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The Economic Well-Being of Canadians: Is there a Growing Gap?

by Chris Sarlo





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Executive summary

The sweeping changes in Canadian life over the past several decades in the structure of the economy, in the demographics, in the social-cultural realm, and in government policy have surely had impacts on living standards and, more importantly, on inequality of economic well-being. Investigation of these impacts and their trends is important. Since we do compare our well-being to that of other Canadians, the possibility of a “growing gap” in Canada garners considerable interest, not least from the media.

In order to examine trends in the distribution of the economic well-being of Canadians, it is important to look at more than income. While income is clearly the most popular and available indicator of the financial resources of a household used to purchase a given standard of living, it is by no means the only indicator we have. Consumption spending, which is arguably closer to actual well-being than income, is available in microdata files. Wealth (i.e., net worth of households) is similarly available. The facilities that households use to save labor and to improve their living standards is available in microdata form as well. When we draw upon a broader array of indicators of economic well-being, we find that the conventional wisdom that there is a “growing gap” in Canada is less supported. Specifically, while the inequality of reported adult-equivalent after-tax income has increased, trends in consumption inequality, facility ownership inequality, and wealth inequality all suggest that the gap may not be growing.

Over the 35-year period covered in this study, the inequality (i.e., Gini coefficient) of adult-equivalent after-tax reported income has increased by 9%. A number of reasons have been cited for the rise in income inequality. Technological change has altered the labor market. There are more jobs which require post-secondary education and fewer requiring less education. There are more part-time workers, although many of them are second earners. There are also substantially more single parents raising children now than was the case in the 1960s. Heisz (2007) argues that a probable driver of the rise in income inequality is the increase in the number of two-earner families.

The rise in income inequality cannot be viewed as conclusive evidence of a growing gap partly because income is only part of the story but mainly because of a number of data issues. The discussion in this study focuses attention on the significant underground economy and subsequent underreporting of income (from both legal and illegal activities) serving to understate true income. However, there can also be hidden sources of income at the high end of the distribution which would tend to reduce measured polarization. The author reiterates a plea to Statistics Canada to work on this issue

so that measured results will reliably reflect what is truly happening in the economy.

Relating to possible hidden income which could distort inequality results, Sarlo cites a study by Giles and Tedds (2002) which puts the size of the so-called “underground economy” (i.e., “legal transactions in goods and services that are ‘hidden,’ resulting in the evasion of taxes” (Canada, Office of the Auditor General, 1999: 2–7)) at about 15%–16% of GDP. The author notes that in 2004, there were about 183,000 households with reported incomes of less than \$5,000. Under normal circumstances, it would be impossible for even a single individual to live on less than \$5,000 per year. Yet, the average consumption of those same truly impoverished households was almost \$20,000. There are indeed some explanations for consumption somewhat exceeding income. Monetary gifts, dissaving by spending capital, foreign sources of income, and excluded sources of income like child support could explain some of the discrepancy, but so could underreporting of income. Schuetz (2002), based on a sample of fulltime, full-year workers who report at least 30% of household income from self-employment, he finds that the rate of non-compliance (i.e., underreporting) is somewhere in the range of 12%–24%. He also finds “little evidence that the degree of underreporting has increased between 1969 and 1992” (Schuetze, 2002: 233).

As many economists have pointed out, consumption is a step closer than income to actual material well-being. Executive summary table 1 shows that from 1969–2004 the gains in consumption shares by all income groupings are broadly similar. In terms of after-tax incomes, the adult-equivalent consumption of the top 10% has increased by 808%, while that of the bottom 10% is up by 807%. The top 1% gains are only about 5.5% above that. To the extent that consumption is a fair reflection of real economic well-being, the standard of living of the top 10% is about 3.85 times that of the bottom 10%, on an adult-equivalent basis. That ratio has been stable for the past 35 years.

If we look at the overall distribution of adult-equivalent consumption by adult-equivalent income quintile shares, we see a similar story. The ratio of consumption for top-to-bottom quintile incomes is displayed in executive summary figure 1. Over the entire period, the ratio is flat for total household income and has a slight drift upward from 4.09 in 1969 to 4.41 in 2004 for after-tax income. Based on this, it would be difficult to make a strong case that Canada has a much more unequal distribution of living standards now than 35 years ago.

While income and consumption are primary indicators of a household’s material standard of living, there is other evidence that might help to complete the picture of the actual well-being enjoyed by the members of a household. Certain consumer products which yield a stream of services over time help define the standard of living of the household. These products, termed “facilities” by Statistics Canada, contribute to the well-being of

Executive summary table 1: Average equivalent consumption by equivalent income shares (dollars), 1969–2004

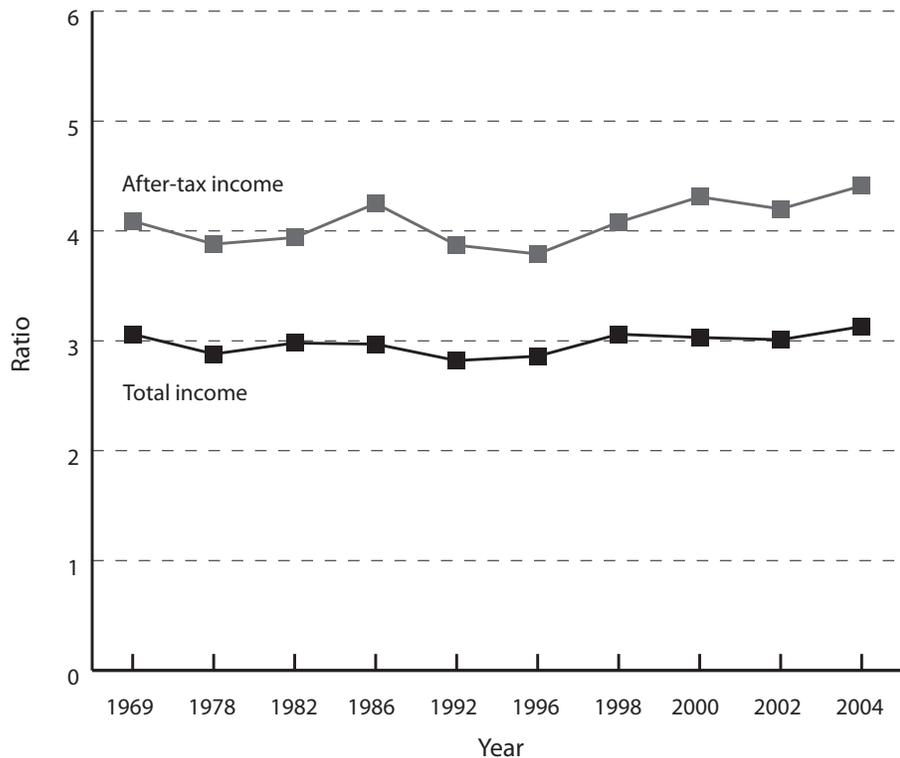
Year	Income definition	Top 1%	Top 5%	Top 10%	Top 20%	Bottom 20%	Bottom 10%
1969	Total adult-equivalent income	10,294	7,409	6,668	5,891	1,936	1,731
	Adult-equivalent after-tax income	10,039	7,360	6,662	5,895	1,918	1,719
1978	Total adult-equivalent income	19,822	15,836	14,505	13,169	4,614	3,985
	Adult-equivalent after-tax income	19,745	15,643	14,527	13,226	4,634	4,021
1982	Total adult-equivalent income	28,050	22,751	21,128	19,288	6,534	5,693
	Adult-equivalent after-tax income	27,704	22,552	21,050	19,361	6,600	5,789
1986	Total adult-equivalent income	40,055	30,290	27,449	24,774	8,401	7,501
	Adult-equivalent after-tax income	38,864	30,353	27,743	24,828	8,445	7,684
1992	Total adult-equivalent income	48,773	38,616	34,782	31,174	11,149	10,314
	Adult-equivalent after-tax income	49,732	38,733	34,853	31,356	11,196	10,350
1996	Total adult-equivalent income	66,370	42,370	37,949	33,435	11,782	10,795
	Adult-equivalent after-tax income	64,929	42,510	37,991	33,546	11,917	11,094
1998	Total adult-equivalent income	62,020	45,623	40,555	36,000	11,800	10,733
	Adult-equivalent after-tax income	58,808	45,367	40,511	36,271	12,011	10,880
2000	Total adult-equivalent income	71,411	49,213	44,189	39,372	12,782	11,351
	Adult-equivalent after-tax income	71,505	49,489	44,575	39,494	12,794	11,771
2002	Total adult-equivalent income	77,382	54,887	49,356	42,821	14,298	12,862
	Adult-equivalent after-tax income	77,426	51,224	46,664	41,324	13,264	11,964
2004	Total adult-equivalent income	85,848	59,560	53,796	47,169	14,964	13,620
	Adult-equivalent after-tax income	85,572	60,102	53,820	46,942	15,210	13,870
Gains in percent over the whole period:							
	Total adult-equivalent income	834	804	807	801	773	787
	Adult-equivalent after-tax income	852	817	808	796	793	807

Sources: Statistics Canada, Survey of Family Expenditures (FAMEX) microdata file, selected years; Statistics Canada, Survey of Household Spending (SHS) microdata file, selected years; calculations by the author.

household members in very significant ways. They may ease the drudgery of household tasks (e.g., aid in the cleaning of clothing and dishes), may save the household time and effort (e.g., a freezer may reduce the time spent shopping and allow the household to save money by purchasing larger quantities), may increase the physical comfort and personal productivity in the home (e.g., air conditioning), or may provide entertainment and information services to the members of the household.

When examining the percentage gains in facility ownership for the period 1985–2004, we see greater gains for the lowest quintiles in both sub-periods (1985–1994 and 1994–2004) and overall, and that the highest quintiles have gained the least (executive summary tables 2, 3). The relatively poor (on average, based on reported incomes) have been acquiring key household facilities at a faster pace than the relatively rich. While we would not expect any kind of convergence, this is certainly evidence against a *growing* gap in material well-being.

Executive summary figure 1: Ratio of top to bottom quintile, adult-equivalent consumption shares by total adult-equivalent household income, 1969–2004



Sources: Statistics Canada, Survey of Family Expenditures (FAMEX) microdata file, selected years; Statistics Canada, Survey of Household Spending (SHS) microdata file, selected years; calculations by the author.

