-revision results, as well as to estimates from CIS for 2012 and 2013. The main conclusions are:

- Revisions to 2006-2011 estimates make it possible to compare results from the CIS to earlier years.
- Revisions to median income values tend to be small.
- Revisions to 2006-2011 increase low-income rates during those years. The upward revisions in low-income estimates are largest in Toronto, and, correspondingly Ontario, and were also concentrated in other large Census Metropolitan Areas (CMAs).

In revising estimates for 2006 to 2011, the objective was to make SLID estimates as comparable as possible to the new CIS data for 2012 and onward. Nonetheless, for some characteristics the data trends could still reveal a “break” due to the change in methodology. Such a break would appear as a noticeable upward or downward shift in the data between 2011 and 2012. It represents a change in the data which is attributable to the two surveys having differences which could not be fully adjusted for in this revision.

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1. The T1FF includes 100% of individuals who filed an individual tax return (T1) or received Canada Child Tax Benefits. From these and other administrative records, individuals are joined into families and identifiable missing spouses and children are imputed.  
 2. Two previous revisions of income data are described in Cotton (2000) and Lathe (2005).  
 3. See Statistics Canada (2014).

This note also provides advice to users regarding the comparison of income estimates for years before 2006 with those from 2006 and after. Users should also be aware of potential breaks when comparing 2006 and later years to income estimates for years before 2006, as pre-2006 estimates have not been revised. Such a break would likely appear as a noticeable upward or downward shift in the data between 2005 and 2006. However, income estimates before 2006 are suitable for analyzing long term, cyclical trends. Analysis suggests that similar conclusions regarding long term or cyclical trends would be drawn using the unrevised and revised series.

## 2.0 Improving comparability of SLID and CIS through re-weighting

All surveys attach a weight to each record to indicate the number of units in the population that are represented by that unit in the sample. Because differences between SLID and CIS arise largely as a result of coverage and response discrepancies, sample weighting techniques can be used to adjust SLID estimates to make them more comparable to CIS. The revisions are only done over 2006 to 2011 as these years have the best methodological information available for the adjustment.

Deriving revised weights consists of two elements. In social surveys, weighted population totals from the survey are set to equal population totals from an independent source, such as the census or an administrative data source. This process is known as “calibration”. Because there are small differences in SLID and CIS calibration methodologies, the first element in adjusting 2006 to 2011 weights is to apply the same calibration methodology used in CIS to SLID.

In the second element, SLID weights are also adjusted in a way that will reduce coverage differences and response differences between SLID and CIS. This adjustment uses information from T1FF for 2006-2011 as a new calibration source to adjust the number of persons represented at the lower-end of the income distribution in SLID. The T1FF is seen as an appropriate calibration source because it provides high quality family income information and it does not have methodological changes over this period (although as explained in the text box below, the T1FF is adjusted to make it more comparable to the survey data). Text box 1 describes this second element in more detail.

### Text box 1

#### Using information from T1FF as a new calibration source for SLID

The following describes, in general terms, the steps involved in recalibrating SLID using information from T1FF.

In the first step, data and concepts are aligned to the greatest extent possible between SLID and T1FF;

- Populations that are excluded from SLID are also excluded from T1FF. This includes populations in the territories, on reserves and other Aboriginal settlements.
- Families are defined at the census family level in T1FF and SLID<sup>4</sup>. Since the T1FF is mainly based on the information provided on income tax returns, family estimates can only be calculated for census families and persons not in census families in T1FF.
- After-tax income<sup>5</sup> is calculated in the same way in the two data sources. For the purposes of this exercise, family income is defined as adjusted after-tax census family income. The adjustment is made by dividing census family income by the square root of the census family size and assigning this value to all persons in the census family. Persons not in a census family are considered a census family of size 1.

In the second step, population counts of the number of persons in low income, by province and for selected CMAs, are generated from T1FF for each year from 2006 to 2011, using the after-tax low income measure (LIM-AT) methodology<sup>6</sup>. In deriving low-income counts from T1FF, one needs to take into consideration that T1FF includes additional populations that are excluded from SLID<sup>7</sup>, and that T1FF tends to produce higher counts of persons in lower income brackets than survey or census sources<sup>8</sup>. Thus, the low-income thresholds used in this step are adjusted accordingly to reduce the calibration totals derived from T1FF<sup>9</sup>.

In the third step, sampled units in SLID are weighted such that the estimates for persons in low income in SLID<sup>10</sup> match the calibration totals from T1FF determined in the previous steps.

4. Census family refers to a married couple (with or without children), a common-law couple (with or without children) or a lone parent family.

5. After-tax income is the total of market income and government transfers, less income tax. Market income consists of earnings, private pensions as well as income from investments and other sources such as support and disability payments.

6. In the standard LIM-AT methodology, individuals are defined as having low income if their adjusted after-tax income falls below 50% of the median adjusted after-tax income. For the purpose of this exercise, the adjusted after-tax income corresponds to the census family after-tax income divided by the square root of the census family size.

7. T1FF includes the following groups of persons which are excluded from SLID: persons living in institutional collective dwellings such as hospitals, nursing homes and penitentiaries; Canadian citizens living in other countries; full-time members of the Canadian Forces stationed outside Canada; foreign residents; and persons living in non-institutional collective dwellings such as work camps, hotels and motels, and student residences.

8. See, for example, Statistics Canada (2013).

9. Instead of the threshold being set at the standard 50% of adjusted median income, the threshold is set to 46%, a figure which yields a count of persons in low income from T1FF for 2012 that is comparable to that seen in the 2012 CIS.

10. Based upon the standard LIM-AT methodology.

Table 1 presents high level results of this recalibration. It highlights changes in income between 2011 and 2012 using the original weights as well as the revised weights. These changes are also compared to changes in income between 2011 and 2012 from the T1FF.

