

Survey of Labour and Income Dynamics: A Survey Overview 2007



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- . 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 ($p < 0.05$)

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Survey objectives

The Survey of Labour and Income Dynamics (SLID) is an important source for income data for Canadian families, households and individuals. Introduced in 1993, SLID provides an added dimension to traditional surveys on labour market activity and income: the changes experienced by individuals and families through time. At the heart of the survey's objectives is the understanding of the economic well-being of Canadians.

Starting with reference year 1998, the Survey of Labour and Income Dynamics (SLID) officially replaced the annual [Survey of Consumer Finances \(SCF\)](#) as the main source of information on family income. Over the 1993-1997, the two surveys were run in parallel and estimates for this period is now produced by combining both samples. The income content of the two surveys is similar, though SLID makes use of a mixed collection mode that combined survey data with data from administrative sources. On the other hand, SLID adds a large selection of variables that capture transitions in Canadian jobs, income and family events.

SLID, as a longitudinal survey, interviews the same people from one year to the next for a period of six years. The survey's longitudinal dimension allows evaluation of concurrent and often related events, which yields greater insight on the nature and extent of poverty in Canada: What socio-economic shifts do individuals and families live through? How do these shifts vary with changes in their paid work, family make-up, receipt of government transfers and other factors? What proportion of households are persistently poor year after year, and what makes it possible for others to emerge from periods of low income?

SLID also provides information on a broad selection of human capital variables, labour force experiences and demographic characteristics such as education, family relationships and household composition. Its breadth of content combined with a relatively large sample makes it a unique and valuable data set.

What's new?

Integrated SCF-SLID sample for the 1993-1997 period

For up to last year's publications, estimates for the period 1976-1995 were produced using the Survey of Consumer Finances (SCF) while the Survey of Labour and Income Dynamics (SLID) took over starting in 1996. Beginning with the 2007 release, estimates from 1976 to 1992 are based on SCF data while estimates from 1998 to 2007 are based on SLID data. To take advantage of the fact that SCF and SLID were both active between 1993 and 1997, the estimates for this period are based on a combined sample of SCF and SLID.

Classification changes

Periodically, Statistics Canada introduces new classification systems. These new systems result from a need to reflect changes in social and economic circumstances, such as the growth of the high tech industries; or from the need to develop internationally compatible classification systems. There were minor revisions to the classification.

Starting this year (2009), the Survey of Labour and Income Dynamics adopted Statistics Canada's new classification systems for industry and occupation, using the North American Industry Classification System 2007 (NAICS) and the National Occupational Classification - Statistical 2006 (NOC-S) respectively. These changes have the following impact on SLID data:

- The greatest change introduced by this revision was within the telecommunications area of the Information and Cultural Industries sector. The updates made to this sector reflect the rapid changes in the structure of these industries, including the merging of activities.
- With two exceptions, all NAICS 2007 revisions occurred within sector boundaries. The exceptions were: (1) Real Estate Investment Trusts, which moved from the Finance and Insurance sector to the Real Estate and Leasing sector; and (2) Executive Search Consulting Services, which moved from the Professional, Scientific and Technical Services sector to the Business, Building and Other Support Services sector.
- The structure of NOC-S 2006 remains unchanged from that of NOC-S 2001. No major groups, minor groups or unit groups have been added, deleted or combined, though some groups have new names or updated content. Therefore, the SLID data was not impacted by this revision.

Introduction of new variables

Cross-sectional weights

As a consequence of the integration of the SCF and SLID samples for the 1993-1997 period, new cross-sectional weight variables are created this year to ease the use of weights for data users. Cross-sectional weights are now available if one wants to use data from the SCF sample exclusively or if one wants to use data from the SLID sample exclusively or if one wants to use data from the combined sample of SCF and SLID for the years that they overlap. Starting this year, all SLID products releases statistics based on this combined sample weight for the overlapping years. Since last year, both surveys use the same concepts and variable definition.

Industry classification

As of reference year 2007, the Survey of Labour and Income Dynamics adopted Statistics Canada's new classification system for industry using the North American Industry Classification System 2007 (NAICS). These industry classifications will be available for all persons aged 16 to 69 who have a job in the reference year. Starting this year, all SLID products releases statistics based on this updated classification (NAICS).

Market Basket Measure

As of 2007, several new variables were added to allow complete analysis of low income based on the Market Basket Measure (MBM). These include the thresholds, disposable income and flags indicating if the family's income is below the MBM thresholds. Based on these, the ratio of income to MBM indicates how close the family income is to the MBM.

Pension income splitting

Eligible individuals were able to allocate up to one-half of their pension income to their lower-income spouse or common-law partner.

Two new variables were added concerning the elected split-pension amount, one variable for the pension transferee or the amount received and one variable for the pensioner or the amount transferred to the spouse or common-law partner.

Other government transfers

The Working Income Tax Benefit (WITB) was included in other government transfers. It is a refundable tax credit intended to provide tax relief for eligible working low-income individuals and families.

Changes to variables

Retirement pensions

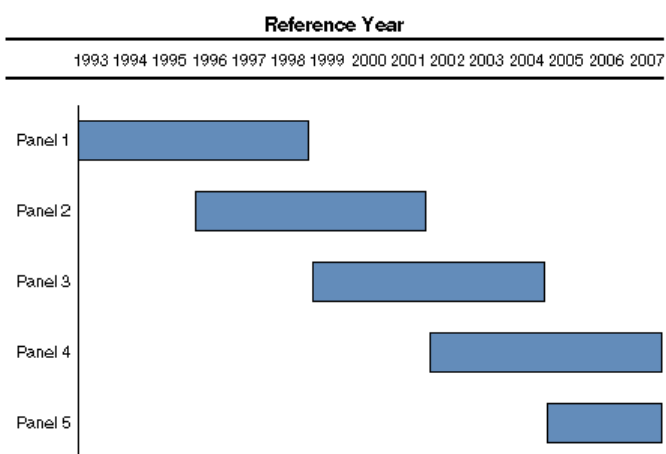
Retirement pension income now includes the elected split-pension amount received or transferred. A new variable called Private retirement pensions, which excludes the pension.

Survey design

SLID is a household survey that covers all individuals in Canada, excluding residents of the Yukon, the Northwest Territories and Nunavut, residents of institutions and persons living on Indian reserves or in military barracks.

The SLID sample is composed of two panels. Each panel consists of roughly 17,000 households and about 34,000 adults, and is surveyed for a period of six consecutive years. A new panel is introduced every three years, so two panels always overlap.

Figure 1. Overlapping design of SLID sample



In January, interviewers collect information regarding respondents' labour market experiences, educational activity and family relationships. The demographic characteristics of family and household members represent a snapshot of the population as of the end of each calendar year. Interviewers also collect information on income to take advantage of income tax time when respondents are more familiar with their tax returns. Over 80 percent of respondents give us their permission to consult their income tax file.

Household relationships

This survey could be called the Survey of Labour, Income and Family Dynamics, since it has complete information on complex family structures and changes. How does it do this?

Unlike most household surveys, which describe how household members are related to one specific reference person, SLID asks explicitly about the relationship among all members of a household. Information on complex family structures - for example, blended or multigenerational families - can help in understanding family dynamics.

However, because families change, it isn't possible to present data for exactly the same families over time. Instead, the same individuals are analysed in light of their family characteristics, for example, their family's income or whether they belong to a blended family.

Computer-assisted telephone interviewing

SLID uses computer-assisted telephone interviewing (CATI) for data collection. With CATI, interviews are conducted over the phone and simultaneously entered in a computer that guides the interviewer through the questionnaire.

Because of its complexity as a longitudinal survey, SLID benefits greatly from CATI's potential for improving data quality. For example, there are many dates to collect in the course of a labour interview - dates worked, dates of jobless spells, absences from work and so on. With CATI, interviewers can remind respondents of information they provided in a previous interview. This helps respondents remember start and end dates of jobs and reduces the tendency to incorrectly associate these dates with the beginning or end of calendar years.

Computer-assisted interviewing helps keep track of members returning to the household and individuals returning to employers, rather than treating these members of employers as completely new.

Proxy response is accepted in SLID. This procedure allows one household member to answer questions on behalf of any or all other members of the household, provided he or she is willing to do so and is knowledgeable.

