
What Has Happened to Middle-Class Earnings in Canada?

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DISTRIBUTIONAL CONCERNS AND ISSUES OF WIDENING INCOME INEQUALITY HAVE caught the public attention since the advent of the Great Recession and the Occupy Movement in the United States, as well as in western Europe and elsewhere (Atkinson 2015; Noah 2012; Stiglitz 2015). The past few years have seen a flurry of major news media series on “the wealth paradox” (*Globe and Mail*), “the great divide” (*New York Times*), “unequal Canada” (*Toronto Star*) and “the third great wave” (*Economist*).¹ Clearly, income inequality is a key issue of our times, with concern about whether a new distributional paradigm has been at work since the late 1970s compared with the period between the end of the Second World War and the early 1970s.

Much of the media attention has focused on the claim of a declining middle class and on the hollowing out of formerly middle-class jobs, resulting in the increased polarization of earnings in the North American labour market (Cross and Sheikh 2015; Friesen 2014; Reich 2014). Public policy research has also focused on this issue (for example, at a 2014 conference at Queen’s University²) and on the growing “middle-class angst” and feeling of economic insecurity it has generated. A declining middle class raises concerns about a broad range of long-run social, political and economic issues, including basic fairness questions about reduced economic and social upward mobility and equality of opportunity, and, as a consequence, a weakening of social cohesion and trust in economic and political institutions that might make it more difficult to govern and obtain political consensus. Income inequality can lead to political and legal inequality and the tilting of rules to favour the rich and powerful, thus potentially causing a shift

from an “inclusive society” to an “extractive society” (Acemoglu and Robinson 2012; Pressman 2007; United States 2010). Rising income inequality can also hamper efficient economic outcomes if rules favouring private benefit get too out of line with the broader public benefit, and it can slow down economic growth if overall consumption, private sector investment and human capital development are affected negatively (Canadian Centre for Policy Alternatives 2007; Osberg 2006; Stiglitz 2012).

An extensive US-based literature presents a number of plausible explanations for earnings polarization and widening income inequality. One focuses on technological change, and in particular information and computer technology, which is replacing middle-skill manual and clerical jobs involving routine tasks such as assembly-line work and the organization, retrieval and manipulation of information (Acemoglu and Autor 2011). On the other hand, nonroutine tasks that are complementary to the new technology — such as jobs requiring abstract problem solving, creativity and persuasion — and that typically are a feature of professional, scientific and managerial occupations have become increasingly important and more highly rewarded.

A second emphasizes the role of globalization and international trade, whereby many well-paying, largely blue-collar, full-time and often unionized jobs — but increasingly some business and professional services as well — in the middle of the earnings distribution have gone to lower-cost jurisdictions abroad (see Feenstra and Hanson 1999; Katz and Autor 1999). At the same time, increasing demand for the highly skilled in the context of a broader, more accessible international market has increased both employment and wages of workers at the upper end of the earnings distribution.

A third highlights institutional and policy-related factors (see Fortin et al. 2012; and Osberg, in this volume). Deregulation and growth in the financial sector and greater global competition for high-skilled talent have increased compensation of those at the top end of the earnings distribution (see Lemieux and Riddell, in this volume), while declining unionization and reduced generosity of and access to employment insurance and social assistance benefits in Canada have weakened the wage negotiation power of less-skilled workers. Moreover, the North American Free Trade Agreement has made right-to-work states in the US south and southwest and Mexico more attractive locations for major new investments, especially in the automotive sector, and placed pressure on the incomes of Canadian workers.

Empirical research on income inequality in Canada has focused primarily on the dramatic rise in incomes at the upper end of the income distribution (see, for example, Freeland 2012; Saez and Veall 2005; Veall 2012). This chapter examines more specifically what has been happening to middle-class earnings over the past several decades. Middle-class earnings are defined as those between 50 percent and 150 percent of the median earnings level. This definition allows one to distinguish between changes in the proportion of middle-class workers in the workforce (as a proxy for the size of the middle class) and changes in the share of total earnings received by middle-class workers — that is, their command of labour market resources. I refer to the former as the workers' share and the latter as the earnings share. In examining what has happened to the Canadian middle class, I principally make use of data from the 1971, 1981, 1991, 2001 and 2006 Censuses,³ with supplemental results from Statistics Canada's Labour Force Survey for the 1997-2012 period.

- My analysis reveals two main trends over the period from 1970 to 2005:
- > a marked decline in the proportion of middle-class workers and a corresponding increase in the proportions of both higher-earning and lower-earning workers among male and full-time, full-year (FTFY) female workers; and
 - > a dramatic increase in the earnings share of high earners, a corresponding drop in the earnings share of middle-class workers and an essentially unchanged earnings share of lower-earning workers.

