Trends in Income Inequality in Canada and Elsewhere

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Income inequality has risen in Canada in recent decades, following a long period of stability. Similar increases occurred in most provinces and in many countries around the world. Given the importance of this development for Canadian society and policy-makers, this chapter provides a broad overview of income inequality trends, using Canadian data and comparable data from other countries viewed from across multiple time periods, datasets and indicators.[1] Indeed, inequality is a multifaceted subject that requires examination from a number of angles to better understand underlying changes and contributing factors.

Following decades of stability, the Gini coefficient of after-tax income inequality showed a significant increase during the second half of the 1990s. Underpinning this increase were large and cumulative increases in market income inequality — that is, income from earnings and investments — starting in the 1980s, which were offset by steady increases in income redistribution through taxes and government transfers up until the 1995-2000 period, when the equalizing effect of the tax-and-transfer system was reduced.

Income inequality has risen despite real increases in income across the distribution and (by some measures) a falling low-income rate, because the incomes of higher-income individuals have grown faster than those of lower-income individuals. A closer look at changes at the top of the income distribution reveals that the share of market income earned by the top 1 percent surged throughout the 1980s and 1990s, and by the 2000s was larger than in any decade since the 1930s.

Increased inequality is also the result of differences in income growth between groups of workers. For instance, through the 1980s and 1990s, the earnings of workers with less education fell behind those of the better-educated, and the earnings of young men fell relative to those of older men,

although both less-educated and younger workers experienced relative wage improvements in the 2000s.

Debates about the importance of these income inequality trends for society often come down to a question of income mobility. In other words, is the relative standing of individuals in the income distribution permanent? If not, what is the probability that their situation will improve or deteriorate? Recent studies of income mobility in Canada show that mobility is relatively high both for individuals over time and for families across generations, although there is some evidence of declining mobility among individuals, raising concerns that income inequalities may become more permanent.

Data and Methods

There are many different ways to examine income inequality, but in this chapter I use two of the more common approaches. The first measures the concentration of income among particular segments of the income distribution. For example, the media commonly report the concentration of income among the "top 1 percent" or the "top percentile" of earners. In this way, the aggregate income of the top 1 percent of earners is expressed as a share of the aggregate income of all earners. It is also common to hear statistics reported on the "top decile" and "top quintile," which corresponds to the top 10 percent and 20 percent of earners, respectively. An advantage of such concentration measures is that they are easy to communicate, since most people can easily grasp the idea that some people receive a disproportionately large or small share of income. A weakness of such measures, however, is that they do not reflect all changes in inequality. For example, monitoring trends in the concentration of income in the top 1 percent of the distribution will not necessarily reveal a shift in income received by the middle class; for this, one would need to look at other indicators.

The Gini coefficient — a summary indicator of inequality that is widely used and accepted — is the second measure I use. The coefficient can range between 0 and 1, where 0 represents a situation of complete equality (all members of a population have equal income) and 1 represents a situation of complete inequality (all income is earned by one member of a population). A strength of the Gini coefficient is that it responds to all changes in the distribution of income — although there may be changes in equality in some parts of the distribution that

cancel out changes in other parts. A weakness of the Gini coefficient is that it tends to be more responsive to changes in the middle of the income distribution, and so might not capture well changes at the very top or bottom.

Another feature of the analysis is the use of low-income statistics, which, as I explain later, differ from inequality statistics. Low-income statistics measure the concentration of the population at the bottom end of the income distribution. These statistics also come with strengths and weaknesses, and certain measures are more closely related to inequality than others.

When studying inequality among the population as a whole, it is often preferable to use as complete a definition of income as possible, taking into account government transfers received and income taxes paid. One would also want to measure income at the level of the spending unit — usually assumed to be the family or household. Another consideration is that households with higher incomes tend to be larger than those with lower incomes, and larger families can enjoy economies of scale, such as sharing the cost of housing. For these reasons, it is common practice to adjust household incomes to make the incomes of different-sized families comparable. Thus, for discussing broad trends in income inequality, one typically uses measures based on "adult-equivalent-adjusted (AEA) after-tax household income."[2] It is also useful to examine inequality measures based on other income definitions, such as market income, which includes only income generated from earnings and investments. I refer to "AEA market income" where appropriate.

Data from social surveys are most commonly used in producing inequality statistics at an aggregate level. The strength of such data is that they are often rich in explanatory variables that might assist in interpreting changes in inequality. The statistics that I report on the concentration of income in the top 20 percent of the income distribution, the Gini coefficient and the low-income rate are based on AEA after-tax household income generated using data from Statistics Canada's Survey of Consumer Finances (SCF), covering the period from 1976 to 1997, and the Survey of Labour and Income Dynamics (SLID), for the period from 1993 to 2011. For international comparisons, I use data from the Organisation for Economic Co-operation and Development (OECD) Database on Household Income Distribution and Poverty, which, for Canada, also uses the SCF and SLID series.

When examining the concentration of income at the top of the income distribution, it is common to use measures that reflect income generated by the market (excluding taxes), and to keep statistics at the individual level, rather

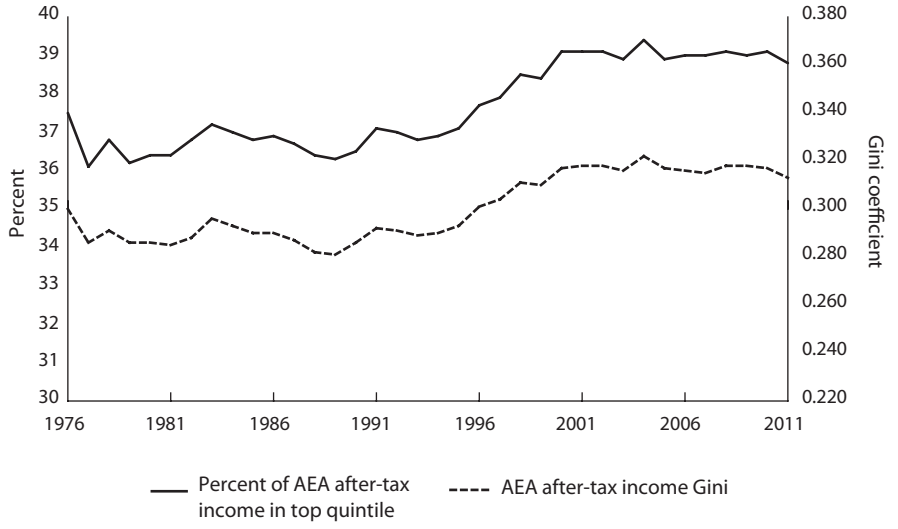
than at the household level. Often the interest in these studies is to explore how changes in the labour market are leading to increased concentrations of market income among top earners, rather than to describe how overall spending power is being concentrated among fewer families, although the results are related. A disadvantage of social surveys is the scarcity of observations at the upper-income levels, which makes the computation of top-percentile inequality measures problematic. For these reasons, descriptions of the top end of the income distribution are based on pre-tax personal income from Canadian taxfiler data, compiled in large datasets such as the Longitudinal Administrative Databank or the World Top Incomes Database. Detailed statistics for the top of the income distribution can also be generated using census data (see Lemieux and Riddell, in this volume). An advantage of using census data is that they combine the advantages of both the administrative and survey datasets: they provide information on useful explanatory variables and have the large numbers of observations necessary to describe accurately trends at the extremes of the income distribution.[3]