SLID: a longitudinal survey

Description of a longitudinal survey

There are two types of recurring surveys: in one you interview a new cross-section of people each time, as most surveys do, while in the other, you interview the same people over a period of time, as in a longitudinal survey.

The advantage of cross-sectional surveys is that they are generally more representative of the population, and they reveal the levels and trends of income or labour for the whole population or its sub-groups. But such surveys do not answer questions about changes or fluctuations faced by individuals or families: What are the fluctuations in people's labour, income or family characteristics at the micro level? What events tend to coincide? How often do people change jobs or get laid off, with what impact on their total family income? How many families split or join together in a given time period? What proportion of households are "persistently poor" year after year, and what makes it possible for others to emerge from periods of low income? These and many other similar questions can only be answered by a longitudinal survey.

In a survey like SLID, the focus extends from static cross-sectional measures to a whole range of longitudinal events: transitions, durations, and repeat occurrences of people's financial and work situations. These yield a number of possible [longitudinal research themes](#).

Paradoxically, the comprehensive data that make SLID so valuable, also makes it more complex for Statistics Canada to maintain the confidentiality of respondents. In order to comply with the strict confidentiality provisions of the [Statistics Act](#), SLID longitudinal data are made available through special modes of dissemination (see [data services](#)).

Longitudinal respondents

Longitudinal respondents are the people belonging to the selected households when a new six-year panel of respondents is introduced. These respondents are interviewed twice a year whether they stay, move away or split up. New joiners, called cohabitants in SLID, are interviewed as long as they continue to live with a longitudinal respondent. That's because the family make-up and family income situation of longitudinal respondents is of key interest. Interviewing cohabitants also improves the quality of cross-sectional estimates.

People aged 16 and over are asked questions on labour, income and education. Children present in the original households are also followed for the full six years. When these children turn 15, they complete a preliminary interview. When they turn 16, they join other longitudinal respondents in completing the interview. On the other hand, people aged 70 years and over are not asked labour-related questions.

Longitudinal research themes

Discussions with prospective users and insights from other panel surveys with similar content helped identify seven longitudinal research themes that illustrate some of the survey's potential. Depending on the angle of study, it may make sense to use individuals, jobs, employers, or spells (of unemployment, for example) as the unit of analysis. SLID covers up to six jobs and six employers that a person might have during each calendar year.

Employment and unemployment dynamics

Labour force activity data usually show total employment, unemployment and inactivity. Changes in employment and unemployment between two months or two years are calculated by comparing these totals. SLID, however, shows the flow into each type of labour force activity experienced by individuals. Flow data of persons or jobs are possible by industry, occupation, or worker characteristics. Durations of spells may be of interest too; for example, to what extent are long spells of unemployment experienced by the same individuals? What are the major determinants? Why do people withdraw from the labour market, and what precedes a transition into self-employment?

Life cycle labour market transitions

Using SLID data, one can study major labour market transitions associated with particular stages of the life cycle, such as transitions from school to work, transitions from work to retirement and work absences taken to have or raise children. What are typical life-cycle patterns in Canada today? What are the subsequent activities of high school drop-outs, and what precedes a return to school?

Job quality

SLID supports research in such areas as wage differences between men and women, under-employment, occupational mobility, earnings growth over a period of several years, and wage and hours polarisation among the working population.

Family economic mobility

How stable is family income? What proportion of families experience a significant improvement or deterioration in income between two points in time? What are the determinants of these changes? How important are changes in family composition (divorce, remarriage) in explaining a change in financial well-being.

Dynamics of low income

This research theme concerns the prevalence and duration of spells of low income and the factors related to families moving into or out of low income. Researchers can isolate and characterize a "persistently poor" sub-population, as is done using longitudinal surveys in other countries. There is also interest in looking at receipt of employment insurance benefits, social assistance and other government transfers in relation to flows into and out of low income.

Life events and family changes

Central to SLID's demographic potential is information on family relationships, which make it possible to accurately identify blended and multi-generational families. The longitudinal aspect permits the study of life events and their determinants or impact. For example, what are the family's economic circumstances preceding a marriage break-up, and what are they for each spouse and child following a separation?

Educational advancement and combining school and work

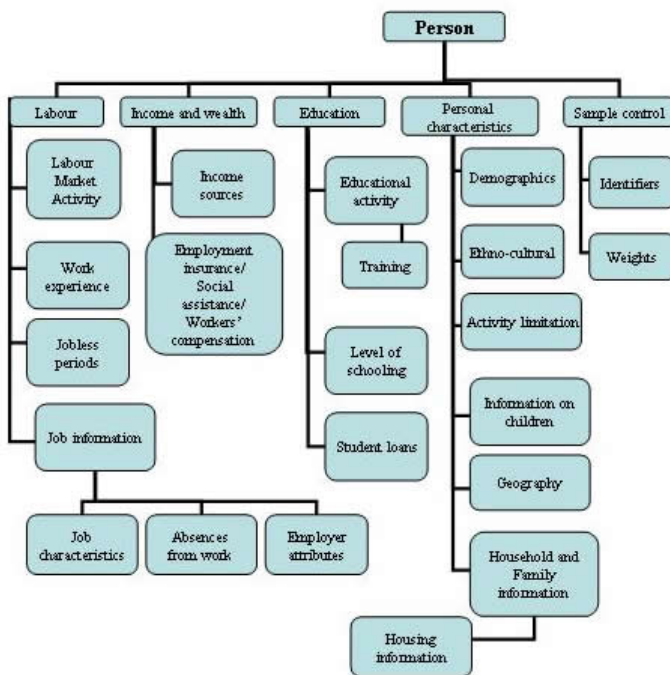
It is possible to view educational activity and attainment in the evolving context of an individual's other activities and family circumstances. What are the family circumstances of young people pursuing post-secondary education? How much do high school or postsecondary students combine work and school?

Survey content

SLID collects data on a wide range of topics. Some are inherently “dynamic”, involving transitions and spells, while others have important explanatory value.

For more detailed information on survey variables, refer to the [SLID electronic data dictionary](#).

Figure 2. Organization of SLID content



Labour

Labour market activity

- major activity during year
- employment/unemployment spells (start and end dates, durations)
- weekly labour force status
- total weeks of employment, unemployment and inactivity by year
- multiple job-holding spells
- work absence spells

Work experience

- years of full-time and part-time employment
- years of experience in full-time, full-year equivalents

Jobless periods

- job search during spell
- dates of search spells
- desire for employment
- reason for not looking

Job characteristics*

- start and end dates, first date ever worked for this employer
- wages
- work schedule (hours and type)
- benefits
- union membership
- occupation
- supervisory and managerial responsibilities
- class of worker
- tenure
- how job was obtained
- reason for job separation

*Job characteristics are updated annually for up to six jobs per year with dates of change recorded.

Absences from work*

- absence dates
- reason
- paid or unpaid

*Absences lasting one or more weeks are collected on the first and last absence each year, for each employer.

Employer attributes

- industry
- firm size
- public or private sector

Income and wealth

Income sources

- annual information on about many income sources

For example:

- market income
- government transfers
- taxes paid
- after-tax income
- inter-household transfers

Receipt of Employment Insurance/social assistance/workers' compensation*

- employment insurance
- social assistance
- workers' compensation

* Amount and timing of monthly benefits received from each source.