Executive summary table 2: Facility ownership, percentage gains by lowest quintile

Facility	1985	1994	2004	Percent gains		
				1985–1994	1994–2004	1985–2004
Washing machine	56.34	56.28	56.04	-0.11	-0.43	-0.54
Clothes dryer	42.11	50.90	52.33	17.27	2.73	19.53
Dishwasher	13.92	20.88	23.79	33.33	12.23	41.49
Freezer	35.67	35.62	34.30	-0.14	-3.85	-3.99
Air conditioning	10.76	17.31	26.65	37.84	35.05	59.62
Cable TV	50.09	63.98	62.97	21.71	-1.60	20.45
Colour TV	80.35	96.62	97.81	16.84	1.22	17.85
VCR	7.02	59.29	78.97	88.16	24.92	91.11
Home computer		11.92	38.65		69.16	
Average				26.86	15.49	30.69

Sources: Statistics Canada, Survey of Household Spending (SHS) microdata file, selected years (2004); Statistics Canada, Household Facilities by Income (HIFE) microdata files, selected years (1985, 1994); calculations by the author.

Executive summary table 3: Facility ownership, percentage gains by top quintile

Facility	1985	1994	2004	Percent gains		
				1985–1994	1994–2004	1985–2004
Washing machine	92.14	95.33	97.38	3.35	2.11	5.38
Clothes dryer	86.99	93.41	96.58	6.87	3.28	9.93
Dishwasher	64.47	73.47	86.15	12.25	14.72	25.17
Freezer	72.36	71.19	70.11	-1.64	-1.54	-3.21
Air conditioning	26.70	39.69	56.86	32.73	30.20	53.04
Cable TV	73.73	82.76	72.14	10.91	-14.72	-2.20
Colour TV	97.09	99.44	99.66	2.36	0.22	2.58
VCR	40.16	94.99	96.62	57.72	1.69	58.44
Home computer		52.56	94.15		44.17	
Average				15.57	8.90	18.64

Sources: Statistics Canada, Survey of Household Spending (SHS) microdata file, selected years (2004); Statistics Canada, Household Facilities by Income (HIFE) microdata files, selected years (1985, 1994); calculations by the author.

Statistics Canada has three surveys examining the wealth of Canadians. They were conducted in 1984, 1999, and 2005. Executive summary tables 4, 5, and 6 present information drawn from these surveys relating to the question of inequality of household net worth. The evidence here does not support the view that wealth is distributed less equally than it was two decades ago. The Gini coefficients are almost flat over the period. The quintile distribution has also changed little since 1984. The shares of net worth by after-tax income quintile show a modest compression from 1984–1999 (i.e., lower shares at both the top and the bottom and more in the middle).

This study emphasizes the need to consider a broader array of indicators before making any definite judgements about a “growing gap.” It also emphasizes that the data, especially the data drawn from surveys and tax files based on reported income, needs to be examined. There are a number of concerns about the reliability of such data and this will clearly have an effect on the reliability of inequality results using this data.

Executive summary table 4: Distribution of wealth in Canada, Gini coefficients (net worth (NW), all households)

	1984	1999a	1999b	2005
Incl. negative NW	0.6868	0.6790	0.6719	0.6861*
Excl. negative NW	0.6797	0.6748	0.6676	0.6818*

Sources: Statistics Canada, Survey of Financial Security (SFS) microdata file, selected years; calculations by the author.

*2005 values courtesy of Statistics Canada, Financial Security Division, June/July 2007.

Note that raw net-worth data includes negative values. Statistics Canada provided Gini coefficients both including and excluding these negative values.

Executive summary table 5: Distribution of wealth in Canada, shares of net worth (percentage), all households, by quintile*

Quintile	1984	1999a	1999b	2005
Top	68.56	66.32	68.5	69.2
Fourth	19.68	21.11	20.1	20.2
Middle	9.30	9.48	8.8	8.4
Second	2.37	2.89	2.6	2.3
Bottom	0.09	0.20	0.1	0.1

Sources: Statistics Canada, Survey of Financial Security (SFS) microdata file, selected years (1984, 1999a); Statistics Canada, 2005: 9 (1999b, 2005).

*This table excludes negative values, converting them to zero following the convention of the Survey of Financial Security (SFS).

Executive summary table 6: Distribution of wealth in Canada, shares of net worth (percentage) by household after-tax income quintile

Quintile	1984	1999a	1999b	2005
Top	45.11	44.32	43.87	NA
Fourth	20.65	22.75	22.88	NA
Middle	16.11	17.42	16.80	NA
Second	12.08	10.92	11.00	NA
Bottom	6.05	5.38	5.45	NA

Sources: Statistics Canada, Survey of Financial Security (SFS) microdata file, selected years*; calculations by the author.

*The 1999 microdata file has 114 records (out of 15,900) with after-tax income set to 999,999,999. SFS officials decided to do that to protect the confidentiality of those households, almost all of which are very high net worth. The results in this table include these values. The quintile values with these very high after-tax incomes excluded are displayed at the far right of this table.

Introduction

Recent papers on income inequality appear to confirm the results of earlier studies showing that there is a growing income gap in Canada. Studies by Yalnizian (2007a) on the after-tax incomes of families with children and Heisz (2007) on household after-tax incomes present evidence of rising income inequality. Earlier, Frenette, Green, and Milligan (2006); Frenette, Green, and Picot (2004); and Heisz, Jackson, and Picot (2001) all found empirical evidence of rising inequality of after-tax family incomes, especially after the mid-1990s. These results, however, stand in contrast to studies done earlier than 2001. Beach and Slotsve (1996), Smeeding and Grodner (2000), and Wolfson and Murphy (2000) found no evidence of rising disposable income inequality—at least up to the mid-to-late 1990s—in Canada. So, to the extent that there is a growing gap, it appears to be a newer phenomenon.

These latest results have received considerable publicity in the major Canadian media including the *Toronto Star*, *Macleans*' magazine, and the main television networks.[1] However, this attention is not new. Inequality and the gap between the rich and the poor have been prominent topics in the news for many years. Public attitudes about inequality, arguably influenced by media attention, are such that a significant majority of Canadians believe that the gap between the rich and the poor is growing.[2]

The evidence of growing income inequality is not limited to Canada. Recent studies have presented substantial empirical evidence of a growing gap in the United States (e.g., Saez and Piketty, 2003) and in Europe (e.g., Kenworthy and Pontusson, 2005). The Saez-Piketty evidence for the US, based on tax-filer data, however, has been criticized as being highly misleading. Alan Reynolds (2007) has argued that a number of tax changes in the US have resulted in a shifting of income into reportable higher-end incomes. As well, the exclusion of transfer payments (an important source of income at the low end) and evidence of growing unreported income tend to understate

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- 1 For example, recent stories in the CBC (2007, May 11) "Canada's Rich Get Richer, Poor Get Poorer, Study Finds," *Toronto Star* (2007, May 12) "Power Couples' Fuel Income Gap Study; Top-Earning Duos Are Helping Lift Rich High Above Poor: StatsCan," and *Macleans*' magazine "Don't Hate The Rich" (Kirby, 2007, June 18) are just a small number of the many pieces that have appeared nationally on the topic. As well, Canada's highest circulation daily newspaper, the *Toronto Star*, ran a series of articles about poverty and the growing gap between rich and poor in Canada during the first quarter of 2007.
 - 2 A recent Environics poll, for example, reveals that 76% of Canadians believe that the gap between the rich and poor in Canada has grown over the past 10 years. In fact, "that number is up from 2003 when 70% thought the gap had grown" (Environics, 2006).

bottom-end income. When these factors are accounted for, Reynolds argues that “there is no clear evidence of a significant and sustained increase in the inequality of US incomes, wages, consumption, or wealth since the late 1980s” (Reynolds, 2007: 22). However, using Canadian tax-filer data, Saez and Veall (2004) find that the top share (i.e., 1% and 5%) of gross income has surged in recent years. The authors argue that this finding closely parallels the US experience which, in turn, casts doubt on tax-induced explanations for the surge in both countries.

This paper has two purposes. First and principally it is a critical examination of the evidence for a “growing gap” in Canada. The paper will attempt to look at inequality in a somewhat broader context than is customary. Evidence drawn largely from household-spending data files as well as from household facility-ownership data and household net-worth data can shed additional light on the trend in inequality for Canada. Second, the paper will examine the issue of data reliability in the context of the measurement of inequality.

What is inequality and why should we be concerned about it?

In their recent book *Dimensions of Inequality in Canada*, Green and Kesselman (2006) discuss at some length why researchers should be interested in the study of inequality. Their argument, largely egalitarian in nature, is that a more equal society is a more just society and that measurement of the level and trend in inequality is critical as a guide to policies to create a more just society. However, regardless of one’s perspective on inequality and independent of the usefulness of such information as a guide to policy, presumably we would want to know about the level and trend in the distribution of all aspects of *human well-being* for its own sake.

We need not look very hard to notice fairly significant differences between people. There are the obvious visible differences (e.g., height, weight, gender, race, etc.) and the less obvious but quickly discernible distinctions between us such as athletic ability, physical strength, intelligence, and the ability to communicate. When looking more deeply we discover other kinds of differences that manifest themselves both at work and at play. Traits, such as personal initiative, ability to control emotions, organizational ability, leadership, and a variety of social skills do matter in almost any setting and are different between people. The sum of all the visible and not-so-visible differences between people is a starting point in explaining inequality.

Clearly, the differences between people need not necessarily result in different outcomes in terms of incomes and living standards. That depends on the social, economic, and political structures and rules that we have in place in society. An egalitarian society is one in which, despite differences

between people, resources (e.g., wealth, incomes, etc.) will be shared more or less equally. A prerequisite for this to work is a significant state actively monitoring and intervening to ensure broadly equal outcomes. A free-market society, in contrast, would be one in which people would largely determine their own outcomes based on their personal skills and traits in markets. The state would have little or no role in monitoring or intervening in the voluntary arrangements made by citizens. In this case, we would not be surprised to see significant inequality of outcomes. Wealth and living standards are likely to vary widely between people.

The world we live in is a mixed system of both market activity and government intervention. While the degree of the mix varies between different nations, it is the case that there are very rich and very poor people in every nation. People, by and large, determine their own fate, with external factors and luck playing a modest or quite substantial role, depending on the society.

Limitations of the data

The measurement of inequality uses microdata files constructed by Statistics Canada. These databases are drawn either from surveys (e.g., annual surveys such as the Survey of Consumer Finances; the Survey of Household Spending; and the census, which is conducted every five years) or from tax-filer information. Recently, the census has become a mix of survey and tax-filer data as respondents are asked to allow Statistics Canada to use their tax file for all income information. According to Frenette et al., more than 80% of filers do grant such permission (2004: 7).