**Table 1**  
**Comparison of changes in upper limits for deciles of adjusted census family after-tax income from T1FF and adjusted household after-tax income from SLID and CIS<sup>1</sup>**

	T1FF			SLID/CIS				
	2011	2012	Change	SLID 2011, unrevised	CIS 2012	Change	SLID 2011, revised	2011 to 2012 Change
	2013 constant dollars		percent	2013 constant dollars		percent	2013 constant dollars	percent
Decile 1	13,600	13,900	2.2	18,600	18,200	-2.2	18,000	1.1
Decile 2	20,000	20,400	2.0	24,700	24,700	0.0	24,400	1.2
Decile 3	25,500	25,900	1.6	30,000	30,300	1.0	29,900	1.3
Decile 4	31,200	31,700	1.6	35,500	35,900	1.1	35,500	1.1
Decile 5	37,100	37,700	1.6	40,800	41,900	2.7	40,900	2.4
Decile 6	43,600	44,300	1.6	46,700	47,900	2.6	46,900	2.1
Decile 7	51,200	52,100	1.8	53,700	54,900	2.2	53,900	1.9
Decile 8	61,300	62,300	1.6	63,100	63,900	1.3	63,300	0.9
Decile 9	78,200	79,600	1.8	78,300	79,100	1.0	78,200	1.2

1. T1FF incomes are adjusted by dividing the census family after-tax income by the square root of family size. SLID and CIS incomes are adjusted by dividing the household after-tax income by the square root of household size. To be consistent with SLID and CIS, T1FF estimates exclude the territories and individuals living on reserves and other Aboriginal settlements.

Estimates from T1FF refer to adjusted after-tax census family income while those of SLID and CIS refer to adjusted after-tax household income<sup>11</sup>. The table presents upper limits of adjusted after-tax income for each decile of the respective distribution.

Although the two sets of estimates are not comparable in level (as T1FF refers to census families while SLID and CIS refer to households), the direction of change over time suggested by each source should be consistent. Since estimates from T1FF are based on a consistent methodology between 2011 and 2012, they can be used to judge the impact of methodological differences between SLID and CIS that affect the comparability of their results over the same period. If T1FF shows an increase in census family incomes between 2011 and 2012, then an increase in household incomes would also be expected.

T1FF estimates show that census families throughout the distribution experienced income gains between 2011 and 2012. In contrast, changes between 2011 SLID (unrevised) and 2012 CIS suggest otherwise. According to those estimates, households in the first decile of the distribution saw their incomes decline by 2.2% and those in the second decile remained unchanged. Income changes throughout the rest of the distribution, however, are more consistent with those from T1FF.

This result shows that inconsistencies between SLID and CIS are largely concentrated at the lower end of the distribution. Estimates that relate to families or individuals towards the middle of the distribution are more comparable.

The final panel of Table 1 presents SLID estimates for 2011 that have been derived using revised sample weights. Revised estimates for 2011 show that incomes in the bottom two deciles increased rather than decreased between 2011 and 2012.

11. Although the calibration process uses income information based on a census family definition, adjusted census family income estimates are not published for SLID nor CIS.



### 3.0 Revisions to survey estimates

#### 3.1 Family income

The revisions to the SLID estimates result in only a small change in median family income over the 2006 to 2011 period. Overall, median market income, government transfers and after-tax income of economic families and persons not in an economic family showed no significant difference between the unrevised and revised results (Table 2).

Some differences were observed for specific family types, but these are generally small changes and do not affect the overall conclusion that median results changed little as a result of the revision.