Education

Educational activity

- enrolled in a credit program, months attended
- type of institution
- full-time or part-time student
- certificates received (if applicable)
- job-related training courses, seminars, workshops and conferences

Level of schooling/educational attainment*

- years of schooling
- degrees and diplomas
- major field of study

Student loans

- received a student loan
- total amount borrowed
- amount currently owing

*Updated annually

Personal characteristics

Demographics

- year of birth/age
- sex
- marital status
- duration of current marital status
- year/age at first marriage

Ethno-cultural

- ethnic background
- member of an employment equity designated group
- mother tongue
- date of immigration
- country of birth
- parents' schooling and place of birth

Activity limitation

- annual information on activity limitations and their impact on working
- satisfaction with work

Information on children

- number of children born, raised
- year and person's age when first child born

Geography and geographic mobility

- economic region or census metropolitan area of current residence
- size of community
- moved during year
- move dates
- reason for move
- nature of move (full household/household split)

Household and family information*

- key characteristics of other household/family members (e.g., age, sex, relationship, income, annual hours worked)
- relevant low-income cutoff
- family events (marriage, separation, deaths, births)
- Housing information:
 - type of dwelling
 - dwelling condition
 - characteristics of dwelling
 - ownership / mortgage / rent
 - payments / costs / rent inclusions
 - housing suitability indicator
 - shelter costs to income ratio

* Annual summary information, e.g., size, type

Sample control

Identifiers

- person
- household
- economic family
- census family

Weights

- cross-sectional
- cross-sectional combined SCF-SLID sample (1993-1997 inclusive)
- cross-sectional adjusted for labour non-response
- longitudinal
- longitudinal combined panel

Classification of income

Classification of income by source

Market Income

- Earnings
 - Wages, salaries and commissions
 - Self-employment income
 - Farm
 - Non-farm
- Investment income
- Retirement pensions
- Other income

(plus) Government transfers

- Child tax benefits
 - Child tax benefits
 - Universal child care benefit
- Canada Pension Plan (CPP)/Quebec Pension Plan (QPP) benefits
- Old Age Security and Guaranteed Income Supplement/Spouse's Allowance
- Employment Insurance benefits
- Social assistance
- Workers' compensation benefits
- GST/HST
- Provincial/territorial tax credits
- Other governments transfers

(equals) Total income

(minus) Income taxes

(equals) After-tax income

(minus) Non-discretionary expenses

- Employment Insurance contributions
- Canada Pension Plan/Quebec Pension Plan contributions
- Registered pension plan contributions
- Union dues and professional membership dues and malpractice liability insurance premiums
- Child care expenses incurred in order to hold a paid job
- Support payments paid
- Public health insurance premiums
- Direct medical expenses, including private insurance premiums

(equals) Disposable income

Income

This section reviews the definitions of the main income concepts and their components. In order to highlight the relationships between them, this section is organized according to the "[Classification of income](#)", described above.

The concept of income

There are several important inclusions and exclusions in the concept of income:

- The concept of income covers income received while a resident of Canada or as relevant for income tax purposes in Canada. This excludes some, but not all, foreign income.
- Retirement income received as a regular pension or annuity during retirement is included, while cash withdrawals from private pension plans, including Registered Retirement Savings Plans (RRSPs), prior to retirement, are excluded.
- Realized capital gains from financial investments are excluded.
- In the Canadian System of National Accounts (CSNA) and the present income classification, taxes on capital gains are included in income taxes, as are taxes on RRSP withdrawals. Both capital gains (the taxable portion thereof) and RRSP withdrawals figure in the calculation of taxes, but are not part of total income in the CSNA or in [SLID's Classification of income](#).
- SLID's classification of income includes all refundable tax credits and benefits, including those that are not considered for income tax purposes, such as child tax benefits, the Goods and Services Tax Credit/Harmonized Sales Tax Credit, and other provincial or territorial tax credits. There are other smaller differences between SLID's total income and total income defined for tax purposes (see [Other income](#) and [Other government transfers](#)).
- Contributions to Employment Insurance and the Canada and Quebec Pension Plans, both federal programs, are not included in income taxes, nor are they deducted from income to arrive at after-tax income. However, the CSNA recently revised its definition of taxes on production to include these payroll taxes, in accordance with international recommendations on national accounting.

Market income

Market income is the sum of earnings (from employment and net self-employment), net investment income, (private) retirement income, and the items under "[Other income](#)". It is equivalent to total income minus government transfers. It is also called income before taxes and transfers.

Earnings

This includes earnings from both paid employment (wages and salaries) and self-employment.

Wages, salaries and commissions

These are gross earnings from all jobs held as an employee, before payroll deductions such as income taxes, employment insurance contributions or pension plan contributions, etc. Wages and salaries include the earnings of owners of incorporated businesses, although some amounts may instead be reported as investment income. Commission income received by salespersons as well as occasional earnings for baby-sitting, for delivering papers, for cleaning, etc. are included. Overtime pay is included.

Military personnel living in barracks are not part of the target population in [SLID](#).

Self-employment income

This is net self-employment income after deduction of expenses. Negative amounts (losses) are accepted. It includes income received from self-employment, in partnership in an unincorporated business, or in independent professional practice. Income from roomers and boarders (excluding that received from relatives) is included. Note that because of the various inclusions, receipt of self-employment income does not necessarily mean the person held a job.

Self-employment income is subdivided into farm self-employment income and non-farm self-employment income. Farm self-employment income is reported by individuals who operate their own or a rented farm, either on own account or in partnership. Included are money receipts from the sale of farm products as well as related supplementary and assistance payments from governments. Income in kind is excluded.

Investment income

This includes interest received on bonds, deposits and savings certificates from Canadian or foreign sources, dividends received from Canadian and foreign corporate stocks, cash dividends received from insurance policies, net rental income from real estate and farms, interest received on loans and mortgages, regular income from an estate or trust fund and other investment income. Realized capital gains from the sale of assets are excluded. Negative amounts are accepted.

Retirement pensions

This is retirement pensions from all private sources, primarily employer pension plans. Amounts may be received in various forms such as annuities, superannuation or RRIFs (Registered Retirement Income Funds). Withdrawals from RRSPs (Registered Retirement Savings Plans) are not included in retirement pensions. However, they are taken into account as necessary for the estimation of certain government transfers and taxes. For data obtained from administrative records, income withdrawn from RRSPs before the age of 65 is treated as RRSP withdrawals, and income withdrawn from RRSPs at ages 65 or older is treated as retirement pensions. Retirement pensions may also be called pension income. Starting in 2007, a new pension income splitting measure was made possible for those earning income that is eligible for the pension income tax credit. Thus, pensioners could save taxes by shifting income from the hands of a family member in a higher tax bracket to the hands of a second family member in a lower tax bracket so that the same income is taxed at a lower rate.

Other income

This sub-total includes all items of market income not included elsewhere. Among them are support payments received (also called alimony and child support). The coverage of other items depends at least to some extent on the method of income data collection, whether from administrative income tax records or by interview. Those items which are included on line 130 of the T1 tax return are well covered. These include, but are not restricted to, retirement allowances (severance pay/termination benefits), scholarships, lump-sum payments from pensions and deferred profit-sharing plans received when leaving a plan, the taxable amount of death benefits other than those from CPP or QPP, and supplementary unemployment benefits not included in wages and salaries.

Government transfers

Government transfers include all direct payments from federal, provincial and municipal governments to individuals or families. See the table [Classification of income](#) for a list of the government transfers identified separately in the latest reference year. It should be noted that many features of the tax system also carry out social policy functions but are not government transfers per se. The tax system uses deductions and non-refundable tax credits, for example, to reduce the amount of tax payable, without providing a direct income.

Child tax benefits

Federal child tax benefits began in 1993 and replaced both the federal Family Allowances and the Child Tax Credit. Several provincial and territorial programs have since been introduced, in addition to Quebec family allowances which already existed before 1993. To be eligible, a person must have the primary responsibility for the care and upbringing of one or more children under the age of 18. Most benefits are calculated by setting a maximum amount per family or per child and reducing that total by a certain percentage of the family's net income.

The programs which were explicitly accounted for in the data were the federal basic benefit and National Child Benefit Supplement (together called the Canada Child Tax Benefit, began in 1998), the Newfoundland and Labrador Child Benefit (began in 1999), the Nova Scotia Child Benefit (began in 1998), the New Brunswick Child Tax Benefit (began in 1997), the New Brunswick Working Income Supplement (began in 1997), the Quebec Allocation familiale (began in 1981), the Quebec Allocation à la naissance (began in 1998), the Ontario Child Care Supplement for Working Families (began in 1998), and the Ontario Child Benefit (commencing with a one-time payment in July of 2007, and with regular payments to begin in July 2008), the Saskatchewan Child Benefit (began in 1998), the Alberta Family Employment Tax Credit (began in 1997), the BC Family Bonus (began in 1996), and the BC Earned Income Benefit (began in 1998). Benefits from these programs are non-taxable.

Effective July 2007, the Canada Child Tax Benefit under 7 supplement within the Canada Child Tax Benefit program will cease to exist and will no longer be paid. This supplement will also only be paid for children who are six years of age between July 2006 and June 2007. In addition, as of July 2006, the Saskatchewan Child Benefit was fully phased out and replaced by the full federal increases to the National Child Benefit Supplement.