Survey databases are subject to some editing to ensure consistency. Some records are masked or suppressed to protect confidentiality. Weights are applied to each record as a way to represent the entire Canadian population. The internal data files, used only by Statistics Canada to generate published tables and charts, differ somewhat from the public-use data files that researchers are permitted to use, largely to protect confidentiality.

Recently, weights used in survey databases (drawn from the Labour Force Survey) have come under increased scrutiny. This has been prompted by Statistics Canada research which indicated that “household income surveys have tended to under-represent people with very low levels of earnings or no earnings, as well as people with very high earnings, while over-representing people who are more in the middle of the earnings distribution” (Lathe, 2005: 6). In other words, the income surveys show an income distribution which is more compressed and less unequal than might be true. To correct this problem, Statistics Canada decided to revise the weights on existing data files to better reflect known benchmark characteristics. The

T4 administrative file from the Canada Revenue Agency (CRA) was determined to be the best benchmark available with which to adjust the weights. Revisions to the weights on the Survey of Consumer Finances (SCF) and the Survey of Labour Income and Dynamics (SLID) are now complete going back to 1980. As expected, measures of income inequality increased somewhat, showing more for market income and less for after-tax income.

Revisions of this sort are appropriate as new information is revealed which might help improve accuracy. However, there seems to be insufficient attention given to the actual data itself, all of which is based on reported incomes. The survey data is drawn from questionnaires that respondents complete. They are asked to report on such things as basic household demographics and detailed income (and in some surveys, spending) information. Not everyone will agree to complete the survey and not everyone who completes the survey will accurately reveal their income on such surveys. With tax-filer data, which also informs the majority of census data on incomes, we again have to acknowledge that not all households will report accurately and, additionally, not all households complete a tax return. T4 files have been shown to be accurate in revealing the total of wages and salaries but not other types of income.

The April 1999 report of the Auditor General of Canada pointed out that the underground economy, which it defines as any “legal transactions in goods and services that are ‘hidden,’ resulting in the evasion of taxes,” (Canada, Office of the Auditor General, 1999: 2–7) amounted to about 4.5% of GDP. It cost both levels of government (i.e., provincial and federal) about \$12 billion annually in lost tax revenue. The report specifically mentions the repair/renovation trade, auto repairs, and the hospitality industry as examples of hidden incomes. Illegal activities are not included in this total. Activities such as gambling, drug dealing, fencing of property, and the various facets of the sex industry also earn incomes for households, much of which is unlikely to be reported on any survey or tax return. In addition, the report suggests that the hidden income problem is likely to grow with the increase in self-employment and expansion of electronic commerce. Based on this report, by 2004, unreported income could have been in the range of \$50 billion or more.

Using a latent variable approach, Giles and Tedds (2002) find the size of the Canadian underground economy to be 15%–16% of total GDP. They also take issue with Statistics Canada estimates of the total underground economy (i.e., 5%–6% of GDP, as determined in the 1990s) as being too narrow in their coverage. Schuetze (2002) uses an expenditure-based approach to examine the question of underreporting of income by the self-employed and the implications for income tax revenues. Based on a sample of full-time, full-year workers who report at least 30% of household income from self-employment, he finds that the rate of non-compliance (i.e., underreporting) is somewhere in the range of 12%–24%. He also finds “little evidence that the

degree of underreporting has increased between 1969 and 1992” (Schuetze, 2002: 233). Tedds (2005), using a non-parametric expenditure-based estimation of income underreporting, finds that the degree of underreporting in Canada has increased between the 1980s and 1990s from \$2,463 to \$3,016 in real terms, but she indicates that the rise is not statistically significant. The author urges that further work be done in investigating the issue of underreporting.

In addition to the hidden income generated from both legal and illegal activities, there is apparently an additional issue with government transfers. While the study is somewhat dated, Wolfson and Evans point out that the Survey of Consumer Finances, which at the time was the basic source of income distribution data in Canada, “suffers from considerable underreporting of certain types of income” (1990: 26). They specifically single out unemployment insurance, about 20% of which is not reported, and social assistance, about 40% of which was not reported. Given the fact that these are important sources of income for those at the lower end of the distribution, their omission from income is potentially significant for the measurement of inequality and poverty.

This discussion has been limited to hidden income, the underground economy, and the possible impact on the misrepresentation of reported income. The underground economy includes both legal activities, the income from which goes underreported or unreported, and illegal activities (e.g., gambling, theft, money laundering, extortion, prostitution, drug deals, etc.), the income from which goes underreported or unreported. However, there are other concerns about the quality of the reported income data. There might be specific exclusions of certain types of income that might be more relevant to the higher end of the income distribution (e.g., employment perks, off-shore and tax-sheltered income, personal expense reimbursements, etc.). If the goal is to find an indicator (e.g., income) that represents the level of individual or household welfare, then any significant omission which impacts on that welfare will reduce the reliability of inequality measurement. This is particularly true if these omissions and/or the level of underreporting of income change over time, making inter-temporal comparisons problematic.

While all of this literature suggests that there are good reasons for concern about the reliability of the income data that researchers use to study inequality, regrettably there does not appear to be a study which compares the size of the underground economy or of unreported income over the past several decades using the same methodology. Further, there does not appear to be any reliable study estimating the “distribution” of hidden income and its likely impact on inequality of reported incomes. Therefore, we simply do not know whether the unreported-income problem leads to overestimates or underestimates of income inequality. Yet, it is not a trivial matter for the

determination of income inequality. Until the data reliability issue is resolved, it will be difficult for anyone to make any definite claims about the “growing gap.”

It is clearly beyond the capacity of individual researchers and even research teams to resolve the data limitation issues that result from hidden income. It is primarily the responsibility of official statistical-gathering agencies to ensure that the data they produce is accurate. These agencies are in the best position to evaluate the quality of the data and make adjustments where appropriate.

Unfortunately, there is little mention of the problem of unreported income in any of the studies dealing with the measurement of income inequality in Canada cited above. Indeed, there is sparse discussion of data limitations in many such studies.^[3] Readers might get the impression that the authors regard the data as “facts” rather than information which may have certain intrinsic weaknesses. This concern is particularly noteworthy in the light of the report of the Auditor General, in which Statistics Canada was cautioned that “users are not always appropriately informed of the strengths and limitations of statistics” (Canada, Office of the Auditor General, 1999: Ch. 3, p. 3–5).

In addition to concerns about unreported income and its potential impact on the measurement of inequality, there may be an issue regarding the discontinuity of the data files used in this study. The Survey of Family Expenditures (FAMEX) was conducted occasionally between 1969 and 1996. After 1996, its replacement, the Survey of Household Spending (SHS), has been conducted annually. This study employs the microdata files from both surveys for selected years in the recognition that they are similar but not identical surveys and that they may not, therefore, be fully comparable. Other researchers, including Crossley and Pendkur (2006), have also used FAMEX and SHS files as a single data set.

Additional concerns about the data will be discussed further on, as needed.

3 The studies lead-authored by Frenette are a partial exception. These studies look in some detail at the advantages and disadvantages of certain databases, especially the census. There is a brief discussion of the sharp decline in bottom-end incomes after 1992. Frenette, Green, and Picot (2004) do allow that “it is, of course, likely that income from some sources is not reported in tax data. It is also conceivable that people at the bottom of the income distribution under-report to a greater extent.” However, no concern is expressed that inequality measurement might be adversely impacted by unreported income and there is no analysis of what that impact might be. Also, in terms of limitations, Heisz (2007) does refer briefly to the issue of the revised weights and the impact on measured inequality but not the quality of the data itself.

Total income and after-tax income

Any examination of economic inequality should look at more than just income. Presumably, we want to know how people are doing in terms of their economic well-being and that would suggest consideration of factors that help identify the household's overall standard of living. We will miss part of the story if we focus only on income. Income, however, is a useful starting point, despite its limitations.

Household income, rather than individual income, is the operative indicator. Households include both families and unattached individuals. In households with more than one person, there are economies of scale in living that are important to an understanding of the household's living standard. The total income of the household would include all of the components of income, principally market earnings (e.g., wages, salaries, commissions, interest, rent, etc.), government transfers, and other income received by all members of the household. Total income is often regarded as a marker of a household's position in the socioeconomic scheme of things, perhaps more from the perspective of the household itself than for outsiders. It is the first and easiest point of comparison that people have. After-tax income, commonly referred to as disposable income, is often preferred by students of inequality because it represents the available purchasing power or "budget constraint" of the household. Both measures are of interest.

To begin, it is useful to look at the income profile to get a clear picture of how reported incomes are distributed. As an example, we take the total incomes in the 2004 Survey of Household Spending and rank them from top to bottom. At the very top, we find some 1,066 households with a total income of \$3.7 million.^[4] Just below that, we find an additional 3,204 households with incomes between \$1 million and \$2.1 million. As we move down the distribution, we see many households with still very high incomes: 261,000 households with total incomes between \$200,000 and \$999,000, and another 1,832,687 households with total incomes between \$100,000 and \$200,000. The overall average reported total household income in 2004, according to this particular data file, was \$63,393. Moving down from the average, we find the median income at \$51,000. In most income distributions, the median (or middle) value is below the mean because the mean is more influenced by very high incomes. A fair bit below the median income, we find households near the bottom of the income distribution. In 2004, there were 1.95 million households (or 15.9% of all households) with incomes below \$20,000; 523,000 households (or 4.2%) with incomes below \$10,000; and 183,000 households (or 1.5%) with incomes below \$5,000. This part of the

4 All of the values in this paragraph are drawn from the Survey of Household Spending (SHS) 2004 microdata file (Statistics Canada, selected years). All calculations by author.

distribution should be most intriguing to social scientists because we know that families, let alone individuals, cannot live on \$5,000 or less. However, even further down the distribution of total reported income, we find 41,000 households with zero income and almost 2,000 households with negative income.[5] With after-tax income for 2004, the values range from a high of \$2.5 million to a low income of \$-382,000. The mean and median are, respectively, \$50,743 and \$43,000.

