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Measuring Income Mobility in Canada

by Charles Lammam, Amela Karabegović, and Niels Veldhuis



Key findings

- This study measures income mobility in Canada over two five-year periods (1996-2001 and 2002-2007) and over a 10-year and a 19-year period (1990-2000 and 1990-2009). In all periods, Canadians initially in the lowest income group (the bottom 20%) experienced the greatest relative income increase.
- Over the 10-year period (1990 to 2000), 83 percent of Canadians who started in the bottom 20% moved to a higher income group. Over the 19-year period (1990 to 2009), 87 percent in the bottom 20% moved up with 21 percent of them reaching the highest income group (the top 20%).
- Some Canadians experienced a relative decline in income. Of those in the top 20% in 1990, 36 percent moved down at least one income group by 2009.
- The average income of those initially in the bottom 20% in 1990 grew an impressive 635 percent by 2009, while the average income of those initially in the top 20% grew by only 23 percent over the same period.
- In 1990, the average income of individuals in the highest income group was 13 times that of individuals initially in the lowest group. By 2009, those who had been in the highest group in 1990 had an average income only twice that of those who had been in the lowest group in 1990.

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Executive summary

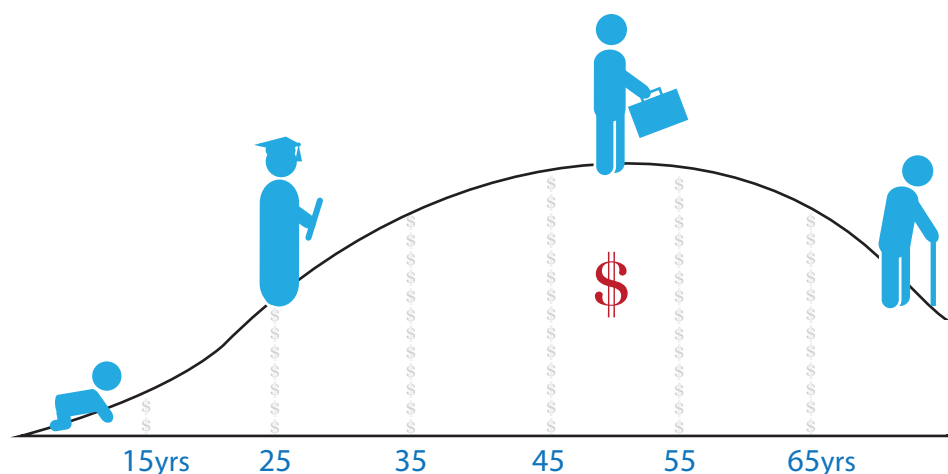
Last year's global Occupy movement reinvigorated the debate about income inequality in Canada and its implications for public policy. Too often, an underlying assumption in this debate is that low- and high-income Canadians are the same people year in and year out. Contrary to the perception of Occupy protesters and other prominent voices in the income inequality debate, this study shows that Canadians are not permanently stuck in fixed income groups. Over the course of their lives, the overwhelming majority of Canadians move up and down the income ladder.

Defining and measuring income mobility

Fluctuation in our income is a part of the natural cycle of our lives. Typically, people start off with relatively low income early on because they are young, new to the workforce, and lack work and life experience. Once they acquire education, job-related skills, and experience, their income typically increases until it peaks in middle age (the prime earning years) and then drops again as they retire (Exsum figure 1).

Measuring income mobility over time requires detailed information about a specific group of individuals. This information allows researchers to track and observe changes to the income of these people, in both absolute and relative terms. Using data obtained from a special request to Statistics

Exsum figure 1: Typical lifecycle of income



Canada, this study measures income mobility in Canada over two five-year periods (1996-2001 and 2002-2007) and over a 10-year and a 19-year period (1990-2000 and 1990-2009).

The people covered in the study were divided into five groups based on their initial income, where income is what they earn from wages and salaries before taxes. The groups are referred to as: the bottom 20% (the lowest income group), the second, third, fourth, and the top 20% (the highest income group). If someone starts in the lowest income group in one year, but moves to a higher group after several years, he or she has experienced upward relative income mobility. Conversely, if someone ends up in a lower income group than the one they started in, he or she has experienced downward relative mobility.

Results: Relative income mobility

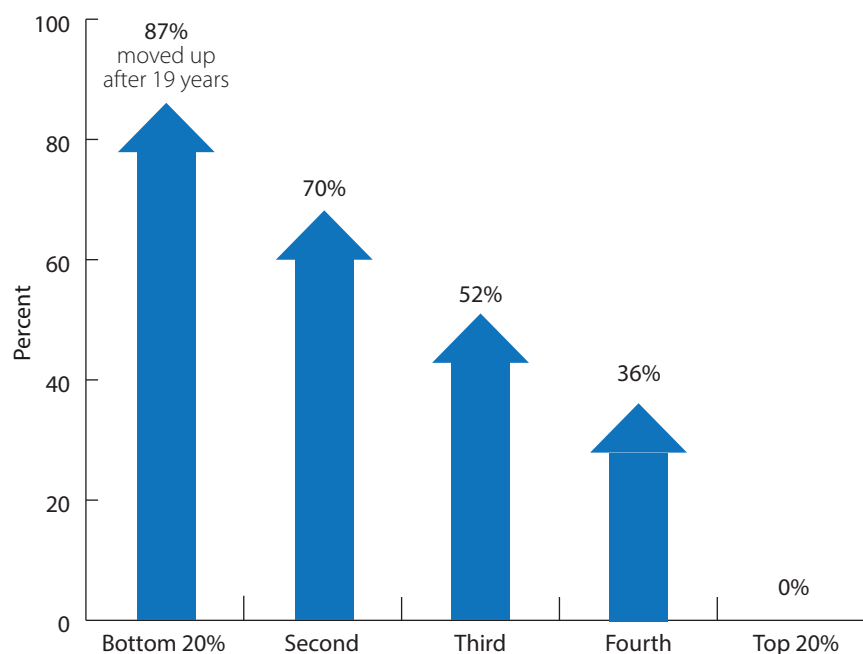
The study finds considerable upward relative mobility over all time periods. In all periods of analysis, individuals initially in the lowest income group (the bottom 20%) experienced the most upward relative mobility. For instance, over the 10-year period (1990 to 2000), 83 percent of Canadians who started in the bottom 20% had moved to a higher income group.

The 19-year period (1990 to 2009) is the longest covered in the study and best captures and reflects income changes over the lifecycle. Over the 19-year period, 87 percent in the bottom 20% in 1990 moved up at least one income group by 2009 (Exsum figure 2). That is, within two decades, nearly nine of every 10 individuals in the lowest income group had moved up the income ladder. And those in the lowest income group weren't alone in their mobility. About 70 percent of people from the second income group moved up at least one income group, while 52 percent and 36 percent of Canadians from the third and fourth income groups did so, respectively.

Being in the lowest income group was generally a temporary experience as the vast majority of people covered in the study moved to a higher income group over time. But in which income groups did the bottom 20% end up after the 19-year period? By 2009, 21 percent ended in the second income group, 24 percent in the third income group, 21 percent in the fourth income group, and 21 percent in the highest income group (Exsum figure 3). Remarkably, more than one of every five Canadians in the bottom 20% in 1990 eventually made it to the highest income group 19 years later and approximately two of every five (42 percent) ended up in the top two income groups.

Of course, some Canadians also moved down the income ladder over time, including those who were initially in the top 20%. Over the 19-year period, 36 percent of individuals in the top 20% in 1990 moved down at least one income group by 2009 as did 28 percent from the fourth income group, 20 percent from the third, and 9 percent from the second (Exsum figure 4). Downward mobility was generally greater for individuals who started the 19-year period in higher income groups and greatest for those who started in the top 20%.

Exsum figure 2: Proportion of income group in 1990 that moved to a higher group by 2009



Note 1: Income is measured by wages and salaries.

Note 2: Zero percent for the top 20% since it is the highest income group and, relative to others, individuals in that group cannot move up any further.

Source: Statistics Canada (2012b), special request from Income Statistics Division using data from the Longitudinal Administrative Databank (LAD).

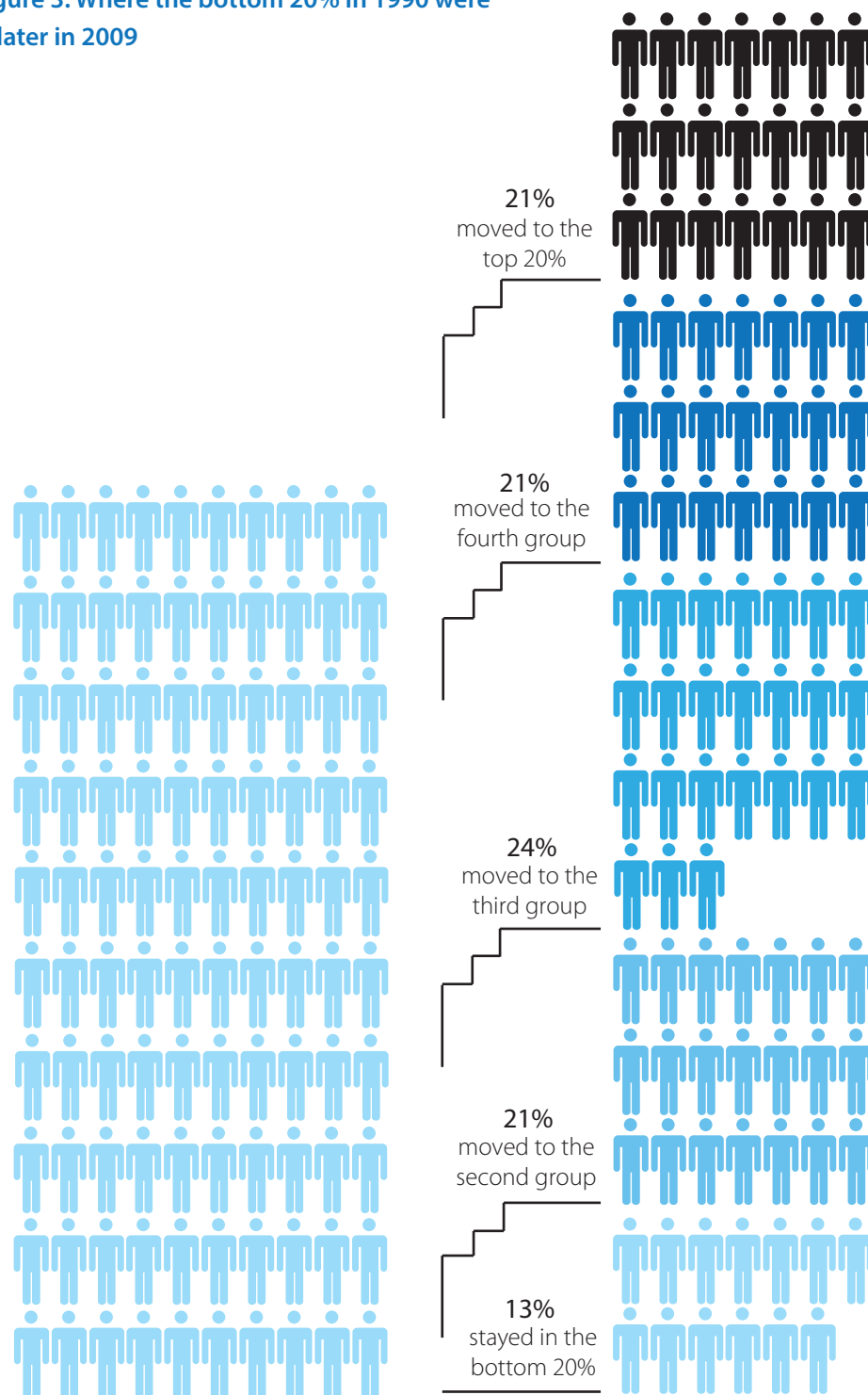
Taken together, the relative income mobility results show that many Canadians initially in the bottom 20% moved to higher income groups over time while some Canadians initially in the top 20% moved to lower income groups.