Looking more specifically at the factors underlying this important shift in earnings share between middle-class and high-earning workers over the 35-year period, I find that the decline in the proportion of middle-class workers in the workplace accounted for more than half of the substantial drop in their earnings share, while the increase in the proportion of high-earning workers accounted for more than three-quarters of the rise in the earnings shares of high-earning male and FTFY female workers. Changes in the relative mean earnings of these groups of workers therefore played a much lesser role. Data for the more recent period from 2000 to 2005, however, suggest that the pattern has reversed. Indeed, a substantial decline in the relative mean earnings of middle-class male and FTFY female workers accounted for between two-thirds and three-quarters of the fall in their earnings shares, and a corresponding strong increase in the relative mean

earnings of higher-earning male and FTFY female workers accounted for about one-half to two-thirds of the rise in their earnings shares.

Concepts of Middle-Class Earners and Categories of Workers

THE DEFINITION OF THE MIDDLE CLASS IS NEITHER CLEAR NOR OBVIOUS, AS IT CAN be viewed historically, culturally, socially or politically (James 2006). Economists, though, typically prefer empirically operational measures (Atkinson and Brandolini 2011; Eisenhauer 2008; International Institute for Labour Studies 2013) and conventionally define the middle class in terms of the income distribution of families or households, typically expressed as a relative measure such as the middle 60 percent of the income distribution. However, given that the principal source of rising income inequality in Canada, the United States and most other developed economies over recent decades is the labour market and its response to factors such as technological progress, the globalization of trade and resource booms, in this chapter I focus on the changing shares of labour market income among individual workers. To do so, I examine the distributional changes in total earnings — that is, wages and salaries plus net self-employment income — and, in particular, changes in the shares of earnings going to workers in the lower, middle and upper ranges of the earnings distribution.

The definition of these three earnings groups is essentially arbitrary, but largely conventional. Like Beach and Slotsve (1996) and many other studies, I define middle-class workers as those with annual earnings *between* 50 percent and 150 percent of their gender-specific median level of earnings.⁴ Workers with annual earnings *below* 50 percent of the median of the earnings distribution make up the lower-earnings group, while higher earners are those with earnings *above* 200 percent of the median. Note that the three groups do not cover 100 percent of the distribution; this is by design, to highlight changes at the upper end of the earnings distribution, yet not to focus too heavily on the very top end — the top 1 percent — where other datasets, such as those from the Canada Revenue Agency, would probably be more appropriate.⁵

One also needs to choose whether to focus on all workers in the labour market or just those working full-time. The past several decades have seen substantial growth in nonstandard employment — particularly part-time work — and this growth might have differed between women and men. Accordingly, I consider two categories of workers: the broadest group of “all workers” —

Table 1

Summary statistics for census estimation samples, by gender, 1970-2005 (real 2005 dollars)

	1970	1980	1990	2000	2005
a) Males					
All workers					
Number of observations	59,123	143,248	234,636	227,828	236,968
Median earnings	31,626	38,217	36,849	35,555	35,000
Middle-class earnings range	15,813–47,438	19,109–57,326	18,425–55,274	17,777–53,332	17,500–52,500
Mean middle-class earnings	31,888	38,310	37,096	35,017	34,388
Higher-earnings cut-off	63,251	76,434	73,699	71,110	70,000
FTFY workers					
Number of observations	28,405	68,614	122,859	121,923	124,231
Median earnings	41,640	49,992	49,133	48,116	49,000
Middle-class earnings range	20,820–62,461	24,996–74,988	24,566–73,699	24,058–72,175	24,500–73,500
Mean middle-class earnings	40,312	49,339	48,039	46,593	47,186
Higher-earnings cut-off	83,281	99,984	98,266	96,232	98,000
b) Females					
All workers					
Number of observations	32,164	101,619	196,143	202,491	217,264
Median earnings	15,286	18,968	20,662	22,432	24,000
Middle-class earnings range	7,643–22,929	9,484–28,452	10,331–30,992	11,216–33,648	12,000–36,000
Mean middle-class earnings	15,397	18,567	20,208	22,106	23,210
Higher-earnings cut-off	30,572	37,936	41,324	44,864	48,000
FTFY workers					
Number of observations	8,608	30,653	78,693	87,871	94,693
Median earnings	25,828	32,830	34,120	35,891	37,000
Middle-class earnings range	12,914–38,741	16,415–49,244	17,060–51,180	17,945–53,836	18,500–55,500
Mean middle-class earnings	25,081	32,166	33,473	34,833	35,738
Higher-earnings cut-off	51,655	65,660	68,240	71,782	74,000

Source: Statistics Canada, Census of Canada, 1971, 1981, 1991, 2001 and 2006.