A question arises about the possible exclusion of non-positive values in calculating inequality measures. Heisz (2007), for example, follows the convention developed by the Luxembourg Income Study (LIS) by first dropping “observations with zero after-tax incomes” making the point that “this convention is based on the assumption that observations with zero after-tax income are erroneous” (Heisz, 2007: 15). There is no further explanation as to why it would be an obvious assumption to make or why very low incomes (e.g., less than a few thousand dollars) might not be equally erroneous. Is it because all households have to have at least some after-tax income (e.g., from transfers), otherwise how could they survive? Of course, it is possible for people to live by liquidating assets or by receiving gifts or loans from others, none of which would be counted as income. With the existing data files it is impossible to tell how many households are in that situation.

Heisz (2007) also points out that, following the LIS protocols, data in his study is both bottom- and top-coded (Heisz, 2007: 15). This simply means that no observations can go below a certain value and none above a certain value. The bottom code is set at 1% of the mean and the top code is set at 10 times the median. In terms of the after-tax incomes drawn from the 2004 Survey of Household Spending, if these procedures were followed, the bottom allowable value would be \$507 instead of the actual bottom value of \$-382,000, while the top allowable value would be \$430,000 instead of the actual \$2.5 million. While it might seem that these are significant adjustments, they have very little impact on the resulting inequality measures.[6] Heisz makes the point that these procedures “improve the transparency of the edits and facilitate international comparisons” (Heisz, 2007: 15).

Finally, there is a question about the exclusion of negative income values. This, of course, would be redundant if one bottom-codes. Heisz points out that “in many studies, households with negative incomes are also dropped since they cause problems for inequality indices based on a log-transformation of income” (Heisz, 2007: 15).

5 Negative incomes are due, invariably, to small business losses claimed on personal tax returns.

6 For example, the 2004 after-tax Gini coefficient without top or bottom coding was 0.3739. With top and bottom coding, it was 0.3728. This experiment was done using reported after-tax income and not on adult-equivalent incomes.

This study uses all of the actual data in the microfiles and neither excludes nor codes any data.

Inequality in Canada

Income

Largely using Statistics Canada microdata expenditure files (i.e., FAMEX and the SHS) for selected years between 1969 and 2004, this study examines inequality in Canada over a 35-year period. As discussed earlier, other evidence suggests, broadly, that income inequality was relatively stable until about the early-to-mid 1990s and increased after that. Table 1, using actual reported total and after-tax income as well as consumption levels, supports these earlier results.

Table 1: Tracking inequality in Canada, household income and consumption, 1969–2004

Year	File	Gini			Quintile ratio			Decile ratio		
		Income before tax	Income after tax	Consump.	Income before tax	Income after tax	Consump.	Income before tax	Income after tax	Consump.
1969	FAMEX	0.3481	0.3216	0.2971	7.57	6.39	5.25	13.68	11.16	8.42
1978	FAMEX	0.3305	0.3043	0.2908	6.64	5.50	4.99	10.94	8.87	7.72
1982	FAMEX	0.3466	0.3169	0.2951	7.07	5.75	5.05	11.58	9.10	7.72
1986	FAMEX	0.3696	0.3370	0.3147	7.62	6.16	5.48	12.31	9.67	8.35
1992	FAMEX	0.3694	0.3258	0.3102	7.61	6.04	5.13	12.46	9.56	7.59
1996	FAMEX	0.3963	0.3527	0.3190	8.47	6.79	5.23	14.35	11.37	7.98
1998	SHS	0.3873	0.3606	0.3244	9.32	7.33	5.73	13.62	12.75	8.92
2000	SHS	0.4159	0.3777	0.3328	9.85	7.77	5.93	18.17	14.06	9.30
2002	SHS	0.4067	0.3659	0.3238	9.43	7.63	6.02	17.04	13.56	9.47
2004	SHS	0.4016	0.3739	0.3492	10.01	8.14	6.11	18.77	14.88	9.72

Sources: Statistics Canada, Survey of Family Expenditures (FAMEX) microdata file, selected years; Statistics Canada, Survey of Household Spending (SHS) microdata file, selected years; calculations by the author.

The inequality measures employed here—the Gini coefficient and the quintile and decile ratios (i.e., top share divided by bottom share)—have been and continue to be the most common in use in studies of this kind. The data shows that inequality of total before-tax income, after-tax income, and consumption has drifted up over time. Focusing on after-tax income, the Gini was fairly flat until 1992 and rose by about 8% in 1996. It rose another 6% between 1996 and 2004. Over the entire period, the Gini coefficient on after-tax household incomes increased by 16%. Inequality of consumption over the same period, as measured by the Gini coefficient, went up by 18%. A broadly similar story is revealed by looking at the quintile and decile ratios. In some cases, though, the more substantial jump in inequality appears to occur in 1998 or 2000.

It is the case that higher-income households are larger (i.e., more persons) than smaller-income households. In 2004, for example, top after-tax quintile households had an average size of 3.51 persons, whereas the bottom quintile average was only 1.47.^[7] This means that the degree of inequality may be overstated somewhat because the income of better-off households is shared between more people. As well, increasing inequality that is due solely to rising incomes of larger families may misrepresent what is truly happening. Thus, it is now common in inequality studies to adjust the data for household size prior to calculating inequality. Following the LIS protocols, Heisz (2007), and a host of others, this study uses the square root of family size to determine “adult-equivalent” incomes.^[8]

Using this transformation, table 2 displays the same inequality measures over the same time period, only using adult-equivalent incomes and consumption. As a result, looking at the Gini coefficients, both the level and the change of measured inequality are smaller. While it is apparent that adult-equivalency inequality has increased over the period, the increase is considerably less than when household size is not considered. Overall, the increase in the inequality of adult-equivalent after-tax income is 9% over the 35-year period. The most significant jump does seem to occur in the mid-1990s, consistent with most of the research. For adult-equivalent consumption, the overall increase in the Gini is also 9%. So, taking account of household size reduces the rise in inequality by about half. The quintile and decile ratios

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- 7 Calculations by the author on the Survey of Household Spending (SHS) 2004 microdata file (Statistics Canada, selected years).
 - 8 Income is divided by the square root of household size. The resulting observations represent the share of income supposedly flowing to each person. The square root rule is one of the most common equivalency scales in use. It is designed to account for economies of scale in living together (e.g., four people do not need four times the income of one person to have the same living standard as that one person).

Table 2: Tracking inequality in Canada, household income and consumption with adult equivalencies, 1969–2004

Year	File	Gini			Quintile ratio			Decile ratio		
		Income before tax	Income after tax	Consump.	Income before tax	Income after tax	Consump.	Income before tax	Income after tax	Consump.
1969	FAMEX	0.3317	0.3009	0.2662	6.03	5.01	3.99	9.62	7.77	5.74
1978	FAMEX	0.3071	0.2765	0.2543	5.28	4.34	3.81	7.86	6.32	5.36
1982	FAMEX	0.3207	0.2880	0.2594	5.62	4.52	3.86	8.43	6.60	5.42
1986	FAMEX	0.3266	0.2927	0.2657	5.74	4.59	3.97	8.76	6.83	5.56
1992	FAMEX	0.3385	0.2894	0.2627	5.90	4.61	3.84	9.03	6.88	5.31
1996	FAMEX	0.3507	0.3160	0.2718	6.55	5.15	3.89	10.69	8.33	5.51
1998	SHS	0.3688	0.3227	0.2780	7.15	5.53	4.24	12.39	9.37	6.24
2000	SHS	0.3695	0.3262	0.2853	7.37	5.70	4.35	12.94	9.75	6.43
2002	SHS	0.3593	0.3192	0.2891	6.96	5.52	4.38	12.04	9.41	6.45
2004	SHS	0.3650	0.3285	0.2910	7.41	5.91	4.45	13.31	10.43	6.61

Sources: Statistics Canada, Survey of Family Expenditures (FAMEX) microdata file, selected years; Statistics Canada, Survey of Household Spending (SHS) microdata file, selected years; calculations by the author.

follow the same pattern. They show lower levels of inequality compared with unadjusted income and consumption, and the rise in inequality is smaller.

These outcomes match, pretty closely, the results of other studies of adult-equivalent after-tax income inequality over time in Canada. Frenette, Green, and Picot (2004), using SCF/SLID data, found that between 1980 and 2000 the Gini coefficient on adult-equivalent after-tax (AAAT) incomes rose by almost 6%. Frenette, Green, and Milligan (2006), using census data, found that the AAAT Gini over the same period rose by about 4%. Heisz (2007), using SCF/SLID survey data for a longer period (1976–2004), found that the AAAT Gini coefficient in 1976 was .2965 and then .3151 in 2004, an increase of about 6%. This study, using FAMEX/SHS data, finds that the AAAT Gini rose from .3009 in 1969 to .3285 in 2004, an increase of about 9%. Yalnizyan (2007a) does not employ Gini measures but does use the decile ratio on unadjusted after-tax incomes of families with children. Her findings of a rise in the decile ratio from about 8 in 1976 to about 10 in 2004 match the results

here fairly well—in this study, the decile ratio on AAAT household incomes rose from about 7.8 in 1969 to about 10.4 in 2004.

Clearly, there has been some increase in the inequality of reported adult-equivalent incomes, both pre- and post-tax, and consumption. This does not tell us, however, what part of the distribution might be driving the increase in measured inequality. This is a very interesting question. Do we only have increases in the top shares leading to more inequality? Or do we have differential increases in top (more) and bottom (less)? Are the rich getting richer and the poor poorer (or at least no better off), or are both relative components of the distribution improving at differential rates?

To help answer this question, it is instructive to look at average actual incomes, both total and after-tax, for specific top and bottom groupings. Table 3 displays the average adult-equivalent total and after-tax incomes for the top 1%, top 5%, top 10%, top 20%, bottom 20%, and bottom 10% of the distributions in each of the years represented in the study. The income values are not adjusted for inflation because the interest is only in a comparison of the overall percentage gains by each group.[9]

The gains in the top shares have been greater than the gains at the bottom. In terms of adult-equivalent after-tax income, the top 1% have 1,051% more than was the case 35 years ago and the bottom 20% have 727% more. If we look at the top and bottom 10%, both gained over the period but the top group rose 17% more.[10]

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- 9 Taking a “whole period” perspective misses some of the interesting changes than happened over part of the period. For example, looking at reported incomes, it appears that the bottom groupings (i.e., 10% and 20%) have lost ground in real dollar terms since the early 1990s.
 - 10 In the calculation of the average incomes (or shares, as we will see next), one encounters an issue relating to the “cut-points” or thresholds that divide one grouping from the other. The problem is that, in a number of cases where several households have the same income, the threshold value will straddle the two adjoining groups with some of the values in one group and some in the other. It is not clear which records should go into which groups, so some convention is required to handle this. In this study, for all such calculations, “less than or equal to” the relevant threshold value is used on the bottom end of any search and “strictly greater than” is used on the top end. This clearly introduces some amount of error in some of the calculations. After some experimentation, it was judged that the errors are relatively small.

