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Analytical document

Income Reference Guide

National Household Survey, 2011

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Standard symbols

The following symbols are used in Statistics Canada publications:

.	not available for any reference period
..	not available for a specific reference period
...	not applicable
0	true zero or a value rounded to zero
0^{s}	value rounded to 0 (zero) where there is a meaningful distinction between true zero and the value that was rounded
^{p}	preliminary
^{r}	revised
x	suppressed to meet the confidentiality requirements of the *Statistics Act*
^{E}	use with caution
F	too unreliable to be published
*	significantly different from reference category ($p < 0.05$)

Catalogue no. 99-014-X2011006

Table of contents

Page

Definitions and concepts

Information in the NHS on income and its sources, including earnings, allows for the compilation of income statistics for people in Canada, their families and households.

Governments use income statistics to develop income support programs and social services, such as the Canada Child Tax Benefit, Employment Insurance, provincial income supplements, and welfare payments.

Businesses, large and small, can use income statistics to locate stores near consumers and to develop new products and services.

Private sector and public sector researchers as well as academics may also make use of earnings data from the NHS to study labour markets and industrial patterns.

In the 2011 NHS, income information was collected for the population aged 15 years and over living in private households. All income received during the preceding calendar year (2010) was to be included, including some non-taxable income and with the following exceptions: withdrawals from Registered Retirement Savings Plans (RRSPs) and other savings plans; inheritances received; lottery winnings and lump sum insurance settlements.

To reduce respondent burden and improve quality, the respondents to the 2011 NHS were asked for permission to use the income information already available in his or her income tax files. If respondents did not give this permission, they could complete the income questions on the questionnaire.

Users should be aware that Statistics Canada income definitions do not always correspond to concepts used by other organisations. For example, the definition of total income in the NHS does not correspond to that used by the Canada Revenue Agency for income tax purposes.

All income variables collected by the NHS, or variables derived by aggregation of component sources, are defined in the *National Household Survey Dictionary*, Catalogue no. 99-000-X. Additional information about the NHS can be found in the *National Household Survey User Guide*, Catalogue no. 99-001-X.

Total income is the sum of income received during 2010 from all income sources together, except net capital gains or losses.

Total income plus net capital gains or losses has been created as an alternate measure of total income for those analysts who might be interested to examine income including the Net capital gains or losses variable.

Personal income was classified into income source categories, to assist in respondent recall for respondents filling out the questionnaire and provide a richer dataset for analysis.

- Market income
  - Earnings or employment income
    - Wages and salaries
    - Self-employment net income
      - Net farm income
      - Net non-farm income from unincorporated business or professional practice
  - Dividends, interest on bonds, deposits and savings certificates, and other investment income
  - Retirement pensions, superannuation and annuities, including those from RRSPs and RRIFs
  - Other money income

- Government transfer payments
  - Old Age Security pension and Guaranteed Income Supplement
  - Benefits from Canada Pension Plan or Quebec Pension Plan
  - Benefits from Employment Insurance
  - Child benefits
  - Other income from government sources

For further explanation of the interdependency of the components, please refer to the following figure: Figure 3.1 Components of income in 2010. Composition of income in the data tables presents the relative share of each component to Total income.

After-tax income is a useful measure of funds available to a household, family or individual for consumption, savings and investment. It is derived by removing Income tax paid from Total income.

Although total income and after-tax income were collected at the individual level, it is useful to look at the complete situation of a family or a household by summing income for family/household members. This is a recommended international practice, since income may be pooled or shared to pay for expenses such as food or rent. Total income and after-tax income were derived for Canadians in private households at various other levels of aggregation:

- Census family total income
- Economic family total income
- Household total income
- After-tax income of census families
- After-tax income of economic families
- After-tax income of households

Definitions for Census family, Economic family and Household, private explain the various concepts and the Figure 1.3 Economic and census family membership and family status of the *National Household Survey Dictionary*, Catalogue no. 99-000-X describes the relationships and classifications of people at each aggregation level.

To facilitate comparisons across families of different sizes and with persons not in economic families, family incomes are adjusted by a factor equal to the square root of the family size (known as the equivalence scale). This adjustment for different family sizes takes into account economies of scale. It reflects the fact that a family's needs increase, but at a decreasing rate, as the number of members increases. The two adjusted family income variables are:

- Adjusted income for economic families and persons not in economic families
- Adjusted after-tax income for economic families and persons not in economic families

For analysis and tabulation purposes, individuals can be categorized into income groups. One of the classification methods presented in several standard tables is based on deciles; it classifies individuals into ten income groups containing equal numbers of people. The Income decile group variable is derived based on their ranking of adjusted after-tax income.

Human Resources and Skills Development Canada (HRSDC) has developed a low-income statistic called the Market Basket Measure (MBM). A few expense variables are required to derive the Disposable income for the MBM.

The MBM disposable income removes a number of expenditures from the income after-tax such as Child care expenses paid and Child or spousal support payments. Combining this information with the mortgage-free owner's advantage for the MBM and after-tax income produces the Disposable income for the MBM.

Statistics, for example, the average or median, can be calculated for all income variables by the tabulation system in a standard way. Notes on the methodology behind the derivation of these statistics at the population level and other levels of aggregation are available in Appendix 3.1 Derived Statistics of the *National Household Survey Dictionary*, Catalogue no. 99-000-X.

Total income, after-tax income, employment income, all other income variables and non-discretionary spending categories collected or derived for the 2011 NHS are for calendar year 2010. Two other labour-related variables also have that same reference period and can be used with the earnings field or other income data: Weeks worked in 2010 and Full-time or part-time weeks worked in 2010 and their less detailed combination Work activity in 2010.

However, some inconsistencies may become apparent when using income variables with other variables and some care must thus be exercised. For example, demographic variables such as age reflect the respondent's situation on the NHS reference day, May 10, 2011. For the following labour variables, Hours worked for pay or in self-employment and Labour force status, the reference week is Sunday, May 1 to Saturday, May 7, 2011, and not calendar year 2010. Thus, these other variables may not be coherent with the income earned in 2010 because individuals may have altered their work activities between the two reference periods.