Income Inequality Trends in Canada and Elsewhere

Whether measured by the share of AEA after-tax income held by households in the top 20 percent (or top quintile) of the distribution or by the Gini coefficient using the same income definition, income inequality increased in Canada over the 1995-2000 period. As figure 1 illustrates, in terms of the concentration of income, the top 20 percent of income earners earned on average 39.0 percent of all income between 2000 and 2011, up from 36.7 percent between 1976 and 1995. At the same time the Gini coefficient rose from 0.293 in 1995 to 0.317 in 2000, an increase that is considered large in the inequality literature. To give a sense of its scale, an increase of 0.024 in the Gini coefficient would account for about one-fifth of the difference in inequality between a lower-income-inequality country such as Sweden and a higher inequality country such as the United States.[4]

Other than the marked increase in after-tax income inequality between 1995 and 2000, there was comparatively little change in inequality over that period. The period from 1976 to 1995 was characterized by cyclical increases and decreases in inequality and no sustained trend. Comparing 1979 and 1989, two similar points in the business cycle, the Gini coefficient fell only slightly, from

Figure 1
Share of income held by the top 20 percent and Gini coefficient of income inequality, Canada, 1976-2001[1]



Source: Statistics Canada, CANSIM tables 202-0707 and 202-0709.
[1] Income is measured after tax on an adult-equivalent-adjusted (AEA) basis.

0.286 to 0.281. During most years from 2000 through 2011, the Gini coefficient more or less remained at the higher level reached in 2000, varying only within a narrow range. This is not to say that all types of inequality did not change over this period, or that inequality did not change according to some other measures — there were, in fact, important changes in market income inequality during the 1980s and 1990s, as well as changes in the concentration of income in the hands of the top 1 percent of earners in each decade from the 1980s to the 2000s.

Inequality changes when incomes in certain parts of the income distribution grow at a different rate than in others. Indeed, it is possible to have rising inequality when households in all parts of the income distribution are becoming better off. As table 1 shows, between 1979 and 1995, after-tax incomes changed very little at the bottom, middle and top ends of the distribution, as did income inequality. Yet, between 2000 and 2011, a period also associated with little change in inequality, incomes grew strongly across the distribution. From 1995 to 2000, however, the period of the largest increase in after-tax income inequality, average income in the highest quintile grew more than average income in the

Table 1
After-tax income[1] by quintile, Canada, selected years, 1979-2011

	Average income (2011$)		
	Lowest quintile	**Middle quintile**	**Highest quintile**
1979	13,000	31,700	62,100
1995	13,200	30,500	62,600
2000	13,600	33,700	74,700
2011	16,900	39,900	87,800
	% change		
1979-1995	1.5	– 3.8	0.8
1995-2000	3.0	10.5	19.3
2000-2011	24.3	18.4	17.5

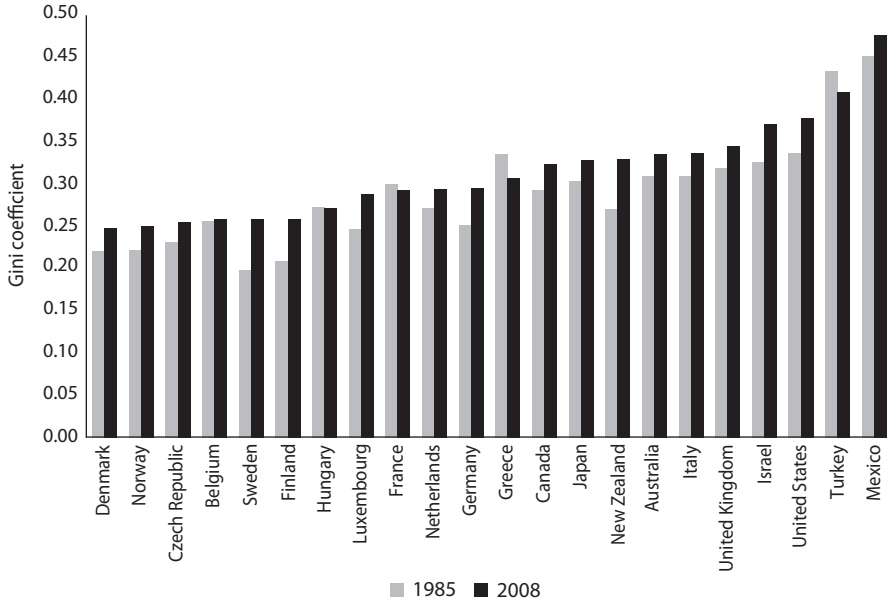
Source: Statistics Canada, CANSIM table 202-0707.
[1] Adult-equivalent-adjusted basis.

middle, which in turn grew more than average income in the lowest quintile. In short, the two periods of comparative steadiness in inequality are associated with more balanced changes across the income distribution, while the period of rising inequality is associated with large income increases in the top quintile and low real income growth at the bottom.[5]

Rising income inequality across countries and provinces

The increase in income inequality seen in Canada also occurred in other countries, as shown in a report by the OECD (2011) that compares after-tax income inequality trends across a number of OECD countries between 1985 and 2008 (figure 2). With regard to Canada's position internationally, the report makes two salient observations. First, income inequality differs markedly among OECD countries, and Canada ranks near the middle of the group (the OECD estimate of the Gini coefficient for Canada was 0.324 in 2008). For example, countries such as the United Kingdom (0.345) and the United States (0.378) have higher inequality, and Scandinavian countries such as Sweden (0.259) and Finland (0.259) have lower inequality. Second, between 1985 and 2008, income inequality increased in virtually all OECD countries. The Gini coefficient for Canada rose from 0.293 to 0.324 over the period. Large increases in inequality were also recorded in the United States, New Zealand, Australia, Japan and several countries in Europe, indicating that the rise was not concentrated only in North America or in

