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DIFFERENCES IN INCOME ESTIMATES FOR PERSONS

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EXECUTIVE SUMMARY

This report compares income estimates obtained from a number of different surveys. Comparisons cover income distributions, average and median income. Aggregate income estimates are also compared, including the Personal Income series from the System of National Accounts, and for some of the government transfer payments, aggregate estimates from the operation of the various programs.

The primary data sources are:

- Census
- Survey of Consumer Finances (SCF)
- Survey of Labour & Income Dynamics (SLID)
- The Revenue Canada Individual Tax Returns
- The National Accounts Personal Income

A focus on ***income estimates for individuals*** is important because:

- it is at the ***individual*** level that incomes are reported for the primary sources; and
- the ***individual*** level is the appropriate level for evaluation against Personal Income and administrative data sources.

Differences in income estimates for families and persons not in families are considered in Working Paper 97-03.

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1. INTRODUCTION

This report compares income estimates obtained from a number of different surveys. Comparisons are made of the income distributions and for average and median income. Comparisons are also made in terms of aggregate income, and here the comparisons include those which can be made with the Personal Income series from the System of National Accounts, and for some of the government transfer payments with aggregate estimates obtained from the operation of the various programs.

A distinction is made is this paper between **primary** and **secondary** sources of income statistics. For this paper a **primary income source** is one which is intended to provide ***official*** income statistics. The paper includes a section on secondary sources, but their differences are not discussed in this summary.

The primary sources are identified as comprising:

- Census
- Survey of Consumer Finances (SCF)
- Survey of Labour & Income Dynamics (SLID)
- The Revenue Canada Individual Tax Returns
- The National Accounts Personal Income

(The latter is a source for aggregate rather than individual income statistics.)

When this document was produced, no income data was available from the Survey of Labour & Income Dynamics. A report comparing SCF and SLID incomes for 1993 has since been prepared [SLID Research Paper 96-07 *Comparison Of Income Estimates From The Survey Of Consumer Finances And The Survey Of Labour And Income Dynamics*]. Some of the data from that report has been

summarized here in Appendix A, which also includes some taxation data from the Small Area and Administrative Data Division (SAAD). Average and median incomes from SCF and SLID are not significantly different from SLID, however, has about 4% more income recipients, so that their estimate of aggregate income is correspondingly higher. The report raises some issues concerning processing methodology which may account for some of the differences in the income estimates.

Both the Census & SCF income estimates have been established for a long time. They use a very similar conceptual basis, and although the Census has a broader geographic coverage, comparisons can be made for the same geographic areas. At the Canada level, the Census average individual income for 1980, 1985, and 1990 were all slightly higher than the SCF (1.4%, 2.5% & 3.1% respectively), and these differences are statistically significant. However, there is the consideration as to whether differences of the order of 2 to 3% are truly significant all things being considered, whether in fact one can judge the issue of such differences simply on the basis of statistical significance. Differences in average incomes for the provinces, however, were not, generally significant, nor were median incomes even at the Canada level.

Income from the Census & SCF can be compared by income source with aggregate income data of Personal Income. The latter is often used as a benchmark, but it must be substantially adjusted to facilitate comparisons. [Overall this amounts to about 80% downward adjustment to approximate the SCF coverage.] Such comparisons indicate that SCF and Census compare well with Personal Income for wages and salaries and some transfer payments such as OAS/GIS, but less well for investment income, and most other government transfer categories although estimates for CPP/QPP have improved. Similar

comparisons made in the US between the CPS income estimates and Personal Income, show differences of the same order.

More direct comparisons can be made with program statistics for some of the government transfer payments. Census and SCF estimates of the number of recipients and average payment can be compared with the program statistics compiled by Human Resources Development Canada's ***Social Security Statistics.*** One problem here, however, is that the number of beneficiaries are usually only shown for the ***components*** of the various programs. For CPP/QPP for example, the numbers are shown for *retirement pension beneficiaries, survivor's pension beneficiaries, disability pension beneficiaries, and of children receiving orphan's or disabled contributor's child benefits,* but an unduplicated estimate of the number of beneficiaries covered by the program as a whole, is not given. Since neither the Census nor the SCF obtain data for these ***components***, such comparisons are not as useful as they could be. For Employment Insurance, however, an unduplicated estimate for the number of beneficiaries is made from the T4U tax slip, and published in the ***Unemployment Insurance Statistics*** publications (STC catalogue number 73-001). Comparisons for some other categories can be made with Revenue Canada tax data.

The income data from Revenue Canada, used here in evaluating data from the Census and SCF, is mostly based on the publication ***Taxation Statistics,*** which is in turn based on a 2% sample of returns. The full file is available to Statistics Canada, and this provides the base for a number of special products which are produced by Small Area & Administrative Data Division (SAAD). Some tables from SAAD have been used to make some comparisons with SCF. The tax filer universe is broader geographically than SCF, and it includes some persons who are residents of institutions. On the other hand the Revenue Canada data excludes

non-tax filers, except those which can be deduced from a spouse's return. From 1992 onwards, the SAAD income data include income of non-filing spouses reported on the tax filer's income tax returns. This added over ½ million persons in 1993, mostly women, with a major impact on the median incomes for females and for both sexes combined. While the universe for the Census & SCF that is of ***income recipients*** within specific boundaries, is fairly certain, the universe for ***tax filers and non-tax filing spouses with income*** is less so.

2. SOURCES OF INCOME STATISTICS FOR INDIVIDUALS IN CANADA

2.1 Primary Sources

If we define a ***primary source*** of income as one used to produce an "official" income series, then the following list is appropriate:

- Census of population
- Survey of Consumer Finances (SCF)
- Survey of Labour and Income Dynamics (SLID)
- Revenue Canada Individual Income Returns
- National Accounts Personal Income

The first four sources provide income statistics with respect to ***individuals living in households*** and the last source to ***persons*** in the National Accounts context. Technically the latter is only a primary source for aggregate income statistics. All of these sources exclude incomes with respect to corporations and governments.

The Census & Survey of Consumer Finances provide income series obtained from household surveys, which can be used to provide aggregate income, average income, median income, and the distribution of income. They provide income data for all income recipients except the institutional population, but the data from the Survey of Consumer Finances also exclude persons living on Indian Reserves, and those living in the Yukon and Northwest Territories. Total income and its components were first asked in the 1961 Census (1960 income), and have since been collected for 1970, 1980, 1985 and 1990. The data for 1970 was based on a one third sample, and the other years on 20% samples. This means that the Census sample is large enough to provide estimates for relatively small geographic areas. The Survey of Consumer Finances was conducted biennially from 1951 to 1972 (1971 income), and since then on an annual basis. From the 1985 survey (1984 income) on, it has always been conducted as a LFS supplement, with data based on a sample between 59,000 and 82,000 depending on the year. Its utility is therefore mainly confined to providing income estimates for the larger geographic areas of Canada (i.e. provinces, and urban/rural areas) and other large sub-groups of the population.

The Survey of Labour and Income Dynamics (SLID) started in 1994, with its first panel based on a sample of about 0.15% (30,000 individuals) providing income data for 1993. The total sample will be enlarged as subsequent panels are added. Income data from SLID was not available at the time of the first draft. A comparison of SLID income estimates with those from SCF and SAAD for 1993 is shown in Appendix A.

The Revenue Canada series is mostly restricted to individuals who submit tax returns. This series can be used to provide aggregate income, average income, median income, and the distribution of income for individuals on the 'tax required'

income concept. Producing data for families on the same basis as for the Census and Survey of Consumer Finances is not easily done, although some estimates are made by SAAD. Since all such returns are potentially available, this series can be used to produce data for very small geographic areas. As a universe, it does not necessarily exclude the institutional population, nor those who died or emigrated, but it is restricted to T1 Tax Form filers. The characteristics of those who do not file are not known with any precision. Income statistics shown in the Revenue Canada ***Taxation Statistics*** include the taxable amount of dividends, which is 1.25 times the dividends actually received. It also includes taxable capital gains, which is not currently treated as income by either the Census nor the Survey of Consumer Finances. On the other hand, the T1 Tax Form data excluded until 1992 income which is not taxable such as the Guaranteed Income Supplement, Spouses Allowances, and Workmen's Compensation, and still excludes Veterans pensions. Most tables shown in ***Taxation Statistics*** are based on a 2% sample, stratified by income. Statistics Canada, however, has access to data files containing all records (called the '100% file'). A number of specialized products are available from SAAD, in addition to other uses of a more evaluative kind which are made by other Statistics Canada analysts.[1]

The Personal Income series within the System of National Accounts is compiled annually from a wide variety of aggregate data sources. It is, however, only available on an aggregate personal income and personal income per person basis for Canada and the provinces, and no information is available, for example, by

[1]The completeness of the '100% file' is not clear, in that the number of records on the 100% file may to be somewhat less that the number indicated as the 100% total in ***Taxation Statistics***. For 1990, for example, ***Taxation Statistics 1992*** gives 18,814,293 returns based on a 100% assessment, most tables however are based on a sample which shows 18,758,730 as the total number of returns, but the final 100% file used at Statistics Canada appears to include only 18,568,674 returns.

income size groups. 'Personal' in this context refers to the ***Persons and Unincorporated Business Sector*** which includes in addition to households, private non-profit organizations such as charitable institutions, labour unions, universities, private pension funds, and similar non-commercial groups. There are also some important differences in the income used here from the household based income series. These differences include *supplementary labour income, imputed net rents from owner-occupied dwellings,* and *imputed interest.* Differences in the universe covered and in the concept of income have to be taken into account in comparing aggregate Personal Income estimates with aggregate individual income derived from the Census and the Survey of Consumer Finances. See the section on **Census & SCF Compared With Personal Income (National Accounts).**

The primary sources for individual income statistics and Personal Income, are in all cases sources which provide data on total income and its components. There are sources largely of an administrative nature which provide aggregate data on payments made to the beneficiaries of specific social security programs such as: Old Age Security, Guaranteed Income Supplement, Canada and Quebec Pension Plans, and Unemployment Insurance. Such payments are included under *government transfer payments to persons* in Personal Income. Data on the number of beneficiaries can also be used in evaluating income data as obtained from household surveys or tax filers. However, they will not be considered directly as either primary or secondary sources of income. A similar consideration would apply to data obtained from the Survey of Employment, Payrolls and Hours (SEPH).