In July 2006 a new Child Benefit program was introduced at the federal level. The Universal Child Care Benefit for children under 6 was introduced in the second half of 2006. Unlike the other child tax benefits, this benefit is taxable and is available to all families with children under 6 year of age regardless of their income. Families can receive \$100 per month for each eligible child. This new benefit has been added to the Child Tax Benefits data.

Old Age Security (OAS)

The Old Age Security (OAS) pension is targeted to Canadian residents aged 65 and over. OAS recipients who have little or no other income may also receive the federal Guaranteed Income Supplement (GIS); and their spouses, if aged 60 to 64 (and not yet eligible for OAS and GIS themselves), receive the Spouse's Allowance.

Canada Pension Plan (CPP) and Quebec Pension Plan (QPP)

The CPP and QPP are compulsory contributory social insurance programs that provide a source of retirement income and protect workers and their families against loss of income due to disability or death.

Employment Insurance

Employment Insurance is a federal program which includes the following types of benefits: regular unemployment benefits, sickness benefits, maternity and parental benefits, and benefits for persons taking approved training courses or participating in job creation or job-sharing projects.

To qualify, the claimant must have ceased receiving employment income and have worked a minimum number of weeks or hours of insurable employment over the preceding period.

Social assistance

Social assistance covers many provincial and municipal income supplements to individuals and families. It is usually provided only after all other possible sources of support have been exhausted.

Workers' compensation

Workers' compensation is provided to protect all full-time and part-time employees from loss of salary due to work accidents or occupational diseases and help them to pay their medical expenses and other costs.

Goods and Services Tax/Harmonized Sales Tax credit

Introduced in conjunction with the Goods and Services Tax in 1990, it is intended to offset the GST/HST for lower income families and individuals. In Nova Scotia, New Brunswick, and Newfoundland and Labrador, it is called the Harmonized Sales Tax Credit because the administration of the tax is combined with the provincial sales tax. Included are the federal Relief for Heating Expenses paid in 2001 and the Federal Energy Cost Benefit paid in 2006.

Provincial/territorial tax credits

Included here are refundable tax credits other than those for children (included with child tax benefits). Some are designed to help low income individuals and families to pay property taxes, education taxes, rent and living expenses, and so on. Provincial sales tax credits such as the Quebec Sales Tax Credit and the Newfoundland and Labrador HST Credit are included. The Quebec abatement, although refundable, is not included here but rather with income taxes. Included is the Alberta Resource Rebate paid in 2006.

Other government transfers

This includes government transfers not included elsewhere, mainly any other non-taxable transfers. In SLID, these amounts are included with "Other income". This is partly because the coverage of any transfers not taxed through the income tax system is low. There may be under-reporting of these transfers, which are mainly collected using an open question in SLID interviews. Nonetheless, the types of transfers which have come under this heading include: training program payments not reported elsewhere, the Veteran's pension, pensions to the blind and the disabled, regular payments from provincial automobile insurance plans (excluding lump-sum payments), and benefits for fishing industry employees. Newly in 2007, the Working Income Tax Benefit (WITB) was included in the other government transfers. It is a refundable tax credit intended to provide tax relief for eligible working low-income individuals and families who are already in the workforce and to encourage other Canadians to enter the workforce.

Total income

Total income refers to income from all sources including government transfers before deduction of federal and provincial income taxes. It may also be called income before tax (but after transfers). All sources of income are identified as belonging to either market income or government transfers.

Income tax

Income tax is the sum of federal and provincial income taxes payable (accrued) for the taxation year. Income taxes include taxes on income, capital gains and RRSP withdrawals, after taking into account exemptions, deductions, non-refundable tax credits, and the refundable Quebec abatement. The data are either taken directly from administrative records or estimated based on aggregate data from administrative records, as this yields better results than the amounts reported by interview.

After-tax income

After-tax income is total income, which includes government transfers, less income tax. It may also be called income after tax.

Disposable income

Disposable income is income after deducting not only direct income taxes but also several expenditures. These expenses are Employment Insurance, Canada Pension Plan, Quebec Pension Plan and Registered Pension Plan contributions, union dues (including professional membership dues and malpractice liability insurance premiums), child care expenses incurred in order to hold a paid job, support payments paid, public health insurance premiums and direct medical expenses including private insurance premiums. Disposable income is used with the MBM thresholds to determine low-income based on the MBM.

Family

Dwelling

In general terms a dwelling is defined as a set of living quarters. A private dwelling is a separate set of living quarters with a private access. A collective dwelling may be institutional, communal or commercial in nature. Of the different types of collective dwellings, SLID covers only communal dwellings.

Household

A household is defined as a person or group of persons residing in a dwelling. SLID defines households and families according to the living arrangements on December 31 of the reference year. Residents of Canada are also defined at those points in time.

Adults

Adults are defined in SLID as individuals 16 or older as of December 31st of the reference year.

Family income

Family income is the sum of income of each adult in the family as defined above. Household income is likewise the sum of incomes of all adults in the household. Family and household membership is defined at a particular point in time, while income is based on the entire calendar year. The family members or "composition" may have changed during the reference year, but no adjustment is made to family income to reflect this change.

Economic family type

"Economic family type" refers to either economic families or unattached individuals. An economic family is defined as a group of two or more persons who live in the same dwelling and are related to each other by blood, marriage, common law or adoption. An unattached individual is a person living either alone or with others to whom he or she is unrelated, such as roommates or a lodger. See [Family classification](#) for more detailed groupings.

Census family type

"Census family type" refers to either census families or persons not in census families. The term "census family" corresponds to what is commonly referred to as a "nuclear family" or "immediate family". In general, it consists of a married couple or common-law couple with or without children, or a lone-parent with a child or children. Furthermore, each child does not have his or her own spouse or child living in the household. A "child" of a parent in a census family must be under the age of 25 and there must be a parent-child relationship (guardian relationships such as aunt or uncle are not sufficient).

Persons "not in census families" are those living alone, living with unrelated individuals, or living with relatives but not in a husband-wife or parent-unmarried child (including guardianship-child) relationship.

By definition, all persons who are members of a census family are also members of the same economic family.

See [Family classification](#) for more detailed groupings.

Major income earner

This characteristic is important for the derivation of detailed family types (see [Family classification](#)). For each household and family, the major income earner is the person with the highest income before tax, with one exception: a child living in the same census family as his/her parent(s) cannot be identified as the major income earner of the census family (this does not apply to economic families).

For persons with negative total income before tax, the absolute value of their income is used, to reflect the fact that negative incomes generally arise from losses "earned" in the market-place which are not meant to be sustained. In the rare situations where two persons have exactly the same income, the older person is the major income earner.

Family classification

SLID uses the major income earner to classify families.

Table B
Classification of family types

Economic families (or Census families), 2 persons or more
Elderly families
Married couples
Other elderly families
Non-elderly families
Married couples without children

No earner
One earner
Two earners
Two-parent families with children
No earner
One earner
Two earners
Three or more earners
Married couples with other relatives
Lone-parent families
Male lone-parent families
Female lone-parent families
No earner
One earner
Two earner or more earners

Other non-elderly families

Unattached individuals (or Persons not in census families)

Elderly male
Non-earner
Earner
Elderly female
Non-earner
Earner
Non-elderly male
Non-earner
Earner
Non-elderly female
Non-earner
Earner

Elderly family

The major income earner is aged 65 or over.

Non-elderly family

The major income earner is under age 65.

Married couples/spouses

Married couples, including legally married, common-law and same-sex relationships, where one of the spouses is the major income earner.

Children

A child or children (by birth, adopted, step, or foster) of the major income earner under age 18. Other relatives may also be in the family.

Lone-parent family

Includes at least one child as defined above. Families where the parent is 65 years or older are excluded.

Relative

A person related to the major income earner by blood, marriage, adoption or common-law.

Other relative

A person in the economic family who is not the major income earner nor his/her spouse or child under age 18.

Analytical concepts

Current dollars versus constant dollars

"Current dollars" are what we usually mean when we refer to a currency in the current time period. The term "constant dollars" refers to dollars of several years expressed in terms of their value ("purchasing power") in a single year, called the base year. This type of adjustment is done to eliminate the impact of widespread price changes.