Figure 2
Gini coefficient by country, 1985 and 2008[1]

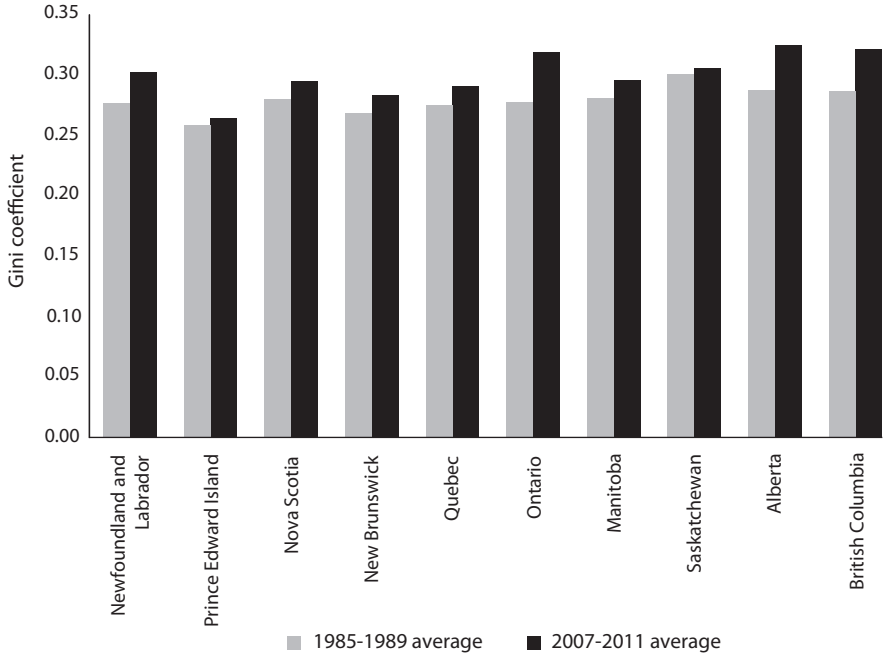


Source: OECD (2011).
[1] Based on adult-equivalent-adjusted after-tax income.

Anglo-Saxon countries. Indeed, inequality rose both in countries with traditionally high levels of inequality, such as the United States and the United Kingdom, and in those with traditionally lower levels, such as Sweden and Finland.

Even within Canada income inequality varies from province to province, although the differences between provinces are less than those between OECD countries. For example, the Gini coefficient for after-tax income in 2011 was 0.311 in Ontario, 0.291 in Quebec and 0.337 in Alberta (Statistics Canada, CANSIM table 202-0709), inequality levels that range between those in low- and high-inequality OECD countries. Statistics at the provincial level are more susceptible to error due to smaller samples, so to look at changes in provinces' income inequality over time, I compare data averaged over the 1985-89 and 2007-11 periods (figure 3). I find that, as in most OECD countries, inequality rose in all provinces, although in some cases the increase was small and probably not significant. The largest increase was in Ontario, where the Gini coefficient grew by 0.041.

Figure 3
Gini coefficient by province, Canada, 1985-1989 and 2007-2011 averages[1]



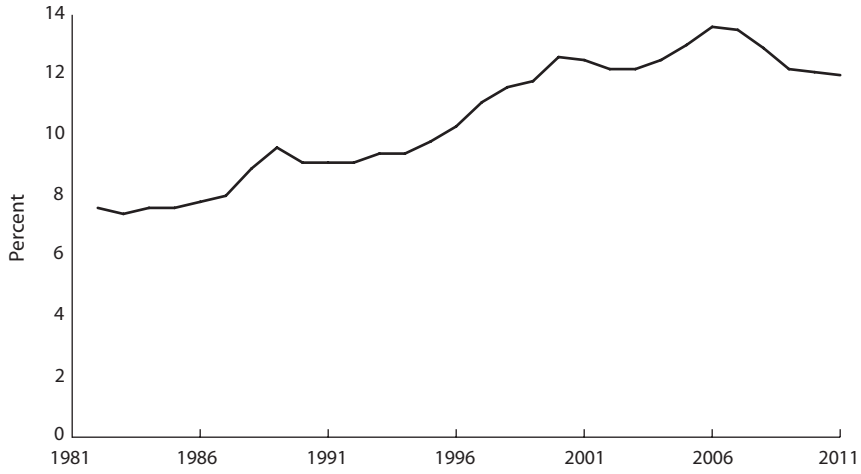
Source: Author's calculations based on Statistics Canada, CANSIM table 202-0709.
[1] Based on adult-equivalent-adjusted after-tax income.

The top 1 percent

Although the study of income inequality is long-standing, public interest in this topic has peaked in recent years, partly as a result of research on the concentration of income among the top 1 percent of earners. Piketty and Saez (2003) for the United States and Saez and Veall (2005) for Canada provide evidence that, by the 2000s, the concentration of income among top earners had reached levels not seen in these countries since the 1930s. The increase in concentration was particularly rapid over the 1993-2010 period.

As figure 4 shows, the share of market income received by the top 1 percent of income earners in Canada increased steadily, from 7.6 percent in 1982 to 12.0 percent in 2011 (peaking at 13.6 percent in 2006). The only interruptions in this steady rise were at the onset of economic slowdowns in the early 1980s, the 1990s and the 2000s, when the income share of high-income earners tended to fall.

Figure 4
Share of market income held by the top 1 percent of earners, Canada, 1982-2011

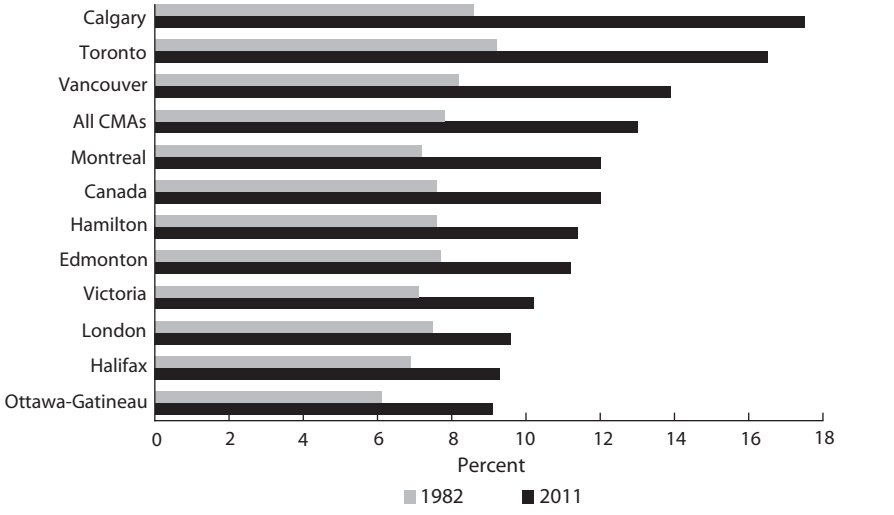


Source: Statistics Canada, CANSIM table 204-0001.