**Table 2**  
**Comparison of revised and unrevised median income estimates by family type**

	SLID 2005	SLID 2006			SLID 2011			CIS 2012	CIS 2013
	2013 constant dollars	Unrevised	Revised	Change	Unrevised	Revised	Change	2013 constant dollars	2013 constant dollars
		2013 constant dollars		percent	2013 constant dollars		percent		
<b>Market income</b>									
Economic families and persons not in an economic family	47,200	48,800	48,500	-0.6	48,800	48,700	-0.2	50,400	50,600
Economic families	66,200	67,300	67,700	0.6*	70,000	70,500	0.7	72,500	72,600
Elderly families	25,400	26,600	26,500	-0.4	28,100	27,900	-0.7	30,900	29,900
Elderly couples	24,600	25,500	25,400	-0.4	27,400	27,000	-1.5	30,800	29,600
Other elderly families	30,300	29,700	29,900	0.7	29,400	29,400	0.0	31,600	31,900
Non-elderly families	73,800	75,300	76,000	0.9*	79,700	80,800	1.4*	83,300	82,800
Couples	73,100	73,800	74,700	1.2*	76,000	77,200	1.6*	79,500	79,500
Couples with children	83,500	84,400	84,100	-0.4	93,200	93,200	0.0	92,500	92,600
Couples with other relatives	110,700	111,700	114,400	2.4*	116,600	118,300	1.5	123,100	122,900
Lone-parent families	29,100	31,800	28,800	-9.4*	32,000	29,100	-9.1*	32,500	29,800
Other non-elderly families	55,800	58,400	58,200	-0.3	55,300	56,000	1.3	64,900	60,500
Persons not in an economic family	20,700	21,000	20,600	-1.9	21,400	20,800	-2.8	22,600	23,100
Elderly persons not in an economic family	6,600	7,700	7,300	-5.2*	9,200	7,800	-15.2*	9,400	10,400
Non-elderly persons not in an economic family	27,400	28,100	27,700	-1.4	27,200	26,900	-1.1	29,400	30,000
<b>Government transfers</b>									
Economic families and persons not in an economic family	3,500	3,900	4,000	2.6	5,300	5,300	0.0	5,300	5,300
Economic families	4,500	5,100	5,300	3.9*	6,200	6,300	1.6*	6,800	7,000
Elderly families	25,200	25,400	25,500	0.4	26,100	26,000	-0.4	26,300	26,600
Elderly couples	25,300	25,600	25,700	0.4	26,100	26,000	-0.4	26,200	26,700
Other elderly families	24,200	24,800	24,700	-0.4	25,800	26,000	0.8	26,600	25,900
Non-elderly families	2,700	3,200	3,300	3.1*	3,600	3,700	2.8*	3,600	3,600
Couples	300	800	800	0.0	700	700	0.0	600	500
Couples with children	3,200	3,700	4,000	8.1*	4,000	4,300	7.5*	4,400	4,300
Couples with other relatives	1,300	1,700	1,800	5.9	2,500	2,700	8.0*	2,800	2,300
Lone-parent families	7,200	7,700	8,000	3.9	8,700	9,000	3.4	9,300	10,300
Other non-elderly families	7,200	8,200	8,200	0.0	6,800	6,800	0.0	6,600	7,700
Persons not in an economic family	600	700	700	0.0	2,100	1,900	-9.5	1,500	1,600
Elderly persons not in an economic family	16,300	16,600	16,600	0.0	16,600	16,600	0.0	17,000	17,000
Non-elderly persons not in an economic family	400	400	400	0.0	700	700	0.0	700	600
<b>After-tax income</b>									
Economic families and persons not in an economic family	49,000	50,200	50,100	-0.2	51,900	51,800	-0.2	53,400	53,500
Economic families	64,300	65,700	66,200	0.8*	69,700	70,400	1.0*	72,300	72,200
Elderly families	46,300	47,900	47,800	-0.2	50,500	50,500	0.0	52,800	52,500
Elderly couples	44,700	47,000	46,800	-0.4	49,600	49,300	-0.6	52,200	51,900
Other elderly families	52,400	52,700	53,500	1.5	55,900	55,900	0.0	56,700	55,700
Non-elderly families	68,500	69,900	70,700	1.1*	75,000	76,000	1.3*	77,600	77,100
Couples	63,900	65,200	65,800	0.9*	68,200	68,700	0.7	71,000	72,400
Couples with children	75,400	76,600	76,700	0.1	85,600	86,200	0.7	85,400	85,000
Couples with other relatives	97,700	100,200	102,100	1.9*	105,900	108,800	2.7*	110,900	110,900
Lone-parent families	37,500	39,600	37,600	-5.1*	42,400	40,300	-5.0*	42,600	41,700
Other non-elderly families	59,600	62,700	62,300	-0.6	60,000	60,300	0.5	67,200	63,400
Persons not in an economic family	24,500	25,500	24,900	-2.4*	26,400	26,000	-1.5	27,500	28,200
Elderly persons not in an economic family	22,500	23,400	23,300	-0.4	24,700	24,100	-2.4*	25,300	25,700
Non-elderly persons not in an economic family	26,400	27,300	26,800	-1.8*	27,400	27,200	-0.7	28,600	29,800

\* Asterisks denote changes that are statistically significant at the 95% confidence level

### 3.2 Low income

Statistics that measure low income are more affected by the revision than other income statistics. Table 3 summarizes changes to low-income rates based on the after-tax low income measure (LIM-AT), the after-tax low income cut-offs (LICO-AT) and the market basket measure (MBM).

**Table 3**  
**Comparison of revised and unrevised low-income rates**

	SLID 2005	SLID 2006			SLID 2011			CIS 2012	CIS 2013
	percent	Unrevised percent	Revised percent	Change percentage point	Unrevised percent	Revised percent	Change percentage point		
<b>Low income measure after tax (LIM-AT)</b>									
All persons	13.0	12.4	13.4	1.0*	12.6	13.3	0.7*	13.8	13.5
Persons in economic families	10.7	10.1	11.0	0.9*	9.9	10.5	0.6*	11.4	11.0
Persons not in an economic family	26.6	26.0	27.5	1.5*	28.2	29.6	1.4*	27.4	27.8
Persons under 18 years	15.7	14.8	16.3	1.5*	14.3	15.2	0.9*	16.3	16.5
Persons 18 to 64 years	12.6	12.2	13.1	0.9*	12.2	12.8	0.6*	13.3	13.1
Persons 65 years and over	10.2	9.6	10.2	0.6*	12.0	13.2	1.2*	12.1	11.1
Females	13.8	13.3	14.3	1.0*	13.3	14.0	0.7*	14.6	14.1
Males	12.1	11.5	12.5	1.0*	11.9	12.6	0.7*	12.9	12.9
<b>Low income cut-offs after tax (LICO-AT)</b>									
All persons	10.8	10.3	11.5	1.2*	8.8	9.6	0.8*	9.9	9.7
Persons in economic families	7.5	7.1	8.2	1.1*	5.5	6.1	0.6*	6.9	6.9
Persons not in an economic family	30.5	29.4	31.1	1.7*	27.7	29.4	1.7*	26.7**	25.7
Persons under 18 years	11.7	11.1	12.8	1.7*	8.5	9.4	0.9*	10.8	11.2
Persons 18 to 64 years	11.4	11.1	12.2	1.1*	9.7	10.3	0.6*	10.8	10.7
Persons 65 years and over	6.2	5.3	5.9	0.6*	5.2	6.4	1.2*	4.4**	3.7
Females	11.1	10.7	11.8	1.1*	8.9	9.7	0.8*	10.1	9.8
Males	10.5	10.0	11.2	1.2*	8.7	9.4	0.7*	9.6	9.6
<b>Market basket measure (MBM)</b>									
All persons	12.3	11.7	12.7	1.0*	12.0	12.6	0.6*	12.9	12.1
Persons in economic families	9.7	9.1	10.0	0.9*	8.8	9.3	0.5*	10.1	9.5
Persons not in an economic family	27.4	27.2	28.8	1.6*	30.1	31.5	1.4*	28.9**	27.1
Persons under 18 years	15.0	14.1	15.5	1.4*	13.7	14.4	0.7	15.5	14.7
Persons 18 to 64 years	13.1	12.6	13.5	0.9*	12.8	13.4	0.6*	13.7	13.2
Persons 65 years and over	3.5	3.4	4.0	0.6*	5.7	6.7	1.0*	5.7	4.2
Females	12.6	12.1	13.1	1.0*	12.2	12.8	0.6*	13.3	12.4
Males	12.0	11.4	12.4	1.0*	11.8	12.4	0.6*	12.5	11.9