Table 3: Average adult-equivalent incomes (dollars), 1969–2004

Year	Income definition	Top 1%	Top 5%	Top 10%	Top 20%	Bottom 20%	Bottom 10%
1969	Total adult-equivalent income	20,919	12,752	10,802	8,974	1,509	1,153
	Adult-equivalent after-tax income	15,727	10,214	8,806	7,437	1,504	1,160
1978	Total adult-equivalent income	41,046	29,194	25,534	21,774	4,177	3,320
	Adult-equivalent after-tax income	31,555	22,793	20,062	17,310	4,038	3,243
1982	Total adult-equivalent income	66,359	46,351	40,405	34,250	6,178	4,896
	Adult-equivalent after-tax income	51,030	35,750	21,482	27,040	6,063	4,864
1986	Total adult-equivalent income	97,948	60,499	51,147	42,584	7,525	6,011
	Adult-equivalent after-tax income	73,485	45,609	38,986	32,908	7,269	5,670
1992	Total adult-equivalent income	122,495	79,119	67,898	56,731	9,765	7,702
	Adult-equivalent after-tax income	83,799	57,009	49,650	42,262	9,297	7,366
1996	Total adult-equivalent income	201,705	101,079	82,436	66,617	10,323	7,942
	Adult-equivalent after-tax income	132,492	71,916	59,555	49,197	9,675	7,378
1998	Total adult-equivalent income	177,297	99,907	82,232	67,249	9,519	6,911
	Adult-equivalent after-tax income	119,575	70,599	59,494	49,536	9,086	6,576
2000	Total adult-equivalent income	235,797	115,012	93,026	74,625	10,385	7,474
	Adult-equivalent after-tax income	156,150	79,971	66,565	54,674	9,738	7,022
2002	Total adult-equivalent income	222,423	116,890	96,738	77,379	11,274	8,222
	Adult-equivalent after-tax income	142,767	82,236	69,351	57,798	10,610	7,566
2004	Total adult-equivalent income	245,283	130,397	105,191	85,410	11,637	8,347
	Adult-equivalent after-tax income	165,355	92,750	77,620	63,699	10,934	7,702

**Gains in percent
over the whole period:**

Total adult-equivalent income	1,173	1,023	974	952	771	724
Adult-equivalent after-tax income	1,051	908	881	857	727	664

Sources: Statistics Canada, Survey of Family Expenditures (FAMEX) microdata file, selected years; Statistics Canada, Survey of Household Spending (SHS) microdata file, selected years; calculations by the author.

Consumption

Incomes, even if they are accurately reported, do not represent the full story when it comes to tracking economic well-being. It can be argued that consumption is a more reliable indicator of the actual standard of living of households.^[11] As many economists have pointed out, consumption is a step closer than income to actual material well-being. While household consumption is clearly based on disposable income, it is also likely to be smoother than income over time. Households with variable incomes will, according to most life-cycle theories, use capital markets to ensure a more stable consumption pattern. It is this pattern of consumption that may be regarded as a better reflection of household well-being and which therefore makes a better basis for the judgment of the inequality of material welfare.

Pendakur (2001) has argued that relative prices can be important in the measurement of inequality. If, for example, food and shelter prices are rising relative to other household commodities and if food and shelter are much larger components of the budgets of low-income households, then ignoring this relative price impact can potentially understate the degree of material inequality. Pendakur also points out that relative prices can be relevant to the setting of equivalence scales for much the same reason, namely changes in relative prices that have distributional impacts. He finds that, once such adjustments are made and inequality re-estimated, the time pattern of Canadian consumption inequality actually reverses over the period 1969–1982.

This analysis raises additional concerns about the variability of measured inequality. Conclusions about whether there is a growing gap appear to be quite sensitive to relative price adjustments, at least given the “flexible” deflators developed by Pendakur for Canada during the period under study. However, if relative price adjustments are important, such adjustments have not been utilized in later studies. In the subsequent Canadian research cited above, none of the studies make this adjustment. As well, the working papers coming out of the LIS project, arguably the leading research body on the study of inequality, do not use relative price adjustments in their analyses.

Table 4 displays the adult-equivalent consumption for the same income groupings as table 3.

Here, the gains over the period by all of the income groupings are broadly similar. In terms of after-tax incomes, the adult-equivalent consumption of the top 10% has increased by 808%, while that of the bottom 10% is up by 807%. The top 1% gains are only about 5.5% above that. To the extent that

11 It is possible that consumption can be underreported as well. There may be less incentive from a tax-avoidance perspective, though. This author is not aware of studies looking at differential underreporting between income and consumption.

Table 4: Average equivalent consumption by equivalent income shares (dollars), 1969–2004

Year	Income definition	Top 1%	Top 5%	Top 10%	Top 20%	Bottom 20%	Bottom 10%
1969	Total adult-equivalent income	10,294	7,409	6,668	5,891	1,936	1,731
	Adult-equivalent after-tax income	10,039	7,360	6,662	5,895	1,918	1,719
1978	Total adult-equivalent income	19,822	15,836	14,505	13,169	4,614	3,985
	Adult-equivalent after-tax income	19,745	15,643	14,527	13,226	4,634	4,021
1982	Total adult-equivalent income	28,050	22,751	21,128	19,288	6,534	5,693
	Adult-equivalent after-tax income	27,704	22,552	21,050	19,361	6,600	5,789
1986	Total adult-equivalent income	40,055	30,290	27,449	24,774	8,401	7,501
	Adult-equivalent after-tax income	38,864	30,353	27,743	24,828	8,445	7,684
1992	Total adult-equivalent income	48,773	38,616	34,782	31,174	11,149	10,314
	Adult-equivalent after-tax income	49,732	38,733	34,853	31,356	11,196	10,350
1996	Total adult-equivalent income	66,370	42,370	37,949	33,435	11,782	10,795
	Adult-equivalent after-tax income	64,929	42,510	37,991	33,546	11,917	11,094
1998	Total adult-equivalent income	62,020	45,623	40,555	36,000	11,800	10,733
	Adult-equivalent after-tax income	58,808	45,367	40,511	36,271	12,011	10,880
2000	Total adult-equivalent income	71,411	49,213	44,189	39,372	12,782	11,351
	Adult-equivalent after-tax income	71,505	49,489	44,575	39,494	12,794	11,771
2002	Total adult-equivalent income	77,382	54,887	49,356	42,821	14,298	12,862
	Adult-equivalent after-tax income	77,426	51,224	46,664	41,324	13,264	11,964
2004	Total adult-equivalent income	85,848	59,560	53,796	47,169	14,964	13,620
	Adult-equivalent after-tax income	85,572	60,102	53,820	46,942	15,210	13,870

**Gains in percent
over the whole period:**

Total adult-equivalent income	834	804	807	801	773	787
Adult-equivalent after-tax income	852	817	808	796	793	807

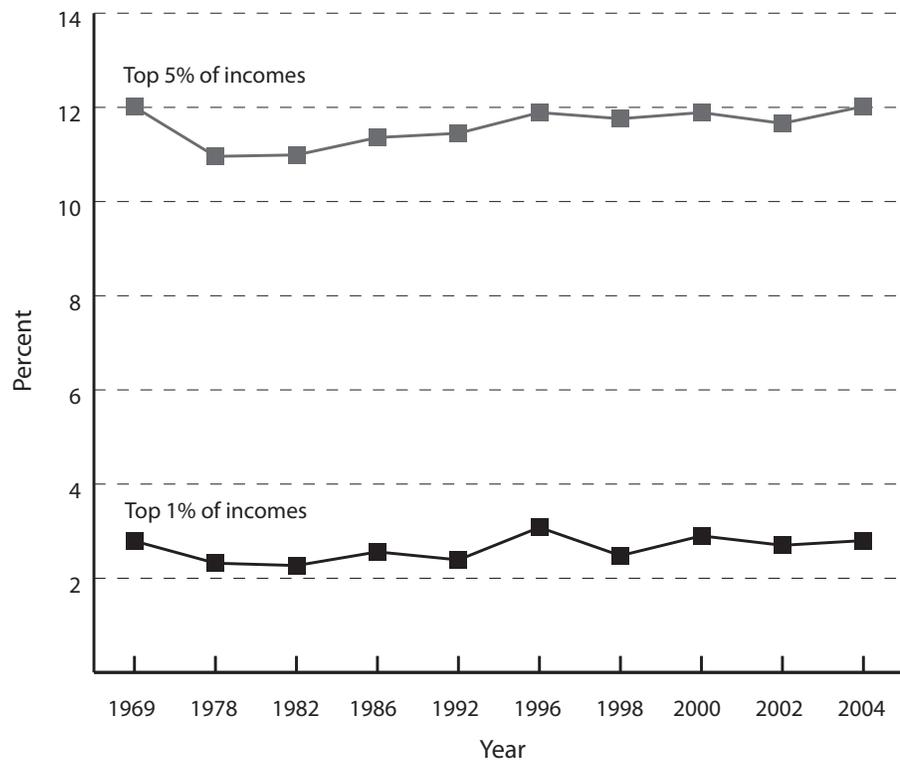
Sources: Statistics Canada, Survey of Family Expenditures (FAMEX) microdata file, selected years; Statistics Canada, Survey of Household Spending (SHS) microdata file, selected years; calculations by the author.

consumption is a fair reflection of real economic well-being, the standard of living of the top 10% is about 3.85 times that of the bottom 10%, both on average and on an adult-equivalent basis. That ratio has been stable for the past 35 years.

The shares of consumption by the top groupings have not changed appreciably over the entire 35-year period. Figure 1 displays the adult-equivalent consumption shares of the top 1% and top 5% of adult-equivalent total income. Figure 2 displays the adult-equivalent consumption shares of the top 1% and top 5% of adult-equivalent after-tax income. It would be hard to make a case that the consumption share of top-income groups has grown over time, excepting a very modest drift up in the share for the top 5%, after tax.