Furthermore, some labour variables refer to the job held during the reference week or to the most recent job held since January 1, 2010: Class of worker; Industry (based on the North American Industry Classification System [NAICS] 2007) and Occupation (based on the National Occupational Classification [NOC] 2011). Therefore, these may or may not correspond to the job held when earning any employment income.

Income data is used traditionally with Owner's major payments and Rent, gross to compute the housing variable – Shelter-cost-to-income ratio. Minor inconsistencies arise as these shelter cost variables, as well as their components (Condominium fees; Annual payment for electricity; Annual payment for fuels; Annual payment for water and other municipal services; Annual property taxes; Monthly mortgage payment and Rent, monthly cash), were either collected for the most recent month or for the last 12 months before the reference period, whereas the income data were always for the previous calendar year.

Classifications

The population in private households aged 15 years and over was classified based on these income characteristics:

- Earner or employment income recipient
- Major source of income

All persons in the NHS were classified by their Income status. Though standard data tables include only the low-income measure after tax (LIM-AT), there are six different income status measures available on the database for the NHS. They differ according to the income variable used (before-tax income, after-tax income, market income or disposable income for the MBM), the aggregation level (economic families and persons not in economic families or households), the equivalency scale used to compare units of different sizes and the source of the applicable threshold. Table 3.1 Summary of low-income lines in the 2011 National Household Survey summarises the different characteristics of each measure.

For each of these methods, once the Income status has been assigned, it is possible to compute several low-income statistics:

- Prevalence of low income
- Low-income gap
- Severity of low income

For an explanation of the concepts behind each of the six measures used, please refer to the following definitions: Low-income measure after tax (LIM-AT); Low-income measure before tax (LIM-BT); Low-income measure of market income (LIM-MI); Low-income after-tax cut-offs (LICO-AT); Low-income before-tax cut-offs (LICO-BT) and Market Basket Measure (MBM).

The actual threshold amounts for calendar year 2010 are supplied in the Table 3.2 Low-income measures thresholds (LIM-AT, LIM-BT and LIM-MI) for households of Canada, 2010, Table 3.3 Low-income after-tax cut-offs (LICO-AT at 1992 base) for economic families and persons not in economic families, 2010, Table 3.4 Low-income before-tax cut-offs (LICO-BT at 1992 base) for economic families and persons not in economic families, 2010 and Table 3.5 Market Basket Measure (MBM) thresholds for economic families and persons not in economic families, 2010 reference tables.

Questions

Income data and some spending information were obtained from Questions 52 to 55 on both NHS questionnaires (N1 and N2). The N1 questionnaires were used to survey a sample of approximately one in three private households in Canada, while the N2 questionnaires were used to enumerate all private households on Indian reserves and in some remote areas.

Question 52 requested the amount spent on child care and, Question 53, any sums paid as child or spousal support in 2010. These two questions were not asked in the 2006 Census.

Question 54 gave respondents the option of allowing Statistics Canada permission to obtain income information from 2010 income tax files instead of completing question 55. For persons that marked 'Yes,' Statistics Canada attempted to find them in files received from the Canada Revenue Agency and, if found, combined the information from various tax items to produce responses to all parts of Question 55.

Question 55 asked respondents to indicate the presence and amount of income from various sources as well as total income. For the 2011 NHS, one new item was added compared to the 2006 Census long form for capital gains or losses.

NHS questionnaires and guides

Data and other products

Data for the 2011 National Household Survey income variables were released on September 11, 2013, as part of an integrated release with the housing variables.

The products published using 2011 NHS income data include:

- Analytical products
- Data products
  - NHS Profile
  - NHS Data Tables
  - NHS Focus on Geography Series
- Reference products
- Thematic maps

For more information on and access to 2011 NHS data, please refer to the 2011 National Household Survey (NHS) website.

Data quality

The National Household Survey (NHS) underwent a thorough data quality assessment similar to what was done for the 2011 Census of Population and past censuses. It consisted of an assessment of various data quality indicators (such as response rate), and an evaluation of the overall results, in comparison with other data sources such as Census of Population data.

Survey process

Quality indicators were calculated and assessed at each of the key steps of the survey. During the collection and processing of the data, the quality and consistency of the responses provided were assessed as were the non-response rates. The quality of the imputed responses was assessed after the completion of the control and imputation steps.

Certification of final estimates

Once data processing and imputation were completed, the data were weighted to represent the total Canadian population. These weighted data (the final estimates) were then certified, at the national, provincial and territorial levels of geography, to determine if they were coherent and reliable in comparison to other independent data sources. This is the final stage of data validation. The main highlights of this assessment are presented below.

Non-response bias

Non-response bias is a potential source of error for all surveys including the NHS. The potential impact of non-response bias increases as the response rate declines. This issue arises when the characteristics of those who choose to participate in a survey are different than those who refuse. Statistics Canada adapted its collection and estimation procedures in order to mitigate, to the extent possible, the effect of non-response bias. (For more details, please refer to the *National Household Survey User Guide*, Catalogue no. 99-001-X.)

It is impossible to definitively determine how much the NHS may be affected by non-response bias. However, based on information from other data sources, evidence of non-response bias does exist for certain populations and for certain geographic areas.

Generally, the risk of error increases for lower levels of geography and for smaller populations. At the same time, the data sources used to evaluate these results are also less reliable at these lower levels making it more difficult to certify these smaller estimates.

For more information on NHS non-response bias and mitigation strategies, please refer to the *National Household Survey User Guide*, Catalogue no. 99-001-X.

Throughout the survey process, every effort was made to ensure high-quality results. Rigorous quality standards were set for data collection and processing, and a public communications program assisted in minimising non-response.

Although considerable effort was made throughout the entire process to ensure high standards of data quality, the resulting data are subject to a certain degree of inaccuracy.