\* Asterisks denote changes that are statistically significant at the 95% confidence level

\*\* Asterisks denote values that are statistically different (at the 95% confidence level) from revised 2011 estimates

In comparing unrevised to revised low-income estimates, revised estimates are virtually all higher than unrevised estimates in both 2006 and 2011. The low-income rate based on the LIM-AT is revised from 12.4% to 13.4% in 2006 and from 12.6% to 13.3% in 2011. Revisions using the LICO-AT are slightly larger, increasing from 10.3% to 11.5% in 2006 and from 8.8% to 9.6% in 2011. Rates based on the MBM increase from 11.7% to 12.7% in 2006 and from 12.0% to 12.6% in 2011. Relative to their initial value, the magnitude of the revisions are fairly uniform for males and females, across age groups as well as for persons in economic families or those not in economic families.

Table 3 also shows results for 2012 and 2013 from CIS. For almost all domains, the change in low-income rates between 2011 and 2012 was insignificant following the revision.

Changes by province and for selected CMAs are summarized in Table 4. Upward revisions to the low-income rates were larger in Ontario and Toronto in both 2006 and 2011. For example, in Toronto, the 2011 low-income rate based on the LIM-AT was revised upwards from 10.7% to 13.9%. Low income was also revised upwards in British Columbia in 2006 (by 1.5 percentage points (p.p.) based on the LIM-AT), associated with a larger upward revision in Vancouver (up 3.7 p.p.). Other notable revisions can be seen in Table 4, such as an upward revision in low income in Calgary (in 2011) and Montreal (in 2006). Because the population of Toronto, Vancouver, Calgary and Montreal make up a large share of Canada's population, much of the revision at the Canada level can be associated with revisions in these large CMAs.

Comparing revised 2011 low-income rates to 2012 rates from the CIS indicates that the rates were steady across the 2011-12 period in most provinces and CMAs.

Table 4

## Comparison of revised and unrevised low-income rates by province and selected Census Metropolitan Areas (CMAs)

	SLID 2005		SLID 2006			SLID 2011			CIS 2012	CIS 2013
	percent	percent	Unrevised	Revised	Change	Unrevised	Revised	Change	percent	
			percentage point			percentage point				
<b>Low income measure after tax (LIM-AT)</b>										
Canada	13.0	12.4	13.4	1.0*	12.6	13.3	0.7*	13.8	13.5	
Newfoundland and Labrador	19.1	18.0	17.4	-0.6	13.8	14.3	0.5	14.6	13.4	
Prince Edward Island	11.2	11.8	12.0	0.2	15.0	13.7	-1.3	13.3	16.1	
Nova Scotia	14.8	14.4	14.7	0.3	13.5	13.4	-0.1	15.3	14.6	
New Brunswick	17.5	17.9	16.5	-1.4*	12.6	13.3	0.7	16.2**	15.0	
Quebec	14.1	13.4	13.8	0.4	14.0	13.9	-0.1	14.9	14.0	
Ontario	11.7	11.3	13.1	1.8*	12.0	13.1	1.1*	14.6	14.4	
Manitoba	14.7	14.2	15.4	1.2	14.0	15.0	1.0	15.6	14.8	
Saskatchewan	17.8	16.7	16.0	-0.7	11.3	12.6	1.3*	12.7	12.7	
Alberta	8.7	7.6	8.1	0.5	8.2	9.4	1.2*	6.4**	7.6	
British Columbia	14.8	14.2	15.7	1.5*	15.3	16.0	0.7	14.3	14.4	
Montréal, Quebec	13.7	13.0	14.8	1.8*	14.7	15.4	0.7	16.5	16.2	
Toronto, Ontario	12.3	12.5	15.8	3.3*	10.7	13.9	3.2*	17.0	15.5	
Winnipeg, Manitoba	12.9	12.3	13.3	1.0	11.2	13.3	2.1*	14.8	14.5	
Calgary, Alberta	7.4	7.1	7.4	0.3	6.3	8.2	1.9*	7.0	7.5	
Edmonton, Alberta	7.9	6.0	7.0	1.0	10.6	9.6	-1.0	5.6**	8.0	
Vancouver, British Columbia	14.0	14.7	18.4	3.7*	15.7	17.7	2.0	13.1**	14.6	
<b>Low income cut-offs after tax (LICO-AT)</b>										
Canada	10.8	10.3	11.5	1.2*	8.8	9.6	0.8*	9.9	9.7	
Newfoundland and Labrador	8.6	7.7	7.4	-0.3	5.3	5.5	0.2	5.4	5.1	
Prince Edward Island	5.5	5.5	5.7	0.2	4.4	3.9	-0.5	3.7	7.2	
Nova Scotia	8.6	8.6	8.8	0.2	7.0	6.8	-0.2	8.4	7.1	
New Brunswick	9.6	9.4	8.6	-0.8*	5.8	6.2	0.4	7.1	6.7	
Quebec	11.7	11.1	11.6	0.5	9.5	9.8	0.3	10.4	10.0	
Ontario	10.3	10.3	12.1	1.8*	9.0	10.2	1.2*	11.3	11.4	
Manitoba	12.7	11.2	11.9	0.7	8.9	9.6	0.7	10.7	10.3	
Saskatchewan	10.8	10.7	10.2	-0.5	5.3	5.8	0.5	6.0	6.5	
Alberta	8.5	7.1	7.9	0.8	7.0	7.6	0.6	5.4**	5.6	
British Columbia	13.2	12.6	14.4	1.8*	10.7	11.7	1.0	10.4	9.9	
Montréal, Quebec	14.6	14.0	16.0	2.0*	13.3	14.0	0.7	14.3	15.0	
Toronto, Ontario	13.1	13.1	16.4	3.3*	9.7	12.7	3.0*	15.4	15.4	
Winnipeg, Manitoba	14.7	13.3	14.4	1.1	10.0	11.5	1.5	13.7	13.1	
Calgary, Alberta	8.7	8.4	8.8	0.4	6.6	8.4	1.8*	7.6	8.4	
Edmonton, Alberta	9.5	7.1	8.2	1.1	11.1	10.0	-1.1	5.9**	6.4	
Vancouver, British Columbia	15.1	14.7	18.5	3.8*	13.6	15.7	2.1	11.9**	12.4	
<b>Market basket measure (MBM)</b>										
Canada	12.3	11.7	12.7	1.0*	12.0	12.6	0.6*	12.9	12.1	
Newfoundland and Labrador	16.0	14.8	14.3	-0.5	11.8	12.1	0.3	12.6	12.4	
Prince Edward Island	11.6	12.5	12.8	0.3	13.0	12.0	-1.0	13.1	15.8	
Nova Scotia	14.3	13.7	13.9	0.2	14.3	14.1	-0.2	15.8	13.1	
New Brunswick	16.1	15.4	14.1	-1.3*	12.0	12.6	0.6	14.7	13.2	
Quebec	10.4	9.7	10.1	0.4	10.7	10.6	-0.1	11.9	10.8	
Ontario	12.3	12.1	13.8	1.7*	12.0	13.0	1.0*	14.4	14.0	
Manitoba	11.6	11.1	12.0	0.9	11.5	11.9	0.4	12.2	11.6	
Saskatchewan	13.5	13.7	13.0	-0.7	9.8	10.8	1.0	10.6	10.1	
Alberta	9.9	7.8	8.4	0.6	9.4	10.6	1.2*	7.3**	7.4	
British Columbia	15.8	15.7	17.1	1.4*	16.5	17.0	0.5	14.9	13.1	
Montréal, Quebec	11.0	10.3	12.0	1.7*	11.8	12.3	0.5	14.4	13.8	
Toronto, Ontario	14.8	14.6	17.5	2.9*	13.3	16.1	2.8*	18.9	17.7	
Winnipeg, Manitoba	9.8	10.0	10.9	0.9	9.1	10.5	1.4	13.3	12.7	
Calgary, Alberta	9.4	8.0	8.2	0.2	8.5	10.7	2.2*	8.3	9.3	
Edmonton, Alberta	8.2	5.9	7.1	1.2	11.9	10.9	-1.0	6.0**	6.7	
Vancouver, British Columbia	15.9	15.9	19.3	3.4*	17.3	19.0	1.7	14.3**	13.2	