If we look at the overall distribution of adult-equivalent consumption by adult-equivalent income quintile shares, we see a similar story. The ratio of consumption for top-to-bottom quintile incomes is displayed in figure 3. Over the entire period, the ratio is flat for total household income and has a slight drift upward from 4.09 in 1969 to 4.41 in 2004 for after-tax income. Based on this evidence, it would be difficult to make a strong case that Canada has a much more unequal distribution of living standards now than 35 years ago.

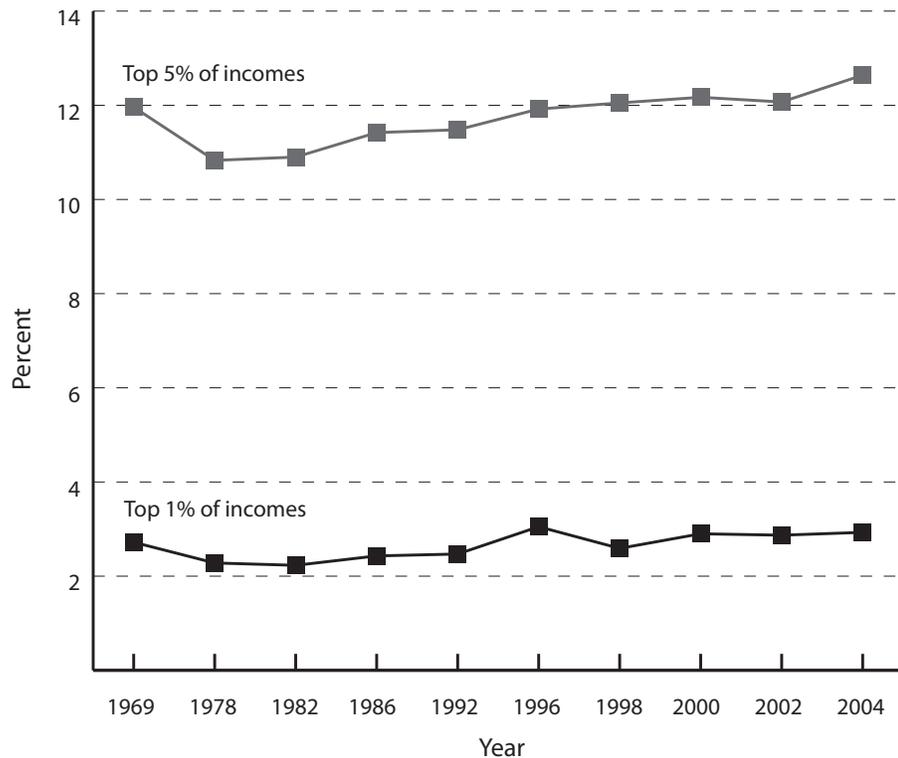
Figure 1: Shares of consumption by adult-equivalent total income, 1969–2004



Sources: Statistics Canada, Survey of Family Expenditures (FAMEX) microdata file, selected years; Statistics Canada, Survey of Household Spending (SHS) microdata file, selected years; calculations by the author.

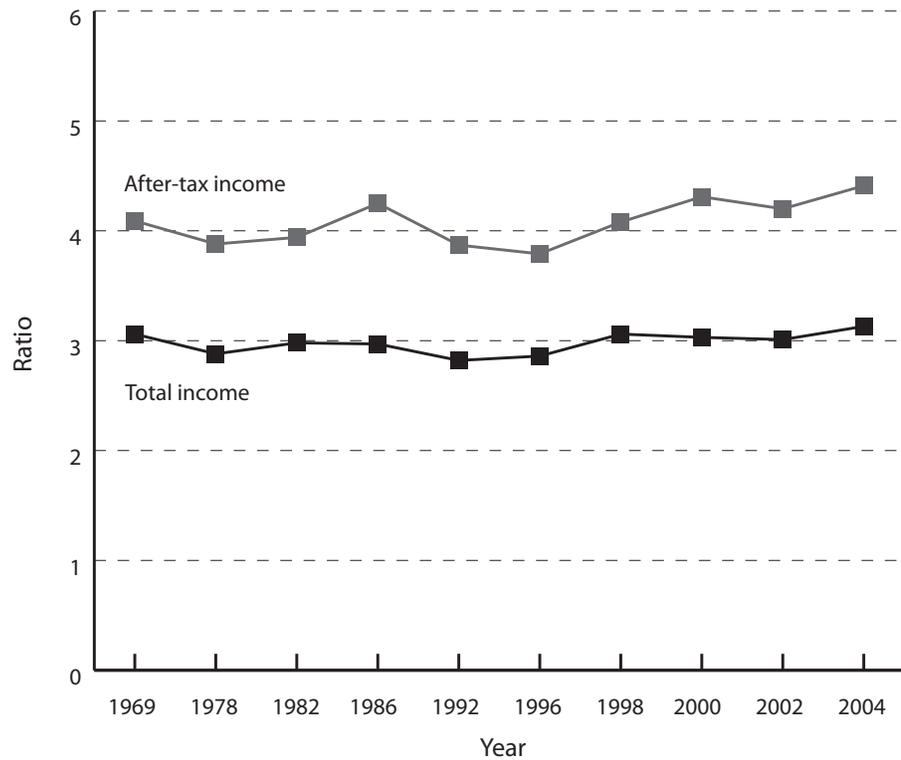
While there is not a lot of research on Canadian consumption inequality to compare these results to, Crossley and Pendakur (2003) examine the time path of real equivalent consumption inequality for selected consumption expenditures. Using FAMEX/SHS data, they find that the Gini was effectively flat or unchanged over the period 1969–1999. These results are substantially confirmed by the present study which looks at a variety of consumption indicators (e.g., consumption gains by income quintile, growth in top and bottom consumption shares, and the consumption quintile ratio over time). However, the findings here tracking the Gini for total equivalent consumption over the period 1969–2004 (table 2) show a rise of about 9% in consumption inequality.

Figure 2: Shares of consumption by adult-equivalent after-tax income, 1969–2004



Sources: Statistics Canada, Survey of Family Expenditures (FAMEX) microdata file, selected years; Statistics Canada, Survey of Household Spending (SHS) microdata file, selected years; calculations by the author.

Figure 3: Ratio of top to bottom quintile, adult-equivalent consumption shares by total adult-equivalent household income, 1969–2004



Sources: Statistics Canada, Survey of Family Expenditures (FAMEX) microdata file, selected years; Statistics Canada, Survey of Household Spending (SHS) microdata file, selected years; calculations by the author.

Facility ownership

Income and consumption are primary indicators of a household's material standard of living. However, are there other commodities that might help in completing the picture of the actual well-being enjoyed by the members of a household? Are there items, the ownership of which could be viewed as markers of the likely level of welfare?

Certain consumer products which yield a stream of services over time help define the standard of living of the household. These products, termed "facilities" by Statistics Canada, contribute to the well-being of household members in very significant ways. They may ease the drudgery of household tasks (e.g., aid in the cleaning of clothing and dishes), may save the household time and effort (e.g., a freezer may reduce the time spent shopping and allow the household to save money by purchasing larger quantities), may increase the physical comfort and personal productivity in the home (e.g., air conditioning), or may provide entertainment and information services to the members of the household. Tracking

a selection of the ownership of such facilities over time by income quintile can help shed some light on the question of the growing gap. For the purpose of this study, the facilities selected were those that are popular; have a definable impact on the comfort level, productivity, or access to information for members of the household; and for which there is at least 20 years of data available.

Tables 5a, b, c, d, and e display facility ownership for nine selected items by total income quintile for the years 1985, 1994, and 2004. These years, spaced about a decade apart, should allow us to track ownership over a period of time which includes the 1990s—the decade often identified as the origin of the growing gap. However, as we see in the table, the percentage gains in facility ownership were highest for the lowest quintiles in both sub-periods (1985–1994 and 1994–2004) and overall, and lowest for the highest quintiles.^[12] The relatively poor (on average, based on reported incomes) have been acquiring key household facilities at a faster pace than the relatively rich. While we would not expect any kind of convergence, this is certainly evidence against a *growing* gap.

Table 5a: Facility ownership, percentage gains by lowest quintile

Facility	1985	1994	2004	Percent gains		
				1985–1994	1994–2004	1985–2004
Washing machine	56.34	56.28	56.04	–0.11	–0.43	–0.54
Clothes dryer	42.11	50.90	52.33	17.27	2.73	19.53
Dishwasher	13.92	20.88	23.79	33.33	12.23	41.49
Freezer	35.67	35.62	34.30	–0.14	–3.85	–3.99
Air conditioning	10.76	17.31	26.65	37.84	35.05	59.62
Cable TV	50.09	63.98	62.97	21.71	–1.60	20.45
Colour TV	80.35	96.62	97.81	16.84	1.22	17.85
VCR	7.02	59.29	78.97	88.16	24.92	91.11
Home computer		11.92	38.65		69.16	
Average				26.86	15.49	30.69

Sources: Statistics Canada, Survey of Household Spending (SHS) microdata file, selected years (2004); Statistics Canada, Household Facilities by Income (HIFE) microdata files, selected years (1985, 1994); calculations by the author.

- 12 It might be argued that it is easier for the relatively poor to make stronger percentage gains because the relatively rich have already acquired these key facilities. The poor are starting from a lower base. However, even in the case of facilities where the market penetration in the top quintile is not high (e.g., dishwasher, air conditioner, and computer), the bottom quintile gains were still higher. It must also be recognized that the lowest quintile has a higher proportion of young people who are often at the beginning of the asset accumulation process.

Table 5b: Facility ownership, percentage gains by second quintile

Facility	1985	1994	2004	Percent gains		
				1985–1994	1994–2004	1985–2004
Washing machine	69.58	74.63	76.84	6.77	2.88	9.45
Clothes dryer	58.14	70.52	73.83	17.56	4.48	21.25
Dishwasher	23.54	34.69	42.84	32.14	19.02	45.05
Freezer	50.09	53.66	50.05	6.65	-7.21	-0.08
Air conditioning	14.5	32.27	35.62	37.69	34.67	59.29
Cable TV	56.74	68.02	66.23	16.58	-2.70	14.33
Colour TV	89.7	98.33	99.07	8.78	0.75	9.46
VCR	14.60	76.06	86.27	80.80	11.83	83.08
Home computer		16.43	52.94		68.96	
Average				25.87	14.74	30.23

Sources: Statistics Canada, Survey of Household Spending (SHS) microdata file, selected years (2004); Statistics Canada, Household Facilities by Income (HIFE) microdata files, selected years (1985, 1994); calculations by the author.