2.2 Secondary Sources

For this study a ***secondary income*** source is one in which the income data has been collected mainly to facilitate the analysis and presentation of ***other data***, and would not normally be regarded as an official source for income statistics. Generally the method of data collection, its timing, and/or its edit and imputation would in itself justify regarding such income data as being of lesser quality, or at least justifiably a "non-official" source. The Family Expenditures Survey (FAMEX) for example, is conducted too early in the year to insure that all persons have received their T4s etc. Also, unlike the SCF and the Census, virtually nothing is known about non-respondents - households refusing to provide income data in FAMEX, generally refuse to provide any data. Imputation for non-response is necessarily more crude. On the other hand it may not be a typical ***secondary income source.*** Generally for special surveys and the General Social Survey income is obtained for only one household member selected at random, either as an estimate of their total personal income (and sometimes for a two or three sources), or as a designated income range for their income and/or a range for the total income for all household members. The manner in which income is obtained can thus vary from one which is similar to that used for Census or the Survey of Consumer Finance, to a more abbreviated approach. It should be noted that even if a similar set of questions are used, the methods for edit and imputation may give somewhat different results.

3. ACCOUNTING FOR DIFFERENCES IN INCOME ESTIMATES

Differences in income estimates may be due to one or more of the following:

- Conceptual differences in the definition of income and its components, and in the population covered.

- The form and number of income questions. That is whether or not the questions are asked separately for each individual and separately for each source of income.
- The reference period for the survey, that is whether it refers to income received in the last calendar year, the last twelve months or some other period. More comprehensive records and summarization are available for the calendar year, than other periods.
- Time of year when the survey is conducted. If records are to be used (T4s etc.) then their availability is important; also, whenever such records are summarized in the preparation of tax returns could be important.
- The method of data collection, whether by personal interview, telephone interview, or self-enumeration could introduce differences.
- Follow-up procedures, non-response, and edit and imputation procedures, can all bear on potential differences.
- The method and data used for weighting the sample data (including calibration estimators) to provide population estimates.

In the next section, which deals with differences in the income estimates from the Census and SCF, some adjustments for coverage have been made although these have a greater impact on aggregate income than on the income distributions themselves.

4. DIFFERENCES IN INCOME ESTIMATES FOR INDIVIDUALS : CENSUS AND THE SURVEY OF CONSUMER FINANCES (SCF)

4.1 Differences in Income Estimates - Census Versus SCF

The Overall Comparisons - Canada & Provinces

The years for which data is available from both the Census and SCF, and the sample of individuals on which estimates are based is shown in the following table. For 1990, a 20% sample for the Census would be about 3.9 million individuals age 15 years and over with income, and this is nearly 50 times the sample for the 1990 SCF. For 1980 the Census sample was about 100 times that for the SCF.

Year	Census	SCF
1980	20%. sample	0.2% sample
1985	20%. sample	0.4% sample
1990	20%. sample	0.4% sample

Since 1971, the SCF has provided a timely source of annual income estimates. This series includes averages, medians, and income distributions for individuals, families and households. For three of these years, the Census has provided estimates based on a 20% sample, and thus for those years, a much better source for examining cross-sectional differences and smaller area data.

Except for 1971, Census estimates exclude the institutional population. In addition to the institutional population, the SCF excludes persons living:

- in the Yukon and Northwest Territories;
- on Indian Reserves
- outside Canada who are enumerated in the Census.

The latter comprise diplomats, Armed Forces personnel and others persons enumerated abroad. To make a more exact comparison of income estimates for the Census and the SCF, the Census data should be adjusted to exclude these three groups of individuals. A summary comparison of the Census and SCF in terms of sample size and response rates et cetera, is given in Appendix B.

The ***1991 Census Technical Reports: Income*** and the ***User's Guide to 1986 Census Data on Income*** both include a table which compares average incomes for Canada and the ten provinces. For 1981 census there is a Staff Report ***1981 Census of Canada: Evaluation of 1980 Income Data*** by Abdul Rashid, which gives a much more detailed evaluation. [Note: SCF data was not available for 1970, but the 1970 Census income data was compared with the 1969 and 1971 SCF data in ***An Evaluation of Income Data from the 1971 Census of Canada*** also by Abdul Rashid.] For 1990 the following differences in average incomes of individuals were observed:

Table 1: Comparison of Average Incomes for Individuals 15 Years and Over With Income: Census & SCF in 1990

	[1] Census data as published	[2] Census data adjusted to SCF coverage	[3] SCF data as published	([2]-[3])/ 0.5*([2]+[3])
Newfoundland	$18,769	$18,717	$17,674	5.7%
Prince Edward	$19,102	$19,042	$17,857	6.4%
Nova Scotia	$20,848	$20,655	$20,455	1.0%
New Brunswick	$19,827	$19,745	$18,772	5.1%
Quebec	$22,391	$22,395	$21,760	2.9%
Ontario	$26,216	$26,215	$25,181	4.0%
Manitoba	$21,129	$21,379	$20,789	2.8%
Saskatchewan	$20,638	$20,908	$20,271	3.1%
Alberta	$24,430	$24,498	$23,906	2.4%
British Columbia	$24,750	$24,852	$24,881	-0.1%
Canada	$24,001	$24,030	$23,302	3.1%
Revised SCF			$23,410	2.6%

Source: Column 1 from Table 1 of ***Selected Income Statistics*** 1991 Census Cat # 93-331. Columns 2 & 3 from Table 6 of ***1991 Census Technical Reports: Income*** Cat # 92-340. Note column 3 is same as data in Table 44 of ***Income Distributions by Size in Canada 1990*** Cat # 13-207. The revised SCF figure for Canada is as shown in Table 43 of ***Income Distributions by Size in Canada, 1994.***

The SCF data series have now been revised to take into account: the move to the 1991 Census population base, which includes non-permanent residents. The population estimates also include an adjustment for net Census under coverage.

At the Canada level the Census average income is higher than the SCF, and the difference, although relatively small, is statistically significant. [The coefficient of variation for average income at the Canada level is 0.5% for SCF, and for Census 0.05%, so that a difference of 3.1% indicates a "t" value of about 6.] A similar situation also existed for 1985. The provincial averages are generally not significantly different, but for virtually all of the provinces the Census average income is higher for both years.

Table 2: Comparison of Average Incomes for Individuals 15 Years and Over With Income: Census & SCF in 1985

	[1] Census data as published	[2] Census data adjusted to SCF coverage	[3] SCF data as published	([2]-[3])/ 0.5*([2]+[3])
Newfoundland	$14,156	$14,120	$13,637	3.5%
Prince Edward	$13,739	$13,591	$13,051	4.1%
Nova Scotia	$16,030	$15,821	$15,779	0.3%
New Brunswick	$14,870	$14,799	$14,685	0.8%
Quebec	$17,057	$17,054	$16,663	2.3%
Ontario	$19,462	$19,446	$18,970	2.5%
Manitoba	$16,796	$16,881	$16,397	2.9%
Saskatchewan	$16,828	$16,951	$16,520	2.6%
Alberta	$19,661	$19,692	$19,301	2.0%
British Columbia	$18,571	$18,630	$18,072	3.0%
Canada	$18,188	$18,187	$17,744	2.5%
Reweighted SCF			$17,737	2.5%

Although the comparisons by province, for both years, indicates that there is a high degree of correspondence overall, it is worth considering whether there are some more significant differences for specific subgroups of individuals. Comparisons based on the same geographic coverage for both 1990 and 1985, are not published for other subgroups. A comparison can, however, be made by age using Census data which has not been adjusted to match the SCF coverage. As Tables 1 and 2 indicate, the impact of the adjustment for coverage is not very large.

Comparisons by Age

For both 1985 and 1990, the distribution of persons with income by age is very similar for both surveys, except that the Census appear to have significantly fewer individuals aged 15-19 years with income for both years.

Table 3: Distribution of Persons 15 Years & Over By Age Census Versus SCF 1985 and 1990

	Census 1985	SCF 1985	Census 1990	SCF 1990
Total	100.0%	100.0%	100.0%	100.0%
15-19 years	5.9%	7.4%	6.1%	6.9%
20-24 years	12.1%	12.2%	9.4%	9.7%
25-34 years	23.9%	23.4%	23.3%	23.1%
35-44 years	19.1%	18.7%	21.0%	20.8%
45-54 years	13.0%	12.7%	14.1%	13.8%
55-64 years	11.6%	11.5%	11.1%	10.9%
65-69 years	5.1%	5.0%	5.4%	5.4%
70 years & over	9.2%	9.1%	9.6%	9.6%

Average incomes from the Census are significantly lower for individuals aged under 25 years, and significantly higher for those 65 years and over as can be seen in Table 4.

Table 4: Comparison of Average Incomes for Individuals 15 Years and Over With Income by Age: Census & SCF in 1985 & 1990

	[1] Census data as published	[2] SCF data as published	([1]-[2])/ 0.5*([1]+[2])
1990			
Age 15-19 years	$4,461	$5,095	-13.3%
Age 20-24 years	$13,098	$13,730	-4.7%
Age 25-34 years	$24,306	$24,298	0.0%
Age 35-44 years	$30,883	$30,276	2.0%
Age 45-54 years	$32,191	$31,446	2.3%
Age 55-64 years	$26,437	$25,412	4.0%
Age 65-69 years	$20,654	$19,000	8.3%
Age 70 years & over	$18,445	$16,877	8.9%
All Age Groups	$24,001	$23,302	3.0%
1985			
Age 15-19 years	$3,337	$4,065	-19.7%
Age 20-24 years	$10,057	$11,099	-9.9%
Age 25-34 years	$19,112	$19,572	-2.4%
Age 35-44 years	$24,370	$24,097	1.1%
Age 45-54 years	$24,291	$23,468	3.4%
Age 55-64 years	$20,649	$19,319	6.7%
Age 65-69 years	$15,329	$13,994	9.1%
Age 70 years & over	$13,020	$12,114	7.2%
All Age Groups	$18,188	$17,744	2.5%

Source: For Census this is data for Canada including Yukon & NWT - ***Selected Income Statistics*** 1991 Census Cat. # 93-331 Table 2 (data for males and females have been combined) and ***Total Income: Individuals*** 1986 Census Cat. # 93-114 Table 5. For the Survey of Consumer Finances - ***Income Distributions by Size in Canada 1985*** and ***1990*** Cat. # 13-207

Comparisons by Income Group

Differences in the distribution of income for the two sources, are shown in Table 5.