\* Asterisks denote changes that are statistically significant at the 95% confidence level

\*\* Asterisks denote values that are statistically different (at the 95% confidence level) from revised 2011 estimates

## 4.0 Examining longer-term trends with SLID and CIS

The previous sections described revisions to the 2006-2011 SLID data to make it more comparable to data from CIS. This section provides advice to users who wish to look at longer trends in income statistics using pre-2006 data<sup>12</sup>. Because the revision mainly affected low-income results, this section concentrates on trends in low income. Graphs comparing selected revised and unrevised low income trends are presented in the annex.

To summarize trends in low income in the revised and unrevised data, Table 5 compares average low-income rates (using the LIM-AT and LICO-AT) from 1996-2000 with those from 2007-2011<sup>13</sup>. In Canada overall, the average low-income rate based on the LIM-AT increased by 0.2 p.p. before the revision and 0.8 p.p. after the revision, while the low-income rate based on the LICO-AT fell by 4.8 p.p. before the revision and by 4.1 p.p. after the revision.

Because the revisions to low-income rates tended to be upward, changes in low-income rates over time are in more of an upward direction in the revised data. That is to say, increases over time are usually larger in the revised data and declines are smaller. This is as expected given the pattern of revisions in low-income rates for 2006-2011 discussed earlier in this note.

For example, in Ontario, the change in the average low-income rate based on the LIM-AT between the two periods increased from 1.8 p.p. before the revision to 2.8 p.p. after the revision. In Calgary, the corresponding change went from -2.8 p.p. to -1.8 p.p. as a result of the revision. However, in most cases, conclusions drawn with the revised data would be similar to those with the unrevised data. Cases where there is a large increase (or decrease) in low income tend to be the same in the revised and unrevised low income series.

Conclusions regarding trend changes in low income based on the LICO-AT do not tend to change as a result of the revision. In most cases, low-income rates based on the LICO-AT show declines in both the unrevised and revised series.

The fact that in most cases conclusions drawn using the revised and unrevised statistics are unchanged leads to the recommendation that income estimates before 2006 remain suitable for analyzing long term, cyclical trends, and can be used with the recalibrated results from 2006 to 2011 and the CIS results from 2012 and beyond.

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12. Income data in Canada were collected between 1976 and 1997 using the Survey of Consumer Finances (SCF) and from 1993 to 2011 using SLID. Estimates for the overlapping years are based on a combination of SCF and SLID data.

13. The Market Basket Measure is only available beginning in 2002, which prevents analysis of MBM across these periods.

**Table 5**  
**Comparison of revised and unrevised long-run change in low-income rates by age, family type, province, and selected Census Metropolitan Areas (CMAs)**