Results: Absolute income mobility

The study also examines absolute mobility, which is the change in average income of the same group of people over time after accounting for inflation (see Exsum figure 5). In 1990, the average income earned through wages and salaries of Canadians in the bottom 20% was \$6,000. However, the average income of those same individuals increased dramatically to \$44,100 by 2009 (all income in 2009 dollars). The \$38,100 rise in average income is an impressive 635 percent increase. The dollar value and percentage increase in absolute mobility for the top 20% was much smaller. Individuals that began the 19-year period in the top 20% had an average income of \$77,200 in 1990 which increased \$17,700 (or 23 percent) to \$94,900 by 2009. In absolute terms, individuals in the bottom 20% in 1990 experienced by far the largest income gains.

Another telling figure emerges from the data: the ratio of average income for those initially in the top 20% in 1990 to those initially in the

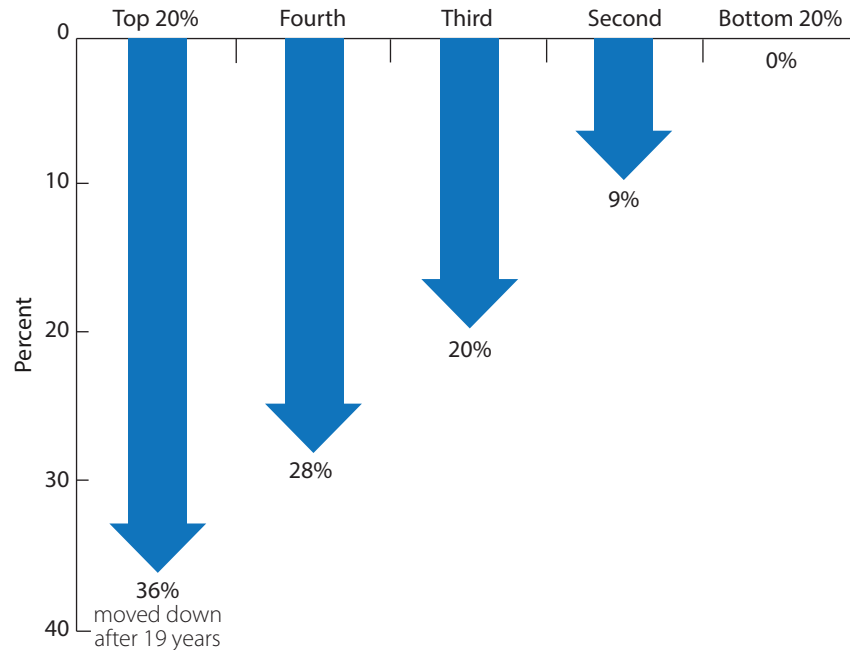
**Exsum figure 3: Where the bottom 20% in 1990 were
19 years later in 2009**



Note: Income is measured by wages and salaries

Source: Statistics Canada (2012b), special request from the Income Statistics Division using data from the Longitudinal Administrative Databank (LAD).

Exsum figure 4: Proportion of income group in 1990 that moved to a lower group by 2009



Note 1: Income is measured by wages and salaries.

Note 2: Zero percent for the bottom 20% since it is the lowest income group and individuals cannot move down any further.

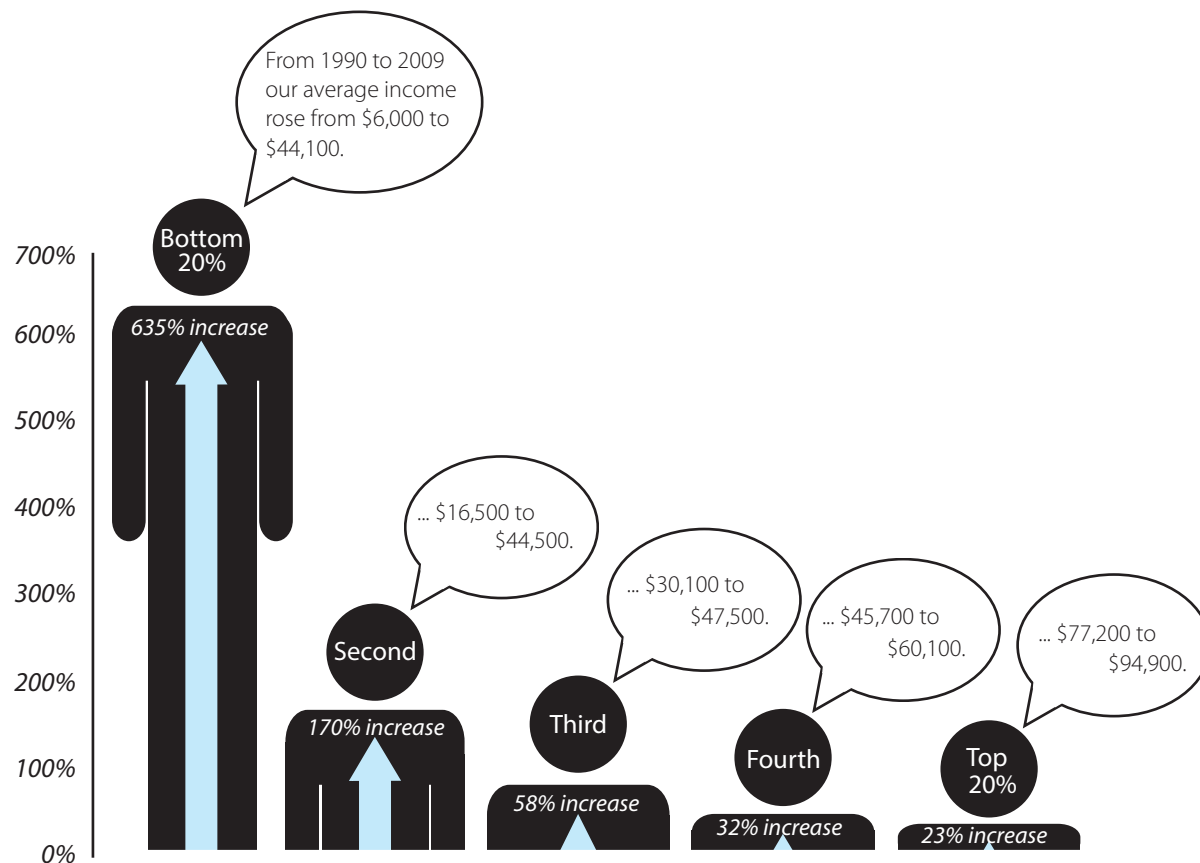
Source: Statistics Canada (2012b), special request from the Income Statistics Division using data from the Longitudinal Administrative Databank (LAD).

bottom 20% in 1990 versus this ratio for the same group of people 19 years later. In 1990, the average income of individuals in the top 20% was 13 times greater than those in the bottom 20%. By 2009, those who were in the top 20% in 1990 now had an average income that was only twice as high as those who were initially in the bottom 20% in 1990. In other words, in a comparison of income of the same group of people over time, income inequality declined significantly. The reason for the decline is that people's incomes were mobile—some moved up while others moved down.

This study provides compelling evidence that the rich and poor do not remain stuck in their respective income groups year after year. In any measure of income inequality, it is misleading to rely solely on comparisons of “snapshots” of the income distribution at any two points in time. Doing so is very misleading because it does not capture the fact that Canadians are mobile.

The findings of this study are powerful and important, but the study is just a first step in the research on income mobility. The next step is to better understand income mobility and specifically to uncover the factors that affect why some people are more or less mobile than others.

Exsum figure 5: Average income of the same group of people in 1990 and 2009 and the increase in dollars and percentage



Note: Income is measured by wages and salaries and adjusted for inflation.

Sources: Statistics Canada (2012b), special request from the Income Statistics Division using data from the Longitudinal Administrative Databank (LAD); calculations by the authors.

Introduction

Contrary to the perception of Occupy protesters and other prominent voices in the income inequality debate, Canadians are not permanently stuck in the same income groups year after year.

Last year's global Occupy movement reinvigorated the debate in Canada about income inequality and its implications for public policy. Unfortunately, too many observers and participants in the debate have relied on piecemeal facts and faulty assumptions to support their positions. Doing so has led to a misunderstanding of a very complex issue.¹

One assumption frequently underlying the income inequality debate is that people's economic positions are fixed. That is, today's low-income Canadians are assumed to be tomorrow's low-income individuals. (Similar assumptions are made about higher income Canadians). Nothing could be further from the truth. The reality is that Canadians with low or high incomes in one year are often not in that same category in future years. Thus, those who are experiencing low income today are not necessarily those who will experience it tomorrow.

This report tells a powerful story. Contrary to the perception of Occupy protesters and other prominent voices in the income inequality debate, Canadians are not permanently stuck in the same income groups year after year. We are fortunate to live in a dynamic society where the majority of us experience significant upward—and downward—income mobility over the course of our lives.

The evidence behind the analysis of income mobility in this report comes from a special data request made to Statistics Canada. This evidence should help everyone better and more accurately understand income mobility in Canada. Importantly, the report is a starting point in the research on income mobility. It takes the first step by helping to ensure that Canadians are aware of the existence and extent of income mobility. Future research may focus on what propels some Canadians to be more mobile than others, though uncovering these drivers is beyond the scope of this report.

¹ See Clemens (2012) for an excellent discussion on the oversimplification of complex issues related to income inequality.

Organization of the study

This report consists of five sections and one appendix. Section 1 defines income mobility and explains why mobility is important to any debate about income inequality. Section 2 reviews the existing literature that has empirically examined income mobility in Canada. Section 3 presents new evidence on Canadian income mobility over two relatively short periods: 1996-2001 and 2002-2007. Section 4 presents new evidence over two longer periods: 1990-2000 and 1990-2009. The final section concludes and summarizes the study's findings. The appendix contains additional details about the data used in this report.

1 What is income mobility and why is it important?

Defining income mobility

Most individuals start with a relatively low income early in life because they are young, new to the workforce, and lack work and life experience. Once they have acquired education, job-related skills, and experience, their income typically increases until it peaks in middle age (the prime earning years), and then drops again after they retire.

The concept behind income mobility is that people's incomes change over the course of their lives.² The typical lifecycle of income is such that most individuals start with a relatively low income early in life because they are young, new to the workforce, and lack work and life experience. Once they have acquired education, job-related skills, and experience, their income typically increases until it peaks in middle age (the prime earning years), and then drops again after they retire.

The lifecycle of income is a reflection of human capital theory, which says that human capital is the stock of competencies and knowledge embodied in one's labour-producing capability.³ Investment in formal education and skills training as well as on-the-job experience typically increase one's human capital, and lead to greater working efficiency and productivity. Ultimately, a more productive worker is able to command a higher wage, meaning a connection exists between one's human capital development and their capacity to earn income.

An insight from human capital theory is that people make most of their investments in education and skills training during their younger years, which explains why earnings often rise quickly early on in life.⁴ However, as people age, their human capital investments decline and, as a result, their earnings continue to rise but at a decreasing rate until they eventually fall. The

2 A related concept is the "permanent income hypothesis" proposed by the eminent economist Milton Friedman (Friedman, 1957). The fundamental insight is that people change their consumption patterns in response to permanent changes in income, not temporary changes, where their permanent income is based on what they expect to earn over their lifecycle. An important implication is that people will generally smooth their consumption patterns despite fluctuations in income over the lifecycle. They may save during unusual periods of high income and dis-save during unusual periods of low income.