Overall, trends in the top earners' market income share reflect trends discussed earlier in relation to the Gini coefficient for AEA after-tax income, with the largest increase occurring between 1995 and 2000, although the rise in the top income shares started earlier, in the late 1980s. A closer look reveals that the increase in top income shares was even faster for earners in the top 0.1 percent and 0.01 percent of the distribution. Compared with 1982, the share earned by the top 1 percent was more than one and a half times as large in 2011, the share earned by the top 0.1 percent was twice as large and the share earned by the top 0.01 percent was two and a half times as large — that is, the top 0.01 percent earned 0.6 percent of income in 1982 and 1.5 percent of income in 2011.

The steady increase in the top 1 percent's share of market income is occurring in most areas of Canada, but, as figure 5 shows, it is particularly pronounced in large urban centres (Murphy and Veall, forthcoming). The increased concentration of income among the top 1 percent was seen in all large Canadian cities over the period from 1982 to 2011, but the increase was largest in Toronto and Calgary. As well, Calgary had the highest income concentration in 2011, at 17.5 percent, followed closely by Toronto at 16.5 percent, with Vancouver ranked third and also above the Canadian average.

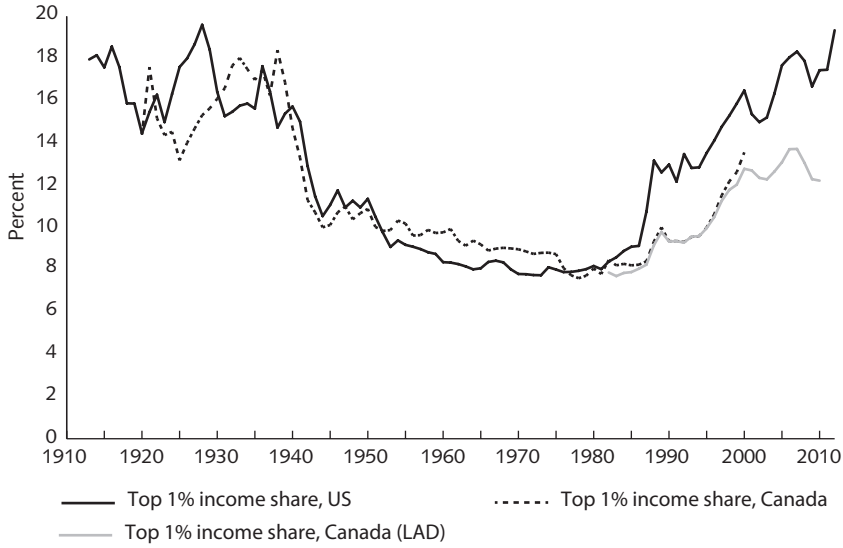
Figure 5
Share of market income held by the top 1 percent of earners in selected census metropolitan areas (CMAs), in all CMAs and in all of Canada, 1982 and 2011



Source: Statistics Canada, CANSIM table 204-0002.
Note: A CMA is a large urban area together with adjacent urban and rural areas that have a high degree of social and economic integration.

Taking a longer view, data from the World Top Incomes Database show trends in the share of market income earned by the top 1 percent back to the 1920s for both Canada and the United States. As figure 6 shows, from the 1920s to the 1980s the concentration of income among the top 1 percent was similar in both countries. Levels of income concentration among these top earners were high — between 15 and 20 percent — until about the Second World War. Top income shares then fell, and were at their lowest during the 1950s through the 1970s, ranging from 7 to 9 percent. After the recession of the 1980s, both countries saw a rapid increase in the share of income held by the top 1 percent, although the increase was more pronounced in the United States.[6] In 2010, the last year for which data are available for both countries, the top 1 percent in Canada earned 12.2 percent of income, while the top 1 percent in the United States earned 17.5 percent of income. More recently, Wolfson, Veall and Brooks (2014) have added income from Canadian-controlled private corporations to Canadian taxfilers' data to reflect more completely the income of top earners. They conclude that top income shares are significantly higher, and have grown faster in recent years, when this income is taken into account.

Figure 6
Share of market income held by the top 1 percent of earners, Canada and the United States, 1913-2012



Source: F. Alvaredo, T. Atkinson, T. Piketty and E. Saez, World Top Incomes Database (http://topincomes.parisschoolofeconomics.eu/).
LAD = Longitudinal Administrative Databank

Factors underlying rising after-tax income inequality

Families receive income from market sources and from direct government transfers such as employment insurance (EI), and they pay income taxes. By design, taxes and transfers tend to reduce income inequality. The rise in after-tax income inequality therefore can be attributed either to changes in the amount of inequality generated by the market or to changes in income redistribution through government taxation and transfer programs. Indeed, both factors have been important in Canada in recent decades.

One way to understand how changes in market income and redistribution have contributed to trends in after-tax income inequality is to compare the Gini coefficients for AEA market income and AEA after-tax income (see figure 7). The market income Gini coefficient measures inequality in income received from earnings, net self-employment income, investment income (such as interest, dividends and net rental income) and private pension income. The

Figure 7
Gini coefficient for market and after-tax income, and Gini coefficient reduction due to taxes and transfers, Canada, 1976-2011

Source: Statistics Canada, CANSIM table 202-0709.

after-tax income Gini coefficient takes into account the effect of government transfers and taxes. Essentially, the market income Gini coefficient is an indicator of the amount of inequality generated in the market, while the difference between the market and after-tax income Gini coefficients is an indicator of the effect of government redistribution.