FTFY = full-time, full-year

specifically, individuals ages 15 and older with positive reported earnings and positive weeks worked in the previous year; and the narrower and more homogeneous group of “full-time, full-year” workers — namely, individuals ages 25 to 59 with positive earnings and who reported working full-time, full-year in the previous year. I report the results separately for men and women since their labour market experience may differ.⁶

Summary statistics for these two groups of workers are provided in table 1. So, for example, in 2005, the middle-class earnings range for FTFY women was \$18,500-\$55,500, and for FTFY men it was \$24,500-\$73,500. Mean (real) middle-class earnings of women rose steadily between 1970s and 2005, although relatively slowly after 2000. Mean middle-class earnings of men increased rapidly in the 1970s, peaked in 1980 and decreased slightly thereafter.

Changes in the Size of the Middle Class

HAS THERE BEEN A DECLINE IN THE SIZE OF THE MIDDLE CLASS IN CANADA OR, TO be more precise, has the proportion of workers with middle-class jobs declined? As table 2 shows, there has indeed been a substantial drop in the proportion of middle-class earners since at least 1980 among both all male workers and FTFY male and female workers. The share of middle-class earners among all male workers fell by 12.62 percentage points (from 54.42 percent in 1970 to 41.80 percent in 2005); in contrast, the share of middle-class female earners went up very slightly. Among FTFY workers, however, males and females show generally quite similar patterns, with the share of middle-class earners declining quite markedly — by 11.56 percentage points for men and by 13.47 points for women. Second, the proportion of higher-earning workers has increased substantially since the 1980s among all workers (although the increase was much larger for men) and similarly among male and female FTFY workers. For instance, between 1970 and 2005, the share of higher earners grew by 3.37 percentage points (from 14.38 percent to 17.75 percent) among all female workers and by 7.79 points (from 9.40 percent to 17.19 percent) among all male workers. Third, over the period, the proportion of lower earners rose among all male workers as well as among FTFY male and female workers, while the proportion of low earners among all female workers steadily declined. As figure 1 illustrates, male and female FTFY workers experienced generally similar distributional shifts and displacement (in the case of middle-class workers). These patterns reflect certain trends: (1) the middle-class workers most heavily hit by technological change and increased offshoring of jobs were the higher-cost workers (more likely male and FTFY female workers); (2) manufacturing jobs (where males are more predominantly employed) were more heavily impacted by offshoring and globalization than service sector jobs (where female workers are more concentrated); and (3) there

Table 2

Percentage of male and female workers by earnings level, Canada, 1970-2005

	Males		Females	
	All workers	FTFY workers	All workers	FTFY workers
Lower earnings (below 50% of median)				
1970	23.28	9.14	31.49	8.14
1980	24.59	9.35	30.08	8.51
1990	26.45	11.09	28.64	12.75
2000	27.02	13.33	27.30	13.24
2005	27.42	14.20	28.21	13.83
<i>Change 1970-2005 (percentage points)</i>	+ 4.14	+ 5.06	- 3.28	+ 5.69
Middle-class earnings (within 50% of median)				
1970	54.42	74.34	39.86	76.53
1980	51.86	75.14	38.91	75.21
1990	48.33	71.46	38.90	68.14
2000	43.71	65.35	41.37	65.52
2005	41.80	62.78	41.50	63.06
<i>Change 1970-2005 (percentage points)</i>	- 12.62	- 11.56	+ 1.64	- 13.47
Higher earnings (above 200% of median)				
1970	9.40	6.73	14.38	4.64
1980	9.22	5.56	15.39	4.60
1990	11.39	6.46	16.71	5.66
2000	14.87	8.89	17.79	7.83
2005	17.19	10.14	17.75	9.53
<i>Change 1970-2005 (percentage points)</i>	+ 7.79	+ 3.41	+ 3.37	+ 4.89

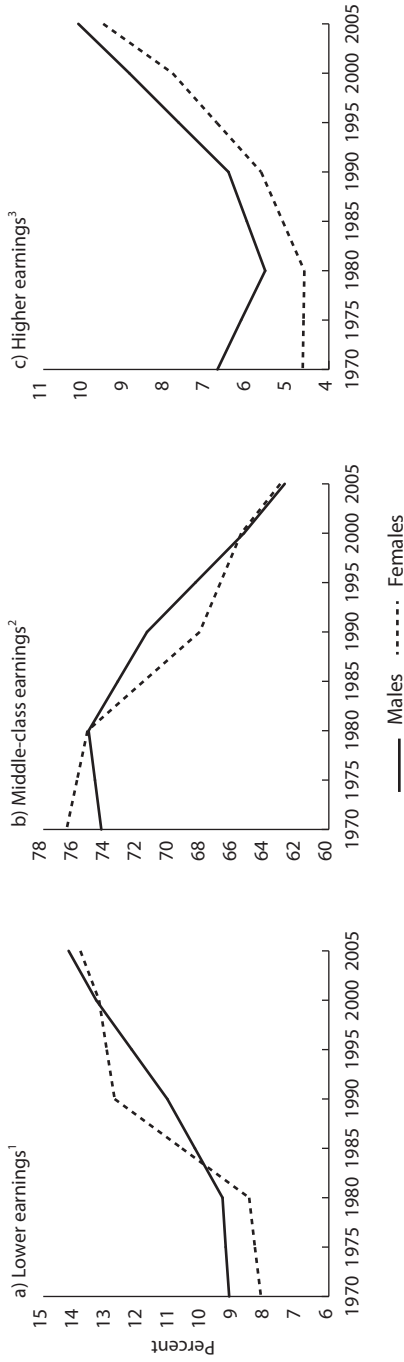
Source: Statistics Canada, Census of Canada, 1971, 1981, 1991, 2001 and 2006.