Table 5: Comparison of Average Incomes for Individuals 15 Years and Over With Income by Income Group: Census & SCF in 1985 & 1990

	Census Published	SCF Original	SCF Revised
1990			
All income groups	100.0%	100.0%	100.0%
Under $5,000	13.3%	12.4%	12.2%
$5,000- $9,999	14.4%	14.7%	14.6%
$10,000-$14,999	14.1%	14.8%	14.7%
$15,000-$19,999	10.3%	11.2%	11.3%
$20,000-$24,999	9.8%	9.8%	9.9%
$25,000-$29,999	8.3%	8.7%	8.8%
$30,000-$39,999	12.8%	12.6%	12.8%
$40,000-$49,999	7.6%	7.1%	7.2%
$50,000 & Over	9.3%	8.7%	8.7%
$75,000 & Over	2.5%	2.1%	n.a.
$100,000 & Over	1.2%	0.9%	n.a.
Average income			
$50,000 & over	$75,402	$70,660	n.a.
$75,000 & over	$121,792	$108,088	n.a.
$100,000 & over	$165,017	$142,000	n.a.
Median income	$18,832	$18,552	$18,737
1985			
All income groups	100.0%	100.0%	100.0%
Under $5,000	19.1%	18.7%	18.7%
$5,000-$9,999	20.1%	20.6%	20.4%
$10,000-$14,999	13.8%	14.6%	14.6%
$15,000-$19,999	11.3%	11.6%	11.7%
$20,000-$24,999	9.4%	9.4%	9.5%
$25,000-$29,999	7.5%	7.1%	7.1%
$30,000-$34,999	6.1%	5.7%	5.7%
$35,000-$39,999	4.1%	4.1%	4.1%
$40,000 & over	8.6%	8.2%	8.2%
Average income			
$40,000 & over	$58,867	$55,489	n.a.
Median income	$13,694	$13,577	$13,546

Source: The Census data for distributions and averages are adjusted to exclude the Yukon and Northwest Territories. The data is from ***Selected Income Statistics*** 1991 Census Cat. # 93-331 Table 1 (data for both sexes), the average income figure is from an unpublished table; and ***Total Income: Individuals*** 1986 Census Cat. # 93-114 Tables 1 and 2. [Note, however, that the income distribution for the Census adjusted to SCF coverage is almost identical.] For the Survey

of Consumer Finances - ***Income Distributions by Size in Canada 1985*** (Tables 50 & 69) and ***1990*** (Tables 43 & 54) Cat. # 13-207 The revised SCF data is from ***Income Distributions by Size in Canada 1994*** (Table 43)**.** Estimates for the higher income groups come from unpublished tables.

The SCF series for 1990 shows fewer individuals with income less than $5,000 and greater than $40,000. Since the average incomes obtained from the SCF have tended to be a little lower than those from the Census, it is not surprising that for both 1985 and 1990 it had proportionately fewer individuals in the higher income groups, and that the average income in the open-ended highest groups is much lower for the SCF. [In Table 5, the percentage of individuals reporting incomes of $50,000 or more for 1990 from the SCF was 0.6% less than the percentage reported from the Census, with standard error of 0.17%, and similarly the percentage for those reporting $30,000 or more for 1985 from the SCF was 0.7% less than those from the Census with standard error of 0.24%.] Individuals in the higher income groups have a disproportionate effect on aggregate and average income, and whether or not a sample is adequately represented at the high income end could have a significant impact on the averages obtained.

Table 6: Contribution of Higher Income Groups to Aggregate Income: Census & SCF, 1990 Canada Excluding Yukon & Northwest Territories

Individuals with income of:	Census	Survey of Consumer Finances
$50,000 or more	29.1%	26.3%
$75,000 or more	12.6%	9.9%
$100,000 or more	7.9%	5.3%

Median incomes from both the Census and SCF for 1990 are shown for Canada and the ten provinces in Table 7. Differences in the medians are not

significant. A comparison of medians for 1985 leads to the same conclusion. These results make sense due to the skewed nature of the income distribution, which means a larger sample size will obtain a better representation of the upper tail.

Table 7: Comparison of Median Incomes for Individuals 15 Years and Over With Income: Census & SCF in 1990

	[1] Census data as published	[2] SCF data as published	([1]-[2])/ 0.5*([1]+[2])
Newfoundland	$13,834	$13,488	2.5%
Prince Edward	$14,775	$14,711	0.4%
Nova Scotia	$15,953	$16,269	-2.0%
New Brunswick	$14,877	$14,421	3.1%
Quebec	$17,649	$17,138	2.9%
Ontario	$20,942	$20,607	1.6%
Manitoba	$16,268	$16,852	-3.5%
Saskatchewan	$15,452	$15,583	-0.8%
Alberta	$18,989	$19,082	-0.5%
British Columbia	$19,291	$19,699	-2.1%
Canada	$18,832	$18,552	1.5%
Revised SCF		$18,737	0.5%

Source: Column 1 from Table 1 of ***Selected Income Statistics*** 1991 Census Cat # 93-331. Column 2 is from Table 44 of ***Income Distributions by Size in Canada 1990*** Cat # 13-207. The revised SCF figure for Canada is as shown in Table 43 of ***Income Distributions by Size in Canada, 1994***

Comparison of the Percentage Composition of Income for Individuals

The differences between the Census and SCF in the percentage composition of income appears to be quite small for both 1985 and 1990, as can be seen from Tables 8 and 9.

Table 8: Percentage Composition of Income from Census & SCF 1990

	Census as published	SCF as published	Difference (Census - SCF)
Wages & salaries	72.0%	71.9%	0.1
Net income from self-employment	5.7%	5.2%	0.5
Investment income	6.5%	6.2%	0.3
Transfer payments	11.4%	12.0%	-0.6
Other money income	4.3%	4.7%	-0.4
Total	100.0%	100.0%	

Source: Census data not adjusted to SCF's geographic coverage, the figures are taken from ***Earnings of Canadians*** Census 1991 Cat.# 96-317 Table 1.1. Data for SCF is from ***Income Distributions by Size in Canada 1990*** Table 54.

Table 9: Percentage Composition of Income from Census & SCF 1985

	Census as published	SCF as published	Difference (Census - SCF)
Wages & salaries	72.9%	72.5%	0.4
Net income from self-employment	5.7%	5.6%	0.1
Investment income	6.6%	6.5%	0.1
Transfer payments	11.1%	11.5%	-0.4
Other money income	3.7%	3.8%	-0.1
Total	100.0%	100.0%	

Source: Census data not adjusted to SCF's geographic coverage, the figures are taken from ***Total Income: Individuals*** Census 1986 Cat.# 93-114 Table 2. Data for SCF is from ***Income Distributions by Size in Canada 1985*** Table 69.

Summary Conclusions on Census-SCF Differences

(a) At the Canada level, the Census average individual income for 1980, 1985, and 1990 were all slightly, but significantly, higher than the SCF's (1.4%, 2.5% and 3.1% respectively, with a Canada level coefficient of variation of 0.6%). Differences for the provinces, however, are generally not significant.

(b) Median incomes were not significantly different, but the SCF appears to have slightly fewer individuals in higher income groups (0.5 %). In the higher income group, the SCF shows significantly lower average incomes.

(c) For SCF, average income for individuals 65 years and over appears to be significantly lower than those from the Census.

4.2 Census & SCF compared with Personal Income (National Accounts)

Personal Income as determined by the System of National Accounts really only provides estimates of aggregate income for Canada and the provinces. It is, however, a benchmark against which other income estimates are often compared. Personal income is defined "*as the sum of all incomes received by persons residing in Canada whether these represent factor earnings from current production or current transfers from the government and other sources. Capital gains and losses are excluded.*"[2] In this context, "incomes received" include ***supplementary labour income***, and ***net imputed rent on owner-occupied dwellings.*** "Persons" refers to the ***persons and the***

[2] ***Guide to the Income & Expenditure Accounts*** Cat.# 13-603 November 1990

unincorporated business sector which comprises individuals in the sense used above in the context of the Census and SCF, including the incomes of persons who are self employed in ***unincorporated businesses*** are considered their too. But this sector also includes ***associations of individuals*** which encompasses *"private non-profit organizations such as charitable institutions, labour unions, universities, private pension funds and similar non-commercial groups."* Before appropriate comparisons can be made of aggregate personal income with aggregate income for individuals from the Census and the SCF, adjustments must be made mostly to personal income to allow for coverage and conceptual differences. Also since there are coverage differences, between the Census and the SCF, such comparisons must be made on a pair-wise basis. Such pair-wise comparisons are routinely made for both the Census and SCF income aggregates.

The extent to which Personal Income is adjusted to allow for a more appropriate comparison with the Census or SCF gives a measure of the coverage difference between the different sources. When Personal Income is adjusted to SCF population and conceptual coverage, the following relationship was obtained.

Table 10: Adjusted Personal Income as Percentage of Personal Income (Based on SCF Concepts & Coverage)

	1990	1994
Wages & salaries	87.6%	86.0%
Non-farm self-employment	64.8%	65.4%
Farm self-employment (I)	68.6%	118.0%
Investment income (ii)	64.4%	45.3%
Government transfer payments	80.5%	87.4%
Old Age Security Pensions &	92.9%	93.4%
Canada/Quebec Pension Plans	98.3%	97.0%
Family Allowance	109.1%	n.a.
Unemployment Insurance Benefits	99.6%	99.5%
Other income from government	60.0%	75.8%
Total income (excluding. pension	81.7%	79.9%

Note: (1) Adjustment to farm income includes a value of inventory change which can be positive or negative. (2) The adjustment for 1994 includes an estimate for the investment income of RRSPs

Apart from geographic coverage considerations the main adjustments reflected in Table 10 are: the removal of *supplementary labour benefits* from *wages, salaries and supplementary labour income,* the removal of *rent* from *net income of non-farm unincorporated business,* and the removal of *imputed interest* and the investment income of *life insurance companies, fraternal societies* and *trusteed pension plans* etc., from *interest and miscellaneous investment income.* The latter, however, is adjusted to include *paid rents* (but not *imputed rents*). The main adjustments to *other income from government sources* include the removal of *pensions paid to government employees* and *grants to post secondary education and benevolent societies.*

The Census comparisons with personal income were included in the ***1991 Census Technical Reports: Income*** Cat # 92-340 and the ***User's Guide to 1986 Census Data on Income.*** Detailed comparisons are also made for SCF income data with personal income, but only a brief summary is given in the ***Income Distributions by Size in Canada*** publications.