It is clear from figure 7 that the increase in after-tax income inequality is rooted in a long-term increase in inequality generated in the market, most of which occurred during the two major recessions in the early 1980s and the early 1990s. From 1981 to 1983 the market income Gini coefficient rose by 9 percent, and from 1989 to 1992 it rose by 10.6 percent. The relative stability of AEA after-tax inequality in the face of these increases in market income inequality can be understood by looking at the trends in redistribution through taxes and transfers, which have followed those of market income and also rose during the recessions of the 1980s and 1990s. Although the level of redistribution remained higher following the 1980s recession, it fell somewhat following the 1990s recession, resulting in a corresponding increase in after-tax income inequality. Nevertheless, the amount by which government redistribution currently reduces inequality is not small by historical standards. In fact, it reduced market income inequality by about the same proportion in the 2000s as it did in the 1980s.

The redistributive effect of the Canadian tax-and-transfer system has been studied extensively (see, for example, Beach and Slotsve 1996; Frenette, Green and Milligan 2009; and Heisz 2007). The storyline that emerges from these studies is that the increases in market income inequality that occurred during the 1980s and 1990s recessions were completely offset by a tax-and-transfer system that became more redistributive, or at least redistributive enough to prevent an increase in after-tax income inequality up until the mid-1990s. The tax-and-transfer system became somewhat less redistributive during the second half of the 1990s as a result of spending reduction measures in social assistance and EI programs, which were not offset fully by new child benefit programs. Hence, after-tax income inequality rose accordingly. (See Heisz and Murphy, in this volume, for a more detailed examination of these issues.)

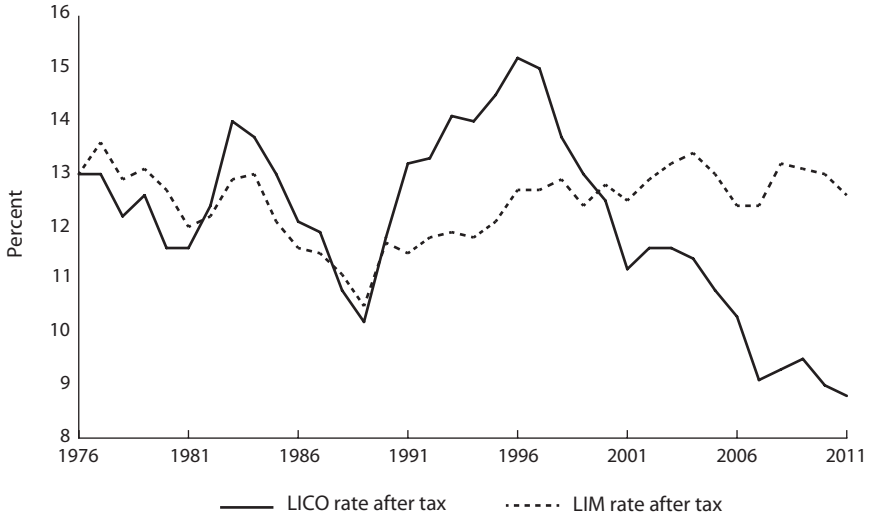
Low-Income Trends

In discussing low-income trends, it is important to note that income inequality and low income, though related, are not necessarily the same. Depending on how one measures low income, and depending on the nature of the changes in the income distribution, it is possible to have rising inequality even as low-income rates are falling.

Two low-income measures are in common use in Canada. One is the well-known low-income cut-off (LICO). The LICO measure tells us what share of the population falls below a fixed income threshold that is updated only to reflect changes in the Consumer Price Index. In other words, it tells us how individuals at the low end of the income distribution are doing in an *absolute* sense. This statistic is not strongly related to inequality, however, since it does not indicate how this population is doing relative to others — only relative to a fixed low-income threshold. The second measure is the low-income measure (LIM), defined as the share of the population whose income falls below a threshold set at one-half the median income in any given year. This measure is similar to the income concentration measures of inequality discussed earlier, and describes how population groups are doing in a *relative* sense. It indicates whether income inequality is rising or falling in the lower half of the income distribution.

The two indicators give different perspectives on low-income trends. As figure 8 shows, the LICO rate and the LIM rate followed similar paths

Figure 8
Share of population in low income under LICO and LIM measures, Canada, 1976-2011

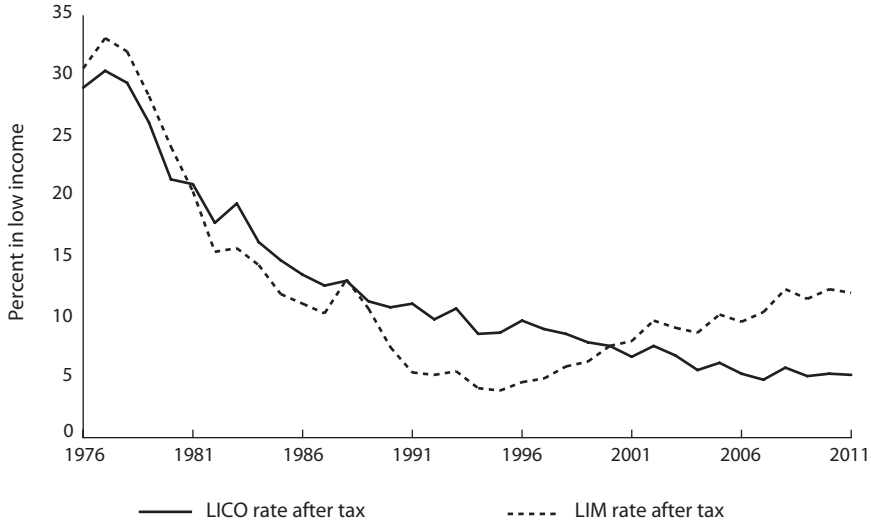


Source: Statistics Canada, CANSIM table 202-0802.
LICO = low-income cut-off
LIM = low-income measure

from 1976 to 1996, although the LICO rate was much more responsive than the LIM rate to the effects of the 1990s recession. After 1996, the LICO and the LIM rates went in different directions. Economic growth continued to benefit low-income earners. After-tax incomes in the bottom quintile rose, particularly in the 2000s (see table 1), and the LICO-based low-income rate fell from over 15 percent in 1996 to below 9 percent in 2011. Changes in the LIM rate were muted in comparison. The relative low-income rate represented by the LIM did not fall after 1997 but remained steady at around 13 percent. This reflects the fact that, while families at the bottom of the income distribution made real income gains during this period, these gains were on par with those made by median-income families.