3 See Mincer, 1958; Becker, 1964; and Ben-Porath, 1967 for seminal research on human capital.

4 See Polachek, 2007, for an overview of the insights from human capital theory.

theory suggests, therefore, that upward income mobility is generally greater for younger individuals than those who are at or near their peak earning years.

Measuring income mobility

In practice, income mobility is measured using statistical databases which regularly follow and record income data on a group of individuals over some period of time. These data allow us to analyze how the incomes of these individuals change over time. In other words, the data enable us to measure the extent to which individuals move up and down the income ladder.

Here's how a typical database is assembled: a statistical authority such as Statistics Canada first identifies a group of individuals. In addition to income, the authority records an assortment of statistics for all individuals in the group at various points in time.⁵ For example, the statistical authority identifies the group based on particular characteristics in some year, say 1990, and at regular intervals (perhaps every year or every couple of years) checks in with members of the group to assess changes in income and other relevant statistics. The income data can be collected either through surveys or from the income tax returns of the group's members.

Income mobility can be measured both in absolute and relative terms. Absolute income mobility simply measures the actual change in an individual's income after accounting for inflation, regardless of their relative standing within a broader group. Relative income mobility measures income changes compared with other members in a group. It is measured by dividing the broader group into smaller groups according to their initial income and examining the extent to which individuals move up, down, or stay within these groups over a specific time. If someone starts in the lowest income group in one period, but moves to a higher group over time, he or she has experienced greater relative income mobility.⁶

5 Statistics Canada has two databases that can be used to measure income mobility: the Survey of Labour and Income Dynamics (SLID) and the Longitudinal Administrative Databank (LAD). The assortment of available statistics is more extensive in the SLID database. In addition to income, SLID includes statistics on an individual's age, family status (single, married, children), labour status (employed, unemployed), and education levels.

6 There are drawbacks when measuring relative income mobility. Individuals may experience no relative income mobility even though they have increased their absolute income mobility. For instance, if someone moved from the bottom to the top of a given income group, they would have experienced upward absolute mobility but not relative mobility. Alternatively, if someone merely crossed one dollar over their income group threshold, they would be counted as moving up, even if by a very small amount. In addition, the extent of relative mobility can be influenced by how the income thresholds are determined—and specifically whether the groupings are quintiles, deciles, or some other categorization.

Many researchers often neglect income mobility and consequently their analysis of income inequality is incomplete and misleading.

Why income mobility is important

There can be no meaningful discussion about income inequality in Canada without considering income mobility. Unfortunately, many researchers often neglect income mobility and consequently their analysis of income inequality is incomplete and misleading. When they examine income inequality, researchers may calculate the share of national income earned by the “richest 20%” and the “poorest 20%” of Canadians, and observe how the share for each group changes over time.⁷ However, these year-to-year comparisons compare snapshots of the income distribution at specific points in time and, as a result, do not account for the fact that the “rich” and “poor” may not be the same people in the different years of comparison.⁸

Of course, significant and growing income inequality would be a concern if we lived in a society where the rich and the poor were the same group of people year after year. A society that lacks income mobility over long periods is undesirable for many reasons—primarily because it suggests that luck and historical circumstances, not hard work or individual effort, largely determines one’s economic fortunes. Some level of income inequality is tolerable as long as people in that society are sufficiently mobile. If they are moving up and down to higher and lower income groups over the course of time, the people in the top 20% and bottom 20% are constantly changing.

As this report will show, Canada is not a caste society where the rich and poor are permanently stuck in their respective income groups. Rather, our country is a dynamic one where individuals are economically mobile. This stands in stark contrast to some developing countries, such as Brazil and Peru, which not only have large income disparities, but also little economic mobility (Corak, 2012). In those societies, income inequalities may translate into a permanent divide between low-income individuals and the well off.⁹

7 See Conference Board of Canada, 2011, for an example of this type of research methodology. Other research methodologies for examining income inequality also fail to account for income mobility. One is a simple comparison of “Gini coefficients” for a country at two different points in time. A Gini coefficient can range from zero (a state of perfect equality where everybody in the country has the same level of income) to one (a state of perfect inequality where all the income is held by one person). See OECD, 2008, for an example of the Gini coefficient methodology.

8 In addition, such comparisons do not account for age differences in the population. Since income tends to rise as people gain education and experience, inequality at any given age should be lower than inequality within the broader population. A more informative measure of static income inequality would calculate changes in inequality for cross-sections of the population by age.

9 For an excellent discussion on the importance of income mobility and the interplay between it and income inequality, see Friedman, 1962, chapter 10. See also Cox and Alm, 1999, for a discussion about why income mobility is important in the United States. Finally, see Murray, 1994, for a discussion about alternative measures of well-being and success.

Defining “income”

It is important to understand the various definitions of income because different measures of income can be used to measure income mobility.

Figure 1 shows the various components of total income as defined by Statistics Canada. Broadly speaking, according to Statistics Canada, total income consists of market income and income from government transfers. The two main components of market income are earnings and other market income. Earnings are the sum of wages and salaries and self-employment income. Other market income may include investment and retirement income. Finally, income from government transfers includes income from various benefit programs such as the Canada Pension Plan (CPP), Old Age Security (OAS), the Guaranteed Income Supplement (GIS), social assistance, and Employment Insurance (EI).

Table 1 displays the average composition of total income¹⁰ for Canadian women and men in 2010. Market income and, specifically, earnings are by far the largest source of total income at approximately 69 percent for women and 78 percent for men. Wages and salaries, the main component of earnings, is the single largest source of income for Canadian women and men, making up approximately 65 percent and 71 percent, respectively, of the total.¹¹ Other market income and income from government transfers represent much smaller proportions of total income (other market income represents 13 percent of the total for both women and men, while government transfers represent 18 percent for women and 9 percent for men) (see table 1).

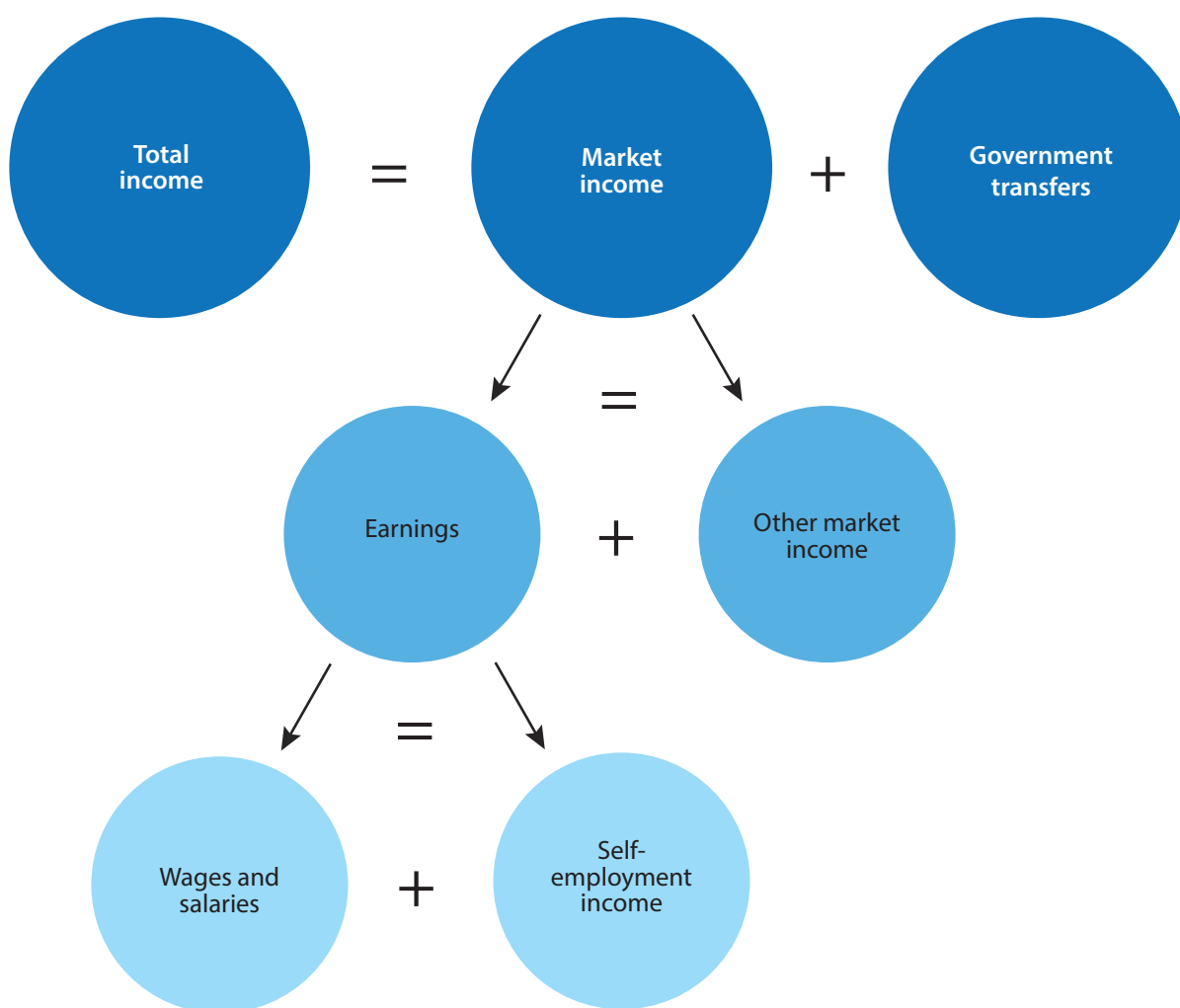
Some researchers examine income mobility using the measure of total income after taxes. This income measure is calculated by simply deducting income taxes from total income. The result is after-tax income.

Ultimately, when measuring income mobility, the selected definition of income should be based on the researcher’s measurement objectives.

10 Other sources of income not displayed in Table 1 also contribute to the total income available for many Canadians. For instance, Canadians may earn unreported income, draw down their savings when the additional income is needed, obtain in-kind (non-monetary) transfers through various government programs, or receive inter-family transfers and transfers through religious or charitable organizations.

11 As a percentage of market income, however, wages and salaries comprise an even larger proportion: roughly 78 percent on average for both women and men (Statistics Canada, 2012d).

Figure 1: Components of total income



Note 1: Other market income includes investment income, retirement income, and other income.

Note 2: Income from government transfers includes Canada Pension Plan (CPP), Old Age Security (OAS), the Guaranteed Income Supplement (GIS), social assistance, Employment Insurance (EI), child tax benefits, the GST/HST credit, and other transfers.

Source: Statistics Canada (2012d).

Table 1: Average composition of total income for Canadian women and men, 2010

		Percent of total income	
		Women	Men
Component of total income	Market Income	82	91
	<i>Earnings</i>	69	78
	Wages and salaries	65	71
	Self-employment income	5	7
	<i>Other market income</i>	13	13
	Government transfers	18	9
Total		100	100

Note 1: Totals may not add to 100% due to rounding.

Note 2: Other market income includes investment income, retirement income, and other income.

Note 3: Income from government transfers includes Canada Pension Plan (CPP), Old Age Security (OAS), the Guaranteed Income Supplement (GIS), social assistance, Employment Insurance (EI), child tax benefits, the GST/HST credit, and other transfers.

Sources: Statistics Canada (2012d); calculations by the authors.

2 Review of research on income mobility in Canada

This section briefly summarizes the existing research on income mobility in Canada; it also includes one study on income mobility for a group of developed nations including Canada.¹² Income mobility research requires income data on the same group of Canadians over a specified time period. Since access to such data is not readily available and is often expensive, the body of research in this area is sparse and consists of only a handful of studies.