	1996-2000 average	2007-2011 average		1996-2000 versus 2007-2011, change	
		Unrevised	Revised	Unrevised	Revised
	percent	percent		percentage point	
<b>Low income measure after tax (LIM-AT)</b>					
All persons	12.7	12.9	13.5	0.2	0.8
Age and family type					
Persons under 18 years	16.3	14.8	15.6	-1.5	-0.7
Persons 18 to 64 years	12.6	12.5	13.0	-0.1	0.4
Persons 65 years and over	5.9	11.7	12.5	5.8	6.6
Persons in economic families	11.1	10.4	11.0	-0.7	-0.1
Persons not in an economic family	23.0	26.7	27.9	3.7	4.9
Province and selected CMA					
Newfoundland and Labrador	19.9	15.3	15.6	-4.6	-4.3
Prince Edward Island	13.5	13.1	13.2	-0.4	-0.3
Nova Scotia	15.8	15.4	15.4	-0.4	-0.4
New Brunswick	15.3	15.2	15.2	-0.1	-0.1
Quebec	14.9	14.3	14.4	-0.6	-0.5
Ontario	10.4	12.2	13.2	1.8	2.8
Manitoba	14.0	14.2	15.3	0.2	1.3
Saskatchewan	15.0	12.9	14.0	-2.1	-1.0
Alberta	10.8	8.3	9.0	-2.5	-1.8
British Columbia	13.4	14.4	14.9	1.0	1.5
Montréal, Quebec	16.1	15.5	16.1	-0.6	0.0
Toronto, Ontario	9.3	12.2	14.6	2.9	5.3
Winnipeg, Manitoba	11.9	11.7	13.6	-0.2	1.7
Calgary, Alberta	9.1	6.3	7.3	-2.8	-1.8
Edmonton, Alberta	10.3	8.9	8.9	-1.4	-1.4
Vancouver, British Columbia	13.5	15.0	16.0	1.5	2.5
<b>Low income cut-offs after tax (LICO-AT)</b>					
All persons	13.9	9.1	9.8	-4.8	-4.1
Age and family type					
Persons under 18 years	16.0	8.9	9.8	-7.1	-6.2
Persons 18 to 64 years	14.1	10.0	10.6	-4.1	-3.5
Persons 65 years and over	8.6	5.2	5.9	-3.4	-2.7
Persons in economic families	10.6	6.0	6.6	-4.6	-4.0
Persons not in an economic family	34.9	27.3	28.6	-7.6	-6.3
Province and selected CMA					
Newfoundland and Labrador	14.2	6.6	6.6	-7.6	-7.6
Prince Edward Island	8.8	4.7	4.7	-4.1	-4.1
Nova Scotia	12.9	7.8	7.7	-5.1	-5.2
New Brunswick	11.3	6.8	6.8	-4.5	-4.5
Quebec	16.6	9.9	10.3	-6.7	-6.3
Ontario	12.3	9.2	10.3	-3.1	-2.0
Manitoba	14.9	9.1	9.9	-5.8	-5.0
Saskatchewan	11.3	6.8	7.3	-4.5	-4.0
Alberta	12.9	6.7	7.2	-6.2	-5.7
British Columbia	15.3	11.3	11.8	-4.0	-3.5
Montréal, Quebec	22.5	13.9	14.5	-8.6	-8.0
Toronto, Ontario	14.3	11.1	13.4	-3.2	-0.9
Winnipeg, Manitoba	18.0	10.5	12.2	-7.5	-5.8
Calgary, Alberta	13.8	7.4	8.2	-6.4	-5.6
Edmonton, Alberta	15.4	8.8	8.8	-6.6	-6.6
Vancouver, British Columbia	19.1	14.5	15.6	-4.6	-3.5

## Conclusion

This note presents revised income estimates for SLID from 2006 to 2011. These revisions to 2006-2011 estimates make it possible to compare results from the CIS to earlier years.

The revisions address the issue of methodological differences between SLID and CIS, and, in general, yield an upward revision in low-income rates. The upward revisions in low-income rates are larger in Toronto, and, correspondingly Ontario, and are also concentrated in other large CMAs. Most other estimates such as median income values are not changed significantly as a result of the revision.

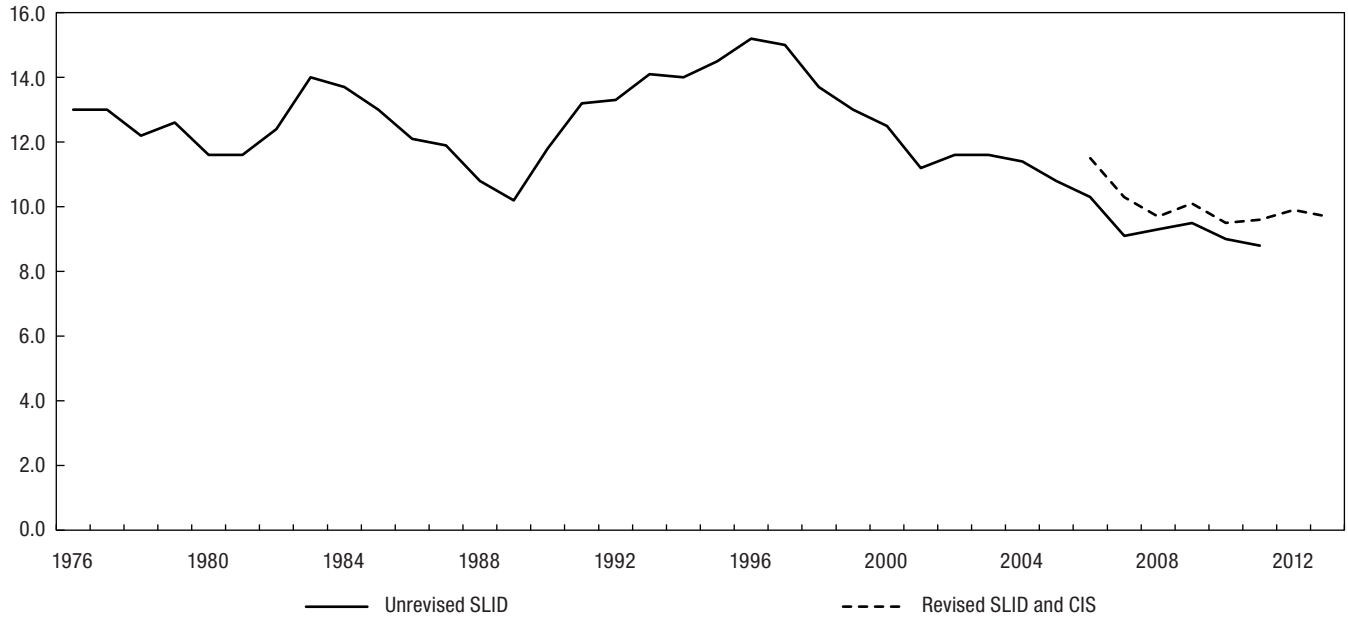
Estimates from before 2006 together with the revised estimates remain suitable for analyzing long-term trends, and conclusions that would be drawn from the revised series are, in most cases, the same as those that would be drawn using the previous series.