To assess the usefulness of NHS data for their purposes and to understand the risk involved in drawing conclusions or making decisions on the basis of these data, users should be aware of their inaccuracies and appreciate their origin and composition. This reference guide, specific to income, will provide the basic information required but other methods have also been used to inform the users. Changes to the methodology and their impacts were summarized in the *National Household Survey User Guide*; data quality notes were attached to specific tables and products (accessible through a footnote linked to the table title in web-based products or via the File | Summary menu in Beyond 20/20 tables); other technical documents are published or planned.

The evaluation of income variables consisted of the following steps at the national level and where appropriate, at the provincial and territorial levels:

- Examination of response rates
- Assessment of the outliers modified during interactive verification
- Observation of the impact of imputation
- Comparison with other sources of income data

Response indicators

To obtain a response to the income question in the NHS, several hurdles had to be crossed: first, the household had to choose to participate in the survey and return a questionnaire. The weighted response rate, which is the ratio of the number of questionnaires completed to the total number of occupied private dwellings in the sample, adjusted for non-response follow-up, was 77.2% for Canada. For persons aged 15 years and over, this translated into a response rate of 78.2%. Second, for returned questionnaires, only a certain proportion contained usable information for the income question. This is considered the item response rate.

Consent to retrieve income data from tax records

NHS survey respondents were given the choice to give Statistics Canada permission to use income information available in their income tax files (Question 54) instead of answering the multiple-part income question (Question 55).

In 2011, 73.2% of respondents to the NHS gave permission to use income information available on their income tax files. The lower permission rate compared to 2006 (82.4%) was mainly attributable to the high item non-response rate rather than a high rate of refusal to use their income information. Since the income question appeared towards the end of the survey, non-responses to this section were more likely to occur.

The percentage of consenting records found in the tax records database supplied by the Canada Revenue Agency (CRA) was 88.7%, similar to that in the 2006 Census.

Permission rates varied across the provinces. Ontario (70.6%) and British Columbia (70.8%) had the lowest permission rates. Alberta (72.2%) also had a rate below the national level. The territories had higher rates of consent to use their income tax data, ranging from 79.3% in Yukon to 90.7% in Nunavut. These rates in the territories were substantially higher than those in the 2006 Census because the permission question in the 2011 NHS N2 questionnaire, which was used on reserves and certain areas in the North for early enumeration, had an additional phrase allowing people who intended to file a tax return to give permission. In the 2006 Census, the question clearly stated that only those who had filed their tax return had the option.

Table 1 Rate of granting permission to access tax records and matching rate for population aged 15 years and over, 2006 Census and 2011 NHS

Regions	2006 Census		2011 NHS	
	Rate of permission granting[1]	Rate of record retrieval[2]	Rate of permission granting[1]	Rate of record retrieval[2]
	percentage			
Canada	82.4	89.1	73.2	88.7
Newfoundland and Labrador	85.9	90.4	77.0	91.8
Prince Edward Island	85.1	90.3	74.6	90.4
Nova Scotia	84.9	89.0	75.9	89.7
New Brunswick	85.2	90.5	76.3	91.1
Quebec	84.7	90.4	77.7	91.4
Ontario	81.3	88.3	70.6	88.1
Manitoba	82.3	90.0	73.8	88.5
Saskatchewan	83.4	90.3	76.4	87.8
Alberta	83.8	88.6	72.2	85.6
British Columbia	79.2	88.1	70.8	87.4
Yukon	55.3	86.7	75.6	81.9
Northwest Territories	41.2	85.4	88.9	76.4
Nunavut	10.8	76.3	90.4	67.7

1. For respondents who answered the 2006 Census or 2011 NHS questionnaire.
2. For respondents who gave permission to link.

Item response rates

Expressed as a percentage of all persons aged 15 years and over who were part of the NHS sample, the item-by-item response rates were between 57.9% and 60.6%, substantially lower compared to the 2006 Census. Specific sub-parts of the income question generally had very similar response rates though the response rate for income tax paid, as in 2006, was a little lower.

Table 2 Item response rates for income questions after retrieval of tax data, 2006 Census and 2011 NHS

Source	2006 Census	2011 NHS
	percentage	
Total wages and salaries	79.3	59.2
Net farm income	80.3	60.3
Self-employment income	80.2	60.2
Child benefits[1]	68.9	60.6
OAS, GIS and allowance	80.6	60.4
CPP, QPP	80.6	60.3
Employment Insurance	80.4	60.6
Other income from government sources	80.6	60.3
Dividends, interest and other investment income	80.3	60.3
Capital gains or losses[2]	..	60.3
Retirement pensions, superannuation, and annuities	80.3	60.3
Other money income	80.2	60.3
Total income[3]	67.4	59.3
Income tax paid	76.6	57.9

.. not available for a specific reference period
1. In the 2006 Census, child benefits were not retrieved from tax files, so a large proportion of persons sourced from tax data had the child benefits field empty.
2. 'Capital gains or losses' was not asked in the 2006 Census.
3. The total income field on the 2011 NHS questionnaire included capital gains or losses.

Edit and imputation for non-response and inconsistent responses

Consistency edits and outlier detection in the Internet questionnaire application

For respondents providing income data online, an automated prompt was made to confirm responses which fell outside of usual parameters. This was to help identify typing errors and situations where the respondent might have reported the amount for a shorter period than the full year or entered a very high or a very low amount by mistake. There were approximately 98,400 outliers detected and flagged for respondent's confirmation. In total, 27.3% or 26,920 fields were edited by the respondents and brought back into the usual range. There was also a summary screen that gave the respondent the opportunity to review their answers and return to change them.

Another feature of the online collection application was to notify respondents of non-response to questions. In the 2011 NHS, this feature was activated 493,230 times for the income questions, and it was successful in obtaining responses 52.2% of the time.

Response verification

For the income questions, certain errors, if left uncorrected, could have led to distortions which could have serious repercussions on the quality and credibility of the NHS income data. For example, a respondent-provided amount of $90,000 in wages and salaries could have been captured erroneously with an additional zero, changing the original amount to $900,000. Similarly, an amount of $9,000 in Employment Insurance benefits could have been erroneously entered as $90,000. A few errors of this magnitude could lead to obvious errors in the estimates.