Table 11: Aggregate Income Estimates from the Census and the Adjusted Personal Income 1980-1990: Percentage Difference

	1980	1985	1990
Wages & salaries	1.6%	-1.6%	0.4%
Non-farm self-employment	-9.3%	-5.6%	0.2%
Farm self-employment	-4.0%	-14.2%	4.5%
Investment income	-26.6%	-44.5%	-50.2%
Old Age Security Pensions & Guaranteed Income Supplement	-3.5%	-1.6%	0.0%
Canada/Quebec Pension Plans	(*)	-20.5%	-12.5%
Family Allowance	-4.5%	-4.6%	-4.1%
Unemployment Insurance Benefits	-27.2%	-29.1%	-13.0%
Other income from government sources	-44.0%	-48.5%	-53.4%
Total income (excluding. pension and other income)	-4.0%	-9.9%	-9.0%

Note: (Aggregate Census - Aggregate Personal Income)/(Aggregate Personal Income)

Table 12: Aggregate Income Estimates from the Survey of Consumer Finances and the Adjusted Personal Income 1980-1990: Percentage Difference

	1980	1985	1990	1994
Wages & salaries	2.4%	-1.6%	-3.4%	+7.4%
Non-farm self-employment	-18.9%	-15.6%	-13.1%	-1.6%
Farm self-employment	-19.5%	-23.2%	29.0%	32.0%
Investment income	-25.2%	-42.5%	-50.6%	-46.9%
Old Age Security Pensions & Guaranteed Income Supplement	-5.6%	-0.1%	0.4%	2.2%
Canada/Quebec Pension Plans	-7.1%	-14.8%	-12.1%	-8.2%
Family Allowance	-3.3%	-5.1%	-4.1%	n.a.
Unemployment Insurance Benefits	-19.5%	-22.2%	-16.3%	-12.9%
Other income from government sources	-53.4%	-47.0%	-44.2%	-22.6%
Total income (excluding. pension and other income)	-4.3%	-10.0%	-11.6%	-0.1%

Note: (Aggregate SCF - Aggregate Personal Income)/Aggregate Personal Income

A comparison for 1994 is included here, partly to reflect the most recent experience better. Also, the 1994 SCF data reflects the population revisions to the 1991 Census base, the addition of non-permanent residents, and an adjustment for the Census undercount, which technically ought to be incorporated in 1980, 1985 and 1990 estimates. The Personal Income data are also subject to revisions. Table 12 therefore presents a set comparisons which were made at about the time the SCF data was released and does not reflect any subsequent updating. (See the section below on *Evaluation Of Income Differences & Revisions to Estimates*.)

Within the ***other income from government sources*** there are some components such as the Federal Child Tax Credit, Family Allowances, Sales Tax Credits which are well estimated by the SCF.[3] Of the major government transfer payments only Old Age Security appears to match the Personal Income estimate closely. However, for both the Census and SCF, the comparison with Personal Income suggests a significant underestimation for CPP/QPP and Employment Insurance benefits. This may reflect on the fact the CPP/QPP is not just a source for retirement pensions, and similarly that Employment Insurance is not just paid as regular unemployment benefit. A further evaluation in presented in the section C**omparisons with Revenue Canada Individual Tax Returns.** The apparent very large understatement of investment income is also considered in the same section.

In the US, the Current Population Survey provides a similar vehicle for the collection of income data from households, and this data is regularly compared

[3] The Census asks only separate questions for OAS/GIS, CPP/QPP, and Employment Insurance. Other income from government sources is just asked as a single question.

with the US Personal Income data after adjustment to CPS income concepts and coverage. The comparisons are similar to those shown above for Canada. For calendar year 1990, for example the CPS/Personal Income ratio for wages and salaries was about 97%, non-farm self-employment 71%, farm self-employment 37%, and interest, dividends and net rents, 50%. Government transfers generally were at 93%. This reflects the importance of the social security component, which like the Canadian OAS and CPP/QPP were fairly well reported, whereas for a category such as unemployment compensation, the ratio was about 80%.

4.3 Evaluation of Income Differences and Revisions to Estimates

The type of evaluation of differences which are routinely made of the Census, SCF and Personal Income data series, are static comparisons. That is, they do not allow for subsequent revisions. This is an understandable situation, since the evaluations are mostly made prior to the release of the data. Personal Income are initially, at least, subject to annual revisions. Estimates for 1990 only reached a "final" form in the ***National Income and Expenditure Accounts: Annual Estimates 1982-1993*** Cat. # 13-201, published in July 1994. Investment income was increased by about 4%.

Income estimates from the Survey of Consumer Finances are also subject to periodic revisions. For example ***Income Distributions by Size in Canada 1994*** Table 43 shows a series of annual income estimates covering 1980-1994, in which those for 1980-1993 reflect the move to the 1991 Census base, the adjustment of population estimates for net Census undercoverage, and the inclusion of non-permanent residents. For the three Census years in this period, the following changes are reflected from those shown in ***Income***

Distributions by Size in Canada 1993, and in the version of the publication when the data was initially released. These are shown in Table 13 as percentages of the 1994 publication figures for average income, and the estimated number of persons.

Table 13: Initial Estimates of Income & Number of Individuals From Survey of Consumer Finances As Percentage of Current Estimates By Year

	Release publication	1993 publication	1994 publication
Average income			
1980	98.6%		100.0%
1985	100.0%	99.6%	100.0%
1990	99.5%	99.5%	100.0%
Estimated number of individuals			
1980	96.8%		100.0%
1985	96.9%	95.8%	100.0%
1990	95.9%	95.9%	100.0%

Source: ***Income Distributions by Size in Canada*** for 1980, 1985, 1990, 1993, 1994

The revised estimates given in ***Income Distributions By Size 1994*** show only a slight change for average income, but quite a large upward revision in the estimated number of individuals, which would have a corresponding impact on aggregate income. For 1990 incomes, in particular the revised estimate of the number of individuals age 15 years and over with income was 19,982,000 compared with the original estimate of 19,162,000 individuals. Now the 1991 Census estimate of the number of individuals with income was 19,424,885 and this reflects the wider coverage for the Census, but a lower incidence of

persons with income (91.2% compared with 92.8%). This figure, however, has not been adjusted to allow for the Census undercount. The ***1991 Census Technical Report: Coverage*** shows an estimated net undercoverage of the population 15 years and over of 664,534 persons, so that the adjusted number of persons 15 years and over with income would be slightly greater than 19,974,170. Incomes for the undercoverage population, however, appears to be much lower than those reported by persons who were enumerated in the Census, as can be seen from Table 14.

Table 14: Individual Income Distributions for Persons 15 Years and Over Covered by the 1991 Census and the Undercoverage Population

	Population Covered by the Census	Undercoverage Population
Total persons 15 years & over	21,304,740	664,534
Without income	1,879,855	115,251
With income	19,424,855	549,283
Percentage distribution		
Total with income	100.0%	100.0%
Under $10,000	27.7%	49.9%
$10,000-$19,999	24.4%	27.1%
$20,000-$29,999	18.2%	16.2%
$30,000-$39,999	12.8%	6.1%
$40,000 & over	16.9%	0.8%
Median income	$18,832	$10,000

Note: For undercoverage population the number shown without income includes some with negative incomes reflecting the form of the income used for the Reverse Record check study.
Source: For the population covered by the Census ***Selected Income Statistics 1991*** (Cat.# 93-331), for undercoverage population ***1991 Census Technical Report: Coverage.***

4.4 Comparisons With Revenue Canada Individual Income Tax Returns

Much of the discussion in this section is based on Revenue Canada data published in ***Taxation Statistics***, since it is the only readily available source of published statistics. As was noted in Section 1, the Small Area & Administrative Data Division (SAAD) has for many years produced individual and family data based on the 100% T1 Family File (T1FF). At the end of this section, there is some information on the SAAD income data series.

A paper entitled ***Comparison of 1990 Income Estimates From T1FF and Census*** was prepared by Abdul Rashid. This in particular compares the number of income recipients from the two data sources, and then aggregate income. The T1FF shows 18,382,790 income recipients, which is more than a million below the 19,424,885 estimated by the Census, and as noted above the latter is undercounted itself by about 2.7 %, so that the 1990 tax filer universe may exclude about 1.5 million persons with income. Unlike the earlier comparison of SCF and Census, this comparison of tax filers and Census income data makes no adjustment for this coverage difference. The report itself makes a number of comparisons including aggregate income, individual income distributions, family income distributions, and incomes for CMAs and FSAs. The results are summarized on pages 19 through to 22 of that report, and they will not be repeated here. A comparison of aggregate income by source, may suffice to give an overall perspective. However, it should be kept in mind that the universe for the Revenue Canada income data series cannot be exactly replicated with the Census data.

Table 15: Aggregate Income By Source, Census & T1FF, 1990

	Census $ millions	T1FF $ millions	Difference % (T1FF-Census) Census
Total income	466,226	454,477	-2.5%
Wages & salaries	335,897	315,560	-6.1%
Income from self employment	26,729	20,720	-22.5%
OAS/GIS	15,540	9,921	-36.2%
CPP/QPP	10,773	12,008	11.5%
Family allowances	3,055	2,577	-15.6%
Child tax credits	2,093	2,128	1.7%
Unemployment insurance	11,414	12,215	7.0%
Other government transfers	10,382	13,529	30.3%
Investment income	30,082	37,960	26.2%
Retirement income	16,100	20,138	25.1%
Other income	4,162	7,720	85.5%

Source: ***Comparison of 1990 Income Estimates From T1FF and Census*** Table 2. A table included in SAAD's ***Neighbourhood Income & Demographics*** material shows some slight differences from the T1FF figures shown here for example investment income (dividends & interest) is shown to be around $39,170. There are however some differences in composition of some of these components.

Now for some of these categories, not only are there differences in the persons covered, but also in the components of income which are covered. For example the comparison shows for OAS/GIS a figure for the Census of $15.54 billion compared with $9.92 billion from the T1FF source. However, the latter excludes GIS, and this accounts for part of the difference. The Census (like the SCF) asks for the combined OAS/GIS. An additional perspective might be given by looking at the estimated number of income recipients by source. For some of the government transfer categories, these numbers are shown in ***Taxation Statistics*** and they can be compared with data shown in Human Resources Development Canada's ***Social Security Statistics.***

[Note: Some apparent inconsistencies in the number of recipients and amounts reported for the Revenue Canada data presented in ***Comparison of 1990 Income Estimates From T1FF and Census*** and ***Taxation Statistics*** reflect on the fact that the former is based on the 100% file, whereas the latter is based on a 2% sample. The completeness of the 100% file is another issue, and being a flexible data base, some records can be left out to obtain a data series which is more comparable to the Census.]

Comparisons which are made below, between the Census, Revenue Canada and Social Security statistics focus on a few, mostly more problematical categories. In the past, comparisons have also been made for some of the other categories, for example the publication ***Earnings of Men & Women: Selected Years 1967 to 1979 (Cat # 13-577)*** included as an appendix a study ***Evaluation of Earnings Data from Survey of Consumer Finances***, which gave a comparison the estimates from SCF, Revenue Canada, and CPP/QPP data sources.