In the implementation of the revision for 2006-2011, revisions to the data were made in such a way as to minimize “breaks” in trends. However, there is always the possibility of breaks occurring in trends whenever a new methodology is introduced. With this revision, changes to the methodology occur between 2005 and 2006 as the revision to SLID is implemented, and between 2011 and 2012 as CIS replaces SLID. Such a break would appear as a noticeable upward or downward shift in the data in these years. It would represent a change in the estimates which is attributable to the two surveys having differences which could not be fully adjusted for in this revision.

## Annex

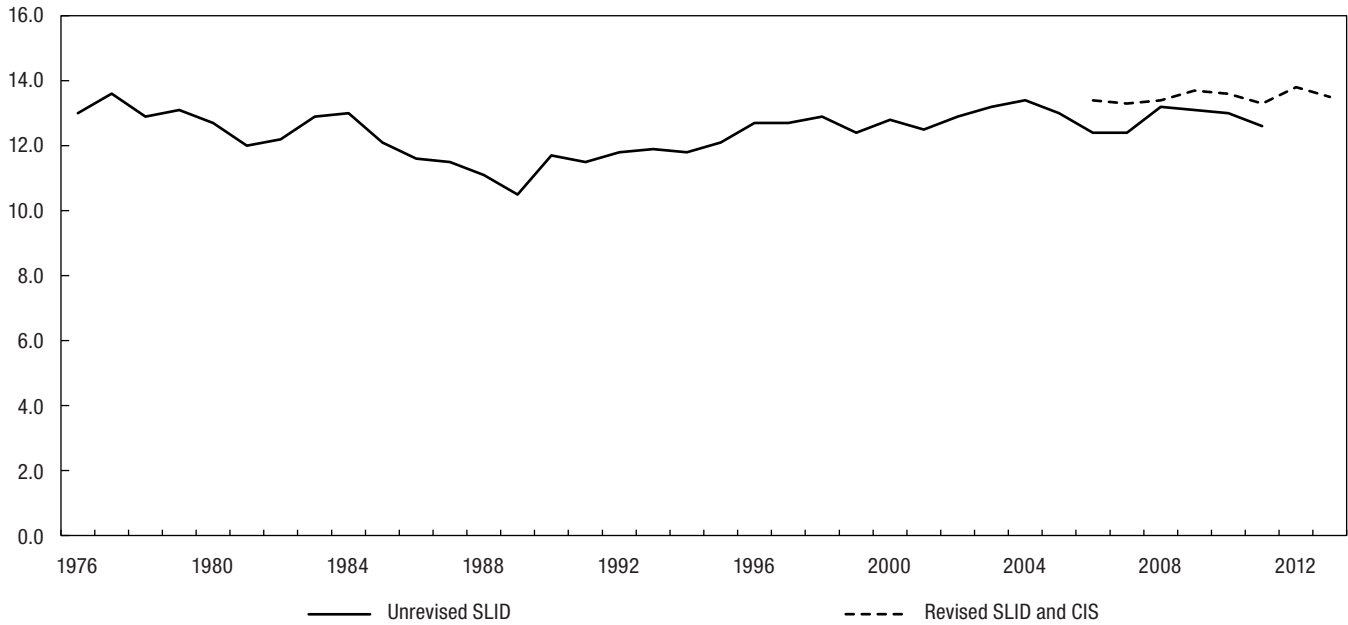
**Figure 1**  
**Comparison of revised and unrevised low-income rates (LICO-AT), 1976 to 2013**