One of the earliest in Canada was written by economists Charles Beach and Ross Finnie (see Beach and Finnie, 1998). The authors examined how the income of a sample of Canadian men and women changed over one year (1993-1994), six years (1982-1988 and 1988-1994), and 12 years (1982-1994). They measured income as earnings (wages and salaries plus self-employment income). The authors divided their sample of Canadians into six income groups, from lowest to highest.¹³ Overall, they found a “considerable amount” of income mobility.

12 This section reviews the literature that has examined income mobility in Canada across various income groups (high and low income), but there is a separate strand that focuses only on the mobility of low-income Canadians. For studies on low income mobility, see Morissette and Bérubé, 1996; Finnie, 1997, 2000; Drolet and Morissette, 1998; Morissette and Drolet, 2000; Morissette and Zhang, 2001; Finnie and Sweetman, 2003; Janz, 2004; Morissette and Zhang, 2005; Ren and Hu, 2011; Murphy et al., 2012; and Statistics Canada, 2012c.

The literature review only covers Canadian research on “intra-generational mobility,” which is the extent to which an individual’s income changes over their lifetime. This is distinct from “inter-generational mobility,” which is the extent to which an individual’s income is connected to their parent’s income. That being said, research shows Canada has one of the highest levels of inter-generational mobility in the developed world (Grawe, 2004; Blanden, 2005; and Corak, 2006). In other words, in Canada there is a relatively weak relationship between a parent’s economic standing and that of their child.

13 Specifically, the six income groups were: very low (25 percent or lower than the median income), low (25 to 50 percent of the median), low middle (50 to 100 percent of the median), high middle (100 to 150 percent of the median), high (150 to 200 percent of the median), and very high (200 percent or higher than the median).

Specifically, the authors found that income mobility generally increased over longer time periods, as more and more people moved upwards from one income group to another. For instance, 59 percent of men and 45 percent of women in the lowest income group moved to a higher income group after just one year (1993-1994). However, after 12 years (1982-1994), 86 percent of men and 80 percent of women in the lowest income group had moved to a higher income group.¹⁴ The authors also found that income mobility wasn't all upwards. In the highest income group, for instance, 12 percent of men and 17 percent of women moved to a lower income group after one year; after 12 years, 31 percent of men and 34 percent of women had dropped to a lower income group.

Another study by Finnie (1999) examined income mobility for a group of Canadians between 1982 and 1992 over periods ranging from one to 10 years. In this study, Finnie measured income more narrowly to include only wages and salaries. He divided the sample of Canadians into quintiles—five groups from lowest to highest income with each group containing 20 percent of the total. After tracking the change in people's income, Finnie found considerable upward income mobility.¹⁵

Specifically, he found that on average, 36 percent of Canadians in the lowest quintile moved to a higher income group after one year, 45 percent moved up after two years, 61 percent moved up after five years, and 72 percent moved up after 10 years. At the same time, he found that on average, 14 percent of Canadians in the top quintile moved to a lower income group after one year, 17 percent moved down after two years, 22 percent moved down after five years, and 27 percent moved down after 10 years (Finnie, 1999).¹⁶

In later work, Beach and Finnie (2004) again collaborated to examine income mobility in Canada. This time they examined income mobility for several one-year periods between 1982 and 1999. They again divided their sample into six income groups from lowest to highest.¹⁷ Their measure of income was earnings (wages and salaries plus self-employment income). Beach and Finnie found that Canadians are quite mobile, even over the very short time

14 A notable finding in Beach and Finnie (1998) is that upward earnings mobility is higher for men than women. In addition, they observe that men's income mobility has declined over time while women's mobility has increased. Their observation is based on the results from two periods: 1982-1988 and 1988-1994. They observed a similar trend in their later work (see Beach and Finnie, 2004).

15 Finnie (1999) also found that income mobility was greater for those who started in lower income groups, for younger workers, and for men.

16 These averages were calculated by the authors using Finnie's (1999) results.

17 The income groups used in Beach and Finnie (2004) are the same as those in Beach and Finnie (1998).

period of just one year.¹⁸ For instance, they found that in 1998, 51 percent of Canadians in the lowest income group moved up at least one income group by 1999. During the same period, 14 percent of Canadians from the highest income group moved to a lower income group.¹⁹

In contrast to the research summarized thus far, Statistics Canada produces an annual publication that measures income mobility but using a different data source, different income definition, and a different unit of analysis. Statistics Canada uses survey-based data, not data derived from Canadian income tax returns. Instead of measuring income by earnings or wages and salaries, Statistics Canada uses total, after-tax income (total income from all sources including government transfers, investment income, and pension income minus income taxes paid). Finally, Statistics Canada uses a measure of income that adjusts for family size rather than solely using an individual's income.

In the most recent edition of this publication, Statistics Canada (2012c) examined income mobility in Canada over four one-year periods (2003-2004, 2006-2007, 2008-2009, and 2009-2010) and two five-year periods (1999-2004 and 2005-2010). The group of Canadians analyzed were divided into quintiles. Similar to the findings from previous studies, Statistics Canada found a greater degree of income mobility the longer the time period. On average, 24 percent of Canadians in the lowest quintile moved up at least one quintile after one year. But after five years, 43 percent of individuals in the lowest income group had moved up. Conversely, Statistics Canada found that, on average, 21 percent of those in the top quintile moved to a lower quintile after one year, and 43 percent had moved down after five.

A study by Chen (2009) also includes income mobility results for Canada over several periods in the 1990s and 2000s.²⁰ Chen's definition of

18 One reviewer astutely pointed out that Beach and Finnie (2004) may be measuring income volatility, not income mobility, since large changes cannot easily be explained by human capital accumulation over very short time periods like one year.

19 Interestingly, Beach and Finnie (2004) found that economic conditions may affect income mobility. In comparing income mobility over two one-year periods (1991-1992 and 1998-1999), they found less upward and more downward mobility in Canada's recessionary 1991-1992 period. Finnie (1999) also found that upward mobility decreased during economic downturns.

20 While Chen (2009) includes income mobility results for Canada, the goal of the study was to compare income mobility in four countries and to uncover the underlying reasons for the differences. The four countries were Canada, the United States, Great Britain, and Germany. After examining an assortment of income mobility measures, Chen's international comparison revealed that Canada generally has less income mobility than do the other countries. He found that a key reason for lower mobility rates in Canada is the stabilizing effect of government transfers. Given this finding, it would be interesting to replicate Chen's international comparison using a different definition of income (say, wages and salaries), to avoid the distortionary impact of a country's system of taxes and transfers.

Existing research has found that Canada is a dynamic society where many of us move up and down the income ladder over time—often in very short order.

income is the same as for Statistics Canada (2012c): total income including government transfers minus income taxes. Chen's analysis divided the Canadian samples into deciles—10 groups from lowest to highest income with each group containing 10 percent of the total. The relative income mobility findings for Canada were as follows: on average, 50 percent to 55 percent of Canadians were not in the same decile after one year; approximately 70 percent were not in the same decile after four years; and around 35 percent moved up at least one decile after four years.²¹

While the specific data source, definition of income, and methodology may differ in the studies summarized above, the consistent finding is that Canadians are mobile. That is, existing research has found that Canada is a dynamic society where many of us move up and down the income ladder over time—often in very short order.

21 In addition to relative mobility, Chen also examined other income mobility measures, including a measure of absolute income mobility and the relationship between income mobility and income inequality.

3 Short-term income mobility in Canada (1996-2001 and 2002-2007)

This section presents the first set of results from our special data request to Statistics Canada. These results are based on an examination of income mobility in Canada over two five-year periods: 1996 to 2001 and 2002 to 2007. The section starts by describing the data and then explains the measure of income used in the analysis. A discussion of the results follows.

Data source and description

The income mobility analysis in this section uses data from Statistics Canada's Survey of Labour and Income Dynamics (SLID). Through this survey, Statistics Canada tracks the income of a group of individuals over time. Our specific data request covers two groups of Canadians during two separate time periods: 1996-2001 and 2002-2007. We therefore present income mobility results over two five-year periods. For each group, the sample consists of individuals between the ages of 20 and 59 (inclusive) in the initial year of the period (1996 and 2002). This means the maximum age for people in the sample at the end of the five-year period is 64. Please see the appendix for additional details on the data used for the short-term income mobility analysis.

Definition of income

As Section 1 explained, there are several ways to define income when measuring income mobility. The definition we use here is wages and salaries. We have chosen that definition for many reasons. First, wages and salaries is by far the single largest component of total income (see Section 1). Second, our objective is to measure income mobility with a definition of income that relies solely on one's labour market efforts. That is, our objective is to measure the extent to which Canadians are able to improve themselves by their own effort and diligence. As a result, our income definition excluded non-labour market income such as government transfers, investment income, and retirement income. We also excluded self-employment income, which is a form of labour market income, because there is considerable annual fluctuation in this income source over time and its volatility obscures any clear indication of mobility.

The “wages and salaries” definition is before taxes to minimize the impact of the tax system on income mobility. Finally, we are analyzing individuals, not the family. Changes in family size and structure often alter family income, and by extension, the income mobility of the family unit. This means that changes in a family’s income mobility can occur without any changes in the income of individual earners in that family. Our analysis of income mobility focuses on individuals to avoid the direct influence of changes in family size and structure.

Results

Five-year income mobility from 1996 to 2001

Table 2 summarizes the results of the five-year income mobility analysis from 1996 to 2001. The table divides the sample of individuals into five groups based on their income in 1996. The groups range from lowest to highest income with each group containing 20 percent of the total SLID population (such groupings are called quintiles). We refer to the income groups as: the bottom 20% (the lowest income group), second, third, fourth, and the top 20% (the highest income group).

The income thresholds for the quintiles were determined by the income of all individuals in the broader SLID group, not the income of just the individuals in our sample. To be part of the overall SLID group in these calculations, individuals had to report at least \$1,000 of income from wages and salaries (in 2007 dollars). This methodology is in line with previous research on income mobility using earnings or wages and salaries as a definition of income.²² We measured income mobility relative to the broader SLID group because the broader SLID group is a better reflection of the income distribution of the entire Canadian population. Ultimately, we are interested in knowing into which income groups individuals in our sample fall relative to the overall Canadian population.

The first column in Table 2 displays the proportion of individuals that moved from their initial income group in 1996 to a higher income group by 2001. The second column displays the proportion of individuals that moved to a lower income group by 2001. The third column displays total mobility, the sum of the first and second columns.

22 Finnie (1999: 10) measured income mobility for individuals in his sample relative to the income of individuals in the broader panel group, not relative to those in his sample. It appears that Beach and Finnie (1998: 5) and Beach and Finnie (2004: 222) did the same, although they do not explicitly state so. We also consulted a senior official at Statistics Canada who is a leading expert on income mobility data regarding the methodology we used to measure relative income mobility.

Table 2: Summary of five-year income mobility from 1996 to 2001

		Five years later		Total mobility (%)
		Percentage that moved into a higher income group	Percentage that moved into a lower income group	
Income group in 1996	Bottom 20%	53	0	53
	Second	34	31	65
	Third	22	40	63
	Fourth	17	38	55
	Top 20%	0	31	31

Note 1: Income is measured by wages and salaries.

Note 2: Zero percent for the bottom 20% since it is the lowest income group and individuals cannot move down any further.

Note 3: Zero percent for the top 20% since it is the highest income group and, relative to others, individuals cannot move up any further.

Source: Statistics Canada (2012a), special request from the Income Statistics Division using data from the Survey of Labour and Income Dynamics (SLID).