FTFY = full-time, full-year

were broad increases in female earnings over the period as female wage rates and hours worked went up substantially.

Results from Statistics Canada's annual Labour Force Survey for the period from 1997 to 2012 are examined to gauge whether these trends have persisted. The

Figure 1
Percentage of full-time, full-year male and female workers by earnings level, Canada, 1970-2005



Source: Statistics Canada, Census of Canada, 1971, 1981, 1991, 2001 and 2006.

¹ Below 50 percent of the median earnings level.

² Within 50 percent of the median earnings level.

³ Above 200 percent of the median earnings level.

Figure 2

Percentage of full-time male and female workers by wage level, Canada, 1997-2012

Source: Statistics Canada, Labour Force Survey, 1997-2012.

¹ Within 50 percent of the median weekly wage level.

² Above 150 percent of the median weekly wage level.

Labour Force Survey uses somewhat different worker sample definitions than those of the census,⁷ and reports weekly wages, rather than total annual earnings. Nonetheless, up to 2005, the general patterns for full-time workers, as shown in figure 2, are quite similar — namely, among both men and women, a decline in the share of middle-class workers and a rise in the share of higher-earning workers. After 2005, however, the share of middle-earning male workers continued to decline, although much more slowly, while there appears to have been a reversal of the trend in the case of women, with the share of middle-earning female workers rising slightly. At the upper end of the distribution, the share of higher-earning males has continued to rise, although at a slower pace, while the share of high-earning females appears to have stabilized.

Changes in the Earnings Shares of Middle-Class Workers

THE EXPRESSION “DECLINING MIDDLE CLASS” CAN REFER TO CHANGES IN THE RELATIVE size of the middle class as a group — for instance, the decline in the proportion of workers with middle-class earnings. But it can also refer to changes in the share of all income (earnings) going to those in the middle of the income

Table 3

Male and female earnings share by earnings level, Canada, 1970-2005 (percent)

	Males		Females	
	All workers	FTFY workers	All workers	FTFY workers
Lower earnings (below 50% of median)				
1970	4.61	2.52	6.32	2.34
1980	5.04	2.71	5.79	2.40
1990	5.28	2.96	5.51	3.65
2000	5.00	3.50	4.84	3.59
2005	4.66	3.40	5.20	3.72
<i>Change 1970-2005 (percentage points)</i>	+ 0.05	+ 0.88	- 1.12	+ 1.38
Middle-class earnings (within 50% of median)				
1970	49.21	64.19	36.07	69.34
1980	48.10	67.62	33.42	68.44
1990	43.60	63.22	31.83	61.58
2000	36.45	55.43	33.29	57.45
2005	30.23	47.33	32.03	51.50
<i>Change 1970-2005 (percentage points)</i>	- 18.98	- 16.86	- 4.04	- 17.84
Higher earnings (above 200% of median)				
1970	26.32	18.51	35.53	11.41
1980	24.19	14.19	37.26	10.59
1990	29.63	16.88	39.71	13.54
2000	37.55	22.51	42.31	18.14
2005	47.72	32.00	45.28	24.97
<i>Change 1970-2005 (percentage points)</i>	+ 21.40	+ 13.49	+ 9.75	+ 13.56

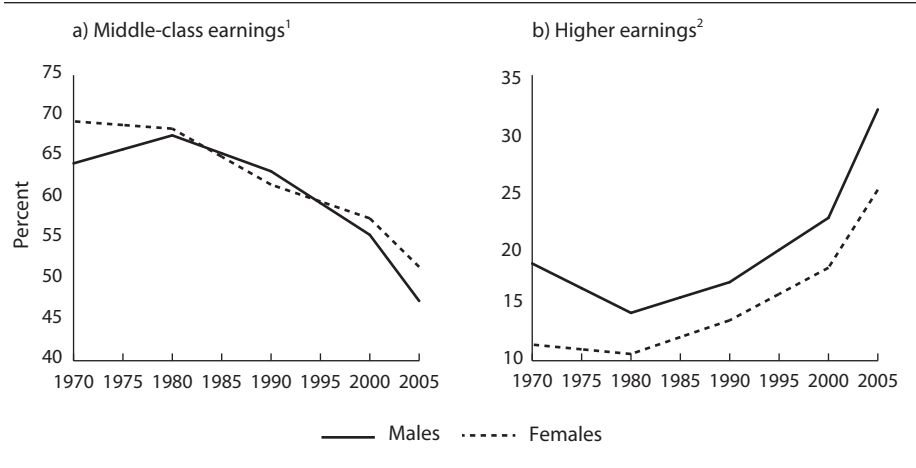
Source: Statistics Canada, Census of Canada, 1971, 1981, 1991, 2001 and 2006.