Current dollars are converted to constant dollars using an index of price movements. The most widely used index for household or family incomes, provided that no specific uses of the income are identified, is the Consumer Price Index (CPI), which reflects average spending patterns by consumers in Canada.

The following table shows the annual rates of the Consumer Price Index. To convert current dollars of any year to constant dollars, divide them by the index of that year and multiply them by the index of the base year you choose (remember that the numerator contains the index value of the year you want to move to). For example, using this index, \$10,000 in 1997 would be 10,553 in 2000 constant dollars ($\$10,000 \times 95.4 / 90.4 = \$10,553$).

Table C
Consumer Price Index, annual rates, 2002=100

1976	31.1	1988	71.2	2000	95.4
1977	33.6	1989	74.8	2001	97.8
1978	36.6	1990	78.4	2002	100.0
1979	40.0	1991	82.8	2003	102.8
1980	44.0	1992	84.0	2004	104.7
1981	49.5	1993	85.6	2005	107.0
1982	54.9	1994	85.7	2006	109.1
1983	58.1	1995	87.6	2007	111.5
1984	60.6	1996	88.9	2008	114.1
1985	63.0	1997	90.4		
1986	65.6	1998	91.3		
>1987	68.5	1999	92.9		

Earners/Income recipient

An earner is a person who received income from employment (wages and salaries) and/or self-employment during the reference year. The term income recipient is generally used for someone who received a positive (or negative) amount of income of any given type.

Mean income (average income)

The mean or average income is computed as the total or “aggregate” income divided by the number of units in the population. It offers a convenient way of tracking aggregate income while adjusting for changes in the size of the population.

There are two drawbacks to using average income for analysis. First, since everyone's income is counted, the mean is sensitive to extreme values: unusually high income values will have a large impact on the estimate of the mean income, while unusually low ones, i.e. highly negative values, will drive it down. (See also [Recipients versus non-recipients](#) and [Negative values](#).) Secondly, it does not give any insight into the allocation of income across members of the population. To examine allocation of income, measures such as [Percentiles](#) or [Gini coefficients](#) may be used.

Recipients versus non-recipients (zero values)

For every table showing average incomes, it must be kept in mind whether non-recipients of that type of income are included or excluded from the population. In the case of total family income, the difference from including or excluding units with zero income is small since there are very few such families. However, if one is interested in the average amount of individual self-employment earnings, the value will be quite different if one includes those persons who were not self-employed.

Negative values

Negative income amounts can arise in two ways: net losses from self-employment (expenses exceed receipts), or net investment losses (losses exceed gains). As with zero values, negative values can have a large impact on results. In general, the published income tables treat negative values no differently than positive values, but there are a few exceptions: for the calculation of both Gini coefficients and the low income gap, negative values are converted to zeroes; and in the derivation of the major income earner of a family or household, the absolute value is used instead (see Major income earner).

Percentiles

Income percentiles, like quintiles and deciles, are a convenient way of categorizing units of a given population from lowest income to highest income for the purposes of drawing conclusions about the relative situation of people at either end or in the middle of the scale. Rather than using fixed income ranges, as in a typical distribution of income, it is the fraction of each population group that is fixed.

First, all the units of the population, whether individuals or families, are ranked from lowest to highest by the value of their income of a specified type, such as after-tax income. Then the ranked population is divided into five groups of equal numbers of units, called quintiles. Analogously, dividing the population ranked by income into ten groups, each comprising the same number of units, produces deciles.

Most analyses should be carried out on the people of different percentiles within one population distribution. Care should be taken in making comparisons between percentiles that resulted from different distributions, because any difference in either the population or the income concept used to rank units could have a large effect. It is probable that both the income ranges represented by each percentile and the people making up each percentile will be different.

Median income

The median income is the value for which half of the units in the population have lower incomes and half has higher incomes. To derive the median value of income, units are ranked from lowest to highest according to their income and then separated into two equal-sized groups. The value that separates these groups is the median income (50th percentile).

Because the median corresponds exactly to the midpoint of the income distribution, it is not, contrary to the mean, affected by extreme income values. This is a useful feature of the median, as it allows one to abstract from unusually high values held by relatively few people.

Since income distributions are typically skewed to the left - that is, concentrated at the low end of the income scale - median income is usually lower than mean income.

Implicit rate of government transfers or taxes

The implicit rate of government transfers or taxes is a way of showing the relative importance of transfers received or taxes paid for different families or individuals. This concept is similar, but not identical, to the effective rate of taxation. For a given individual or family, the effective rate is the amount of transfers/taxes expressed as a percentage of their market income, total income, or after-tax income. The implicit rate for a given population is the average (or aggregate) amount of transfers/taxes expressed as a percentage of their average (or aggregate) income.

Family size adjustment (equivalence scale)

When comparing family incomes to study such things as income adequacy or socio-economic status, one often wants to take family size and composition into account. The income amount itself is not sufficient to understand a family's financial well-being without knowing how many people are sharing it. In general, two approaches have been used to help with the analysis of family income. One is to produce data by detailed family types, so that within a given family type, differences in family size are not significant. In fact, many income measures have been crossed by detailed family types in the published tables. The other way to take into account family size and composition is to adjust the income amount by an adjustment factor.

The simplest method is to use per capita income, that is, to divide the family income by the family size. A limitation of per capita income, however, is that it tends to underestimate economic well-being for larger families as compared to smaller families. This is due to the fact that it assumes equal living costs for each member of the family, but some costs, primarily those related to shelter, decrease proportionately with family size (they may also be lower for children than for adults). For example, the shelter costs for an adult married couple with no children are arguably not much more than those for an adult living alone.

To take such economies of scale into account, it is common to use an “equivalence scale” to adjust family incomes. Instead of implicitly assuming equal costs for additional family members as the per capita approach does, the equivalence scale is a set of decreasing factors assigned to the first member, the second member, and so on. The adjusted income amount for the family is obtained by dividing the family's income by the sum of the factors assigned to each member. The concept can be applied to the family after-tax income, family market income as well as any other family income sources, even family tax paid.

There is no single equivalence scale in use in Canada. The one used in the published income tables and in concepts such as the low income measure (LIM) has, however, achieved a high degree of acceptance. In this equivalence scale, the factors are as follows:

- the oldest person in the family receives a factor of 1.0;
- the second oldest person in the family receives a factor of 0.4;
- all other family members aged 16 and over each receive a factor of 0.4;
- all other family members under age 16 receive a factor of 0.3.

Other equivalence scales in use include:

OECD scale (Organization for Economic Cooperation and Development)

- the oldest person in the family receives a factor of 1.0;
- all other family members aged 15 and over each receive a factor of 0.5;
- all other family members under age 15 receive a factor of 0.3.

Square root of family size (this is a close approximation to the LIM equivalence scale, particularly for families with 6 members or less).

Gini coefficient

The Gini coefficient measures the degree of inequality in the income distribution. Gini coefficients are published for market income, total income and after-tax income, and are used to compare the uniformity of income allocation between different income concepts, across different populations or within the same population over time.

Values of the Gini coefficient can range from 0 to 1. A value of zero indicates income is equally divided among the population with all units receiving exactly the same amount of income. At the opposite extreme, a Gini coefficient of 1 denotes a perfectly unequal distribution where one unit possesses all of the income in the economy. A decrease in the value of the Gini coefficient can, by and large, be interpreted as reflecting a decrease in inequality, and vice versa.

Low income definitions

Low Income Cut-offs (LICOs)

Low income cut-offs (LICOs) are established using data from the Survey of Household Spending. They convey the income level at which a family may be in straitened circumstances because it has to spend a greater proportion of its income on necessities than the average family of similar size. Specifically, the threshold is defined as the income below which a family is likely to spend 20 percentage points more of its income on food, shelter and clothing than the average family. There are separate cut-offs for seven sizes of family - from unattached individuals to families of seven or more persons - and for five community sizes - from rural areas to urban areas with a population of more than 500,000.

The first step in the production of a set of low income cut-offs is to calculate the average proportion of income that a family spends on food, shelter and clothing. The 1992 Family Expenditure Survey found that, on average, families spend 43% of their after-tax income (and 35% of their total "before-tax" income) on these necessities. Then, 20 percentage points are added, giving 63% of after-tax income. This is done on the grounds that a family spending more than this proportion of its income on necessities is significantly worse off than the average family. The final step is to look at the distribution of income by expenditure and determine, using a regression line, the level of income at which a family tends to spend 20 percentage points more than the average on the necessities of food, shelter and clothing.