Table 16: Comparison of the Estimates for Old Age Security Income from Different Sources for 1990

	Census	Revenue Canada	Social Security Statistics
Individuals with			
OAS+GIS+SA	2,777,860		3,158,108
OAS		2,560,810	3,036,809
GIS			1,325,300
SA			121,299
Aggregate income $ mn.			
OAS+GIS+SA	15,540		16,860
OAS		10,121	12,461
GIS			3,947
SA			452
Average/individual ($)			
OAS+GIS+SA	5,594		5,339
OAS		3,952	4,103
GIS			2,978
SA			3,727

Source: Census from an unpublished table. Revenue Canada ***Taxation Statistics 1992*** (1990 data. Social Security Statistics from HRDs ***Social Security Statistics*** (1994 edition.). Note the data in ***Social Security Statistics*** is given on fiscal year basis which has been roughly adjusted to calendar year data.

Given that the Census excludes the 226,000 individuals 65 years and over who were residents of institutions in 1991, and those who died, the 380,000 difference (SSS minus Census) in the number of individuals with OAS appears to be quite reasonable. Also since those who died in 1990 are only part year beneficiaries, they would lower the average per individual for the SSS estimate. On the other hand about half million OAS beneficiaries did not make a return to Revenue Canada. Here the comparison is made just with respect to OAS since the GIS and Spouse's Allowance (SA) are not subject to tax.

As noted above, CPP/QPP incomes appear to be less well reported on the Census, and a similar comparison can be made as in Table 16, for the same three sources.

Table 17: Comparison of the Estimates for Canada & Quebec Pension Plan Income from Different Sources for 1990

	Census	Revenue Canada	Social Security Statistics
Individuals receiving	2,755,621	2,972,880	n.a.
Retirement pension beneficiaries			2,331,147
Survivor's pension beneficiaries			784,335
Disability pension beneficiaries			242,648
Payments to children			200,042
Aggregate income $ mn.	10,773	12,233	13,441
Retirement pension beneficiaries			8,905
Survivor's pension beneficiaries			2,372
Disability pension beneficiaries			1,910
Payments to children			254
Average per individual	3,909	4,115	n.a.
Retirement pension beneficiaries			3,820
Survivor's pension beneficiaries			3,024
Disability pension beneficiaries			7,871
Payments to children			1,269

Note here that the number shown for beneficiaries for the separate categories, are not necessarily mutually exclusive so that a simple addition is not likely to be technically correct.

Source: Census from an unpublished table. Revenue Canada ***Taxation Statistics 1992*** (1990 data. Social Security Statistics from HRDs ***Social Security Statistics*** (1994 edition.). Note the data in ***Social Security Statistics*** is given on fiscal year basis which has been roughly adjusted to calendar year data.

The HRD ***Social Security Statistics*** (1994 version) shows data for the different categories of beneficiaries under the CPP/QPPs. These are shown in Table 17 for 1990. Since individuals can in some cases receive more than one type of benefit, a simple addition of the numbers shown in Table 17 would be too large. Aggregate CPP/QPP income should give a better indication of coverage and/or adequacy of reporting. The tax filer aggregate income is about 91% of the SSS figure, while the percentage for the Census was 76%. As for the OAS, the Census excludes individuals 65 years and over who are residents of institutions, and some of these would be eligible for CPP/QPP, and be tax filers.

For Employment Insurance benefits the Census shows $11.41 billion as compared with $12.22 billion from T1FF. ***Taxation Statistics*** shows for 1990, 3,082,750 returns with EI, and this is fairly close to the 3,260,970 beneficiaries shown in ***Unemployment Insurance Statistics***. This comparison is shown in Table 18.

Table 18: Comparison of the Estimates for Employment Insurance Income from Different Sources for 1990

	Census	Revenue Canada	Employment Insurance Statistics
Individuals receiving	2,822,717	3,082,750	3,260,970
Aggregate income $`000	11,414	12,416	13,189
Average per individual	4,044	4,028	4,045

Source: Census from an unpublished table. Revenue Canada ***Taxation Statistics 1992*** (1990 data). Employment Insurance statistics from Statistics Canada's Cat.# 73-001 Monthly (October 1995 edition.). The footnote to Table 2 of 73-001 referring to the number of beneficiaries says that "*The annual number represent unduplicated counts of all persons who, during the course of a calendar year, received unemployment insurance benefits.*"

The difference (EI - Census) in the estimated number of individuals receiving EI benefits, is 438,000 but with very similar average benefits per individual this difference appears to indicate that problem is in the incidence of reporting EI benefits rather than in the amount reported by those who do.

Turning now to **investment income**, the apparent large discrepancy here may still in part reflect on the inadequacy of the Personal Income as a comparable source for data on the investment income of individuals as defined for the universes covered by the Census and SCF. As was noted in Section 1(a) the ***personal sector*** in the national accounts includes not only persons living in private and collective households but also ***associations of individuals*** where the latter includes private non-profit organizations such as charitable institutions, labour unions, universities, private pension funds and similar non-commercial groups. Personal income also includes imputed interest and net imputed rent paid with respect to owner-occupied dwellings. Now for the

comparisons which were made above some adjustments were made to personal income, for imputed income and also for some of the ***associations of individuals***, but only in so far as such data exists. Another source for comparison, although it does not quite include all individuals with investment income, and although it would include some who are residents of institutions, would be to compare the survey data against investment income reported to Revenue Canada as part of the personal income tax system. For this purpose although it is only based on a 2% sample, the Revenue Canada data published in ***Taxation Statistics*** has been used. It has been assumed that the investment income categories in ***Taxation Statistics*** which should be summed to provide conceptually the same aggregate income are:

(I) Dividends received (taken as 4/5 th of *Taxable amount of dividends [12]*)
(ii) *Bond interest [13]*
(iii) *Bank interest [14]*
(iv)*Mortgage interest [15]*
(v)*Income from Trusts [16]*
(vi)*Foreign investment income [18]*
(vii)*Net rental income [19]*
Using this the following aggregate comparison can be made with estimates from the Census and SCF.

Table 19: Comparison of Aggregate Investment Income Estimates from Different Sources For 1990

	Aggregate income $mn	Percentage of Revenue Canada
Revenue Canada	39,556	100.0%
Census	30,082	76.0%
Survey of Consumer Finance		
Original	27,683	70.0%
Revised (?)	28,868	73.0%

Source: Census from unpublished table. SCF 'original' from Table 54 of ***Income Distributions by Size in Canada, 1990***. Revised assumes the same average but allows for the overall increase in the estimated number of individuals with income as given in the 1994 publication. Revenue Canada data from ***Taxation Statistics 1992*** (for 1990 income)

On a more tentative basis, data in ***Taxation Statistics 1992*** could be used to make comparisons by income group. Unfortunately the Revenue Canada definition of income used in determining their total income groups includes the *taxable amount of dividends* (which is 25% larger than dividends received) and also *taxable capital gains*, but it excludes categories such as GIS. So that although the aggregate amount of investment income can be estimated for each income group on a comparable basis, the income groups themselves would not be strictly comparable. A more appropriate comparison can be made, by using the T1FF 100% file to estimate investment income approximating as closely as possible the definitions used for SCF, and also to exclude records for persons who would not be included in the SCF universe (persons living in the territories, deceased tax filers etc.). This comparison is shown in Table 20.

Table 20: Comparison of Aggregate Investment Income SCF Versus Revenue Canada by Income Group 1990

	Survey of Consumer Finances	Revenue Canada	SCF / Revenue Canada Ratio
Aggregate Income:	$mn.	$mn.	
All income groups	27,683	37,903	73.0%
Under $30,000	12,165	14,235	85.5%
$30,000 - $39,999	3,950	4,953	79.7%
$40,000 - $49,999	2,969	3,691	80.4%
Under $50,000	19,085	22,879	83.4%
$50,000 & over	8,802	15,024	58.6%
Average Income	$	$	
All income groups	1,445	2,079	69.5%
Under $30,000	887	1,097	80.8%
$30,000 - $39,999	1,631	2,177	74.9%
$40,000 - $49,999	2,188	2,706	80.9%
Under $50,000	1,090	1,377	79.2%
$50,000 & over	5,299	9,294	57.0%

Source: SCF 'original' from Table 54 of ***Income Distributions by Size in Canada 1990.*** The Revenue Canada data is from a special table produced from T1FF (1990 income). Using the 'revised' SCF would increase the SCF estimates by about 4%.

The figures shown in Table 20, indicate that the under-reporting of investment income is much more of a problem in the higher income group.

The Census and SCF have a fairly definite universe, although their enumeration is still subject to some uncertainties. The Revenue Canada universe is less definitely known: in theory individuals with taxable income must file, and many others are encouraged to do so to take advantage of various tax credits. For 1990 about 18,800,000 submitted a tax return of which 13,800,000 or 74%

were taxable returns. Comparing numbers of individuals with income by age and sex on the Census with those submitting tax returns shows a fairly good concordance except for persons aged 15-19 years of both sex, and woman 55 years and older and more particularly those 65 years and over. It seems appropriate that more use be made of Revenue Canada income data of the tax filer universe.

A comparison of the tax filer universe with the total population 15 years and over is more readily available, and is presented in Table 21 for 1990 and 1993. Since 1990, the percentage of the total population who filed a tax return increased for most age groups, particularly for women, but it is still relatively low for women aged 65 years and over, most of whom, presumably receive at least OAS.

Table 21: Tax Filers as Percentage of Total Population By Age and Sex, Canada 1990 and 1993

	Males		Females	
	1990	**1993**	**1990**	**1993**
15 years & over	86.6%	86.9%	81.5%	83.3%
15-19 years	47.1%	38.9%	45.0%	39.4%
20-24 years	88.7%	86.4%	88.6%	88.6%
25-29 years	89.5%	89.7%	93.4%	92.9%
30-34 years	89.3%	90.2%	90.0%	92.7%
35-39 years	89.7%	91.2%	91.2%	93.1%
40-44 years	89.6%	91.1%	90.0%	92.1%
45-49 years	90.3%	92.2%	84.3%	86.7%
50-54 years	90.4%	91.9%	82.6%	83.7%
55-59 years	93.1%	92.9%	76.7%	79.0%
60-64 years	94.1%	96.0%	72.2%	76.0%
65-69 years	95.2%	95.6%	73.3%	80.1%
70-74 years	93.0%	94.3%	73.1%	78.0%
75 years & over	89.9%	96.9%	76.1%	82.8%

Source: Data tax filers by age and sex from ***Taxation Statistics 1992*** (for 1990) and ***Taxation Statistics 1995*** (for 1993). Data on total population at July 1, 1991 from ***Revised Intercensal Population & Family Estimates, July 1, 1971-1991 (Cat # 91-537)*** (July 1994), and total population at July 1, 1994 from ***Annual Demographic Statistics, 1994 (Cat # 91-213)*** (March 1995). Note the percentages for 1990 reflect number of persons filing tax returns for 1990 as percentage of the total Canadian population by age and sex as at July 1, 1991. Similarly the percentages for 1993 reflect 1993 tax filers as percentage of population as at July 1, 1994.