FTFY = full-time, full-year

(earnings) distribution. Concerns about the economic and social implications of rising income inequality are often based on the latter definition.

Changes in earnings shares by earnings groups reported in table 3 show a fairly consistent pattern across groups of workers. Between 1970 and 2005, there

Figure 3
Percentage share of earnings of full-time, full-year male and female workers by earnings level, Canada, 1970-2005



Source: Statistics Canada, Census of Canada, 1971, 1981, 1991, 2001 and 2006.

¹ Within 50 percent of the median earnings level.

² Above 200 percent of the median earnings level.

was a large drop in the share of total earnings going to middle-class workers, a substantial increase in the share going to higher-earning workers and not much change in the share received by lower-earning workers. For example, among all male workers, the upper-earnings group saw their share of earnings increase from 26 percent to 48 percent of all earnings, while the earnings share of the middle class fell by almost as much, from 49 to 30 percent. As figure 3 shows, the drop in the earnings share of the middle class was nearly as dramatic among FTFY male and female workers, especially after 1980, when the earnings share of high earners began to climb rapidly. These constitute remarkably large shifts in the distribution of earnings in the labour market.

Factors Driving the Changes in Earnings Shares

INTUITIVELY, THE EARNINGS SHARE OF A GROUP OF WORKERS DEPENDS UPON BOTH THE relative size of the group and its relative mean earnings. For the middle- and higher-earning groups, the changes in their earnings shares (shown in table 3) greatly exceeded the changes in their shares of the labour force (shown in table 2).

Table 4

Factor decomposition of percentage changes in male and female earnings shares, Canada, 1970-2005 (percent)

	Males		Females	
	All workers	FTFY workers	All workers	FTFY workers
Lower earnings (below 50% of median)				
<i>Earnings shares</i>	+ 1.1	+ 34.9	- 17.7	+ 59.0
Share of workers	+ 17.8	+ 55.4	- 10.4	+ 69.9
Relative mean earnings	- 16.7	- 20.5	- 7.3	- 10.9
Middle-class earnings (within 50% of median)				
<i>Earnings shares</i>	- 38.6	- 26.3	- 11.2	- 25.7
Share of workers	- 23.2	- 15.6	+ 4.1	- 17.6
Relative mean earnings	- 15.4	- 10.7	- 15.3	- 8.1
Higher earnings (above 200% of median)				
<i>Earnings shares</i>	+ 81.3	+ 72.9	+ 27.4	+ 118.8
Share of workers	+ 82.9	+ 50.7	+ 23.4	+ 105.4
Relative mean earnings	- 1.6	+ 22.2	+ 4.0	+ 13.4

Source: Statistics Canada, Census of Canada, 1971, 1981, 1991, 2001 and 2006.

FTFY = full-time, full-year

This suggests that changes in *relative* mean earnings played a major role in the shift of earnings shares from middle-class workers to high earners between 1970 and 2005. More formally, the percentage change in the earnings share of a particular group of workers can be expressed as the sum of the percentage change in that group's share of the labour force and the percentage change in that group's relative mean earnings.⁸ This decomposition allows one to look separately at changes in employment and wages.

Looking at the decomposition for each earnings group separately in table 4, one can see that, for higher earners, the percentage change in their earnings share was driven largely by a marked increase in the proportion of workers belonging to this group, although, in the case of FTFY workers, increases in their relative mean earnings also contributed to their much higher share of earnings. For middle-class workers, the percentage change in their earnings share was driven by both a

decrease in the proportion of such workers and a fall in their relative earnings. For lower-earning workers, the pattern is mixed across groups of workers. Among FTFY workers overall, the change in their earnings share was driven more strongly by changes in the proportions of workers across earnings groups. As well, the percentage changes in the earnings share and share of the labour force of females were larger than those for males, whereas the percentage changes in relative mean earnings were larger for males. More generally, then, more than half of the decline in the earnings shares of all middle-class male workers and middle-class FTFY female workers was due to the fall in the proportion of these workers in the labour force, and more than three-quarters of the dramatic rise in the earnings shares of all higher-earning male workers and higher-earning FTFY female workers was due to the increase in the proportion of these workers in the labour force.