To safeguard against such errors, an editing system was put in place, as it was in the 2006 Census, which checked all respondent-provided and captured amounts against specified limits. If an amount reported on paper or online was in excess of the specified limits or if the sum of the individual sources deviated largely from the reported total, the relevant source was highlighted on an electronic display of the income question, along with various individual characteristics (sex, age, education, weeks worked, etc.), to assist in validation of the response. In many cases, it was also necessary to examine the electronic image of paper questionnaires. Responses were then either accepted as reported or modified as required on the database. Some 182,900 amounts were examined. While more responses required examination in the NHS, the proportion of responses adjusted remained comparable to the 2006 Census.

Edit and imputation

The objective of edit and imputation is to ensure the reasonable accuracy and consistency of the data supplied by the respondents and to fill in any missing information. With this objective in view, during each phase of edit and imputation in the 2011 NHS, a record was kept of all changes made to the data. The table below gives the percentage change in the number of income recipients, the aggregate amount received from different income sources and the average amount received before and after edit and imputation.

Table 3 Impact of edit and imputation on estimates of number of recipients, aggregate amounts and averages by source

	Change in number of recipients		Change in aggregate amount		Change in average	
	2006 Census	2011 NHS	2006 Census	2011 NHS	2006 Census	2011 NHS
Source	percentage					
Total wages and salaries	12.7	28.9	10.0	27.0	-2.4	-1.5
Net farm income	-0.2	19.5	-23.6	15.7	-23.5	-3.2
Self-employment income	10.1	24.8	11.4	26.1	1.2	1.1
Child benefits[1]	770.5	31.0	984.0	39.4	24.5	6.4
OAS, GIS and allowance	10.7	24.4	16.2	32.7	5.0	6.6
CPP, QPP	10.9	23.2	10.5	21.9	-0.3	-1.1
Employment Insurance	12.0	34.2	12.3	33.7	0.2	-0.4
Other income from government sources	127.7	211.1	58.5	115.0	-30.4	-30.9
Dividends, interest and other investment income	10.6	24.0	10.2	18.8	-0.4	-4.2
Retirement pensions, superannuation, and annuities	9.8	18.3	9.2	15.3	-0.6	-2.6
Other money income	12.0	23.9	12.2	21.2	0.1	-2.2
Total income[2]	38.8	34.2	29.7	27.4	-6.6	-5.0
Income tax paid	13.5	32.9	21.3	42.2	6.9	7.0
Capital gains or losses[3]	..	21.9	..	22.3	..	0.3

.. not available for a specific reference period
1. In the 2006 Census, child benefits were not retrieved from tax files, so a large proportion of persons sourced from tax data had the child benefits field empty before edit and imputation.
2. The total income in 2011 is the sum of all the sources, except capital gains or losses.
3. 'Capital gains or losses' was not asked in the 2006 Census.

At the end of the edit and imputation process, the number of income recipients had increased by 34.2% and the aggregate amount of income had increased by 27.4%. The average income decreased by 5.0%. Other than the higher edit and imputation rates, the change pattern was similar to that in the 2006 Census.

In general, the proportion of income assigned for most sources is commensurate with the proportion of records imputed. For example, the number of Employment Insurance recipients went up by 34.2% after edit and imputation, whereas the aggregate amount of Employment Insurance benefits increased by 33.7%. Other income from government sources is one source where this does not hold, as many tax credits not available from the tax linkage file were calculated and added to the respondent's income data. These were mostly smaller amounts that were available to a broad group of people. The Ontario Sales Tax Transition Benefit, a one-time temporary relief program designed to help residents of Ontario adjust to the new Harmonized Sales Tax (HST) that took effect on July 1, 2010, is a good example of such a credit. This program contributed to the increase between the 2006 Census and 2011 NHS in the proportion of the population of Ontario with other government income and, to a lesser extent, the aggregate amount of other government income.

Comparison with other data sources

As with all data sources produced by Statistics Canada, the quality of the 2011 NHS income information released was evaluated internally prior to publication. As part of this evaluation, the income data were compared, to the extent possible, with other data sources. Many factors affect comparisons of income data across these data sources. Amongst other factors, comparability is affected by differences in target populations; reference period; sampling and collection methods; question wording, questionnaire format, examples and instructions supporting the questions and approaches to data processing.

The main sources of data for comparison were the income estimates from the Survey of Labour and Income Dynamics (SLID) and the Annual Estimates for Census Families and Individuals or T1 Family File (T1FF), an administrative data file created primarily from income tax returns submitted to the Canada Revenue Agency (CRA). For evaluation purposes, the NHS estimates were also compared with those from the 2006 Census. For additional information, refer to the publication *Comparing Income Statistics from Different Sources: Aggregate Income, 2005*, Catalogue no. 75F0002MWE.

All of the above sources have different coverage levels as they are produced with different methods. For example, the SLID estimates reflect adjustments made for population undercoverage, while the 2006 Census and T1FF estimates do not include such an adjustment.

The NHS covered all persons in private households who usually lived in Canada, in the provinces and the territories. It included persons who lived on Indian reserves and in other Indian settlements, permanent residents, non-permanent residents such as refugee claimants, holders of work or study permits, and members of their families living with them. In the SLID, residents of the Yukon, the Northwest Territories and Nunavut, residents of institutions and persons living on Indian reserves were excluded.

As in SLID, the NHS also excluded 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; and foreign residents. Also excluded were persons living in non-institutional collective dwellings such as work camps, hotels and motels, and student residences. This last group of people were included in the 2006 Census for individual-level income statistics, but not for income statistics at the family level. Due to the administrative nature of the T1FF and limited dwelling type information available, none of the above exclusions apply to this file.

Given the sensitivity of most income indicators to such methodological differences, users should use caution when comparing income estimates from the NHS to other household income surveys, administrative data or 2006 Census data or earlier censuses.