Table 22: Tentative Comparison of the Number of Persons With Income Universe and the National Revenue Tax Filer Universe for 1990

	Persons with income from all sources	Aggregate Investment Income $mn
Personal Income		60,398
Revenue Canada		
Tax Filers	18,814,293	39,556
Census		
Before undercount revision	19,424,885	30,083
Net undercount	549,283	
Residents in institutions (*)	226,120	
Total Census universe	20,200,288	
Deceased tax filers & emigrants (not covered by the Census)	117,702	
Total persons with income universe	20,319,990	
Persons with income not covered by Revenue Canada	1,505,697	

Note (*) According to the 1991 Census publication ***Dwellings & Households (Cat # 93-311)*** there were 302,205 institutional residents of whom 226,120 were aged 65 years and over. For the purposes of this table the latter, at least, are assumed to be persons with income.

Subsequent adjustments made by SCF to the investment income component of Personal Income are larger than were shown for 1990. Presumably the $60 billion figure is thus too high. The question then would be whether even a

(say) $15 billion difference (Personal Income - Revenue Canada) can be simply attributed to the investment income received by the 1.5 million persons with income not covered by the Revenue Canada statistics, and under-reporting of investment income particularly of small amounts for which amounts are not given. [Perhaps a larger source for the discrepancy could be the investment income of persons aged under 15 years?]

In addition to comparisons made between the Census or SCF with the tax filer income data of aggregate income, and income distributions etc., there are the possibilities of evaluative studies which link the two sources at the individual record. One such study linked the SCF for 1983 to the Revenue Canada files, in order to assess the comparability of the two estimates of total income. The results for both sexes of two way table showed:

Table 23: Distribution of Total Income of Individuals Estimated By the SCF and Reported to Revenue Canada, 1983

	Males		Females	
	Number of records	**Percentage distribution**	**Number of records**	**Percentage distribution**
All records	9,489	100.0%	8,847	100.0%
Records on the main diagonal	5,851	61.7%	5,983	67.6%
One class above main diagonal	928	9.8%	819	9.3%
One class below main diagonal	984	10.4%	670	7.6%
Two or more classes above	816	8.6%	865	9.8%
Two or more classes below	910	9.6%	510	5.8%

Source: ***The Effect of Respondent Errors on Income Distributions and Associated Measures,*** a LHSAD Staff Report prepared by H.E. Alter, Table 1

Records on the main diagonal are those for which the estimates of total income for the individual obtained from SCF and that reported to Revenue Canada was in the same $1,000 range for income groups below $10,000 rising to with the $5,000 ranges for income groups between $15,000 and $39,999 and so on. Since "allowable" differences increase absolutely with income, one must be careful in making an appropriate interpretation. However, the comparison does suggest that non-sampling errors are a more complex problem than may appear in comparisons made at the aggregate level, since there are a significant number of respondents who appear to be providing income estimates which are greater than those actually received, but this tendency is off-set by those who provide estimates which are lower. Thus a comparison of the two distributions separately as shown below, can be misleading.

Table 24: Percentage Distribution of Total Income for Individuals Reported to SCF Compared With Their Incomes Reported to Revenue Canada, 1983

	Survey of Consumer Finances	Revenue Canada
Under $5,000	27.0%	25.5%
$5,000-$9,999	16.0%	17.3%
$10,000-$14,999	13.9%	14.4%
$15,000-$19,999	11.7%	12.3%
$20,000-$24,999	9.3%	9.1%
$25,000-$29,999	7.5%	7.5%
$30,000-$34,999	5.2%	5.1%
$35,000-$39,999	3.5%	3.3%
$40,000-$49,999	3.3%	3.2%
$50,000 & over	2.6%	2.4%

The Small Area & Administrative Data (SAAD) Income Series is based on the 100% T1FF Revenue Canada tax filer file. Apart from being based on the "full" data base of tax filers, data from SAAD differs from that presented in ***Taxation Statistics*** (or ***Taxation Statistics on Individuals*** as the latest version is called) by changing some of the components of total income to be closer to that used by the Census and SCF, and more recently by including the income of non-filing spouses reported on the tax filer's income tax return. Also it leaves out the records of individuals who died or emigrated during the reference year, although it retains the records of those who died or emigrated at the beginning of the following year. Instead of taxable dividends it uses actual dividends, its leaves out taxable capital gains, and adds in the non taxable income components which are now reported on the tax form.

The inclusion of records created with income ***of non-filing spouses reported on the tax filer's income tax return*** from 1992 on, has somewhat broadened the coverage of individuals, and this has had a significant impact on median incomes of females and both sexes, so that whereas before 1992, the medians for females, and for all persons from SAAD were higher than those estimated from SCF, from 1992 on they are lower. A summary comparison of persons with income and median incomes from SAAD and SCF are shown in Table 25. It should be noted that no adjustment has been made here for coverage differences, geographic and other. The universe covered by SAAD is broader geographically, and also it can include persons who are residents in institutions. On the other hand even for 1992 on, it is confined to tax filers and non-filing spouses whose income was reported on the tax filer's return.

Table 25: Summary Comparison of Persons With Income and Median Incomes By Sex from SAAD and SCF, Canada 1990-1993

	SAAD Tax filers with income	SCF Individuals with income	SAAD/SCF Ratio
Number of persons			
1990 Both sexes	18,407,120	19,982,000	92.1%
1990 Males	9,307,260	10,252,000	90.8%
1990 Females	9,099,860	9,730,000	93.5%
1991 Both sexes	18,711,310	20,166,000	92.8%
1991 Males	9,396,110	10,335,000	90.9%
1991 Females	9,315,200	9,831,000	94.8%
Median income			
1990 Both sexes	$19,100	$18,727	101.9%
1990 Males	$25,300	$25,427	99.5%
1990 Females	$14,400	$13,790	104.4%
1991 Both sexes	$19,300	$19,040	101.4%
1991 Males	$25,300	$25,581	98.9%
1991 Females	$14,800	$14,300	103.5%
	SAAD Tax filers & dependents with income	**SCF Individuals with income**	**SAAD/SCF Ratio**
Number of person			
1992 Both sexes	19,649,400	20,499,000	95.9%
1992 Males	9,641,650	10,497,000	91.9%
1992 Females	10,007,750	10,002,000	100.1%
1993 Both sexes	20,423,400	20,801,000	98.2%
1993 Males	9,854,370	10,619,000	92.8%
1993 Females	10,569,040	10,182,000	103.8%
Median income			
1992 Both sexes	$18,600	$19,677	94.5%
1992 Males	$25,200	$25,822	97.6%
1992 Females	$14,100	$14,631	96.4%
1993 Both sexes	$18,000	$19,400	92.8%
1993 Males	$24,600	$25,070	98.1%
1993 Females	$13,600	$14,923	91.1%

Source: The SAAD estimates taken from a summary table associated with their ***Neighbourhood Income & Demographics*** series (Table 6) The SCF estimates incorporate the revised weighting scheme as presented in Table 43 of ***Income Distributions By size In Canada 1994*** for both sexes, and unpublished data was used to provide the separate figures for males & females.

More evaluative work needs to be done in this area, and of course the potentiality of using tax file data, where possible, is being exploited in the context of the Survey of Labour and Income Dynamics.

5. SECONDARY SOURCES COMPARED WITH THE SCF

5.1 The Nature of Income Data from Secondary Sources

The design of the questionnaires used to collect income data from the Census and the Survey of Consumer Finances, and their associated methodologies for data collection, edit and imputation assume:

- That income data is best obtained by asking for ***each member*** an estimate of their income for ***each income source***. For 1990, the SCF questionnaire shows 20 income source categories (questions), whereas the Census shows 10 income questions.(Some categories like Family Allowances were imputed on 100% basis.) Exactly how many income source categories need to be separately known is not certain, too few could make it more difficult for estimation and evaluation, as would also too many. The choice would take into account the uses of the income data.
- That since persons are provided with summary income data for the calendar year, in the T4s and T5s issued to facilitate the completion their tax returns, that better income data should be obtained for the ***calendar year*** rather than for any other 12 month or shorter periods,

and that such data would be best obtained after the receipt of the T4s and T5s, and preferably after this information had been further summarized in the completion of the tax returns, say in the April to June period.

- That since the response to income questions are generally lower than those for labour force characteristics, and the latter seem to provide a reasonable basis for imputation, whole record imputation using LFS characteristics should provide better data than simply dropping the records for non-respondents and modifying the weights. For example, the SCF has since 1984 always been conducted as a supplement to the April Labour Force Survey. In the SCF about 20% of persons are non-respondents who failed to provide some or all income details. These missing details are imputed using donors selected based on the wide variety of personal and work history variables available from the LFS, which generally has a non-response rate of only about 5%.

To these ***a priori*** assumptions one might add the importance of having a regular series which can be evaluated in terms of year-to-year changes, and against alternative data sources.

The types of income questions associated with the secondary sources for income statistics, can be characterized as follows:

- Surveys which ask essentially the same income questions separately for each person aged 15 years and over, as for the SCF, for the calendar year as for example the ***Survey of Family Expenditures,*** or for the previous twelve months as for example the ***Food Expenditure Survey.***

- Surveys which ask a greatly reduced number of income questions, of a randomly selected person within the household as for example the ***Adult Education and Training Survey.***
- Surveys which ask a randomly selected person to select the income range corresponding to their personal income from all sources, or from a specific source such as wages and salaries, as for example the ***General Social Survey-Cycle 8.***

Depending on which of these applies, income data from such sources may vary in terms of reliability, the use which can be made of the data, and even whether such data can be effectively evaluated. On the other hand, since generally income from these secondary sources is sought as an individual or household characteristic to which the principal data obtained from the survey can be related, it is likely sufficient to know whether or not the income thus obtained appears to be fairly consistent with income obtained from a primary source such as the SCF.