In the span of only five years, more than half of all individuals in the lowest income group moved into a higher income group.

The results in table 2 demonstrate that there is considerable mobility across all income groups. The lowest income group experienced the highest level of upward mobility: approximately 53 percent of individuals in the bottom 20% in 1996 moved to a higher income group by 2001. Put differently, in the span of only five years, more than half of all individuals in the lowest income group moved into a higher income group.

The other income groups also experienced upward income mobility from 1996 to 2001. Thirty-four percent of the second income group, 22 percent of the third income group, and 17 percent of the fourth income group moved to higher income groups in that time. For those in the highest income group (the top 20%), the rise in income mobility was zero because relative to others, individuals in that group cannot move up any further.

Table 2 shows that while some individuals moved up the income ladder over the five-year period, others moved down the ladder between 1996 and 2001. Thirty-one percent of the top income group, 38 percent of the fourth income group, 40 percent of the third income group, and 31 percent of the second income group moved to a lower income group in the five-year period. Individuals in the lowest income group (bottom 20%) did not drop further because they are already in the lowest income group.

Overall, a considerable degree of total mobility is evident. When we sum up the proportion of individuals in each income group in 1996 that moved up and down the income ladder over the five-year period, total

mobility for the second, third, and fourth income groups was 61 percent on average. This means that, on average, three of every five individuals in these income groups were not in their initial income group five years later—some moved up while others moved down.

Table 2 understates the true level of total mobility for the bottom 20% and top 20% since individuals in these income groups can only move either up or down the income ladder, not in both directions.²³ Nonetheless, total mobility after five years was approximately 53 percent for the bottom 20% and 31 percent for the top 20%.

Five-year income mobility from 2002 to 2007

Table 3 contains the results from a similar analysis of income mobility for the five-year period from 2002 to 2007. The results for this later period are virtually identical to those of the first five-year period, so they will not be covered in detail. Notably, however, approximately half of the individuals in the bottom 20% moved to a higher income group after five years. The second, third, and fourth income groups also experienced an average total mobility of 61 percent.

Summary of the short-term income mobility results

The results from both five-year time periods show that Canadians generally enjoyed a meaningful amount of income mobility. Most encouraging is the finding that individuals in the lowest income group (the bottom 20%) had the highest level of upward mobility of any of the income groups. Being in the lowest income group was therefore a temporary experience for many Canadians in our two samples.

Most encouraging is the finding that individuals in the lowest income group (the bottom 20%) had the highest level of upward mobility of any of the income groups.

23 Total mobility is understated because we are comparing income mobility at two points in time without accounting for what happened in the years in between. Individuals in the bottom 20% may after one year move to higher income group (say, the second) and then fall back into the bottom 20% by the fifth year. In our analysis, we do not account for the income mobility that may have occurred between the first and last year of the period.

Table 3: Summary of five-year income mobility from 2002 to 2007

		Five years later		Total mobility (%)
		Percentage that moved into a higher income group	Percentage that moved into a lower income group	
Income group in 2002	Bottom 20%	50	0	50
	Second	30	33	64
	Third	23	40	63
	Fourth	17	38	56
	Top 20%	0	32	32

Note 1: Income is measured by wages and salaries.

Note 2: Zero percent for the bottom 20% since it is the lowest income group and individuals cannot move down any further.

Note 3: Zero percent for the top 20% since it is the highest income group and, relative to others, individuals cannot move up any further.

Source: Statistics Canada (2012a), special request from the Income Statistics Division using data from the Survey of Labour and Income Dynamics (SLID).

4 Long-term income mobility in Canada (1990-2000 and 1990-2009)

The previous section has shown that income mobility for Canadians is significant, even over a short time period. But what about income mobility over a person's lifetime? To better grasp the extent of longer-term income mobility, this section examines income changes in Canada over a 10-year period (1990-2000) and a 19-year period (1990-2009). This section is organized like the previous one, but presents additional data for these longer time periods.

Data source and description

The data for the analysis in this section are from Statistics Canada's Longitudinal Administrative Databank (LAD). This new data source tracks the income of Canadians over a longer time period than SLID. The databank is constructed from the income tax returns of a group of Canadians from 1982 to 2009. By linking tax-filing information to an individual's Social Insurance Number, Statistics Canada is able to track and record annual income changes for the same group of individuals. Our specific data request covers one group of Canadians over two time periods: 1990-2000 and 1990-2009. With the data, we evaluate income mobility for a group of Canadians in 1990 after 10 years and again after 19 years. The age range for those in our sample in 1990 is 20 to 45 (inclusive). This means the maximum age for people in the sample at the end of the 10-year period is 55 and 64 for the 19-year period.²⁴ Please see the appendix for additional details on the data used for the long-term income mobility analysis.

24 It would be interesting to conduct a sensitivity analysis by varying the age range of individuals contained in the sample. One possible way to conduct the sensitivity analysis is to examine the impact on relative income mobility by limiting the sample to individuals with ages at which most people are increasing their labour market income. This could be achieved by constraining the maximum age for people in the sample to 45 at the end of the 10-year period and 55 at the end of the 19-year period. However, we do not have direct access to the mobility data to perform such an analysis. All tabulations are performed by Statistics Canada and additional data requests are costly.

Definition of income

The definition of income used for the analysis of long-term income mobility is wages and salaries. Section 3 discussed our reasons for using this income definition.

Results

10-year income mobility from 1990 to 2000

Table 4 summarizes the results of the 10-year income mobility analysis from 1990 to 2000. The table divides the sample of individuals into five groups based on their income in 1990. The groups range from lowest to highest income with each group containing 20 percent of the total LAD population (such groupings are called quintiles). We refer to the income groups as: the bottom 20% (the lowest income group), second, third, fourth, and top 20% (the highest income group).

The income of all the individuals in the broader LAD group determined the income thresholds for the quintiles, not the income of just the individuals in our sample. To be part of the overall LAD group in these calculations, individuals had to report at least \$1,000 of income from wages and salaries (in 2009 dollars). Again, this methodology is in line with previous research on income mobility using earnings or wages and salaries as a definition of income.

Table 4: Summary of 10-year income mobility from 1990 to 2000

		10 years later		Total mobility (%)
		Percentage that moved into a higher income group	Percentage that moved into a lower income group	
Income group in 1990	Bottom 20%	83	0	83
	Second	65	10	75
	Third	49	17	65
	Fourth	36	20	56
	Top 20%	0	21	21

Note 1: Income is measured by wages and salaries.

Note 2: Zero percent for the bottom 20% since it is the lowest income group and individuals cannot move down any further.

Note 3: Zero percent for the top 20% since it is the highest income group and, relative to others, individuals cannot move up any further.

Source: Statistics Canada (2012b), special request from the Income Statistics Division using data from the Longitudinal Administrative Databank (LAD).

The first column in table 4 displays the proportion of individuals that moved from their initial income group in 1990 to a higher income group by 2000. The second column displays the proportion of individuals that moved to a lower income group by 2000. The third column displays total mobility, the sum of the first and second columns.

The results of the 10-year analysis (see table 4) reveal that income mobility was greater in this time period than it was in the short-term mobility analysis described in the previous section. Individuals in the lowest income group again had the greatest upward mobility: 83 percent of those in the bottom 20% in 1990 moved to a higher income group 10 years later. In the decade, more than eight of every 10 individuals in the bottom 20% had moved up the income ladder. This compares to an upward mobility in the five-year periods of roughly five of every 10 individuals in the bottom 20% moving up. While the income mobility results for the 10-year period are not directly comparable to those for the five-year periods, the contrast is telling nonetheless.

Figure 2 shows the proportion of individuals in the various income groups in 1990 that moved to a higher income group by 2000. There was clearly upward mobility across all income groups.²⁵ Specifically, 65 percent of individuals in the second income group in 1990 moved to a higher group by 2000, while 49 percent in the third income group moved up, and 36 percent in the fourth income group did so. Taken together, the results indicate that a large number of individuals in our sample from 1990 experienced substantial relative income mobility over the decade.

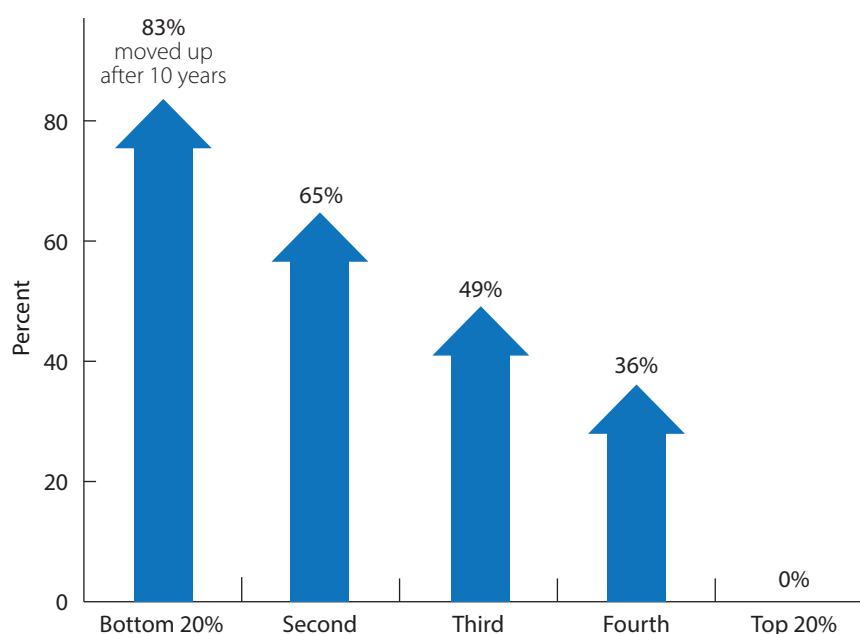
Yet Table 4 also shows that individuals in our sample moved down the income ladder. Those in the top 20% in 1990 experienced the greatest downward mobility after 10 years. Specifically, 21 percent of individuals in that group in 1990 moved to a lower income group by 2000. Twenty percent from the fourth income group percent moved down, as did 17 percent from the third income group, and 10 percent from the second income group (see also figure 3).

Total mobility over the 10-year period is sizeable. On average, 65 percent of individuals in the second, third, and fourth income groups in 1990 moved to a higher or lower income group by 2000. So, within the span of a decade, most Canadians did not stay in their initial income group, reinforcing the notion that Canadians are not economically stationary and highlighting the presence of considerable income mobility—in both directions.

While the overall results show the proportion of individuals that moved up and down from each income group in 1990, they do not tell us into which income group these individuals ended up. Table 5 shows where individuals

Within the span of a decade, most Canadians did not stay in their initial income group, reinforcing the notion that Canadians are not economically stationary and highlighting the presence of considerable income mobility—in both directions.

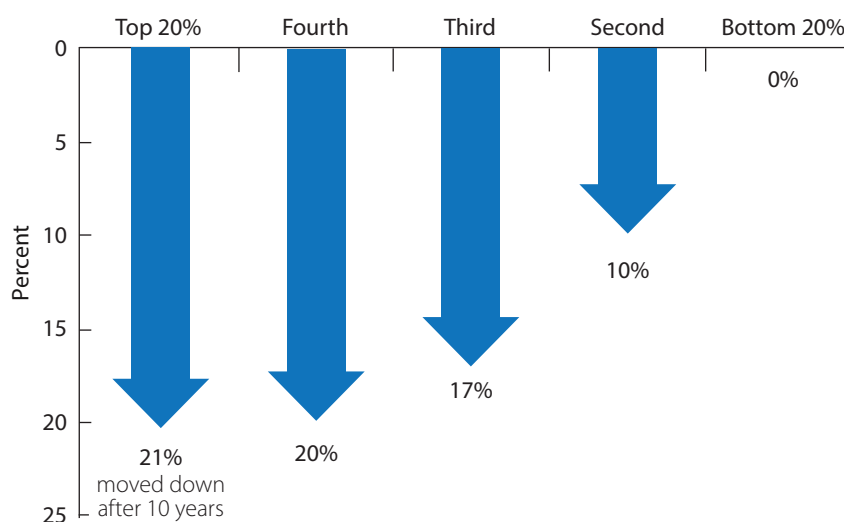
25 The only exception was individuals in the top 20%; they cannot move into a higher income group because they are already in the highest possible group.