The point can also be made by comparing the two low-income rates for seniors. As figure 9 shows, for the population ages 65 and over, there was a remarkable fall in the LICO-based low-income rate from 30.4 percent in 1977 to just 5.2 percent by 2011, indicating that far fewer seniors were falling below

Figure 9
Share of population ages 65 and over in low income under LICO and LIM measures, Canada, 1976-2011



Source: Statistics Canada, CANSIM table 202-0802.
LICO = low-income cut-off
LIM = low-income measure

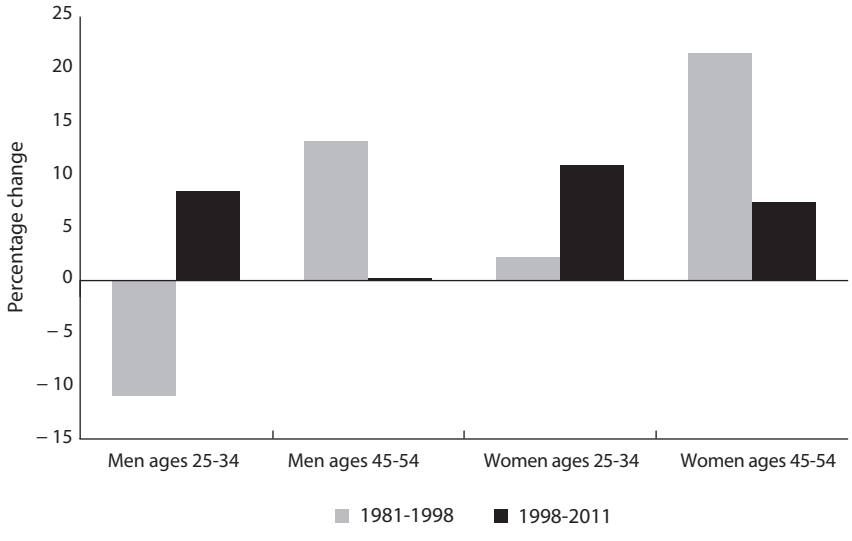
the fixed low-income threshold. The LIM-based low-income rate shows a similar improvement up to 1995, when it reached its lowest level of 3.9 percent. After 1995, however, the LIM-based rate trended upward, reaching 12 percent by 2008 and holding steady since then. The conclusion is that seniors at the bottom of the income distribution also made income gains throughout the period, but their incomes fell behind those of median-income families from 1995 to 2008.

Income inequality by age, education and gender

Changes in income inequality among individuals reflect changes in relative earnings between groups, such as between older and younger workers, men and women, and workers with more or less education. At the same time, global indices of inequality such as the Gini coefficient might mask offsetting changes in the relative earnings of various groups. Have particular groups made relative economic gains in recent decades?[7]

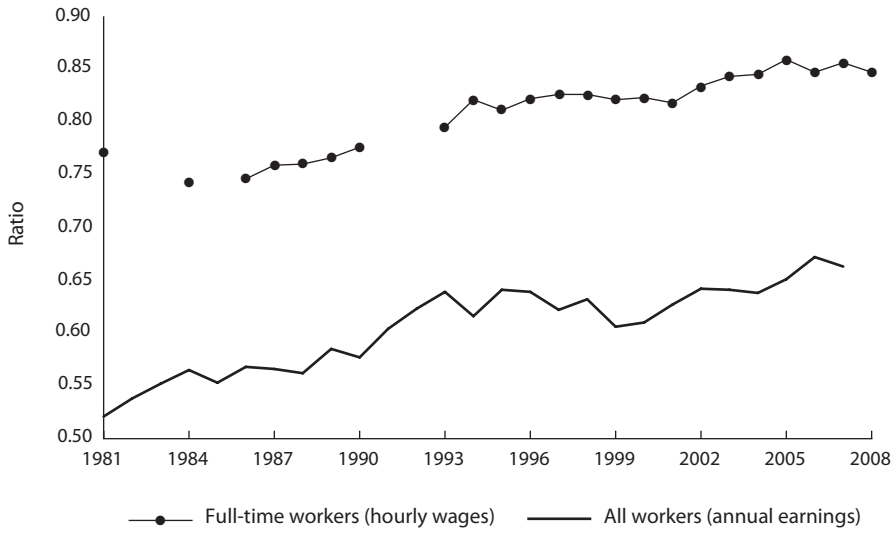
Morissette, Picot and Lu (2012, 2013) examine the relative earnings of older and younger workers over three decades beginning in the early 1980s, and find that the difference in the earnings of the two age groups widened between 1981 and 1998 (figure 10). For men, this widening earnings gap was due to a drop in the real earnings of workers ages 25 to 34 and an increase in the real earnings of workers ages 45 to 54 (the results look the same if one looks at more age groups or includes part-time workers). Hourly earnings of younger men fell by 11 percent and those of older men rose by 13.2 percent over this period. In contrast, the earnings of women in both age groups rose — although those of older women rose faster, thus widening the difference in the earnings of older and younger women. Looking at the factors that contributed to the poor earnings performance of younger workers relative to older workers, the authors of the study estimate that about 40 percent of the difference in wage growth among men and three-quarters of the difference among women over the 1981-98 period can be attributed to declining unionization, falling seniority and changes in the industry and occupation of younger workers.

Figure 10
Wage growth of younger and older workers,[1] Canada, 1981-1998 and 1998-2011



Source: Adapted from Morissette, Picot and Lu (2013), charts 5 and 6.
[1] Hourly wages of full-time workers.

Figure 11
Earnings of women relative to men, Canada, 1981-2008



Source: Baker and Drolet (2010).
Note: Figure shows female-male pay ratios for workers ages 25-54. Male earnings equals 1.0.

In contrast, the period from 1998 to 2011 was characterized by faster earnings growth for young men and women than for their older counterparts. The hourly wages of younger men rose by 8.5 percent over the period, while those of older men hardly changed; and the hourly wages of younger women rose by 10.9 percent, while those of older women rose by 7.4 percent. Again, changes in unionization, industry and occupation accounted for a substantial portion (60 percent) of the difference in wage growth between younger and older men over the period, as these factors began to shift in favour of younger men. These three factors also accounted for the faster increase in the hourly wages of young women relative to those of older women. An additional factor, however, was the relative increase in the educational attainment of younger women.

The "education wage premium" is the earnings difference between workers with higher education and those with lower education. Boudarbat, Lemieux and Riddell (2010), examining the evolution of pay rates of those with different education levels over two and a half decades, find that the weekly earnings gap between men with a bachelor's degree and those with a high school education rose from

32 percentage points in 1980 to 40 percentage points in 2005. Among women, the gap widened by a more modest 3 percentage points.[8]

Another long-standing and better-known wage gap is that between men and women, although, as figure 11 shows, over the past three decades that gap has been reduced gradually. In their study of the gender pay gap, Baker and Drolet (2010) find that, in terms of hourly wages of full-time workers, women earned about 85 percent as much as men in 2008, but that was up from estimates of about 75 percent in the early 1980s. When women and men with the same demographic and employment characteristics are compared, the adjusted wage gap appears to be smaller, with women earning about 92 percent as much as men. The annual earnings gap is wider, however, since women tend to work fewer hours than men during a year (which is why it is preferable to look at hourly wage data), although even by that measure the earnings differential between men and women has declined.