Individual income by source

In terms of the number of income recipients and earners, the NHS estimates of 2010 income are between the estimates from the 2010 SLID and the 2010 T1FF. The NHS estimates showed fewer income recipients (-3.2%) and earners (-4.8%) than the SLID estimates. When comparing to the T1FF estimates, the NHS showed more income recipients (2.7%) and earners (2.2%).

The NHS estimate of median total income was 4.0% higher than that from the 2010 SLID and 2.3% higher than that from the 2010 T1FF. The five-year growth rate of median total income was higher between the 2006 Census and the NHS (7.1%) than that of the SLID (5.3%) and the T1FF (5.7%).

Looking at income from employment, the NHS estimate of median employment income was 8.4% higher than that from the SLID and 6.3% higher than that from the T1FF. Similarly, the five-year growth rate of median employment income was higher between the 2006 Census and the NHS (8.1%) compared to that of the SLID (1.7%) and the T1FF (3.9%).

Median wages and salaries showed a similar picture, with the NHS estimate being 8.2% higher than SLID and 5.0% higher than T1FF. When considering only full-year full-time workers, the estimates of median wages and salaries between the NHS and the SLID were more comparable ($48,916 versus $48,131), though in this case the five-year growth rate between the 2006 Census and the NHS (6.2%) were lower than that of the SLID (8.0%).

Table 4 Median income and percentage change for income data from different sources for Canada (provinces only), 2005 and 2010 in 2010 constant dollars

Source	2006 Census	SLID	T1FF	2011 NHS	SLID	T1FF	NHS/ Census	SLID	T1FF
	2005 median ($)[1]			2010 median ($)			% change[1]		
Total income	27,877	27,265	27,607	29,859	28,699	29,191	7.1	5.3	5.7
Employment income	29,209	28,635	28,585	31,580	29,120	29,713	8.1	1.7	3.9
Wages and salaries[2]	30,486	29,938	30,081	33,075	30,581	31,487	8.5	2.1	4.7
Full-year full-time workers	46,080	44,571	.	48,916	48,131	.	6.2	8.0	.
Self-employment income	6,152	8,525	5,444	5,485	7,642	5,750	-10.8	-10.4	5.6
Retirement income	13,065	13,359	12,673	14,188	12,329	13,639	8.6	-7.7	7.6
Investment income	544	488	535	593	541	607	9.0	10.9	13.5
Other income	906	1,255	947	786	980	808	-13.2	-21.9	-14.7
Government transfers	4,587	3,939	4,993	4,113	3,664	4,580	-10.3	-7.0	-8.3
Child benefits	2,652	2,167	2,779	3,197	2,400	2,815	20.6	10.8	1.3
OAS and GIS	6,213	6,213	6,213	6,222	6,222	6,222	0.1	0.1	0.1
CPP and QPP	6,627	6,671	6,654	6,630	6,677	6,679	0.0	0.1	0.4
Employment Insurance	4,496	4,314	4,533	4,980	5,191	5,184	10.8	20.3	14.4
Other government transfers	625	491	549	701	665	710	12.2	35.4	29.4
Income tax	5,309	5,411	5,387	5,383	5,549	4,949	1.4	2.6	-8.1
After-tax income	25,367	24,689	24,971	27,317	26,494	26,753	7.7	7.3	7.1

. not available for any reference period
1. 2005 data have been adjusted to 2010 constant dollars using the consumer price index (CPI).
2. Median wages and salaries based on the T4 Statement of Earnings information slips was $31,500 in 2010. This represented a growth of 6.0% from 2005, after taking into account inflation.

Note: This table represents only the provinces and excludes any data from the territories.

When comparing the median total income and the median employment income from the NHS and the T1FF for provinces, territories and census metropolitan areas (CMAs), the NHS estimates were generally higher than those from the T1FF. The differences in estimates were more apparent in the employment income than in the total income. Amongst the provinces and territories, the average percentage difference was 1.0% for median total income and 6.3% for median employment income. Amongst the CMAs, the average percentage difference was 0.6% for median total income and 4.4% for median employment income.

High income individuals

The NHS estimated 29,140 more persons than the T1FF with a total income of $100,000 or more in 2010, corresponding to a 2.0% difference. The five-year growth rate of this income group is similar when comparing the growth between the 2006 Census and the NHS to that of the T1FF.

The number of persons with a total income of $1,000,000 or more was 2,760 lower in the NHS than in administrative data. In percentage terms, the NHS estimate for this group is 20% below the T1FF estimate. In terms of changes from 2005, Census/NHS showed a decline of 19.1%, whereas T1FF only showed a 6.5% decline. These differences may further affect the comparability of trends between these two sources when considering very high-income individuals.

Table 5 Population with income by total income group and data source, 2005 and 2010 based on 2010 constant dollars

Population with income	2005		2010		Growth (%)	
	2006 Census	T1FF	2011 NHS	T1FF	Census/NHS	T1FF
Population with income	24,423,160	23,736,140	25,918,505	25,227,050	6.1	6.3
Income under $100,000	23,276,360	22,593,290	24,442,790	23,780,470	5.0	5.3
Income $100,000 or more	1,146,800	1,142,850	1,475,715	1,446,580	28.7	26.6
$200,000 or more	216,570	222,100	247,410	260,050	14.2	17.1
$300,000 or more	99,755	105,020	106,330	114,430	6.6	9.0
$500,000 or more	39,960	43,380	39,280	43,930	-1.7	1.3
$1,000,000 or more	12,715	13,950	10,290	13,050	-19.1	-6.5