Table 5c: Facility ownership, percentage gains by middle quintile

Facility	1985	1994	2004	Percent gains		
				1985–1994	1994–2004	1985–2004
Washing machine	77.39	81.41	86.61	4.94	6.00	10.65
Clothes dryer	69.90	78.84	84.35	11.34	6.53	17.13
Dishwasher	33.84	47.15	58.04	28.23	18.76	41.70
Freezer	56.67	59.67	58.83	5.03	-1.43	3.67
Air conditioning	17.99	26.80	42.07	32.87	36.30	57.24
Cable TV	64.82	74.08	63.39	12.50	-16.86	-2.26
Colour TV	93.59	98.78	99.50	5.25	0.72	5.94
VCR	23.90	87.69	93.03	72.74	5.74	74.31
Home computer		26.78	73.86		63.74	
Average				21.61	13.28	26.05

Sources: Statistics Canada, Survey of Household Spending (SHS) microdata file, selected years (2004); Statistics Canada, Household Facilities by Income (HIFE) microdata files, selected years (1985, 1994); calculations by the author.

Table 5d: Facility ownership, percentage gains by fourth quintile

Facility	1985	1994	2004	Percent gains		
				1985–1994	1994–2004	1985–2004
Washing machine	85.59	88.37	93.97	3.15	5.96	8.92
Clothes dryer	80.20	86.41	91.82	7.19	5.89	12.66
Dishwasher	47.32	59.17	70.55	20.03	16.13	32.93
Freezer	64.57	65.37	63.85	1.22	-2.38	-1.13
Air conditioning	20.25	30.94	47.57	34.55	34.96	57.43
Cable TV	68.95	78.25	66.86	11.88	-17.04	-3.13
Colour TV	95.17	99.36	99.79	4.22	0.43	4.63
VCR	31.52	92.53	95.56	65.94	3.17	67.02
Home computer		36.31	85.02		57.29	
Average				18.52	11.60	22.42

Sources: Statistics Canada, Survey of Household Spending (SHS) microdata file, selected years (2004); Statistics Canada, Household Facilities by Income (HIFE) microdata files, selected years (1985, 1994); calculations by the author.

Table 5e: Facility ownership, percentage gains by top quintile

Facility	1985	1994	2004	Percent gains		
				1985–1994	1994–2004	1985–2004
Washing machine	92.14	95.33	97.38	3.35	2.11	5.38
Clothes dryer	86.99	93.41	96.58	6.87	3.28	9.93
Dishwasher	64.47	73.47	86.15	12.25	14.72	25.17
Freezer	72.36	71.19	70.11	-1.64	-1.54	-3.21
Air conditioning	26.70	39.69	56.86	32.73	30.20	53.04
Cable TV	73.73	82.76	72.14	10.91	-14.72	-2.20
Colour TV	97.09	99.44	99.66	2.36	0.22	2.58
VCR	40.16	94.99	96.62	57.72	1.69	58.44
Home computer		52.56	94.15		44.17	
Average				15.57	8.90	18.64

Sources: Statistics Canada, Survey of Household Spending (SHS) microdata file, selected years (2004); Statistics Canada, Household Facilities by Income (HIFE) microdata files, selected years (1985, 1994); calculations by the author.

Wealth

To the extent that there has been a growing income gap over the past several decades, it is likely that it would lead, with a lag, to a growing gap in wealth. After-tax income can be spent or saved. While the 9% growth over 35 years in the Gini coefficient for after-tax incomes has been more or less matched by the 9% growth in consumption inequality, it would be misleading to suggest that there is not much room for rising wealth disparity. By 2005, the principal residence was the largest single asset for Canadians; it comprised a third of the value of total assets (Statistics Canada, 2005: 13). Given the significant rise in the price of homes in most urban areas and given the fact that fully 21% of all consumption is on an owned principal residences (e.g., mortgage payments, utilities, repairs and renovations, etc.)¹³, there is clearly scope for rising wealth inequality.

Statistics Canada has three surveys examining the wealth of Canadians. They were conducted in 1984, 1999, and 2005. Table 6 presents information drawn from these surveys relating to the question of inequality of household net worth.

The evidence here does not support the view that wealth is distributed less equally than it was two decades ago. The Gini coefficients are almost flat over the period. The quintile distribution has also changed little since 1984. The shares of net worth by after-tax income quintile show a modest compression from 1984–1999 (i.e., lower shares at both the top and the bottom and more in the middle). The Survey of Financial Security microdata file for 2005 was not available at the time this paper was authored and published information does not include the net worth by income quintile shares.

These results, drawn from both the Survey of Financial Security microdata and the Statistics Canada publication *The Wealth of Canadians*, appear to be quite different from the results obtained by Morrisette and Zhang (2006). They find a rising trend in the Gini coefficient between 1984 and 2005, from .691 in 1984 to .746 in 2005, and conclude that the distribution of wealth in Canada has become more unequal. However, their analysis specifically excludes Registered Pension Plans (RPPs). These plans, of which employer plans make up the majority, compose almost 30% of total assets and are listed first by Statistics Canada in the composition of wealth. Their exclusion would certainly be significant. The omission would tend to increase the importance of non-financial wealth, chiefly the principal residence and other real estate, which had experienced a huge run up in value by 2005. Clearly, RPPs serve to offset the apparent rise in wealth inequality coming from these other components. It is not clear why we might want to exclude these plans in the determination of wealth inequality.

13 Average consumption in 2004 was \$44,606, of which \$9,451 was spent on an owned principal residence, according to the Survey of Household Spending 2004 microdata file (Statistics Canada, selected years). Calculations by the author.

Table 6a: Distribution of wealth in Canada, Gini coefficients (net worth (NW), all households)

	1984	1999a	1999b	2005
Incl. negative NW	0.6868	0.6790	0.6719	0.6861*
Excl. negative NW	0.6797	0.6748	0.6676	0.6818*

Sources: Statistics Canada, Survey of Financial Security (SFS) microdata file, selected years; calculations by the author.

*2005 values courtesy of Statistics Canada, Financial Security Division, June/July 2007.

Note that raw net-worth data includes negative values. Statistics Canada provided Gini coefficients both including and excluding these negative values.

Table 6b: Distribution of wealth in Canada, shares of net worth (percentage), all households, by quintile*

Quintile	1984	1999a	1999b	2005
Top	68.56	66.32	68.5	69.2
Fourth	19.68	21.11	20.1	20.2
Middle	9.30	9.48	8.8	8.4
Second	2.37	2.89	2.6	2.3
Bottom	0.09	0.20	0.1	0.1

Sources: Statistics Canada, Survey of Financial Security (SFS) microdata file, selected years (1984, 1999a); Statistics Canada, 2005: 9 (1999b, 2005).

*This table excludes negative values, converting them to zero following the convention of the Survey of Financial Security (SFS).

Table 6c: Distribution of wealth in Canada, shares of net worth (percentage) by household after-tax income quintile

Quintile	1984	1999a	1999b	2005
Top	45.11	44.32	43.87	NA
Fourth	20.65	22.75	22.88	NA
Middle	16.11	17.42	16.80	NA
Second	12.08	10.92	11.00	NA
Bottom	6.05	5.38	5.45	NA

Sources: Statistics Canada, Survey of Financial Security (SFS) microdata file, selected years*; calculations by the author.

*The 1999 microdata file has 114 records (out of 15,900) with after-tax income set to 999,999,999. SFS officials decided to do that to protect the confidentiality of those households, almost all of which are very high net worth. The results in this table include these values. The quintile values with these very high after-tax incomes excluded are displayed at the far right of this table.

Explaining the growing income gap

Over the 35-year period covered in this study, the inequality (i.e., Gini coefficient) of adult-equivalent after-tax reported income has increased by 9%. Consumption inequality, as measured by the ratio of top to bottom quintile shares of consumption by adult-equivalent after-tax income (figure 3), is up by 8%. In both cases, the total increase occurred since the late 1990s. Facilities (i.e., key household items which contribute significantly to labor saving, convenience, comfort, entertainment, and information) data shows that the relatively poor are not falling behind and that wealth inequality appears to be unchanged since 1984.

A number of reasons have been cited for the rise in income inequality. Technological change has altered the labor market. There are more jobs which require post-secondary education and fewer requiring less education. There are more part-time workers, although many of them are second earners. There are substantially more single parents raising children now than was the case in the 1960s. Heisz (2007) argues that a probable driver of the rise in income inequality is the increase in the number of two-earner families. It turns out that only a very small part of it is the rise in very high incomes going to sports and entertainment superstars and business executives.^[14]

To what extent might the rise in measured income inequality be due to more income going unreported? If, because of tax avoidance and/or the attempt to prevent detection of criminal activity, there is more hidden income in the economy, then it is possible that underreporting of income could help explain some of the rise in income inequality?

While there does not appear to be any hard evidence (in the form of a major study comparing the hidden economy over time) along these lines, there are certainly questions about the quality of the data. The Auditor General's report of 1999 (Canada, Office of the Auditor General, 1999) expressed its concerns and suggested that the problem may be growing. The study by Giles and Tedds (2002), putting the size of the underground economy at about 15%–16% of GDP, reveals a problem with a significant dimension and one that is capable of distorting measured inequality.

14 In 2004, for example, there were 4,270 households with total incomes of \$1 million or more. If we do an experiment and first halve the number of households with million dollar incomes and next completely get rid of these households altogether, the Gini coefficient is unchanged at 0.40 throughout. The quintile ratios fall from 10.04 to 9.94 and then to 9.84. These are very marginal changes in inequality for what might seem like extraordinary changes at the top of the income distribution.