Table 4 also highlights that the *relative* mean earnings of groups of workers can fall even as their real mean earnings rise. For instance, in the case of FTFY middle-class workers, relative mean earnings went down by 10.7 percent for men and 8.1 percent for women between 1970 and 2005, while their mean earnings rose by 17.1 percent and by 42.5 percent, respectively, over this period (table 1). At the same time, however, the relative mean earnings of FTFY high earners went up by 22.2 percent for men and by 13.4 percent for women, again typically a higher increase among male than among female workers. Since overall mean (real) FTFY earnings rose by 34.1 percent for men and by 58.1 percent for women over the 1970-2005 period (Beach 2014, tables A3, A4), this means that the average (real) earnings among upper-earning FTFY workers increased by 56.3 percent for men and by 71.5 percent for women. Even so, this increase was still lower than the 96.3 percent growth in real gross domestic product (GDP) per capita over the same period (Statistics Canada 2009, 27), which is consistent with both a falling total share of GDP going to labour income over this period and faster-rising real earnings at the very top of the earnings distribution (as discussed by Lemieux and Riddell, in this volume). The pattern of changes in employment and wages over the 1970-2005 period is strongly similar to that found in Green and Sand (forthcoming; see the summary in this volume). Among higher earners, increases in employment and wages are consistent with an upward shift in the demand for more high-skilled labour. Decreases in employment and wages for middle-class workers are consistent with a downward shift in the demand for middle-class jobs. And an increase in employment and a decrease in wages among

lower earners are consistent with an upward shift in the supply of such workers as displaced middle-class workers compete for jobs lower down the occupation/wage distribution.

As fairly important changes in earnings shares occurred between 2000 and 2005 (figure 3), table 5 shows how these changes played out for the various groups of workers over this shorter period. For middle-class and higher earners, the direction of change was essentially the same as for the entire 1970-2005 period, but the relative importance of the underlying components of changes in earnings shares changed. For middle-class earners, the fall in their relative mean earnings was now the dominant driver, as two-thirds to three-quarters of the declining earnings shares of middle-class male and FTFY female earners was due to a decline in their relative earnings levels. For higher-earning male workers and FTFY female workers, about one-half to two-thirds of the increase in their earnings shares was due to a strong increase in their already-higher relative earnings

Table 5

Factor decomposition of percentage changes in male and female earnings shares, Canada, 2000-2005 (percent)

	Males		Females	
	All workers	FTFY workers	All workers	FTFY workers
Lower earnings (below 50% of median)				
<i>Earnings shares</i>	- 6.8	- 2.9	+ 7.4	+ 3.6
Share of workers	+ 1.5	+ 6.5	+ 3.3	+ 4.5
Relative mean earnings	- 8.3	- 9.4	+ 4.1	- 0.9
Middle-class earnings (within 50% of median)				
<i>Earnings shares</i>	- 17.1	- 14.6	- 3.8	- 10.4
Share of workers	- 4.4	- 3.9	+ 0.3	- 3.8
Relative mean earnings	- 12.7	- 10.7	- 4.1	- 6.6
Higher earnings (above 200% of median)				
<i>Earnings shares</i>	+ 27.1	+ 42.2	+ 7.0	+ 37.7
Share of workers	+ 15.6	+ 14.1	- 0.2	+ 21.7
Relative mean earnings	+ 11.5	+ 28.1	+ 7.2	+ 16.0

Source: Statistics Canada, Census of Canada, 2001 and 2006.

FTFY = full-time, full-year

levels. Among lower-earning male workers (though not females), the fall in their earnings share was due to the decline in their relative earnings, which more than offset the increase in their share of the labour force. This quite different pattern of underlying changes in earnings shares between 2000 and 2005 is consistent with the findings of Beaudry, Green and Sand (forthcoming) for the United States and those of Foley and Green (in this volume) for Canada, but it is not yet at all clear what might have driven these trends.

Conclusion

IN EXAMINING WHAT HAPPENED TO MIDDLE-CLASS WORKERS AND MIDDLE-CLASS EARNINGS in Canada over the period from 1970 to 2005, my analysis revealed four major findings. First, there was a major shift in the distribution of male workers and full-time, full-year (FTFY) female workers by earnings level. Indeed, there was a marked decline in the proportion of workers who receive middle-class earnings — for instance, the percentage of male workers earning within 50 percent of the median earnings level dropped from 54 to 42 percent — and there was a correspondingly marked increase in the proportion of both lower-earning and higher-earning workers. More recent data from Statistics Canada's Labour Force Survey suggest, however, that this trend attenuated somewhat over the 2005-12 period.

Second, beginning in the early 1980s, there was an even larger shift in the relative shares of earnings among groups. Middle-class FTFY male and female workers saw their earnings shares decline significantly (by 20 and 17 percentage points, respectively), while the earnings shares of their higher-earning counterparts rose by over 13 percentage points. In contrast, the earnings share of lower earners did not change much.