Figure 2: Proportion of income group in 1990 that moved to a higher group by 2000

Note 1: Income is measured by wages and salaries.

Note 2: Zero percent for the top 20% since it is the highest income and relative to others, individuals in that group cannot move up any further.

Source: Statistics Canada (2012b), special request from the Income Statistics Division using data from the Longitudinal Administrative Databank (LAD).

Figure 3: Proportion of income group in 1990 that moved to a lower group by 2000

Note 1: Income is measured by wages and salaries.

Note 2: Zero percent for the bottom 20% since it is the lowest income group and individuals cannot move down any further.

Source: Statistics Canada (2012b), special request from the Income Statistics Division using data from the Longitudinal Administrative Databank (LAD).

Table 5: Where individuals from income groups in 1990 ended up 10 years later in 2000

		Where they ended up (percentage in income group in 2000)				
		Bottom 20%	Second	Third	Fourth	Top 20%
Where they started (income group in 1990)	Bottom 20%	17	26	25	20	12
	Second	10	25	31	22	12
	Third	5	12	35	34	15
	Fourth	2	5	13	44	36
	Top 20%	1	2	4	13	79

Note 1: Income is measured by wages and salaries.

Source: Statistics Canada (2012b), special request from the Income Statistics Division using data from the Longitudinal Administrative Databank (LAD).

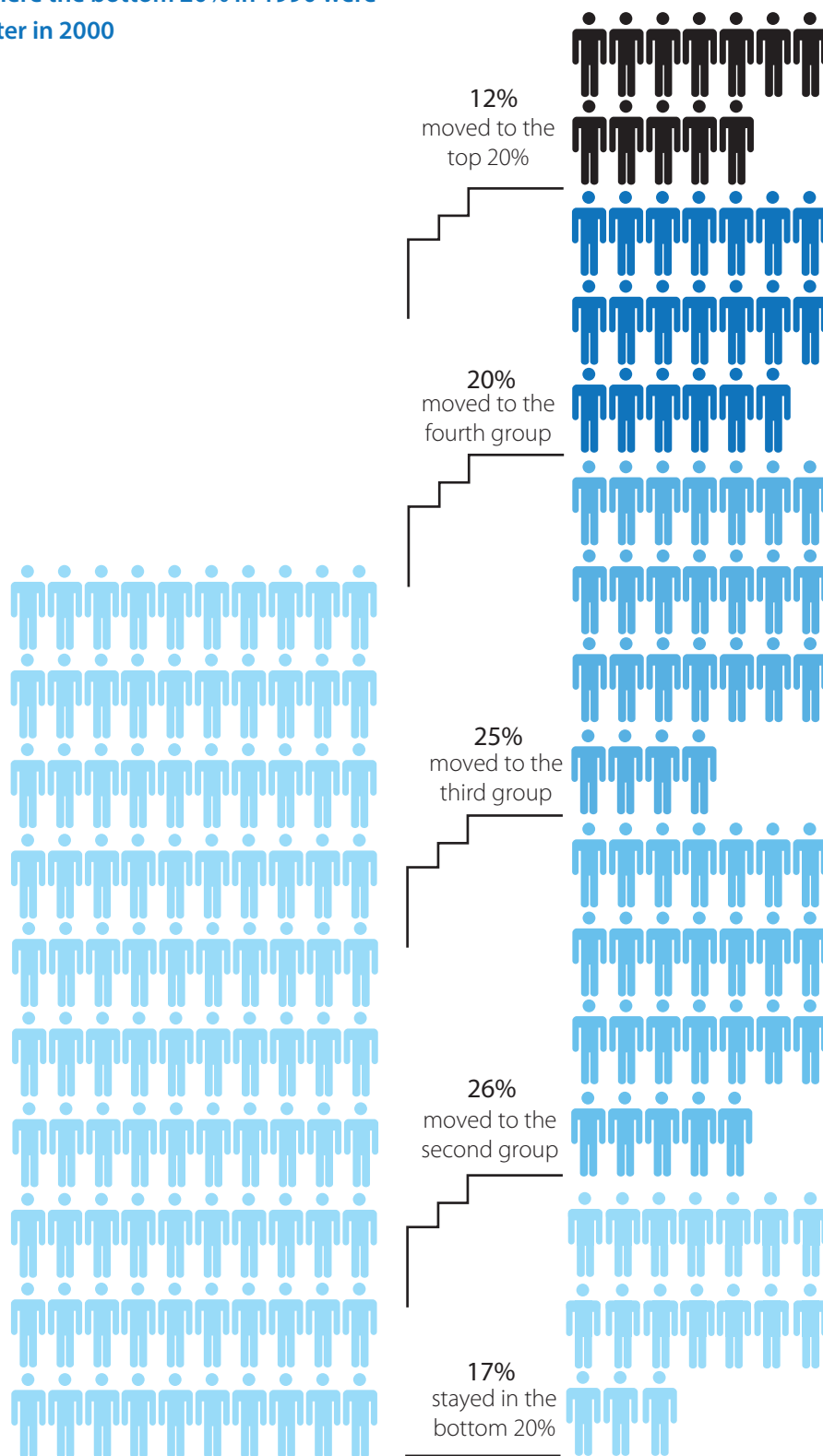
from the various income groups in 1990 finished up 10 years later. Consider the first row of results for the bottom 20% in 1990, which are also displayed graphically in figure 4.

Figure 4 shows that approximately 17 percent of the individuals that started in the bottom 20% in 1990 were still in that income group in 2000. However, of the 83 percent that moved up, 26 percent ended up in the second income group, 25 percent ended up in the third income group, 20 percent ended up in the fourth income group, and 12 percent were in the top 20% after only 10 years. The results are impressive: more than half of the people in the bottom 20% in 1990 ended up in one of the top three income groups by 2000; nearly a third ended up in the top two; and more than a tenth found their way from the bottom to the very top income group.

Table 5 also shows that many individuals from the second, third, and fourth income groups in 1990 managed to reach the top 20% group by 2000. Specifically, of those in the second income group, 12 percent reached the top 20% group after 10 years. Of those in the third income group, 15 percent reached the top 20% group, and of those in the fourth income group, 36 percent reached the top 20% group. This means that the make-up of the top 20% changed a lot after 10 years as many new people entered this group who were not there in 1990.

In sum, the 10-year mobility analysis not only shows that many low- and middle-income Canadians moved up the income ladder, but that many who started in lower income groups in 1990 were able to reach the highest income groups within a decade.

Figure 4: Where the bottom 20% in 1990 were ten years later in 2000



Note: Income is measured by wages and salaries

Source: Statistics Canada (2012b), special request from the Income Statistics Division using data from the Longitudinal Administrative Databank (LAD).

Nearly nine of every 10
Canadians in the lowest
income group moved up
the income ladder within
the span of two decades.

19-year income mobility from 1990 to 2009

Table 6 summarizes the income mobility results from the 19-year period. These results are for the same group of individuals from the 10-year analysis except that now we examine their income mobility after 19 years.

The table divides the sample into the same five groups (quintiles) based on their 1990 income. The first column displays the proportion of people that moved from their initial income group in 1990 to a higher income group by 2009. The second displays the proportion that moved to a lower income group. The third column displays total mobility.

As expected, individuals who were in lower income groups in 1990 saw the greatest degree of upward mobility (see also figure 5). Of those from the bottom 20% in 1990, 87 percent moved into a higher income group by 2009. Put differently, nearly nine of every 10 Canadians in the lowest income group moved up the income ladder within the span of two decades. About 70 percent of those from the second income group moved up, as did 52 percent and 36 percent of individuals in the third and fourth income groups, respectively.

Table 6 also shows the proportion of individuals in 1990 that moved to a lower income groups after 19 years (see figure 6 for a graphical representation). Downward mobility is proportionately higher for individuals who started the period in higher income groups and is largest for those in the top 20%. Specifically, over a third (36 percent) of individuals from the top 20% in 1990 moved to a lower income group by 2009. Among those in the fourth income group, 28 percent moved down, as did 20 percent in the third group, and 9 percent in the second.²⁶

-
- 26 Over the 19-year period, on average, 19 percent of individuals across all income groups moved to a lower income group while 49 percent moved to a higher income group. Thus, net upward mobility for the period was positive 30 percentage points (49 percent minus 19 percent). In comparison, net upward mobility was on average positive 33 percentage points for the 10-year period from 1990 to 2000 (46 percent minus 14 percent). For the five-year periods, net upward mobility was negative 5 percentage points from 2002 to 2007 (24 percent minus 29 percent) and negative 3 percentage points from 1996 to 2001 (25 percent minus 28 percent).

While we recognize the importance of net upward mobility, uncovering the precise reason for the difference in results between the five, 10, and 19-year periods is beyond the scope of this study. That said, the different age range of the individuals in the samples is likely a driving factor. In the five-year periods, the age range of individuals in the initial year is between 20 and 59 (inclusive) while it is between 20 and 45 (inclusive) for those in the 10-year period. The average proportion of downward mobility will be greater in the five-year period because people in the sample have passed their typical peak earning years (around 55) and have entered pre, partial, or full retirement. Not so in the 10-year period since the oldest individuals after 10 years are 55. They have not yet started to see their incomes drop significantly. The greater proportion of older people seeing their incomes drop in the five-year period is likely driving the negative net upward mobility results.

Other factors might be different data sources, time periods, and time frames for which income mobility is analyzed.

Table 6: Summary of 19-year income mobility from 1990 to 2009

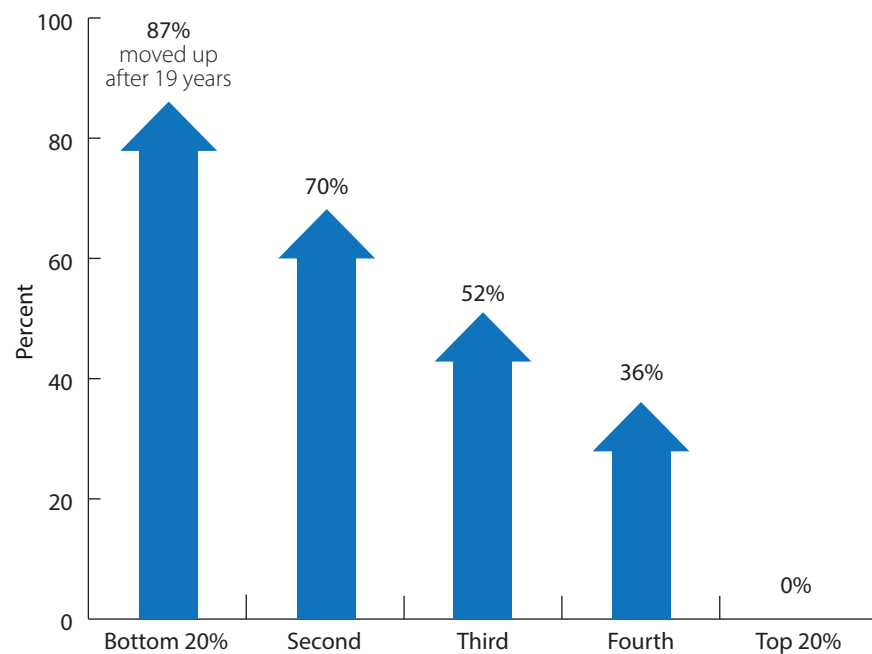
		19 years later		Total mobility (%)
		Percentage that moved into a higher income group	Percentage that moved into a lower income group	
Income group in 1990	Bottom 20%	87	0	87
	Second	70	9	79
	Third	52	20	71
	Fourth	36	28	65
	Top 20%	0	36	36

Note 1: Income is measured by wages and salaries.