5.2 Assessing the Significance of Income Differences

Differences in the income estimates from the Census and the SCF were assessed in Section 3(a) using average incomes, medians, and income distributions by size, and age. In particular it was noted that average incomes from the SCF were marginally but significantly lower than those reported in the Census, whereas median incomes were not significantly different. Not surprisingly then, a comparison of the income distributions by size showed that the SCF has tends to have fewer individuals in the higher income groups, and the average income for these higher income groups are lower than in the Census. All of these measures were needed to make the appropriate

inferences. There is therefore an issue. If comparisons with data from other surveys are only based on partial information, can appropriate inferences be made? Now if there are estimates of total income for each individual, the average income, the median and the income distribution can all be determined. However, if only the income range data was obtained, income distributions by size can be determined, and medians can be estimated even from coarsely graduated income distributions albeit crudely. However, the absence of average income would mean that a more complete comparison is not possible. The SCF publication ***Income Distributions by Size in Canada*** shows the estimated standard errors for all average incomes, but there is only one table which shows the estimated standard errors for the percentage distribution of individuals by income group.

5.3 Income Differences for Selected Surveys

Survey of Family Expenditures & the Food Expenditure Survey

These two surveys both obtain detailed income estimates by source for each household member 15 years and over, using income questionnaires and concepts which are virtually identical to those used for the SCF. The Survey of Family Expenditure has generally been conducted starting at the end of January through to mid-March, but the survey conducted in 1993 (for 1992) started in mid-January. These surveys obtain estimates of ***incomes received during the previous calendar year***. The Food Expenditure Survey is conducted monthly throughout the reference calendar year, and in each month a different sample of households are asked to provide, for each individual, estimates of ***incomes received during the previous 12 months.*** For both surveys, although income is obtained for each individual, it is only presented on

a household basis, since the expenditure data, which is the ***raison d'être*** for these surveys, is only available on a household basis. Also although the sample for these surveys is selected from the LFS frame, they are not supplements to the LFS. Therefore, unlike the SCF, virtually no information is available for non-responding households. Usable household records are thus weighted in a manner which makes some allowance for differential non-response, but these are based on demographic rather than economic factors. For 1992 the response rate was 73.8% for the Survey of Family Expenditures, and 79.7% for the Food Expenditure Survey. There is one other important difference between the Survey of Family Expenditures and the SCF. Whereas for the SCF the household comprises all persons who are present at the time of the survey, for the Survey of Family Expenditures the household is in effect reconstituted as it existed during the reference calendar year, which can mean that some persons and their incomes and expenditures are only represented on a ***part year basis***, and in some cases there are ***part-year households***. This not only includes persons who move from one household to another, but new immigrants and where possible even persons who died. The income data shown below from the Survey of Family Expenditures is for full-year households, that is households for which at least one member was present for the entire calendar year. The presence of part-year members, and the absence of part-year households, will distort the distributions, and leaving out part-year households will result in an overestimation of average income.

Table 26: Comparison of Income Statistics from Survey of Family Expenditures and the Food Expenditure Survey with the Survey of Consumer Finances, Canada, 1986 and 1992.

	Survey of Family Expenditures	Food Expenditure Survey	Survey of Consumer Finances
Percentage Distribution of Income for Households in 1992			
Under $10,000	4.7%		5.7%
$10,000 - $14,999	9.1%		9.2%
$15,000 - $19,999	7.9%		7.5%
$20,000 - $24,999	7.5%		7.7%
$25,000 - $29,999	7.5%	n.a.	6.9%
$30,000 - $34,999	7.0%		6.8%
$35,000 - $39,999	7.0%		6.7%
$40,000 - $49,999	12.9%		11.6%
$50,000 - $59,999	10.5%		10.6%
$60,000 - $69,999	7.1%		8.1%
$70,000 & over	18.8%		19.0%
Upper Limits of Income Quintiles of Households in 1992			
Lowest quintile	$18,960	$17,448	$18,621
Second quintile	$32,072	$30,556	$32,176
Third quintile	$46,852	$45,019	$48,282
Fourth quintile	$67,829	$65,556	$68,969
Average Income of Households in 1992			
Original	$46,076	$43,953	$46, 756
Revised			$46, 465
Upper Limits of Income Quintiles of Households in 1986			
Lowest quintile	$14,478	$12,557	$14,684
Second quintile	$25,500	$22,320	$25,563
Third quintile	$36,900	$33,442	$37,834
Fourth quintile	$52,215	$47,125	$53,236
Average Income of Households in 1986			
Original	$35,665	$31,976	$35,673
Revised			$35,942

Source: Survey of Consumer Finances: ***Household Facilities by Income and Other Characteristics, 1987 & 1983 (13-218)*** and unpublished revised estimates of average income. Survey of Family Expenditures: ***Family Expenditure in Canada 1986 & 1992 (62-555)*** and unpublished data for the upper limits to the income quintiles. Food Expenditure Survey: ***Family Food Expenditure in Canada, 1986 & 1992 (62-554)*** and unpublished data for the upper limits to the income quintiles. The upper limits for the Food Survey are averages of the 12 monthly figures.

Adult Training & Education Survey

This was a special survey sponsored by Human Resources Canada, which was conducted in January 1994. Persons aged 17 years and over in Canada were eligible, and one person from each household contacted was selected at random to answer a set of questions which included income. For the latter they were asked to give their annual income for each of the following three sources:

- Total income from wages and salaries
- Net income from self-employment
- Other income such as investment, scholarships

Table 27: Comparison of Income Statistics from Adult Education & Training Survey and the Survey of Consumer Finances, 1993 Incomes

	Adult Education & Training Survey 1993 Persons 17 years & over	Survey of Consumer Finances for 1993 Persons 15 years & over.
No income & negative (*)	9.7%	8.1%
Under $15,000	34.9%	36.6%
$15,000-$19,999	8.5%	10.5%
$20,000-$24,999	8.7%	8.9%
$25,000-$29,999	7.2%	7.5%
$30,000-$34,999	7.6%	6.6%
$35,000-$39,999	5.2%	5.1%
$40,000-$49,999	7.9%	7.3%
$50,000 & over	10.3%	9.3%
With income		
Average income	n.a.	$24,555
Median income	$21,000	$19,400

Source: Note (*) For SCF negative incomes are included in under $15,000 group. Adult Education & Training Survey based on distribution shown in microdata file. Survey of Consumer Finances the revised distribution for 1993 shown in ***Income Distributions by Size in Canada 1994*** and unpublished data for no income. Average & median incomes are only for persons with income.

The income distribution for the Adult Education & Training Survey in Table 27 exclude the 23.9% of persons who did not respond to the income question (refused or did not know), whereas the SCF distribution includes the imputed records for non-respondents.

National Population Health Survey (NPHS)

The first wave of this survey was conducted between June 1994 and June 1995. For this survey a knowledgeable person was asked: *What is your best estimate of the total income, before taxes and deductions, of all household members from all sources in the past 12 months?* This estimate was made by choosing a specific income range from those mentioned. This household income estimate was then deemed to be a characteristic of all members of the household, and the income distribution shown in the documentation is thus neither that of individuals nor households, but one in which each household is weighted by the number of persons in the household. (In producing a comparable distribution from the SCF the household weight was multiplied by the number of persons in the household.) A comparison of this income distribution from the NPHS compared with SCF is as follows:

Table 28: Comparison of Income Statistics from National Population Health Survey and the Survey of Consumer Finances, 1994 Incomes (Distribution of Persons in Households by Range of Household Income)

	National Population Health Survey 1994/95	Survey of Consumer Finances for 1994
Under $5,000	0.9%	0.8%
$5,000-$9,999	3.0%	2.0%
$10,000-$14,999	8.0%	5.5%
$15,000-$19,999	7.6%	6.2%
$20,000-$29,999	13.5%	12.9%
$30,000-$39,999	14.4%	13.4%
$40,000-$49,999	13.7%	12.6%
$50,000-$59,999	11.8%	11.5%
$60,000-$79,999	13.9%	16.9%
$80,000 or more	13.1%	18.1%
Total with income	100.0%	100.%

Source: National Population Health Survey 1994/1995 microdata documentation. SCF special table based on household income applied to all household members.

For the NPHS, figures above exclude the 4.8% of persons for whom income was *not stated*, whereas for SCF incomes were imputed for all non-respondents.

General Social Survey - Cycle 9 (1994 - Education & Work)

This survey asked several types of income questions either of wages and salaries or total income. Although comparisons have not so far been made for just wages and salaries, it was tempting since in asking the question *What is your current wages or salary before deductions from all sources?* respondents could have indicated a specific dollar figure rather than just a dollar range. The median estimate for wages and salaries was about $29,000 as compared with about $22,500 from SCF (for 1994). The comparison here therefore is based

on another question: *What is your best estimate of your own personal income before deductions from all sources during the past 12 months?* and this could be responded to with reference to *Same as P13 or P14* (previous questions) or by choosing one of the indicated income ranges. This question was asked of a randomly selected individual.

Table 29: **Comparison of Income Statistics from General Social Survey - Cycle 9 (1994) and the Survey of Consumer Finances 1993 & 1994**

	General Social Survey Cycle 9 (1994)	Survey of Consumer Finances, 1993	Survey of Consumer Finances, 1994
Nil & Under $5,000 (*)	17.9%	18.8%	18.1%
$5,000-$9,999	12.3%	12.1%	12.4%
$10,000-$14,999	12.0%	13.8%	13.9%
$15,000-$19,999	10.0%	10.5%	10.2%
$20,000-$29,999	16.1%	16.5%	15.8%
$30,000-$39,999	12.1%	11.7%	12.1%
$40,000-$49,999	8.8%	7.3%	7.5%
$50,000 & over	10.8%	9.3%	9.9%
Median income			
Including no income	$18,914	$17,500	$17,700
Excluding no income	n.a.	$19,400	$19,600

Source: For GSS - Cycle 9 the ***Public Use Microdata Documentation & User's Guide***. For SCF ***Income Distributions by Size in Canada, 1994.***
Note (*) : The GSS question and variable used (DVP14C) did not include a separate no income category. It is not clear, however, that the GSS "under $5,000" is exactly the same as the SCF "no income" plus "under $5,000". All medians based on the inclusion of the "no income" category have been estimated from the distributions shown above.

The income distribution for the General Social Survey in Table 29 excludes the 14.6% of persons who did not respond to the income question (refused or not

stated), whereas the SCF distribution includes the imputed records for non respondents.

General Social Survey - Cycle 8 (1993 - Personal Risk)

The data collection for this survey began in February 1993 and continued monthly through December 1993, the sample being evenly distributed over the 11 months. From each household one randomly selected person 15 years and over was asked: *What is your best estimate of your own personal income before deductions from all sources during the past 12 months? Was your income*.....followed by a series of income range check boxes. Income received ***during the past 12 months*** would tend to have an ambiguous character: would the respondent report for the last known ***calendar year*** (for 1992) or would they attempt to base it on incomes received during 1993 as well? The lack of change in the income distribution between 1992 and 1993 as evidenced by SCF, would lessen the significance of this ambiguity.