Income Mobility

In recent decades, the study of income inequality has evolved from simply looking at characteristics of the income distribution at a point in time to also looking at changes over time — or what researchers refer to as "longitudinal" or "dynamic" studies. In longitudinal studies, respondents (or tax records, in the case of administrative datasets) are followed for several years and changes in their situations recorded. In this way, researchers can see whether an individual's position in the income distribution remains fixed over time or is mobile. Such analysis allows the researcher to answer the following questions:

- Is low income a persistent state? How much mobility into and out of low income is there?
- By how much do people move up and down the income distribution over time? Has this mobility changed in recent years?
- What about income mobility across generations? Do children inherit their income position from their parents?
- How does Canada's experience compare with those of other countries?

To address the first question, data for Canada going back to the early 1990s indicate that there is quite a lot of churning in the low-income population from one year to the next. Tracking changes in the incomes of Canadians over a

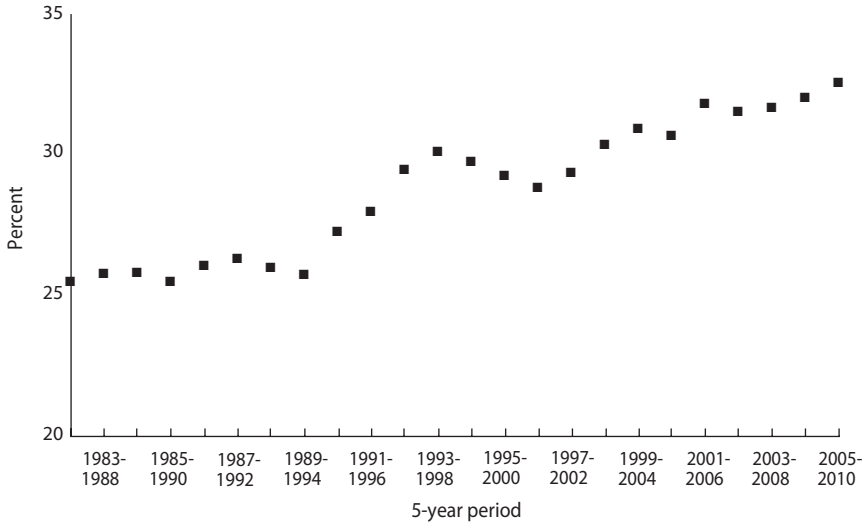
six-year period, Murphy, Zhang and Dionne (2012) find that, although the average low-income rate between 2002 and 2007 was 10.9 percent, fully 20 percent of Canadians experienced at least one year of low income during that period, and only 5.1 percent of Canadians remained in low income for four out of the six years. The authors conclude that this "persistent" low-income rate was higher for certain groups: single parents, individuals ages 45 to 64 who live alone, recent immigrants (those who immigrated to Canada between two and ten years earlier[9]) and individuals identifying themselves as having an "activity limitation."

Correspondingly, Murphy, Zhang and Dionne find that the rates of entry into and exit from low income were quite high. For example, one-third of those in low income in one year had escaped the following year. This degree of movement into and out of low income reflects a number of factors — for example, unstable work patterns could cause such movements, but so could other life-cycle factors, such as when youth transition from school to work. (See Fang and Gunderson, in this volume, for a description of low-income trends and patterns among vulnerable groups.)

Questions about the extent to which individuals' relative income changes over time or about their mobility across the income distribution are also important since greater income mobility for a given level of income inequality indicates more labour market opportunity and greater equity (Beach 2006). Two branches of research describe income inequality in this dynamic setting: "income mobility" describes the extent to which a person's relative income standing changes over time, while "intergenerational income mobility" describes the extent to which a person's relative income standing differs from that of his or her parents.

Based on their analysis of the income mobility of Canadians across the income distribution using multiple indicators over a long period, Zhang, Chung and Saani (forthcoming) confirm the conclusion other Canadian researchers (for example, Beach 2006) have reached — namely, that, although levels of income mobility are high overall, income mobility has declined. As figure 12 shows, income "immobility," measured by the percentage of persons who did not move from one income decile to another over a five-year period, has risen in recent decades, from 25.7 percent in the period from 1989 to 1994, to 30.1 percent from 1993 to 1998, and to 32.5 percent from 2005 to 2010. A decline in income mobility such as this indicates that inequalities in income observed at one point in time are becoming more permanent.

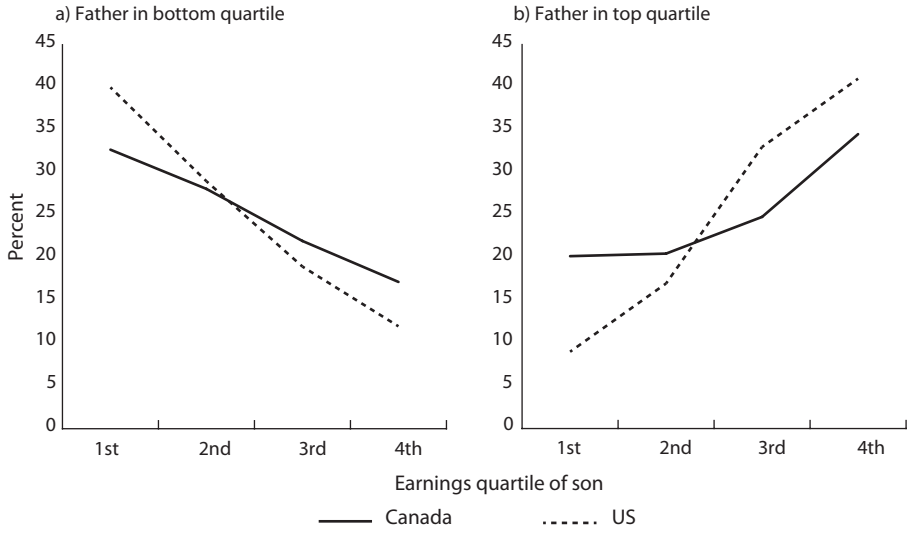
Figure 12
Income immobility over five-year periods, Canada, 1982-2010



Source: Zhang, Chung and Saani (forthcoming).
Note: Figure shows the percentage of individuals remaining in the same income decile at the end of each five-year period as at the beginning.