Note 2: Zero percent for the bottom 20% since it is the lowest income group and individuals cannot move down any further.

Note 3: Zero percent for the top 20% since it is the highest income group and, relative to others, individuals cannot move up any further.

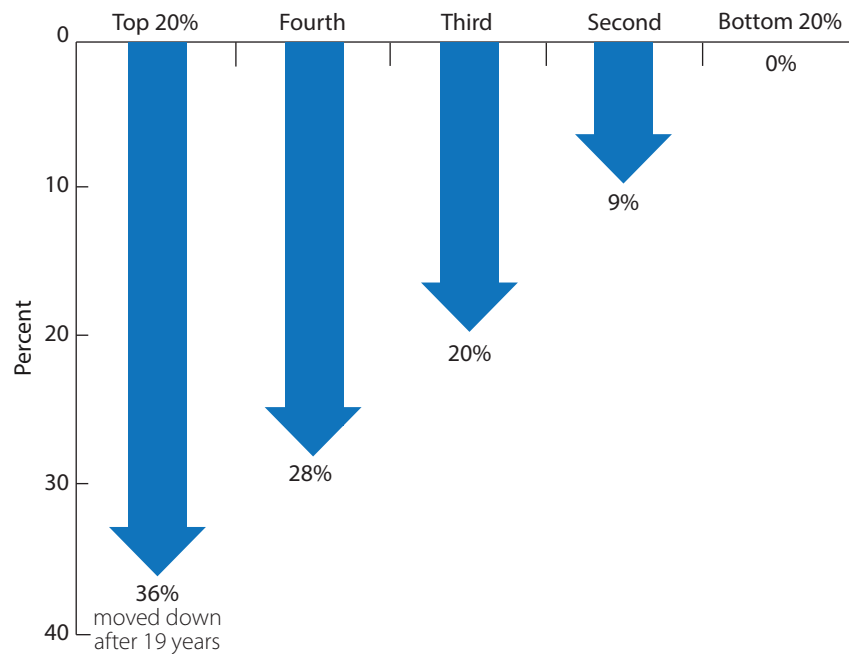
Source: Statistics Canada (2012b), special request from the Income Statistics Division using data from the Longitudinal Administrative Databank (LAD).

Figure 5: Proportion of income group in 1990 that moved to a higher group by 2009

Note 1: Income is measured by wages and salaries.

Note 2: Zero percent for the top 20% since it is the highest income group and, relative to others, individuals in that group cannot move up any further.

Source: Statistics Canada (2012b), special request from the Income Statistics Division using data from the Longitudinal Administrative Databank (LAD).

Figure 6: Proportion of income group in 1990 that moved to a lower group by 2009

Note 1: Income is measured by wages and salaries.

Note 2: Zero percent for the bottom 20% since it is the lowest income group and individuals cannot move down any further.

Source: Statistics Canada (2012b), special request from the Income Statistics Division using data from the Longitudinal Administrative Databank (LAD).

Total mobility over the 19-year period is higher than in all other periods examined.

Total mobility over the 19-year period is higher than in all other periods examined. For individuals in the second, third, and fourth income groups, total mobility over the period was 72 percent, on average. Except for those in the top 20%, total mobility was approximately two-thirds (65 percent) or higher, which means the vast majority of Canadians were not economically stationary. As explained earlier, the true amount of total mobility for the top 20% (and bottom 20%) is somewhat understated because individuals that start in these income groups can move in only one direction, given the methodology used.

Table 7 provides more detailed information on where individuals from the various income groups in 1990 ended up after 19 years. The results for the bottom 20% are displayed graphically in figure 7.

Of those in the bottom 20% in 1990, 21 percent ended in the second income group by 2009, 24 percent in the third income group, 21 percent in the fourth income group, and 21 percent in the highest income group. Remarkably, more than one of every five people in the bottom 20% in 1990 eventually made it to the highest income group after 19 years. Approximately two of every five (42 percent) ended up in the top two income groups after 19 years, while two of every three (66 percent) ended up in the top three income groups.

Table 7: Where individuals from income groups in 1990 ended up 19 years later in 2009

		Where they ended up (percentage in income group in 2009)				
		Bottom 20%	Second	Third	Fourth	Top 20%
Where they started (income group in 1990)	Bottom 20%	13	21	24	21	21
	Second	9	21	27	23	19
	Third	7	13	29	32	20
	Fourth	6	8	15	35	36
	Top 20%	7	6	7	16	64

Note 1: Income is measured by wages and salaries.

Source: Statistics Canada (2012b), special request from the Income Statistics Division using data from the Longitudinal Administrative Databank (LAD).

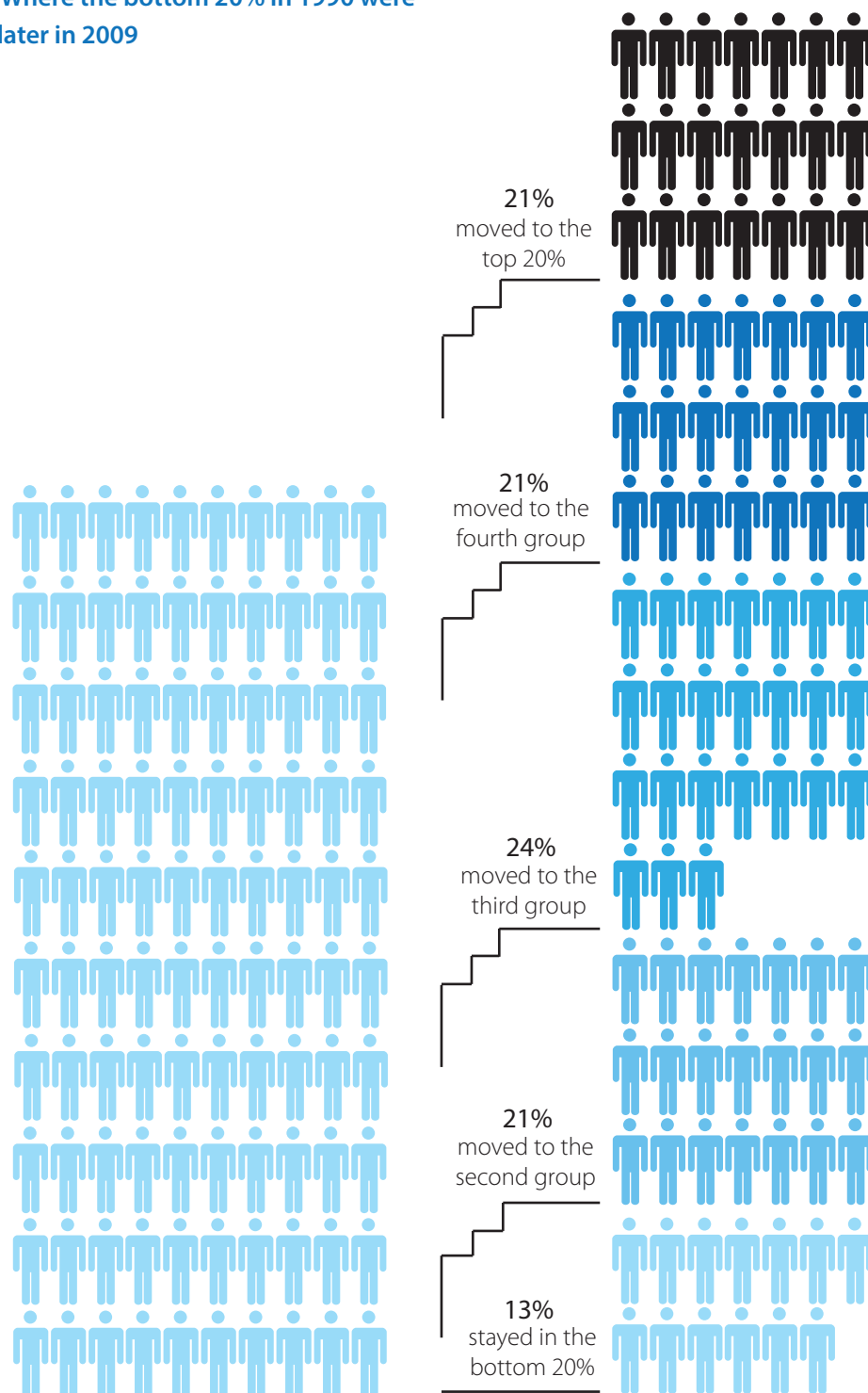
A meaningful proportion of Canadians initially in the second, third, and fourth income groups also managed to reach the top 20% by 2009 (see table 7). Specifically, 19 percent from the second income group in 1990 were in the top 20% after 19 years, while 20 percent from the third, and 36 percent from the fourth reached the highest income group. Table 7 demonstrates yet again that Canada is an economically mobile society where in time many income earners—including the lowest—climb the income ladder.

Comparing results from the 10- and 19-year periods

The 10- and 19-year periods show similar upward income mobility results. While the proportion of individuals that moved to a higher income group is generally higher in the 19-year period, the difference is marginal. For instance, after 10 years, 83 percent of the individuals in the bottom 20% moved up, and 87 percent had done so after 19 years—only a 4 percentage point difference. The results suggest that income mobility occurs quite rapidly. In our sample, most of the movement took place in the first 10 years; the gains were much less in the subsequent nine years.

Downward mobility is a slightly different story; there are larger differences between the two periods among the top two income groups. Specifically, 21 percent of those in the top 20% moved to a lower income group after 10 years. After 19 years, 36 percent had done so (a 15 percentage point difference).

**Figure 7: Where the bottom 20% in 1990 were
19 years later in 2009**



Note: Income is measured by wages and salaries

Source: Statistics Canada (2012b), special request from the Income Statistics Division using data from the Longitudinal Administrative Databank (LAD).

In the fourth income group, 20 percent had moved down after 10 years. After 19 years, 28 percent had moved down (an 8 percentage point difference). Thus, the proportion of individuals in the top two income groups that moved downwards is noticeably higher after 19 years than after 10 years.

These results are consistent with the lifecycle of income. Typically, a young person's income increases until it peaks during the prime earning years (around age 55) and then drops near and after retirement. The individuals in our long-term mobility sample are between the ages of 20 and 45 (inclusive) in 1990. By 2000, the oldest person in our sample is 55 years old, still within their prime earning years. However, by 2009 some of the people in our sample reach age 64 and are near retirement. From age 55 to 64, many people experience downward income mobility because they have passed their prime earning years and are beginning to pare down their working hours in preparation for retirement. Some may even be partially or fully retired. The lifecycle of income, coupled with our sample's demographics, suggests that we should expect upward income mobility to slow, and downward income mobility to accelerate, in the 19-year period compared to the 10-year period.

Absolute income mobility after 19 years

All of the analyses thus far have been of relative income mobility. However, it is instructive to examine absolute income mobility, the change in people's income over time (after adjusting for inflation), regardless of their relative standing within the broader group.