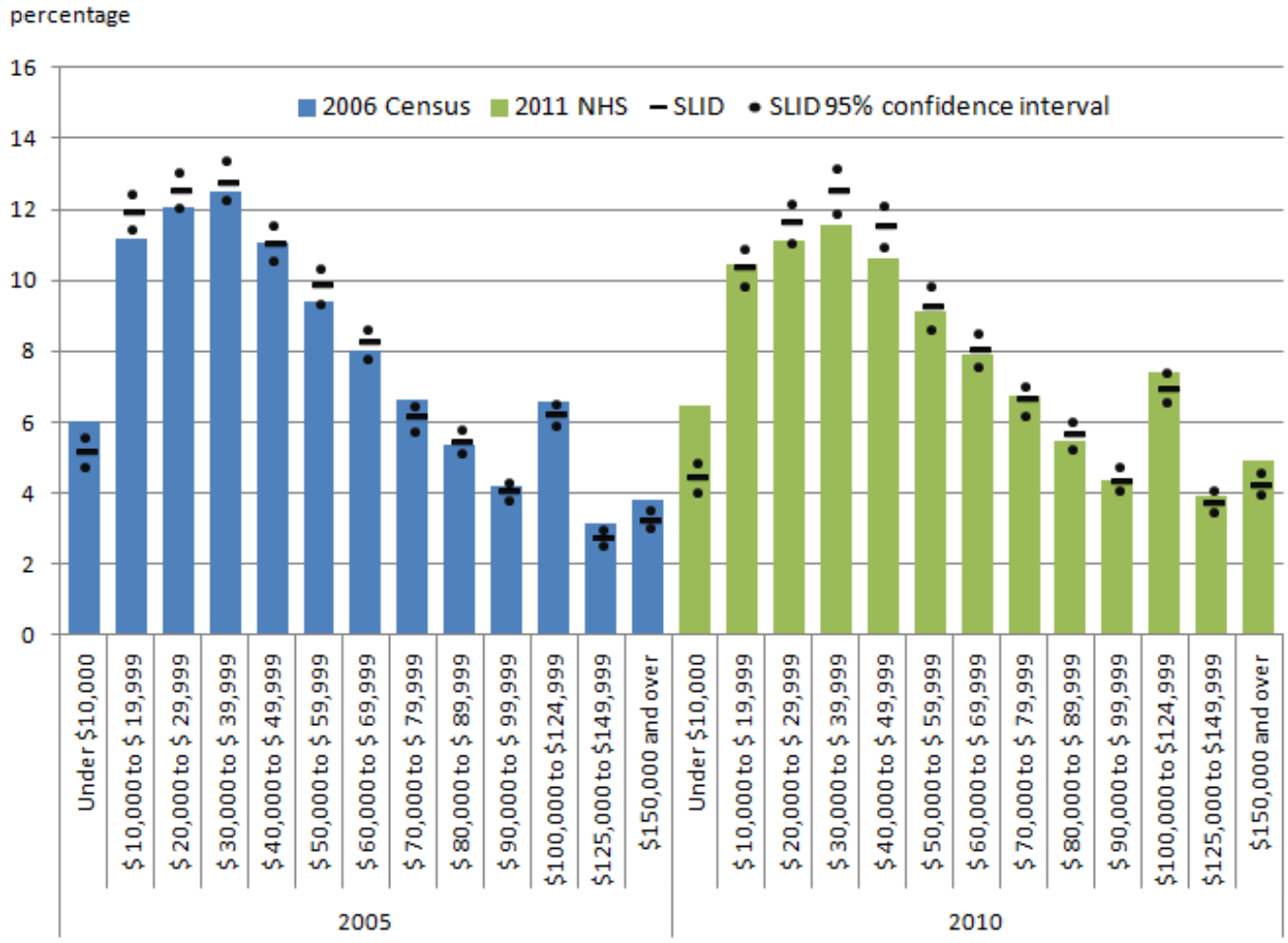
Family income

In terms of after-tax income at the economic family level, the NHS estimated more economic families and persons not in economic families (together they will be called economic family units) with very low income compared to SLID. The NHS estimated that 6.5% of all economic family units had family income under $10,000, whereas 4.5% of the economic family units in SLID had income below $10,000. The NHS also estimated a higher proportion of family units with over $100,000 in family income than the SLID (16.2% vs. 15.1%).

A similar pattern was observed when the same comparisons were done using the 2005 SLID and the 2005 income collected as part of the 2006 Census.[1] However, there was much less of a difference between the proportion of economic family units with family income under $10,000 (5.2% from the SLID versus 6.0% from the 2006 Census).

1. Income data from 2005 have been adjusted to 2010 constant dollars using the CPI.

Figure 1 Distribution of after-tax income of economic family units for Canada (provinces only), 2005 and 2010