Third, more than half of the dramatic decline in the earnings shares of middle-class workers was due to their falling share of the labour force over the whole period. Meanwhile, more than three-quarters of the considerable rise in the earnings shares of higher-earning workers was due to an increase in their share of the labour force. Changes in the relative mean earnings of each group also contributed to these changes in earnings shares, but they were not the leading factor.

Fourth, over the period from 2000 to 2005, the factors driving the changes in the earnings shares of the different groups reversed. Two-thirds to three-quarters of the fall in the earnings shares of middle-class workers was due to the

decline in their relative earnings levels, and one-half to two-thirds of the rising earnings shares of higher-earning workers was due to the strong increase in their relative earnings levels.

The first two findings are consistent with evidence elsewhere; the latter two findings are new to the literature and deserve further interpretation. They could be viewed as a good-news, bad-news story. The bad news is that, over the 1970-2005 period, the long-run polarization of the male and FTFY female workforce has been accompanied by a large transfer of earnings share from middle-class workers to high-earning workers, which in turn gave rise to concerns about rising income inequality and a declining middle class. The good news is the marked increase in the proportion of high-earning workers. This increase is consistent with an “upskilling” effect in the labour market as more workers become better educated and take up better-paying, nonroutine jobs and the economy gradually shifts away from manufacturing to services. Also at play, however, are a deskilling effect and the displacement of workers toward the lower end of the earnings distribution. Over the longer period it appears that both a job polarization effect and an upskilling effect are at work, with the upskilling effect dominant at the upper end of the distribution. The factors contributing to this upskilling and its overall impact across the earnings distribution are worthy of further study, but to the extent that it is raising average earnings levels and indicates that the Canadian economy is moving to higher-value-added production, it is indeed beneficial, albeit for efficiency rather than equity reasons. Evidence that earnings polarization and not job polarization dominated distributional changes over the more recent period from 2000 to 2005, however, raises a flag of concern about what might have been driving the important (and ongoing) distributional changes in recent years.

Notes

I would like to thank the research services of John Pries while retaining full responsibility for any errors or limitations of this chapter. I also benefited from extensive comments by David Green, Craig Riddell and France St-Hilaire and from questions asked at a presentation of this material at the Queen's University International Institute on Social Policy conference in August 2014. Results based on the Labour Force Survey data were provided by David Green.

1. The *Globe and Mail* series ran from November 9 to November 14, 2013. The *New York Times* series ran from August 24, 2013, to June 27, 2014. The *Toronto Star* series ran over 2012 and 2013. The *Economist's* Special Report appeared in the October 4, 2013, issue.
2. The Queen's International Institute on Social Policy conference, held in Kingston, Ont., August 18-20, 2014, was titled "The Middle Class: Pressure Points and Public Policies." Presentation decks are available at <http://queensu.ca/sps/events/conferencesandworkshops/qiisp/2014/presentations.html>.
3. The analysis did not include the 2011 National Household Survey (NHS), which replaced the 2011 Census long form, because of sampling concerns. Response rates in general are not random and are lower at the two ends of the income distribution, and this is likely to be much more of a problem with the NHS than with previous censuses, particularly since the focus of this chapter is on middle versus higher and lower earnings in the distribution over time.
4. A longer version of this chapter (Beach 2014) also includes results based on an alternative measure of the middle 60 percent of earners within a distribution. Results based on this measure, as well as on those between 50 and 200 percent of the median, are similar to those presented here.
5. Results were also calculated for different income groups covering the entire income distribution, but they are not included here because of space limitations.
6. Results were also calculated that included an adjustment for Statistics Canada top coding of a small number of high earnings values, but the adjustment made essentially no difference to the major findings of this chapter and so are not included.
7. Labour Force Survey results over the 1997-2012 period are based on an estimation sample of paid employees who are not currently full-time students and who are full-time workers, broken down by gender. The earnings measure used is weekly wages (rather than annual total earnings). The middle-earnings group is workers with weekly wages between 0.5 and 1.5 times the median wage level, and the higher-earnings group consists of those with wages above 1.5 times the median (rather than above 200 percent of the median).
8. An alternative way of looking at the link between earnings shares, $SE(i)$, and workers' shares for some group i , $SW(i)$, is that changes in $SW(i)$ are measured along the horizontal axis of a Lorenz curve, while changes in $SE(i)$ are measured along the vertical axis, and the slope of the Lorenz curve is related to the relative mean earnings ratio, $\text{avg } E(i)/\text{avg } E$. For a formal derivation of this decomposition, see Beach (2014). The fact that one is approximating a differential change by an incremental change over an extended period means that the results based on this decomposition should be viewed as approximate, rather than exact.