Table 30: Comparison of Income Statistics from General Social Survey - Cycle 8 (1993) and the Survey of Consumer Finances 1992 & 1993

	General Social Survey -Cycle 8 (1993)	Survey of Consumer Finances, 1992	Survey of Consumer Finances, 1993
No income or loss	8.0%	8.0%	8.1%
Under $5,000	10.2%	11.2%	10.7%
$5,000-$9,999	12.3%	12.1%	12.1%
$10,000-$14,999	12.0%	13.7%	13.8%
$15,000-$19,999	9.7%	9.6%	10.5%
$20,000-$29,999	15.7%	16.4%	16.4%
$30,000-$39,999	13.2%	12.1%	11.7%
$40,000-$49,999	8.3%	7.5%	7.3%
$50,000 & over	10.5%	9.6%	9.3%
Median income			
Including no income	$18,838.	$17,607	$17,486
Excluding no income	n.a.	$19,677	$19,400

Note: For SCF negative incomes are included in under $5,000 group.
Source: General Social Survey - Cycle 8 data based on distributions provided by E. Praught. Survey of Consumer Finances the revised distributions for 1992 and 1993 shown in ***Income Distributions by Size in Canada 1994*** and unpublished data for no income. All medians based on the inclusion of the "no income" category have been estimated from the distributions shown above.

The income distribution for the General Social Survey in Table 30 excludes the 16.6% of persons who did not respond to the income question (refused or not stated), whereas the SCF distribution includes the imputed records for non-respondents.

Appendix A: Income Data from the Survey of Labour & Income Dynamics (SLID) for 1993. A Comparison with SCF and SAAD

Income data for 1993, which was obtained from the Survey of Labour & Income Dynamics conducted in May of 1994, was not available at the time of the first draft of ***Differences in Income Estimates for Individuals***. Some data has now been released and a document ***Comparison of Income Estimates from the Survey of Consumer Finances and the Survey of Labour and Income Dynamics*** , SLID research paper 96-07 is available.

This appendix presents a comparison of the SLID income estimates, with those obtained from the SCF and SAAD data sources. The 1993 SLID income data is a combination of data obtained by interview using a questionnaire similar to the SCF and tax file data from Revenue Canada (for those who **gave permission,** and who could be matched to the tax file). The comparison study shows some aggregate income estimates for the survey data and tax file data separately (both reweighted to give population estimates).

For this current study of income differences, a comparison of income distributions, average and median incomes, and aggregate income by sources are shown in Tables A(i) and A(ii). The SLID sample is nearly 30,000 individuals, and thus about 40% of the SCF sample. The comparison of SLID with SCF, shows SLID with over 600,000 more income recipients, of which about 50% have incomes below $5,000. The SLID estimates also have nearly 50,000 more recipients with income of $100,000 or more. Average and median incomes at the Canada level are not significantly different. Aggregate incomes by source are generally lower for SCF, except for some government transfer incomes, reflecting the higher incidence of income recipients. It is,

however, worth noting that investment income, which appears to be well under-reported on the SCF, is not much better on SLID. The comparison study points to a number of differences in how the two survey were processed, and indicates that they may account for much of the differences between the SCF and SLID data. In the future, steps are being taken the improve the consistency of processing methodologies.

Table A(i): Income Data from the Survey of Labour & Income Dynamics (SLID) for 1993. A Comparison with SCF and SAAD

	SCF	SLID Composite	SLID Survey Data	SLID Tax Data	SAAD
Under $5,000	2,421,668	2,740,000			2,915,220
$5,000-$9,999	2,748,379	2,731,000			2,822,100
$10,000-$14,999	3,122,894	3,127,000			3,095,490
$15,000-$19,999	2,365,292	2,393,000			2,174,760
$20,000-$24,999	2,028,351	1,927,000			1,821,510
$25,000-$34,999	3,204,987	3,309,000			2,954,140
$35,000-$49,999	2,803,742	3,000,000			2,568,990
$50,000-$74,999	1,643,251	1,704,000			1,530,590
$75,000-$99,999	277,935	266,000			304,280
$100,000 & over	184,678	232,000			236,320
Total number income recipients	20,801,177	21,429,000	21,076,000	22,081,000	20,423,400
Percentage Distribution					
Under $5,000	11.6%	12.8%			14.3%
$5,000-$9,999	13.2%	12.7%			13.8%
$10,000-$14,999	15.0%	14.6%			15.2%
$15,000-$19,999	11.4%	11.2%			10.6%
$20,000-$24,999	9.8%	9.0%			8.9%
$25,000-$34,999	15.4%	15.4%			14.5%
$35,000-$49,999	13.5%	14.0%			12.6%
$50,000-$74,999	7.9%	8.0%			7.5%
$75,000-$99,999	1.3%	1.2%			1.5%
$100,000 & over	0.9%	1.1%			1.2%
Mean	$24,555	$24,779	$24,752	$24,725	$24,393
Median	$19,400	$19,300			$18,000
Standard error of mean	$160	$213			
Cumulative Percentage Distribution					
Under $5,000	11.6%	12.8%			14.3%
$5,000-$9,999	24.9%	25.5%			28.1%
$10,000-$14,999	39.9%	40.1%			43.2%
$15,000-$19,999	51.2%	51.3%			53.9%
$20,000-$24,999	61.0%	60.3%			62.8%
$25,000-$34,999	76.4%	75.7%			77.3%
$35,000-$49,999	89.9%	89.7%			89.9%
$50,000-$74,999	97.8%	97.7%			97.4%
$75,000-$99,999	99.1%	98.9%			98.8%
$100,000 & over	100.0%	100.0%			100.0%

Source: SCF & SLID distribution data from the Table 13 of the report ***Comparison of Income Estimates from the Survey of Consumer Finances and the Survey of Labour and Income Dynamics.*** Average incomes for SCF & SLID come from Table 8 in the same report. Median and standard error of average income for SCF comes from ***Income Distributions By Size In Canada (1994)*** and for SLID estimates were obtained by special request. SAAD distributions come from Table 6 of the special tables for the ***1993 Neighbourhood Income & Demographics.***

Table A(ii): Comparison of Aggregate Income By Source for SCF, SLID and SAAD, Canada 1993

	SCF	SLID Composite	SLID Survey Data	SLID Taxation Data	SAAD
	$ '000	$ '000	$ '000	$ '000	$ '000
Wages & salaries	360,507,519	368,379,945	360,465,493	379,897,069	335,029,351
Self-employment	26,513,865	31,143,851	37,196,966	25,235,816	22,875,599
Dividends & interest	21,370,205	22,089,766	22,170,348	22,851,184	26,043,786
Gov't transfer income [A]	70,995,724	73,269,098	70,744,029	76,247,204	
UI	15,430,199	15,930,461	13,960,384	17,822,883	16,786,093
Old Age Security	19,068,362	17,530,960	17,566,155	17,542,833	12,583,459
CPP/QPP	14,862,471	18,485,509	18,293,704	18,976,348	16,544,202
GST Credit	2,336,783	2,519,315	2,513,202	2,571,354	2,838,742
Child Tax Ben.	5,535,046	5,100,576	4,777,387	5,437,894	5,074,492
Oth Gov't Trans	13,762,863	13,702,285	13,633,214	13,895,892	
Soc Assistance	10,672,826	10,024,295	10,916,715	9,218,902	
Work. Comp	3,090,037	3,677,990	2,716,499	4,676,990	
Gov't tran inc [B]	2,238,172	Not avail.	Not avail.	Not avail.	
Prov Tax Cred	500,000				
Veterans Pens	600,000				
Tax Oth GT inc	600,000				
Non-tax Oth GT	500,000				
Other Income	29,141,162				
Other Pensions	21,535,048	25,226,569	23,619,651	27,368,757	22,318,846
Alimony	1,357,541	1,433,431	1,382,199	1,487,303	
Other income	7,606,114				17,898,905
Residual [Oth Inc & Oth GT Inc]		9,420,245	6,099,062	12,887,397	20,188,293
Total Income	510,766,647	530,962,905	521,677,748	545,974,730	498,181,768

Source: SCF & SLID aggregate data from the Table 8 of the report ***Comparison of Income Estimates from the Survey of Consumer Finances and the Survey of Labour and Income***

Dynamics. SAAD aggregate data come from Table 4 of the special tables for the 1993 Neighbourhood Income & Demographics.

Note: SCF, SLID, and SAAD do not show aggregate income for all of the sources according to a common level of detail. Footnotes associated with Table 8 of the report ***Comparison of Income Estimates from the Survey of Consumer Finances and the Survey of Labour and Income Dynamics*** give some documentation of this. The rounded estimates for the components of **Government transfer income [B]** for SCF come from a footnote. The **Residual** category for SLID includes other government transfer income and other non-government, as does the estimate from SAAD.

APPENDIX B: A Summary Comparison of Census & Survey of Consumer Finances

	1980	1985	1990
Survey of Consumer			
Sample size (number of	15,446	34,883	45,014
Labour Force Survey	No	Yes	Yes
Method of interview	Questionnaires	Questionnaires	Mail-out
Number of questions	16	16	21(*)
Response Rates:			
Complete individual records	24,164	53,493	66,063
Incomplete or blank records	3,552	12,547	16,715
Total individual records	27,716	66,040	82,778
Number records shown in	27,537	65,703	82,431
Response rate:	87.2%	81.0%	79.8%
Census			
Sample size (approx.	1,656,000	1,800,000	2,000,000
Census/SCF Sample Size	107	52	44
Number of income questions	8	10	10
Response Rate	92.5%	86.8%	82.0%
Census & SCF: Overall			
Census			
Average individual income	$12,998	$18,187	$24,030
Standard error average	$7	$10	$13
Coefficient of variation	0.05%	0.05%	0.05%
Survey of Consumer			
Average individual income	$12,817	$17,744	$23,302
Standard error average	$97	$102	$135
Coefficient of variation	0.76%	0.57%	0.58%
Difference (Census - SCF)	$181	$443	$728
Percentage difference (C-	1.4%	2.5%	3.1%
“t” value =	1.8	4.3	5.4

(*)1990 questionnaire includes a category for taxable capital gains, but it is not currently included in the SCF income concept.
(**)The number of income questions shown for Census is a bit misleading in that some components (such as family allowances were imputed on a 100% basis.