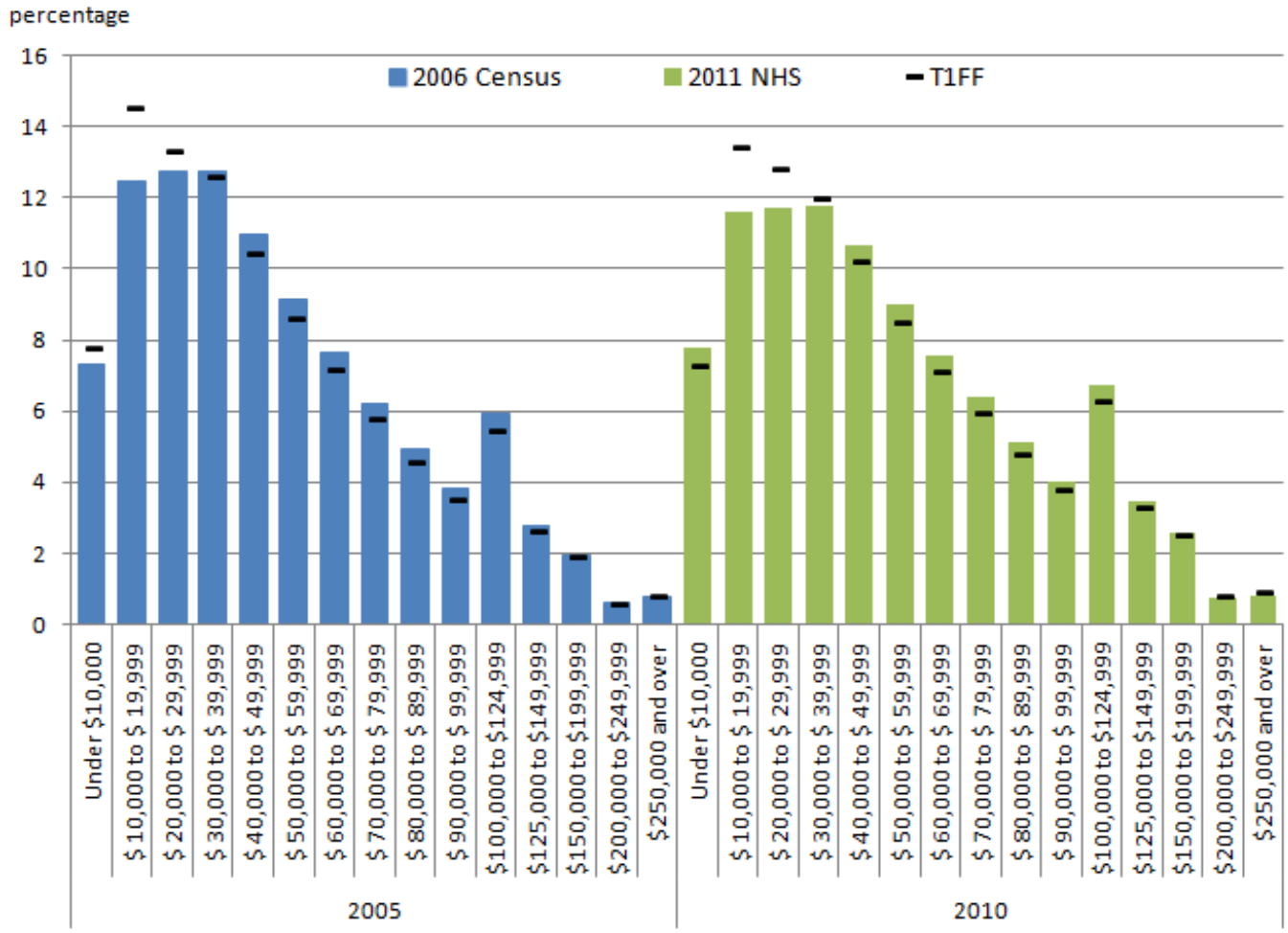


Since the T1FF is mainly based on the information provided on income tax returns, family estimates can only be calculated for census families and persons not in census families (together they will be called census family units). In terms of after-tax income at the census family level, the NHS estimated more census family units with income under $10,000 than T1FF (7.8% vs. 7.3%), but fewer family units with $10,000 to $29,999 income (23.3% vs. 26.3%). The NHS had relatively more units with income between $40,000 and $199,999 than T1FF (55.6% vs. 52.7%).

The 2005 income data[2] from the T1FF and the 2006 Census showed a reversed pattern for the income under $10,000 category: there were fewer census family units in this category according to the 2006 Census (7.3%) than the T1FF (7.8%). On the other hand, the proportion of census family units with income between $10,000 and $29,999 was closer in 2005 (27.9% from the T1FF versus 25.2% from the 2006 Census) than in 2010.

2. Income data from 2005 have been adjusted to 2010 constant dollars using the CPI.

Figure 2 Distribution of after-tax income of census family units for Canada, 2005 and 2010



Low income

To assess the potential impact of the methodological differences between different data sources on low-income indicators, some estimates of low income from the NHS based on after-tax low-income cut-offs (LICO-AT) and after-tax low-income measure (LIM-AT) were compared with those from the 2006 Census and the SLID.

After-tax low-income cut-offs (LICO-AT)

The NHS estimated more economic family units with very low after-tax income (family income under $10,000) compared to SLID. Low-income rates based on after-tax low-income cut-offs (LICO-AT) were less comparable to SLID in 2010 than in 2005.[3] The all- person low-income prevalence rate for Canada (excluding the territories) was two percentage points higher in the 2011 NHS than in SLID 2010.

3. The LICO-AT income threshold varies by family unit and community size. The lowest income threshold for which a family unit would be considered to be in low income is for a one person family unit in a rural area ($12,271 in 2010).

Comparison of the LICO-AT estimates from the 2006 Census (income for 2005) to the NHS (income for 2010) suggests a decline in the low-income rate of 0.4 percentage points. Doing the same comparison based on the data from SLID, there is a 1.8 percentage points decline in the LICO-AT low-income rate between 2005 and 2010.

The LICO-AT low-income rates for provinces and CMAs are generally higher according to NHS than SLID. With the exception of New Brunswick and Prince Edward Island, the relative low-income rates by province appear to be quite consistent between the two surveys.

Because of these differences and the fact that estimates from the NHS are not directly comparable to other household surveys such as the SLID and previous censuses, estimates of low income based on the LICO from the NHS are not available as a standard product but are available upon request.

Table 6 Prevalence of low income based on after-tax low-income cut-off (LICO-AT) for population in private households, Canada 2005 and 2010

	2005		2010	
LICO-AT low-income rate (%)	SLID	2006 Census	SLID	2011 NHS
Canada	10.8	11.4 [1]	9.0	11.0 [1]
Atlantic Region	8.7	9.5	6.5	8.7 [1]
Newfoundland and Labrador	8.6	10.1	6.5	8.1
Prince Edward Island	5.5	7.0	3.9	7.2 [1]
Nova Scotia	8.6	9.6	7.7	9.2 [1]
New Brunswick	9.6	9.3	5.5	8.8 [1]
Quebec	11.7	12.5	10.0	12.2 [1]
Ontario	10.3	11.1	8.8	10.8 [1]
Prairies Region	9.8	9.9	7.2	9.4 [1]
Manitoba	12.7	12.2	9.2	11.6 [1]
Saskatchewan	10.8	9.9	6.4	7.8 [1]
Alberta	8.5	9.1	6.8	9.1 [1]
British Columbia	13.2	13.1	11.5	13.0

1. Indicates statistically significant difference between SLID and the 2011 NHS or the 2006 Census estimates at the 5% level

After-tax low-income measure (LIM-AT)

The LIM is an internationally used measure of low income. The concept underlying the LIM is that a household has low income if its income is less than half of the median income of all households. The LIM income threshold is the same for a household regardless of where they live in Canada and is itself derived from the households that responded to the NHS.