References

- Acemoglu, D., and D. Autor. 2011. "Skills, Tasks and Technologies: Implications for Employment and Earnings." In *Handbook of Labor Economics*, vol. 4B, edited by O.C. Ashenfelter and D. Card. Amsterdam: Elsevier.
- Acemoglu, D., and J. Robinson. 2012. *Why Nations Fail: Origins of Power, Poverty and Prosperity*. New York: Crown.
- Atkinson, A.B. 2015. *Inequality: What Is to Be Done?* Cambridge, MA: Harvard University Press.
- Atkinson, A.B., and A. Brandolini. 2011. "On the Identification of the 'Middle Class.'" ECINEQ Working Paper 217. Verona, Italy: Society for the Study of Economic Inequality.
- Beach, C.M. 2014. "What Has Happened to Middle-Class Earnings? Distributional Shifts in Earnings in Canada, 1970-2005." CLSRN Working Paper 131. Vancouver: Canadian Labour Market and Skills Researcher Network.
- Beach, C.M., and G.A. Slotsve. 1996. *Are We Becoming Two Societies? Income Polarization and the Myth of the Declining Middle Class in Canada*. Toronto: C.D. Howe Institute.
- Beaudry, P., D.A. Green, and B.M. Sand. Forthcoming. "The Great Reversal in the Demand for Skill and Cognitive Tasks." *Journal of Labor Economics*.
- Canadian Centre for Policy Alternatives. 2007. *Why Inequality Matters, in 1,000 Words or Less*. Essays by T. Hennessy, J. Kesselman, C.M. Beach, J. Myles, M. Orsini, F. Cunningham, L. Osberg, and D.A. Green. Toronto: CCPA.
- Cross, P., and M.A. Sheikh. 2015. *Caught in the Middle: Some in Canada's Middle Class Are Doing Well; Others Have Good Reason to Worry*. School of Public Policy Research Papers 8 (12). Calgary: University of Calgary.
- Eisenhauer, J.G. 2008. "An Economic Definition of the Middle Class." *Forum for Social Economics* 37 (2): 103-13.
- Feenstra, R.C., and G.H. Hanson. 1999. "The Impact of Outsourcing and High Technology Capital on Wages: Estimates for the United States, 1979-1990." *Quarterly Journal of Economics* 114 (3): 907-40.
- Fortin, N.M., D.A. Green, T. Lemieux, K. Milligan, and W.C. Riddell. 2012. "Canadian Inequality: Recent Developments and Policy Options." *Canadian Public Policy* 38 (2): 121-45.
- Freeland, C. 2012. *Plutocrats: The Rise of the New Global Super-Rich and the Fall of Everyone Else*. Toronto: Doubleday Canada.
- Friesen, J. 2014. "A New High for Middle Incomes." *Globe and Mail*, April 23, p. A3.
- Green, D. A., and B. M. Sand. Forthcoming. "Has the Canadian Labour Market Polarized?" *Canadian Journal of Economics*.
- International Institute for Labour Studies. 2013. "Income Distribution and Middle-Income Groups across the World." In *World of Work Report 2013: Repairing the Economic and Social Fabric*. Geneva: International Labour Organization.
- James, L. 2006. *The Middle Class: A History*. London: Abacus, Little Brown.
- Katz, L.F., and D.H. Autor. 1999. "Changes in the Wage Structure and Earnings Inequality." In *Handbook of Labor Economics*, vol. 3A, edited by O.C. Ashenfelter and D. Card. Amsterdam: Elsevier.
- Noah, T. 2012. *The Great Divergence: America's Growing Inequality Crisis and What We Can Do about It*. New York: Bloomsbury Press.
- Osberg, L. 2006. "Pulling Apart: The Growing Gulfs in Canadian Society." *Policy Options* 27 (4): 8-11. Montreal: Institute for Research on Public Policy.

- Pressman, S. 2007. "The Decline of the Middle Class: An International Perspective." *Journal of Economic Issues* 41 (1): 181-200.
- Reich, R.B. 2014. "It's the Inequality, Stupid." *Globe and Mail*, March 15, p. A13.
- Saez, E., and M. Veall. 2005. "The Evolution of High Incomes in Northern America: Lessons from Canadian Evidence." *American Economic Review* 95 (3): 831-49.
- Statistics Canada. 2009. *Canadian Economic Observer: Historical Statistical Supplement*. Ottawa: Minister of Industry.
- Stiglitz, J.E. 2012. *The Price of Inequality: How Today's Divided Society Endangers Our Future*. New York: W.W. Norton.
- _____. 2015. *The Great Divide: Unequal Societies and What We Can Do about Them*. New York: W.W. Norton.
- United States. 2010. Department of Commerce. *Middle Class in America*. Report prepared for the Office of the Vice President of the United States Middle Class Task Force. Washington, DC: US Department of Commerce.
- Veall, M.R. 2012. "Top Income Shares in Canada: Recent Trends and Policy Implications." *Canadian Journal of Economics* 45 (4): 1247-72.