The [2003 historical revision](#) incorporated revised 1992-base low income cut-offs (LICOs) resulting from a historical re-weighting of the 1992 Family Expenditure Survey.

Every year a [research paper](#) is produced which provides a detailed description of the LICO including a time series of the lines

Rebasing and Indexing the LICOs

Over time, Canadian families have spent a smaller percentage of their income on the necessities of food, shelter and clothing. This relationship between families' income and spending is associated with a specific point in time, i.e. the year of the expenditure survey used to derive the cut-offs. That particular year is referred to as the base year for the set of cut-offs.

After having calculated LICOs in the base year, cut-offs for other years are obtained by applying the corresponding Consumer Price Index (CPI) inflation rate to the cut-offs from the base year - the process of indexing the LICOs.

Low income rate and low income gap

To determine whether a person (or family) is in low income, the appropriate LICO (given the family size and community size) is compared to the income of the person's economic family. If the economic family income is below the cut-off, all individuals in that family are considered to be in low income. In other words, "persons in low income" should be interpreted as persons who are part of low income families, including persons living alone whose income is below the cut-off. Similarly, "children in low income" means children who are living in low income families. Overall, the low income rate for persons can then be calculated as the number of persons in low income divided by the total population. The same can be done for families and various sub-groups of the population; for example, low income rates by age, sex, province or family types.

The low income gap is the amount that the family income falls short of the relevant low income cut-off. For example, a family with an income of \$15,000 and a low income cut-off of \$20,000 would have a low income gap of \$5,000. In percentage terms this gap would be 25%. The average gap for a given population, whether expressed in dollar or percentage terms, is the average of these values as calculated for each unit. For the calculation of this low income gap, negative incomes are treated as zero.

Use of after-tax and before-tax LICOs

Statistics Canada produces two sets of low income cut-offs and their corresponding rates-those based on total income (i.e., income including government transfers, before the deduction of income taxes) and those based on after-tax income. Derivation of before-tax versus after-tax low income cut-offs are each done independently. There is no simple relationship, such as the average amount of taxes payable, to distinguish the two types of cut-offs.

Although both sets of low income cut-offs continue to be available, Statistics Canada prefers the use of the after-tax LICOs. The before-tax rates only partly reflect the entire redistributive impact of Canada's tax/transfer system. It is therefore logical that the low income rate is higher on a before-tax basis than on an after-tax basis.

Low Income Measures (LIMs)

For the purpose of making international comparisons, the LIM is the most commonly used low income measure. Unlike the low income cut-offs, which are derived from an expenditure survey and then compared to an income survey, the LIMs are both derived and applied using a single income survey. The LIM is a fixed percentage (50%) of median adjusted family income, where "adjusted" indicates that family needs are taken into account. See [the Family size adjustment \(equivalence scale\)](#) for more information.

The LIMs are calculated three times; using market income, before-tax income, and after-tax income. They do not require updating using an inflation index because they are calculated using an annual survey of family income.

Every year a [research paper](#) is produced which provides a detailed description of the LIM including a time series of the lines.

Market Basket Measure (MBM)

Human Resources and Skills Development Canada (HRSDC) has collaborated with the provincial and territorial ministries of social services to develop the Market Basket Measure (MBM) of low income. The approach is to cost out a basket of necessary goods and services including food, shelter, clothing and transportation, and a multiplier to cover other essentials. The results define thresholds that represent levels of income needed to cover the cost of the basket. A detailed description of the MBM methodology was written by [Michaud et al. \(2004\)](#).

The same argument that can be made for using after-tax low income rates can be made for using after-tax income to compare to the MBM thresholds. That is, a measure of well-being should take into account what is actually available to spend. The income concept that is used for comparisons with the MBM thresholds goes even further than after-tax income by also subtracting from total income other non-discretionary expenses such as support payments, work-related child care costs and employee contributions to pension plans and to Employment Insurance. The Survey of Labour and Income Dynamics collects the data necessary to produce statistics based on the MBM.

Data sources

There have been two surveys focused on income. The Survey of Consumer Finances (SCF) was conducted until 1997 and the Survey of Labour and Income Dynamics (SLID) began in 1993. The estimates of *Income in Canada* and *Income Trends in Canada* are drawn from both surveys. Estimates from 1976 to 1992 are based on SCF data while estimates from 1998 to 2007 are based on SLID data. For the 1993-1997 period, estimates are based on a combined sample of both SCF and SLID¹.

1976 to 1992

Some of the SCF information is available through the SLID database including most of the income variables as well as others, such as demographic information. This permits users to access a longer period of historical data from a unique database². Variables were adapted as much as possible to SLID concepts.

Here is the [list](#) of SCF variables available in SLID database.

There were three changes made to the definition of families. One of the concepts modified was the “head of the family”. In the original SCF the family type was defined using the characteristics of the “head of the family”. For example the head of the family in a couple was always the male. In SLID the family type is based on the characteristics of “[major income earner](#)” regardless of the sex. Converting the SCF into SLID, the major income earner concept was used to define the family type within couples but no other family types were changed. This has caused a shift from elderly families to non-elderly families since wives are on average younger than husbands especially for older couples.

Another concept modified was the definition of lone-parent families. In original SCF, to be defined as a lone parent family, the parent had to be without a spouse, had at least one child below 18 years old, all children had to be unmarried and with no other family member could be present. In SLID, a lone parent family is defined as a family with a parent without a spouse, with at least one child below 18 years old. The conversion resulted in a decrease in the numbers of “other non-elderly families” and an increase of lone-parent families.

Another concept modified relates to families where children are not the natural, adopted or foster children of the adult in the family. For example in original SCF, a family where a child lived with his grandparents was defined as a two-parent family with children. In SLID, this family would be defined as a couple with other relatives. The impact of the conversion was a decrease in the number of two-parent families with children and an increase in the number of couples with other relatives.

Beside the family type concept changes there were two significant modifications related to jobs. In SCF, working full year meant working 50 weeks compared to 52 weeks for SLID. For this reason, after the conversion there were less full year full time workers and their average earnings increased. Additionally, job characteristics in SCF were defined based on the job involving the greatest number of usual hours worked during the reference week of the Labour Force Survey (LFS). If the respondent had not worked during the reference week, the job characteristics were defined by the most recent job within the last year (for the 1996 and 1997 reference years) or the last five years (for the 1976 to 1995 reference years). With the conversion of SCF into SLID, job characteristics were kept only if the respondent had worked during the reference year. This change explains why respondents who had not worked during the reference year do not have job characteristics.

There was only one modification to income. Amounts for the Federal Sales Tax Credits from 1987 to 1990 were moved from provincial and territorial tax credits to Goods and Services Tax (GST) and Harmonized Sales Tax (HST) Credits. This explains why a value is found for GST and HST between 1987 and 1989.

1993 to 1997

The Survey of Labour and Income Dynamics was introduced in 1993. When SLID was originally created, changes in income concepts were kept to a minimum while nonetheless making some important improvements in survey practices³. Both surveys took place during this period with SCF last being conducted in 1997.

One notable improvement that occurred as a result of new survey techniques introduced in SLID is better coverage of small income amounts received by respondents. It has been observed in surveys conducted by questionnaire that respondents tend to forget or neglect small income amounts they received in the past. This means an underestimation of income in general. The use of administrative income tax files in SLID for approximately 80% of sample respondents means that there is considerably better coverage of non-zero amounts of income, and in general, a greater number of recipients of most kinds of income.

1998 to 2007

For this period SLID is used exclusively.

Notes

1. While the combined sample is used in these two publications, microdata covering the SCF sample (1976-1997) and SLID sample (1993 to 2007) are also available in the SLID database.
2. Users still have the choice of using the SCF original files, if it better suits their needs.
3. Before replacing the SCF series with SLID, a study was done on the overlapping reference years, particularly the years 1996 and 1997. The results of the study are contained in a research paper, [A Comparison of the Results of the Survey of Labour and Income Dynamics \(SLID\) and the Survey of Consumer Finances \(SCF\) 1993-1997: Update \(75F002MIE99007\)](#).