Information from the microdata files does raise some issues along these lines. For example, in 2004, there were about 183,000 households with reported incomes of less than \$5,000. Under normal circumstances, it would be impossible for even a single individual to live on less than \$5,000 per year.^[15] Yet, the average consumption of those same truly impoverished households was almost \$20,000. There are indeed some explanations for consumption somewhat exceeding income. Monetary gifts, dissaving by spending capital, foreign sources of income, and excluded sources of income like child support could explain some of the discrepancy, but so could underreporting of income.^[16]

Related evidence which might be the result of underreporting is the discrepancy between low-end incomes and consumption and how it has changed over time. To investigate this discrepancy, it is instructive to look at a very low living standard that all might agree is unsustainable under normal conditions. The average monetary social assistance benefit for a single employable individual across Canada is posited here as a “non-sustainable” threshold. Social activists have long pointed out that single individuals on welfare in any province cannot survive on the allowance given. In my conversations with government officials, I get a strong sense that this is deliberate and is intended to be an incentive for employable individuals to find work. In 2005, the (weighted) average total income for a single non-disabled welfare recipient was \$6,569 (Canada, National Council of Welfare, 2006). The average annual cost of a bachelor apartment in Canada’s 28 largest cities—whose residents comprise about 65% of the total Canadian population—was \$6,516 in 2005 (CMHC, 2007: 33). Unless the recipient takes extraordinary measures (e.g., finds a roommate or finds free or subsidized accommodation), this amount of income is not sustainable.^[17]

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- 15 The basic needs poverty line for a single person in Canada in 2004 was about \$10,000. The basic needs poverty line is intended to measure absolute poverty. According to the author, it is a level of income which covers all of the necessities at a standard of quality considered minimally “decent” in Canadian society (Sarlo, 2008: 5).
- 16 The fact that we had 3,560 households in 2004 with zero income but \$78,000 in consumption appears anomalous, as does the 821 households of four persons with zero income but \$143,000 of consumption. These and other anomalies drawn from the Survey of Household Spending 2004 microdata file (Statistics Canada, selected years) do raise fair suspicion about underreporting of income.
- 17 In fairness, there is a fairly wide range of rents in these major cities. The average annualized cost of a bachelor apartment in 2005 varied from \$3,756 in Saguenay to \$8,688 in Toronto. Nevertheless, rent represents only part of the cost of living. There is still food, clothing, furnishings, health care costs, household and personal supplies, etc. to consider. It is also noted that the income of welfare recipients is well below the average basic-needs poverty line for a single person. That line (see Sarlo, 1992, 1996, 2001, 2006) is intended to represent the essential costs of living required to maintain physical health and was about \$10,000 in 2005.

Table 7 displays the inflation-adjusted non-sustainable income cut-off for each of the years examined in the study. In part A of the table, the number and proportion of households at or below this threshold are calculated. In part B, the average adult-equivalent consumption of these same households is given.

In 1969, the number and proportion of households living on non-sustainable reported incomes was very high. We do know that real poverty was still quite high at that time, with approximately 20% of household living below the poverty line (Sarlo, 2006: 4). However, the non-sustainable proportion fell dramatically sometime in the 1970s and stayed below 1% until at least 1992. It rose sharply in the mid-1990s and has continued to rise to the present. Currently, there are more than 340,000 households—about 2.8% of all households—living on reported incomes that are not sustainable. When we look at the average adult-equivalent consumption of these households (part B of the table), the picture changes substantially. Many of those households with non-sustainable reported incomes had reported consumption levels which were, in fact, sustainable (i.e., above the poverty line).

To the extent that the discrepancy between the non-sustainable income threshold and average consumption represents the suspicion that some incomes are underreported, then any increase in that discrepancy

Table 7a: Adult equivalency Canadians with non-sustainable disposable incomes, 1969–2004

Year	Non-sustainable income cutoff, \$	Number of Canadian households	Percentage of total population
1969	1,209	235,377	3.92
1978	2,247	59,359	0.79
1982	3,307	59,520	0.71
1986	4,027	67,020	0.76
1992	5,157	76,849	0.78
1996	5,458	121,586	1.11
1998	5,605	313,648	2.68
2000	5,857	277,593	2.37
2002	61,69	299,079	2.49
2004	6,428	342,386	2.77

Sources: Statistics Canada, Survey of Family Expenditures (FAMEX) microdata files, selected years; Statistics Canada, Survey of Household Spending (SHS) microdata files, selected years; calculations by the author.

Table 7b: Average adult-equivalent consumption (dollars) of Canadians with non-sustainable adult-equivalent disposable incomes, 1969–2004

Year	Non-sustainable income cutoff	Basic needs poverty line	Average consumption
1969	1,209	1,862	1,756
1978	2,247	3,460	4,221
1982	3,307	5,190	4,602
1986	4,027	6,202	8,944
1992	5,157	7,941	14,636
1996	5,458	8,404	16,214
1998	5,605	8,631	12,515
2000	5,857	9,019	13,379
2002	6,169	9,454	15,681
2004	6,428	9,898	14,489

Sources: Statistics Canada, Survey of Family Expenditures (FAMEX) microdata files, selected years; Statistics Canada, Survey of Household Spending (SHS) microdata files, selected years; calculations by the author.

suggests the possibility of more underreporting. This discrepancy peaked around the mid-1990s, just around the time that measured income inequality (based on reported incomes) began to increase. The discrepancy has, however, remained high since the mid-1990s.^[18] No one would regard this suspicion as evidence; however, in the absence of any investigation by Statistics Canada about the reliability of the income data, all we can do is point out important discrepancies.

Given all of the evidence about the underground economy in Canada, it would be naive to suggest that it is not a factor in producing poor-quality data on incomes. Certainly much more research is needed to establish the exact nature of the bias (i.e., low-end, high-end), whether its impact on measured inequality is significant, and whether that impact is growing.

¹⁸ It has to be emphasized that different databases are involved here. The Survey of Family Expenditures (FAMEX) was replaced by the Survey of Household Spending (SHS) after 1996, so the data before 1998 is drawn from a different survey than that from 1998 and on. Thus the results cannot be as comparable as if the data all came from the same survey.

Conclusion

This study is somewhat unique in examining the question of inequality more broadly than most research, which tends to focus almost exclusively on income inequality. If our interest is ultimately in the matter of human well-being and the distribution of that well-being, then we should be looking at a more comprehensive set of indicators. This paper, looking not only at income but also consumption, the ownership of key households facilities, and wealth, shows that there may be some legitimate questions about whether the “gap” in material living standards is indeed growing. To the extent that the material living standard is an important component of overall human welfare, this exercise is useful.

We must keep in mind that there are a great many factors that can influence measured inequality. Sociodemographic changes such as a greater proportion of seniors, more students in post-secondary institutions, more single parents, and more two-income families, are just a few examples. Technological and economic changes, including how we compensate high-skill jobs, are clearly important considerations. Given the significant changes over the past 35 years, many of which might be regarded as inequality inducing, it might not be a surprise to find inequality indicators increasing. Clearly, analysis of some of the causes of inequality including possible structural changes which might help explain patterns of inequality go well beyond the scope and intent of this paper.

It is important to emphasize that while this research does present some estimates that support prevailing results, it primarily presents an additional analysis which serves to question the apparently common view that the gap is growing.

Measured economic inequality using Gini coefficients based on reported incomes or reported consumption has increased by only 8% or 9% over the past 35 years, though most of that increase has been relatively recent. This is a relatively small change over 35 years and could have been driven by something as simple as an increase in two-earner households, as Heisz suggests. Further, it is not at all clear that inequality of living standards has, in fact, increased by 8% or 9%. Consumption gains by after-tax income shares and the trend of the consumption quintile ratio by income shares suggest that real living standards may not be getting more unequal. To the extent that facility ownership (i.e., items which clearly make life easier for households) matters for living standards, the evidence shows that the bottom quintiles are not falling behind but, rather, are acquiring helpful devices faster, on average,

than top-quintile households. Also, there is no evidence from net-worth data that the rich are getting richer and the poor poorer.[19]

It is important, as well, to remember that even these results are suspect due largely to concerns about hidden incomes and underreporting. The magnitude of the hidden- and unreported-income problem may be sufficient to bias the results of reported income inequality measurement one way or the other.[20]

Statistics Canada is the only organization with the resources and expertise to determine the impact of underreporting on the distribution of income. Researchers in this field would undoubtedly be grateful to the agency for a serious look at this problem.

However, even if the data were reliable and it showed increasingly inequality, should we be concerned? If, for example, there were solid evidence that inequality of after-tax incomes rose by 10% over the past decade, is that a policy issue? Would the concern be more with the actual level of inequality or simply the fact that it has increased? And at what threshold would most Canadians believe there is too much inequality?

The answer to these questions is a matter of values and political perspective. Some economists have a deep and abiding concern with inequality per se. Kenneth Arrow, a Nobel prize winner in economics, recently stated, “I find inequality to be in and of itself objectionable. Not everybody agrees with that statement. But, to me, the mere fact that members of the same community should differ so much is a bothersome thing” (Arrow et al., 1997).

However, for others, inequality per se is not an issue. If inequality is the result of differentials in talent, hard work, and thrift, it should not be a problem. As long as we have no coercion, corruption, or serious barriers to opportunity, then unequal outcomes are not immoral. Further, rising

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- 19 Even if it is not increasing, some might regard the high degree of wealth inequality to be an issue. The fact that the top 20% of households have two thirds of all wealth and the bottom 20% have less than 1% seems too unequal. However, many of those in the bottom quintile are young and have not yet had the time to accumulate any net worth. Indeed, for those households headed by someone under 30, over 18% have zero or negative net worth, whereas for households headed by someone over 30 years old, only 3% have zero or negative net worth. Many in the bottom 20% will rise, over their career, to be in the top 20% in terms of net worth. This explanation is based on recognition of the critical role that age plays in wealth acquisition.
- 20 The concern about deriving “facts” drawn from self-reported data is not limited to income surveys. The United Nations Office on Drugs and Crime (UNODC) latest report, 2007, shows that Canada is among the world leaders in illegal drug use. However, criminologist Neil Boyd advises caution: “I would be highly skeptical of the methods used to collect data across the full range of countries ... You’re asking people if they have committed a criminal offence, so you’re always going to get something of an underestimate” (Timm, 2007, July 30).

inequality would not necessarily be a concern unless it were the result of force, fraud, and unequal access. This perspective, often labeled “libertarian,” would conclude, according to economist Greg Mankiw, that “as long as the process determining the distribution of income is just, the resulting distribution is fair, no matter how unequal” (Mankiw, 1998: 434).

Egalitarians insist on equal outcomes. For them, inequality itself is evidence that the structure of a society is unjust. Capitalism, free markets, and a minimal state will all lead to significant inequality of outcomes. Presumably, the correct structure will lead to broadly equal shares.

For good or bad, almost all societies in the world have chosen a “middle option”—that is, they allow people to make fairly free choices in various markets and then use a tax/transfer mechanism to address poverty. It is not at all clear what level of inequality is appropriate or at what point inequality should be perceived as a problem in mixed economies. With no broad consensus about how much inequality is too much, it is difficult to understand how policy makers should respond to a growing gap, should it be detected. This issue, relating to unjust levels of inequality, needs much discussion and is at least as important as the measurement problem.

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