Low-income rates for Canada (excluding the territories) based on after-tax low-income measure (LIM-AT) was higher in the 2011 NHS by 1.9 percentage points compared to the 2010 SLID. This gap had widened by 0.9 percentage points compared to 2005. Comparison of the LIM-AT estimates from the 2006 Census (income for 2005) to the NHS (income for 2010) suggested an increase in low-income rate of 0.9 percentage points. Doing the same comparison based on the data from SLID, there was no change in the LIM-AT low-income rate between 2005 and 2010. NHS also estimated

higher low-income rates in provinces and CMAs than SLID in 2010. Although discrepancies in these low-income estimates from the NHS and SLID exist, the relative low-income rates by geography appear to be moderately consistent between the two surveys.

Table 7 Prevalence of low income based on after-tax low-income measure (LIM-AT) for population in private households, Canada 2005 and 2010

	2005		2010	
LIM-AT low-income rate (%)	SLID	2006 Census	SLID	2011 NHS
Canada	13.0	14.0 [1]	13.0	14.9 [1]
Atlantic Region	16.4	17.7 [1]	14.7	17.3 [1]
Newfoundland and Labrador	19.1	20.0	14.4	17.9 [1]
Prince Edward Island	11.2	15.5 [1]	14.8	15.8
Nova Scotia	14.8	17.2 [1]	14.7	17.4 [1]
New Brunswick	17.5	17.2	14.8	17.2 [1]
Quebec	14.1	15.3 [1]	14.5	16.7 [1]
Ontario	11.7	12.9 [1]	12.3	13.9 [1]
Prairies Region	11.6	12.2	10.4	12.4 [1]
Manitoba	14.7	15.7	14.3	16.4
Saskatchewan	17.8	16.8	11.9	14.0 [1]
Alberta	8.7	9.8	8.7	10.7 [1]
British Columbia	14.8	15.4	14.9	16.4

1. Indicates statistically significant difference between SLID and the 2011 NHS or the 2006 Census estimates at the 5% level

In summary, low-income estimates from the 2011 National Household Survey (NHS) compared to previous censuses show markedly different trends than those derived from other surveys and administrative data such as the Survey of Labour and Income Dynamics (SLID) or the T1 Family File (T1FF).

Data to support quality estimates of low-income trends require a stable methodology over time that has similar response patterns. With the new methodology of the NHS, estimates of low income are not comparable to the census-based estimates produced in the past.

Previous census income releases compared low-income rates over time using the low-income cut-off (LICO). Given the lack of comparability of the trends and to prevent misleading conclusions arising from comparisons of LICO estimates from the NHS with earlier censuses, estimates of low-income based on LICO are not available as a standard product from the NHS. They are available upon request.

Analysis of the NHS estimates suggests that it is valid to compare low-income estimates for different sub-populations within the NHS (that is, for different geographic areas or demographic groups). While many low-income measures, including the LICO, are well suited to the analysis of trends in low income, the after-tax low-income measure (LIM-AT) is better suited to the analysis of low income in the NHS because the threshold level of income below which one is considered to have low income is itself derived from the households that responded to the survey.

Inconsistency in work activity and presence of employment income

As was the case in the data from the 2006 Census, there are inconsistencies between presence of employment income and work activity reported in the NHS. For example, over 370,000 (3.8%) full-year, full-time workers were without reported earnings in 2010. There were also about 1.2 million (13.7%) persons who did not report work activity in 2010 but had earnings for that year. The table below shows the estimates of persons with and without income by work activity. Although it is possible to have pre-payment or retroactive pay of employment income, it is uncertain if the extent of such arrangements is captured accurately by the survey data.

Table 8 Presence of employment income and work activity during the reference year for population aged 15 years and over, Canada 2005 and 2010

Presence of employment income	Year[1]	Work activity during reference year			
		Did not work	Worked full year, full time	All others	Total
Without employment income	2005	6,646,225	306,510	510,230	7,462,955
	2010	7,538,215	372,960	528,035	8,439,210
With employment income	2005	1,159,425	9,275,770	7,766,080	18,201,260
	2010	1,199,955	9,473,485	8,146,870	18,820,315
Total	2005	7,805,645	9,582,270	8,276,300	25,664,225
	2010	8,738,170	9,846,445	8,674,905	27,259,525
Number of inconsistent record	2005	1,159,425	306,510	510,230	1,976,165
	2010	1,199,955	372,960	528,035	2,100,950
Percentage of inconsistent record	2005	14.9%	3.2%	6.2%	7.7%
	2010	13.7%	3.8%	6.1%	7.7%

1. Employment income and work activity data for reference years 2005 and 2010 were estimated using data from the 2006 Census and the 2011 NHS, respectively.

Measurement issues on savings and investment accounts

Conceptually, income earned in various savings and investment accounts in 2010 should be included in the total income for 2010. However, income earned in Registered Retirement Savings Plans (RRSPs), Registered Education Savings Plans (RESPs) and Tax-free Savings Accounts (TFSAs) were not immediately available from the income tax files. Consequently, total income likely does not include all 2010 income from these accounts for respondents who gave permission to Statistics Canada to use their tax data instead of responding to these questions in the questionnaire.

Cross-classification of income variables, small domains, sampling and suppression

Income variables are often crossed with other variables in a table to analyse a subject in more depth. Data users should be aware when examining small populations, either by selecting small geographical areas or by crossing multiple variables, that the estimates will tend to have greater variability due to sampling error.

Confidentiality suppressions are applied to all areas and statistics to preserve respondents' confidentiality. Given that some users may wish to tolerate larger errors in order to be able to obtain data for very small population groups, data

quality suppressions are not applied to most standard products even when the estimates are subject to high sampling variability. Thus, users are cautioned to always beware of statistics based on cells with small estimates.

Further references related to data quality

For general information on the overall content, collection, design, processing and data quality for the NHS, please refer to the *National Household Survey User Guide*, Catalogue no. 99-001-X.