Comparisons with previous editions

Data from different editions are not directly comparable. Every edition has some modifications done on data. The modification which is applied every year is the expression of all dollar amounts in constant dollars of the latest reference year. (See "[Current dollars versus constant dollars](#)".)

Periodically, the weights are updated to reflect the availability of new population benchmarks provided by a new census. The most recent multi-year weight revision for the Survey of Labour and Income Dynamics and the Survey of Consumer Finance occurred with the release of data for 2003, when the population projections based on the 2001 Census of Population were incorporated.

The improvements to survey weights during the 2000 and 2003 historical revisions were part of a comprehensive project at Statistics Canada regarding the weighting strategies in the main annual surveys on income, expenditures, and wealth. Weights are typically adjusted using population benchmarks by province, age and sex. Since the 2000 weight revision, the weights in SLID also respect population benchmarks by household size and economic family size.

Since the 2003 revision, the weights from 1990 to the current period include adjustments based on the annual T4 file from Canada Revenue Agency (CRA), which is a compilation of employer remittances for the purposes of payroll taxes. For more, please refer to the free research paper, [Survey of Labour and Income Dynamics: 2003 historical revision](#), Statistics Canada.

Methodology

Survey universe

SLID is a household survey that covers all individuals in Canada, excluding residents of the Yukon, the Northwest Territories and Nunavut, residents of institutions and persons living on Indian reserves or in military barracks. Overall, these exclusions amount to less than three percent of the population.

The sample

The samples for SLID are selected from the monthly Labour Force Survey (LFS) and thus share the latter's sample design. The LFS sample is drawn from an area frame and is based on a stratified, multi-stage design that uses probability sampling. The total sample is composed of six independent samples, called rotation groups because each month one sixth of the sample (or one rotation group) is replaced. For more information on the LFS design, refer to the Statistics Canada Publication [Methodology of the Canadian Labour Force Survey](#). The most recent SLID panels (panels 3 to 5) are based on the LFS design introduced at the end of 1994.

The SLID sample is composed of two panels. Each panel consists of two LFS rotation groups and includes roughly 17,000 households. A panel is surveyed for a period of six consecutive years. A new panel is introduced every three years, so two panels always overlap.

For the reference years 1993 to 1997, the SLID cross-sectional sample was combined with the sample of the Survey of Consumer Finances (SCF). The SCF samples were also selected from the LFS. Each year, the SCF sample consisted of four LFS rotation groups.

Weighting

The estimation of population characteristics from a survey is based on the premise that each sampled unit represents, in addition to itself, a certain number of unsampled units in the population. A basic survey weight is attached to each record to indicate the number of units in the population that are represented by that unit in the sample.

For each reference year, SLID produces two sets of weights: one is representative of the initial population (the longitudinal weights) while the other is representative of the current population (the cross-sectional weights).

For the production of longitudinal weights, three types of adjustments are applied to the basic survey weights in order to improve the reliability of the estimates. The basic weights are first inflated to compensate for non-response and then adjusted for influential values. These adjusted weights are then further adjusted to ensure that estimates on relevant population characteristics would respect population totals from sources other than the survey.

The first set of population totals used for SLID is based on Statistics Canada's Demography Division population counts for different age/sex groups as well as counts by household and family size at the provincial level. These annual population totals are based in large part on totals from the Census of population. The second set of totals is derived from Canada Revenue Agency (CRA) administrative data (T4 file) and is intended to ensure that the weighted distribution of income (based on wages and salaries) in the data set matches that of the Canadian population.

The switch from 1996 to 2001 Census-based population totals for recent years and the use of T4 information from CRA were introduced with the release of data for 2003. SCF estimates from 1990 to 1995 and SLID estimates from 1996 to 2002 were revised back to 1990 at the same time.

For the production of the cross-sectional weights, SLID combines the two panels and assigns a probability of selection to individuals who joined the sample after the panel was selected. As with the longitudinal weights, the cross-sectional weights are adjusted for non-response and influential values. The cross-sectional weights are also adjusted to ensure that estimates on specific population characteristics respect totals of the cross-sectional target population. The types of population totals are the same as those used for the longitudinal weights but correspond to the cross-sectional population.

Since 2002, a third set of weights has been produced which combined two overlapping panels to form a new longitudinal sample. These weights are referred to as the combined longitudinal weights. These weights allow SLID data users to conduct longitudinal analyses using both panels. The analyses, however, are limited to the period of up to three years where the panels overlap and refer to the population at the time of selection of the most recent panel.

For a detailed description of the weighting process, refer to the publication [Longitudinal and Cross-sectional Weighting of the Survey of Labour and Income Dynamics](#). For a description of the combined panel weighting, refer to the publication [Combined-panel Longitudinal Weighting, Survey of Labour and Income Dynamics](#).

Cross-sectional representation

Each longitudinal sample, or "panel" in SLID initially constitutes a representative cross-sectional sample of the population. However, because the real population changes each year, whereas by design the longitudinal sample does not, the sample must be modified to properly reflect these changes to the composition of the population. This is done by adding to the sample all new people in the population who are found to be living with the initial respondents (and likewise dropping them from the sample if they leave at later time-points).

Any original respondents who leave the target population (by moving abroad, into institutions, etc.) are given a zero weight for cross-sectional purposes. In this way, the cross-sectional sample, composed of the original respondents minus those who left the target population plus those who have entered it, is virtually fully representative of the population at each subsequent time-point. The missing group is composed of persons who have newly entered the target population and are not living with anyone who was in the target population when the most recent panel was selected. However, since SLID introduces a new panel every three years, this group is quite small.

Data quality

There are two types of errors inherent in sample survey data, namely, non-sampling errors and sampling errors. The reliability of survey estimates depends on the combined impact of non-sampling and sampling errors. For more detailed information on data quality indicators see the research paper [Data quality for the Survey of Labour and Income Dynamics \(SLID\)](#).

Non-sampling errors

Non-sampling errors generally result from human errors such as simple mistakes, misunderstanding or misinterpretation. The impact of randomly occurring errors over a large number of observations will be minimal. Errors occurring systematically can, on the other hand, have a major impact on the reliability of estimates. Considerable time and effort is invested into reducing non-sampling errors in SLID.

Non-sampling errors may arise from a variety of sources such as coverage, response, non-response and processing errors.

Coverage error arises when sampling frame units do not exactly represent the target population. Units may have been omitted from the sampling frame (under-coverage), or units not in the target population may have been included (overcoverage), or units may have been included more than once (duplicates). Undercoverage represents the most common coverage problem.

Slippage is a measure of survey coverage error. It is defined as the percentage difference between control totals (Census population projections) and weighted sample counts. Slippage rates for household surveys are generally positive because some people that should be enumerated are missed. Slippage rates have been revised back to 1997 using the 2001 Census population projections. According to the numbers in the table below, in 2006, SLID covered 84% of its target population. SLID estimation procedures use Census population projections to compensate for determined slippage.

Rates are also available upon request for sex, province and age groupings.

Table A
Slippage rates in SLID

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Canada (%)	8.4	9.0	8.4	9.5	10.6	12.4	13.4	14.2	14.5	16.0	16.3

Response errors may be due to many factors, such as faulty questionnaire design, interviewers' or respondents' misinterpretation of questions, or respondents' faulty reporting. Great effort is invested in SLID to reduce the occurrence of response error. Measures undertaken to minimize response errors include the use of highly-skilled and well-trained interviewers, and supervision of interviewers to detect misinterpretation of instructions or problems with the questionnaire design. Response error can also be brought about by respondents who, willingly or not, provide inaccurate responses.

Income data are especially prone to misreporting, as income is a sensitive issue and includes many items with which respondents are not always familiar. Therefore, respondents are provided with information by mail prior to the interview, informing them of the income related questions. This gives them time to consult documents and have information available at the time of the interview. For respondents who grant Statistics Canada permission to access their tax files (the majority of respondents), SLID collects income data directly from administrative files. This procedure reduces misreporting of income in the SLID.

Non-response errors occur in sample surveys because not all potential respondents cooperate fully. The extent of non-response varies from partial non-response to total non-response.

Total non-response occurs when the interviewer is unable to contact the respondent, no member of the household is able to provide information, or the respondent refuses to participate in the survey.