One can extend the time horizon and compare the incomes or earnings of parents with those of their children many years later to determine to what extent children inherit their parents' economic status, after adjusting for differences in incomes due to the life-cycle position of parents and children. The results reflect the degree of intergenerational mobility in Canada and equality of opportunity — that is, the extent to which the earnings outcomes of Canadians are independent of their relative economic status as children. A number of studies over the past two decades have concluded that intergenerational mobility is higher in Canada than in the United States.[10] Figure 13 shows results for Canada from Corak and Heisz (1999) and comparable results for the United States from Zimmerman (1992). Figure 13a plots the quartile of the earnings of sons whose fathers had earnings in the bottom quartile (25 percent). In the absence of intergenerational mobility, all of these sons, like their fathers, would have ended up in the bottom quartile of earnings for their generation, but that was not the case. Rather, in Canada, only 33 percent of the sons landed in the bottom quartile, while 17 percent made it to the top quartile of earnings. In contrast in the United States, the sons of fathers

Figure 13
Intergenerational income mobility, Canada and the United States



Source: Corak and Heisz (1999) for Canada and Zimmerman (1992) for the US.
Note: Figure shows the percentage of sons whose adult earnings are in the bottom (top) quartile, given their fathers' earnings in the bottom (top) quartile one generation earlier.

with earnings in the bottom quartile were somewhat more likely than those in Canada to inherit bottom-quartile earnings and were less likely to land in the top earnings quartile.

Figure 13b tells the story of sons whose fathers had earnings in the top quartile. In the United States, sons of fathers in the top quartile were more likely to land in the same quartile and less likely to end up in the bottom quartile than were their Canadian counterparts. This again indicates that the correlation between the earnings of fathers and sons is lower in Canada than in the United States, and hence that intergenerational mobility is greater in Canada. Recent research by Chen, Ostrovsky and Piraino (2015) demonstrates that intergenerational mobility in Canada might be lower than previously estimated by Corak and Heisz (1999). They also note that recent US research indicates less mobility in that country as well, compared with previous estimates. They conclude that Canada remains more mobile than the United States, but that intergenerational mobility might be lower in both countries than previously thought. Recent research also shows that a country's income inequality and level of intergenerational mobility

are correlated, with more unequal societies being less mobile (Corak 2013). This evidence raises the possibility that the increases in income inequality seen throughout the world could precipitate declines in intergenerational mobility.

Conclusion

After remaining stable for several decades, family after-tax income inequality in Canada rose in the second half of the 1990s and settled at a higher level in the 2000s. Underlying these broad overall trends were large and cumulative increases in market income inequality (earnings and investment income) starting in the 1980s, which were offset by steady increases in income redistribution through taxes and transfers from government until about 1995. From 1995 to 2000 the redistributive effect of government programs fell, market income inequality remained high, and after-tax income inequality rose as a result. The concentration of income among the top 1 percent of income earners also rose over the 1980s and 1990s, and peaked in 2006, before falling slightly later in the decade.

Income inequality increased even though real incomes rose across all income groups and low-income rates fell. Indeed, lower-income households did see their incomes rise, but income increases for those at the low end of the distribution generally were smaller than increases for those at the middle and especially at the top during the periods of rising inequality.

International comparisons reveal that Canada's level of income inequality ranks near the middle among OECD countries, and that many other industrialized countries have experienced increases in income inequality in recent decades. This suggests that some of the forces driving the rise in income inequality are common to all OECD countries and that identifying these should aid in our understanding of underlying causes, although country-specific causes are evidently at play as well. In Canada, research has brought to light the widening income gaps between more- and less-educated workers and between older and younger workers. Even though some of these trends might have reversed in more recent years, this suggests they are also important factors to consider.

Finally, concerns about the level of income inequality might be lessened if differences in relative income standing prove to be temporary, rather than permanent. Accordingly, research showing that overall income mobility in Canada is

high, both for individuals over time and for families across generations, could be seen as encouraging. At the same time, evidence that income mobility among individuals has declined in recent years raises concerns that inequalities might become more permanent.

Notes

1. This chapter also draws heavily on the rich descriptive literature on income inequality in Canada. In fact, there is far more research than could be covered in this brief synthesis. I recommend that readers interested in more detail on a particular aspect of inequality see the works listed in the References
2. There are a few accepted methods for making this adjustment. Statistics Canada's standard is to adjust family income using the "square-root method," whereby family income is divided by an adjustment factor equal to the square root of family size. This adjusted amount is then attributed to all family members, and analysis is done at the level of the individual. In this chapter, I also show results from an international study done by the Organisation for Economic Co-operation and Development (OECD). Although the Canadian data in that study were provided by Statistics Canada, the adjustment method followed the "modified OECD standard" (OECD 2011). In practice, these two methods provide very similar results. In addition, I use the terms "households" and "families" interchangeably, even though both the Statistics Canada and OECD inequality results refer to households, which might consist of more than one family.
3. Milligan (2013) compares the SCF/SLID series with census data and finds that inequality trends in the two datasets are similar except for statistics describing the tails of the income distribution.
4. According to OECD data, in 2011 the Gini coefficients for AEA after-tax income were 0.389 in the United States and 0.273 in Sweden, for a difference of 0.116.
5. Statistics Canada gives analogous figures for unadjusted family income (see CANSIM table 202-0701). Unadjusted after-tax income for all family types was $15,100 in the bottom quintile, $51,200 in the middle quintile and $139,400 in the top quintile in 2011, up 13 percent, 21 percent and 37.2 percent, respectively, from 1995.
6. The data show a particularly large increase in income concentration between 1986 and 1988 in the United States, due in part to a change in the reporting of income for tax purposes in that country. Nevertheless, researchers still believe that the surge in top incomes was larger in the United States than in Canada (see Veall 2012).
7. For a more thorough description of these developments over the longer term, see Fortin et al. (2012).
8. Morissette, Picot and Lu (2012, 2013), looking at the education earnings premium using Labour Force Survey data for the 2000-11 period, find some evidence of a decline in the hourly wage premium for men and women over that decade (the results are the same using hourly and weekly wages). Although their main results differ from those of Boudarbat, Lemieux and Riddell (2010), that might be attributable to differences in the period examined or the datasets used in the two studies.
9. First-year immigrants were dropped from the analysis because they would have had less than a full year of income.
10. Corak (2013) provides an update and summary of the current state of research.

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