Table 8 shows the average income of individuals in the five income groups in 1990 (in 2009 dollars). It also displays the average income of the same individuals 19 years later in 2009, regardless of which income group they ended up in (also in 2009 dollars). The table gives the dollar and percentage increase in average income for individuals in each initial income group.

The first row in table 8 contains individuals that began the 19-year period in the bottom 20%. Their average income earned through wages and salaries in 1990 was \$6,000, but it increased dramatically to \$44,100 by 2009 (all income in 2009 dollars). The \$38,100 rise represents an impressive 635 percent increase in average income.

Now consider the increase in absolute mobility for the top 20%. Individuals that began the 19-year period in the top 20% had an average income of \$77,200 in 1990 which increased by \$17,700 to \$94,900 by 2009. This growth represents a percentage increase of just 23 percent. Interestingly, among individuals in the five initial income groups, the percentage increase in absolute mobility is greatest for those in the bottom 20% (635 percent). While the growth in average income is also large for

Table 8: Average income of the same group of people in 1990 and 2009 and the increase in dollars and percentage

		Average income in 1990 (\$2009)	Average income in 2009 (\$2009)	Dollar increase from 1990 to 2009	Percentage increase from 1990 to 2009
Income group in 1990	Bottom 20%	6,000	44,100	38,100	635
	Second	16,500	44,500	28,000	170
	Third	30,100	47,500	17,400	58
	Fourth	45,700	60,100	14,400	32
	Top 20%	77,200	94,900	17,700	23

Note: Income is measured by wages and salaries and adjusted for inflation.

Sources: Statistics Canada (2012b), special request from the Income Statistics Division using data from the Longitudinal Administrative Databank (LAD); calculations by the authors.

In 1990, the average income of individuals in the top 20% was 13 times greater than those in the bottom 20%. By 2009, those who were in the top 20% in 1990 now had an average income that was only twice as high as those who were initially in the bottom 20% in 1990.

those initially in the second income group (170 percent), it is considerably smaller for those in the other income groups: 58 percent growth for those in the third income group, 32 percent growth for those in the fourth, and just 23 percent growth for those in the top 20%. In absolute terms, individuals in the bottom 20% in 1990 had by far the largest gains in absolute income mobility. In other words, the income of the poor increased at a faster rate than the income of the rich.

Another telling figure emerges from the data: the ratio of average income for those initially in the top 20% in 1990 to those initially in the bottom 20% in 1990 versus this ratio for the same group of people 19 years later. In 1990, the average income of individuals in the top 20% was 13 times greater than those in the bottom 20%. By 2009, those who were in the top 20% in 1990 now had an average income that was only twice as high as those who were initially in the bottom 20% in 1990. In other words, in a comparison of income of the same group of people over time, income inequality declined significantly. The reason for the decline is that people's incomes were mobile—some moved up while others moved down.

Unfortunately, this critical fact is never reported in debates about income inequality.

Summary of the income mobility results over the long term

The results from both the 10- and 19-year income mobility analysis tell a powerful story. Over time, individuals from the lowest income group improved their lot on average; the majority of them moved to a higher income group. Not only did many from the bottom 20% end up in higher income groups, but a meaningful proportion of them remarkably ended up in the top 20%. Those in the lowest income group had the greatest gains in absolute mobility, both in dollars and percentages.

While many individuals from the lower income groups moved up the income ladder, some from the higher income groups moved down. Similar to our observations in the short-term analysis, total mobility was considerable over the longer term as well. The Canadians in our sample generally did not stay in their initial income group.

Conclusion

This study measured income mobility in Canada over two five-year periods (1996-2001 and 2002-2007) and over a 10-year and a 19-year period (1990-2000 and 1990-2009). It found considerable upward relative mobility over all time periods. In all periods of analysis, individuals initially in the lowest income group (the bottom 20%) experienced the most upward relative mobility. For instance, over the 10-year period (1990 to 2000), 83 percent of Canadians who started in the bottom 20% had moved to a higher income group.

The 19-year period (1990-2009) is the longest covered in the study and best captures and reflects income changes over the lifecycle. Over the 19-year period, 87 percent of those in the bottom 20% in 1990 moved up at least one income group by 2009. That is, within two decades, nearly nine of every 10 individuals in the lowest income group had moved up the income ladder. And those in the lowest income group weren't alone in their mobility. About 70 percent of people from the second income group moved up at least one income group, while 52 percent and 36 percent of Canadians from the third and fourth income groups did so, respectively.

Being in the lowest income group was generally a temporary experience, as the vast majority of people covered in the study moved to a higher income group over time. But in which income groups did the bottom 20% end up after the 19-year period? By 2009, 21 percent ended in the second income group, 24 percent in the third income group, 21 percent in the fourth income group, and 21 percent in the highest income group. Remarkably, more than one of every five Canadians in the bottom 20% in 1990 eventually made it to the highest income group 19 years later.

The study also found that some Canadians slip down the income ladder over time, including those who were initially in the top 20%. Over the 19-year period, 36 percent of individuals in the top 20% in 1990 moved down at least one income group by 2009, as did 28 percent from the fourth income group, 20 percent from the third, and 9 percent from the second. Downward mobility was generally greater for individuals who started the 19-year period in higher income groups and greatest for those who started in the top 20%.

Taken together, the relative income mobility results showed that many Canadians initially in the bottom 20% moved to higher income groups over time while some initially Canadians initially in the top 20% moved to lower income groups.

The study also examined absolute mobility, which is the change in average income of the same group of people over time after accounting for inflation. In absolute terms, individuals initially in the bottom 20% in 1990 experienced by far the largest income gains (in both in dollars and percentages).

This study provides compelling evidence that low and high income Canadians do not remain stuck in their respective income groups year after year. This evidence is critical to enable a better understanding of the whole income inequality debate. In any measure of income inequality, it is misleading to rely solely on comparisons of “snapshots” of the income distribution at any two points in time. Doing so is very misleading because it does not capture the fact that Canadians are mobile. By not accounting for income mobility, one paints an incomplete picture of the well-being of Canadians. Ultimately, such an analysis could lead to misguided policies and a reduction in Canada’s prosperity.

We must emphasize that this study’s purpose was to provide broad evidence on income mobility in Canada. It is a first step in the research process and certainly not an end point. The next step for future research is to understand what propels income mobility and to uncover the factors that affect why some people are more or less mobile than others. In this regard, considering such factors as age and educational attainment may be informative.

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Appendix: Data Description

The income mobility data for this report were obtained through a special request made to Statistics Canada. There are two sources of data depending on the period in question. The data sources for the particular periods are discussed in turn.

Data for measuring short-term income mobility (1996-2001 and 2002-2007)

Our short-term income mobility analysis relies on data from Statistics Canada's Survey of Labour and Income Dynamics (SLID). This survey provides data on income and other statistics for a group of individuals over time. Data is collected on various groups between 1993 and 2009. Every three years, a new group of individuals is added to the survey database and their income is tracked and recorded for six consecutive years.

We examined short-term income mobility for two groups of Canadians over the course of two time periods (1996-2001 and 2002-2007). Within each group, our sample consists of individuals between the ages of 20 and 59 (inclusive) in the first year of the periods (1996 and 2002). Thus, the sample consists of individuals between the ages of 25 and 64 (inclusive) in the final year of the short-term mobility periods (2001 and 2007). Individuals under age 20 in the first year of the periods are excluded because they are typically students and are not expected to have significant income mobility while enrolled in post-secondary schooling or training. The Survey of Labour and Income Dynamics allows us to identify individuals who are full-time students, so they were excluded from the sample as well (this is standard practice among researchers analyzing income mobility using SLID data). Individuals who are 65 and older were also excluded since they are typically retired, are unlikely to have significant income from wages and salaries, and are therefore unlikely to experience material income mobility.

In addition, the sample from each group includes only individuals that reported at least \$1,000 of income from wages and salaries (in 2007 dollars). This criterion was imposed to exclude individuals with only a marginal attachment to the labour force. The sample also only includes individuals who reported income in both the first and last year of the period examined. As discussed in detail in Section 3, the measure of income is wages and salaries.

For the period from 1996 to 2001, our sample consists of 12,537 individuals, which corresponds to 28.8 percent of the overall group surveyed by SLID (43,547 individuals in total). The sample for the period from 2002 to 2007 consists of 11,953 individuals, which is 28.3 percent of the overall group (42,232 individuals in total).

Finally, it is important to note that the relative income mobility of individuals in each sample is evaluated relative to all individuals contained in the entire SLID group. That is, for each year that we analyzed income mobility, income thresholds for the quintiles were determined by the income of all individuals in the SLID group, not just the income of individuals in the sample. To be part of the overall SLID group in these calculations, individuals had to report at least \$1,000 of income from wages and salaries (in 2007 dollars).

The specifications for our data request on short-term mobility are generally in line with existing Canadian research that examines income mobility using earnings or wages and salaries as a definition of income (see Beach and Finnie, 1998, 2004; Finnie, 1999).

Data for measuring long-term income mobility (1990-2000 and 1990-2009)

Our long-term income mobility analysis relies on data from Statistics Canada's Longitudinal Administrative Databank (LAD). The databank provides income data on a group of Canadians from 1982 to 2009. The income data is derived from income tax returns collected by the Canada Revenue Agency (CRA). The databank includes a sample of 20 percent of all tax-filers in a given year. By linking tax-filing information using an individual's Social Insurance Number, Statistics Canada is able to track and record the income of the same individuals year after year.

We examined long-term income mobility for one group of Canadians over the course of two periods (1990-2000 and 1990-2009). Our sample consists of individuals between the ages of 20 and 45 (inclusive) in the first year of the period (1990). Thus, the sample consists of individuals between the ages of 39 and 64 (inclusive) in the final year of the 19-year mobility period (2009). Individuals under the age of 20 in the initial year are excluded because they are typically students and not expected to experience significant income mobility while enrolled in post-secondary schooling or training. Unfortunately, the Longitudinal Administrative Databank does not allow us to directly identify tax-filers who are post-secondary students.²⁷ Individuals

²⁷ Indirectly, researchers can estimate whether a tax-filer is a post-secondary student through LAD according to whether or not they claimed tuition tax credits. This is an imperfect method, however, because we would be unable to discern whether students are full- or part-time. In addition, parents or spouses may claim these credits if transferred by a student. Finally, students may not choose to claim their tuition tax credits in the year in which they are a student as they have the option to carry forward the amount eligible for the tax credit to higher income earning years.

who are 65 and older also were excluded since they are typically retired, are unlikely to have significant income from wages and salaries, and are therefore unlikely to experience material income mobility.

In addition, our sample includes only individuals who reported at least \$1,000 of income from wages and salaries (in 2009 dollars) in order to exclude individuals with only a marginal attachment to the labour force. The sample also includes only individuals who filed a tax return in three years: 1990, 2000, and 2009. So, in the analysis of income mobility from 1990 to 2009, individuals had to file a tax return in 1990, 2000, and 2009 (but not necessarily in any of the years in between).

The sample that we used to analyze long-term income mobility consists of 1,079,000 individuals, which corresponds to 27.5 percent of the overall group available through the Longitudinal Administrative Databank (3,918,000 individuals in total).

Finally, the relative income mobility of individuals in our sample is evaluated relative to all individuals contained in the entire LAD group. That is, for each year that we analyzed income mobility, income thresholds for the quintiles were determined by the income of all individuals in the LAD group, not just the income of individuals in our sample. To be part of the overall LAD group in these calculations, individuals had to report at least \$1,000 of income from wages and salaries (in 2009 dollars).

The specifications for our data request on long-term mobility are generally in line with existing Canadian research that examines income mobility using earnings or wages and salaries as a definition of income (see Beach and Finnie, 1998, 2004; Finnie, 1999).

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