Response is calculated at the household level. A household is considered to be "respondent" if at least one of its members responds to the interview. There is the additional stipulation that the information on the household's composition cannot be missing for more than one year.

Total household non-response is handled by adjusting the basic survey weight for individuals within responding households to compensate for individuals in nonresponding households.

Nonresponding members (if any) within responding households will have final data that are either shown as "missing" on the final database or imputed, depending on the variable (see partial non response section for details on imputation).

The importance of the non-response error is unknown but in general this error is significant when a group of people with particular characteristics in common refuse to cooperate and where those characteristics are important determinants of survey results. The bias introduced by non-response increases with the differences between respondent and non-respondent characteristics. Methods employed to compensate for non-response make use of information available for both respondents and non-respondents in an attempt to minimize this bias.

High response rates are essential for the data quality of any survey and thus considerable effort is invested to encourage effective participation from SLID respondents.

Cross-sectional households' response rates, given in Table B, range between 71.8% (2007) and 85.9% (1996).

Table B
Response rates in SCF (1990-1992), SCF_SLID
(1993-1997) and SLID (1998-2007)

Year	Response rate (%)
1990	79.0
1991	80.0
1992	80.7
1993	84.2
1994	82.6
1995	83.3
1996	85.9
1997	83.9
1998	82.7
1999	82.7
2000	79.2
2001	79.1
2002	79.0
2003	78.3
2004	74.7
2005	76.1
2006	74.9
2007	71.8

Partial non response occurs when the respondent does not understand or misinterprets a question, refuses to answer a question, or is unable to recall the requested information. Imputing missing values compensates for this partial non-response.

Income data are imputed using previous years' data updated for any changes in circumstances. In the absence of previous years' data, data is imputed using the "nearest neighbour" technique, in which a respondent with certain similar characteristics becomes the "donor" for the imputed value.

Amounts received through certain government programs, such as child tax benefits, the Goods and Services Harmonized Sales Tax Credit, and the Guaranteed Income Supplement, are also derived from other information.

Processing errors can occur at various stages in the survey: data capture, editing, coding, weighting or tabulation. The computer-assisted collection method used for SLID reduces the chance of introducing capture errors because checks for consistency and completeness of the data are built into the computer application. To minimize coding, weighting or tabulation errors, diagnostic tests are carried out periodically. These tests include comparisons of results with other data sources.

Sampling errors

Sampling errors occur because inferences about the entire population are based on information obtained from only a sample of the population. The results are usually different from those that would be obtained if information were collected from the whole population. Errors due to the extension of conclusions based on the sample to the entire population are known as sampling errors. The sample design, the variability of the population characteristics measured by the survey, and the sample size determine the magnitude of the sampling error. In addition, for a given sample design, different methods of estimation will result in sampling errors of different sizes.

Standard error and coefficient of variation

A common measure of sampling error is the standard error (SE). The standard error measures the degree of variation introduced in estimates by selecting one particular sample rather than another of the same size and design. The standard error may also be used to calculate confidence intervals associated with an estimate (Y). Confidence intervals are used to express the precision of the estimate. It has been demonstrated mathematically that, if the sampling were repeated many times, the true population value would lie within the confidence interval $Y \pm 2SE$ 95 times out of 100 and within the narrower confidence interval defined by $Y \pm SE$, 68 times out of 100. Another important measure of sampling error is given by the coefficient of variation, which is computed as the estimated standard error as a percentage of the estimate Y (i.e., $100 \times SE / Y$).

To illustrate the relationship between the standard error, the confidence intervals and the coefficient of variation, let us take the following example. Suppose that the estimated average income from a given source is \$10,000, and that its corresponding standard error is \$200. The coefficient of variation is therefore equal to 2%. The 95% confidence interval estimated from this sample ranges from \$9,600 to \$10,400, i.e. $\$10,000 \pm \400 . Thus it is assumed with a 95% degree of confidence that the average income of the target population is between \$9,600 and \$10,400.

The bootstrap approach is used for the calculation of the standard errors of the estimates. For more information on the bootstrap technique and examples of software that can be used to produce bootstrap variances see the document [Using bootstrap weights with WesVar and SUDAAN](#).

Quality indicators

Quality indicators (QIs) are based on the estimate's coefficient of variation (CV) and suppression rules. The following symbols are used:

Table C
Quality rules

QI Code	Description
A	Excellent (0% <= CV < 2%)
B	Very good (2% <= CV < 4%)
C	Good (4% <= CV < 8%)
D	Acceptable (8% <= CV < 16%)
E	Use with caution (CV greater than or equal to 16%)
F	Too unreliable to be published
.	Not available for a complete reference period
..	Not available for a specific reference period

...	Not applicable
p	Preliminary
r	Revised
x	Suppressed to meet the confidentiality requirements of the Statistics Act

Suppression rules

Suppression rules, or data reliability cutoffs, are currently established based on the sample size that underlies the estimate. In general, a sample size of 25 observations is required for the estimate to be published. Depending on the type of estimate, this rule can vary slightly. These rules help protect the confidentiality of survey respondents and ensure the reliability of estimates.

Table D
Suppression rules

Estimate	Suppress if:
Percentage, Distribution, Proportion/Shares	
<ul style="list-style-type: none"> • % under the low-income cutoff (LICO) • Income distribution • Proportion of families with income=0 	Denominator sample size* < 25 or Denominator sample size* < 100 and numerator sample size < 5
Ratios	
<ul style="list-style-type: none"> • female/male earnings 	Numerator sample size < 25 or Denominator sample size < 25
Quintiles (shares, means and upper income limits)	
<ul style="list-style-type: none"> • shares of income by quintile • average income by quintile • upper income limits 	sample in quintile/5 < 25 or upper income limit for upper income quintile or total of quintiles
Other estimates	
<ul style="list-style-type: none"> • Counts • Mean • Medians • Gini coefficients 	sample < 25

*The denominator sample size refers to the sample size of the total estimate from which the distribution, percentage, proportion or share is derived.

Data products

The links below are related to data products generated by SLID and other surveys. Below is a list of additional Statistics Canada data products created from SLID as well as other surveys. Additional support for the use and interpretation of SLID estimates are available from a number of user guides, publications, and research paper series, also listed below.

Free SLID analytical products

- [Analysis of Income in Canada](#)
- [Income in Canada](#)
- [Income Trends in Canada](#)
- [SLID cross sectional public use microdata files](#)

Other free analytical products

- [Labour: salaries and wages](#)
- [Personal finance and household finance: income](#)
- [Analytical Studies Branch research paper series](#)
- [Perspectives on labour and income](#)

Data products for sale

- [Detailed tables on CANSIM](#)

SLID documentation for researchers

- [SLID Electronic Data Dictionary](#)
- [Survey of Labour and Income Dynamics Microdata User's Guide](#)
- [SLID questionnaires](#)
- [Data Quality of the Survey of Labour and Income Dynamics \(SLID\)](#)
- [Income research paper series including publications on the low-income cutoff \(LICO\)](#)

Data services

Custom tabulations of SLID data

For clients with specialized data needs, custom tabulations can be produced on a cost-recovery basis. Contact Client Services, Income Statistics Division (1-888-297-7355 or 613-951-7355; income@statcan.gc.ca).

Remote access to SLID data

Remote access is an initiative that enables external researchers to access and use SLID data.

Under this arrangement, researchers contact the Income Statistics Division to indicate their interests in remote access to SLID data and provides a short abstract outlining the objectives for their research. Upon approval of their access request, researchers are provided with a copy of the SLID retrieval software (SLIDRET), as well as an empty SLID database structure.

Researchers write and test their own computer programs, then send these programs to Statistics Canada over the Internet. We submit their programs, vet the output for confidentiality, and e-mail the results back. This process opens up our complex data set to even more researchers and increases research volume.

This service is an alternative to Statistics Canada's [Research Data Centres](#) and regional offices.

Contact Client Services, Income Statistics Division (1-888-297-7355 or 613-951-7355; income@statcan.gc.ca).

Research Data Centres

Research Data Centres are part of an initiative by Statistics Canada, the [Social Sciences and Humanities Research Council](#) (SSHRC) and university consortia to help strengthen Canada's social research capacity and to support the policy research community.

Publications

Longitudinal studies

2007

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