percent

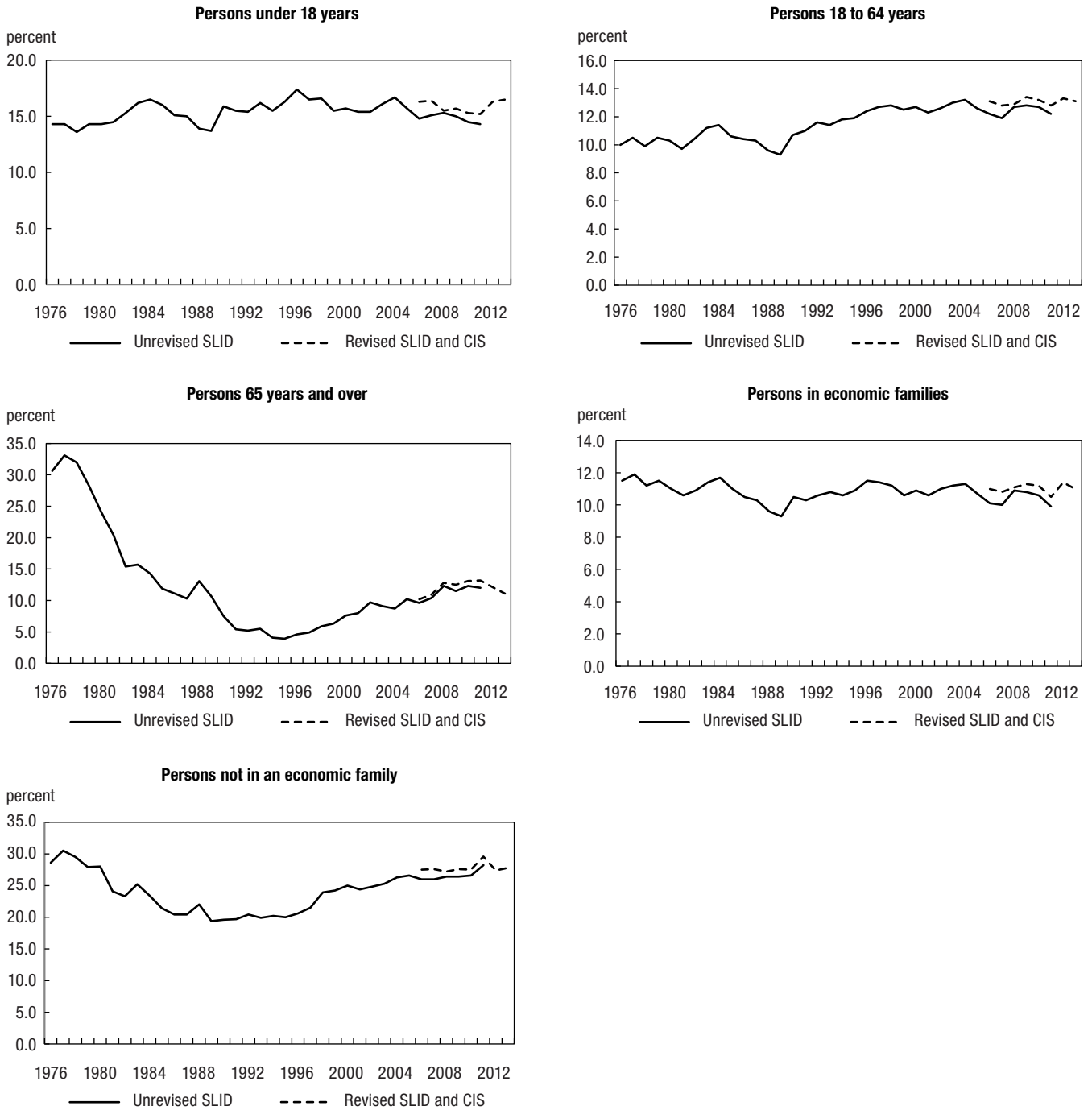


**Figure 2**  
**Comparison of revised and unrevised low-income rates (LIM-AT), 1976 to 2013**

percent

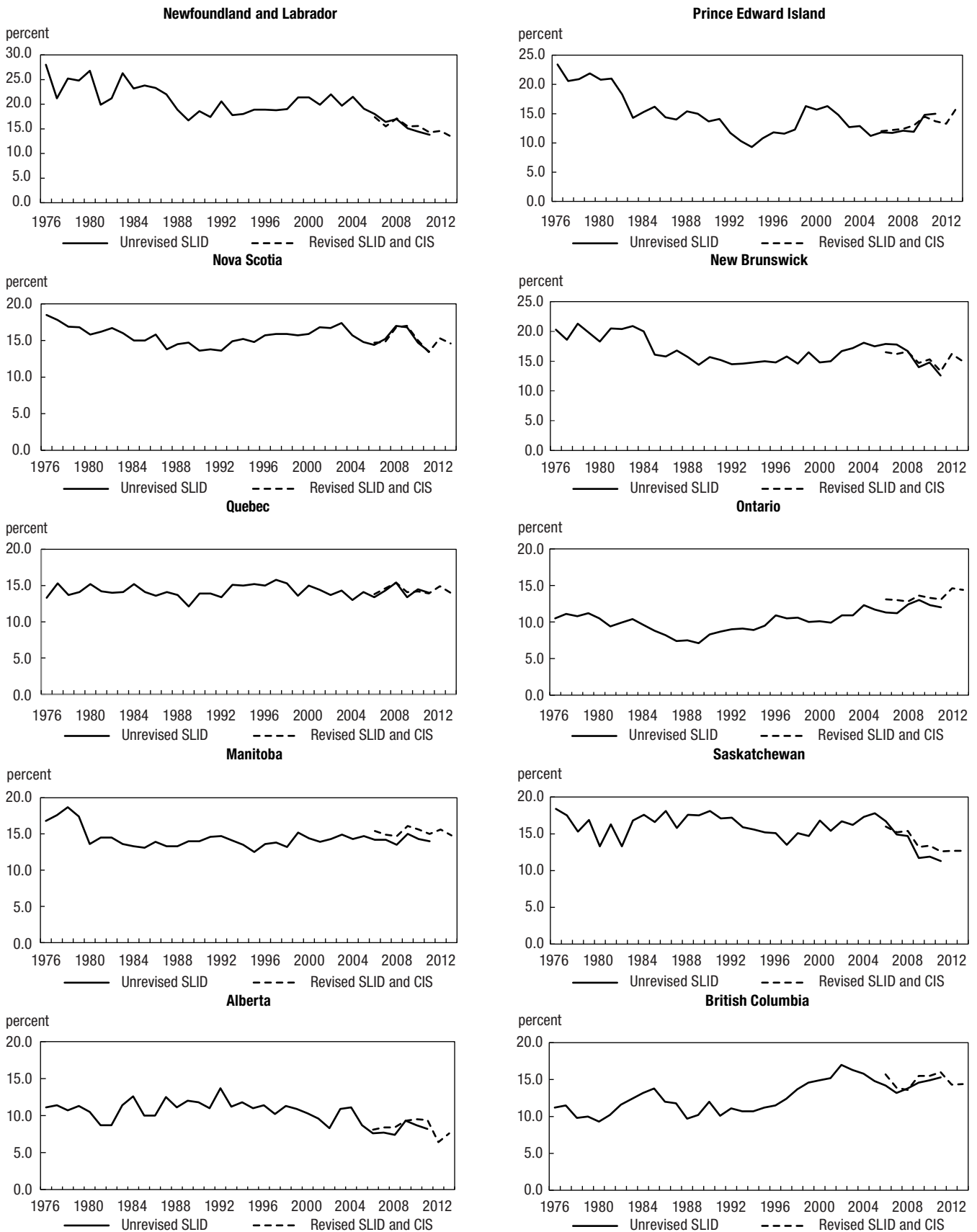


**Figure 3**  
**Comparison of revised and unrevised low-income rates (LIM-AT), by age and family type, 1976 to 2013**





**Figure 4**  
**Comparison of revised and unrevised low-income rates (LIM-AT), by province, 1976 to 2013**



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