

Earnings mobility of Canadians, 1982-1992

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Over the last decade, a renewed interest in the distribution of earnings has taken hold in Canada as elsewhere. This interest has been spurred largely by concerns about increasing inequality during a period of relatively flat earnings. Workers in the lower reaches of the distribution have fallen behind in both *relative* and *absolute* terms, a sharp reversal from the previous decades of steady increases across the entire distribution. Furthermore, these reversals appear concentrated among particular groups, such as young people, those with less education, and individuals in import-competing industries.

A good deal is known about the distribution of earnings in any given year and how it has changed over time.¹ However, virtually nothing is known about earnings *mobility* in Canada: how people's earnings change from one year to another, how short-run earnings mobility compares with longer-run changes, how these tendencies vary by age or sex, or whether the patterns have changed in recent years.

If understanding earnings dynamics is so important, why is so little known? The answer lies in the nature of the data available until recently. Virtually all existing studies are based on cross-sectional data (that is, data gathered at a single point in time). The study of earnings dynamics requires longitudinal data, which follow the same people over time. Until the 1980s, Canada had no longitudinal databases of the size, time span or representative nature suitable for a general study of earnings dynamics.

The present study analyzes the earnings mobility of paid workers from 1982 to 1992, using Statistics

Canada's Longitudinal Administrative Databank (LAD) (see *Data source*). The LAD possesses the sample framework, longitudinal structure, earnings information, and size to address the following:

- What is the extent of earnings mobility in Canada?
- How does short-term mobility compare with longer-term mobility?
- Did the structure of earnings mobility change between the early 1980s and the early 1990s?
- How do mobility patterns compare across age-sex groups?

The cross-sectional story: who was doing well in 1983 and 1992?

Not surprisingly, men in the prime age group and, to a lesser degree, younger and older men were more heavily concentrated in the upper earnings quintiles in 1983 and 1992 (two roughly comparable "trough" years) (Chart A). All others – including women of all ages – were more clustered in the lower reaches of the overall distribution of earnings. On the other hand, the first group was somewhat less concentrated in the top two quintiles in the later period, in contrast to prime age women, whose proportion grew from 24.5% to 32.7%, with commensurate decreases in the lower quintiles.⁴

The most dramatic changes, however, were among the youngest workers. In 1983, some 17.8% of entry age men were in the top two quintiles and 61.6% in the bottom two. By 1992, only 9.7% – barely half the earlier level – were in the top two quintiles and a full 72.1% were in the bottom two. Changes for entry age women were in the same direction but not quite as marked (owing in part to their lower starting positions): the percentage in the top two quintiles declined from 6.5% to 4.5%, and that in the bottom two increased from 72.0% to 79.7%. In short, this age group lost considerable ground over the period.

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Data source

The Longitudinal Administrative Databank (LAD) is now a 10% sample of taxfilers created from Revenue Canada tax records by Statistics Canada's Small Area and Administrative Data Division. Individuals are followed over time via their social insurance numbers. The LAD started as a 1% sample running from 1982 through 1992 originally, thus determining the period covered by this analysis.

The LAD's coverage ranges from 91% to 95% of the adult population (official population estimates), with relatively little attrition, meaning that it is representative in both a static and dynamic context – the latter being particularly important for a study of earnings mobility.

The LAD includes information drawn from individuals' tax files:

basic demographic characteristics, income, tax deductions, and tax paid. Most critical to this analysis is the earnings variable; that is, wages and salaries from paid employment.

How the working samples were constructed

The cross-sectional (year-by-year) samples used in the analysis cover the 1982-92 period and include individuals who

- earned at least \$1,000 (1992 constant dollars);
- made no more than \$1,000 in (gross) self-employment income;
- were between 20 and 64 (inclusive); and
- were not enrolled full time in post-secondary school.

Placement in the overall earnings distribution – the backbone of this analysis – is based on all persons in the

relevant cross-sectional samples in each year, with no longitudinal restrictions applied. For the mobility analysis, persons must meet the sample inclusion criteria in the specific years under consideration – but not necessarily in other years.²

The age groups used were “entry” (20 to 24), “younger” (25 to 34), “prime” (35 to 54), and “older” (55 to 64).³ For the initial, static portion of the analysis, persons were grouped by their age in the relevant year; in the dynamic analysis, they were categorized by their age in the initial year, with older workers dropped as they aged beyond the upper cut-off. The dynamic analysis thus represents fixed cohorts that age over the period considered, with the older cohorts changing as increasingly longer periods are considered.

Younger men were also less likely to be near the top of the overall earnings distribution in 1992 than in 1983. Those in the upper two quintiles declined from 54.3% to 45.9% and those in the bottom two quintiles rose from 27.1% to 32.6%. Younger women saw somewhat less movement over the decade, maintaining their percentage in the top two quintiles (24.0%) and increasing only slightly in the bottom two (from 49.6% in 1983 to 51.0% in 1992).

Earnings mobility: the quintile transitions

In general, a relatively high degree of short-term earnings stability (or “immobility”) between 1982 and 1983, and 1991 and 1992 characterized the upper quintiles especially.⁵ For example, 86.9% of earners in the top quintile in 1991

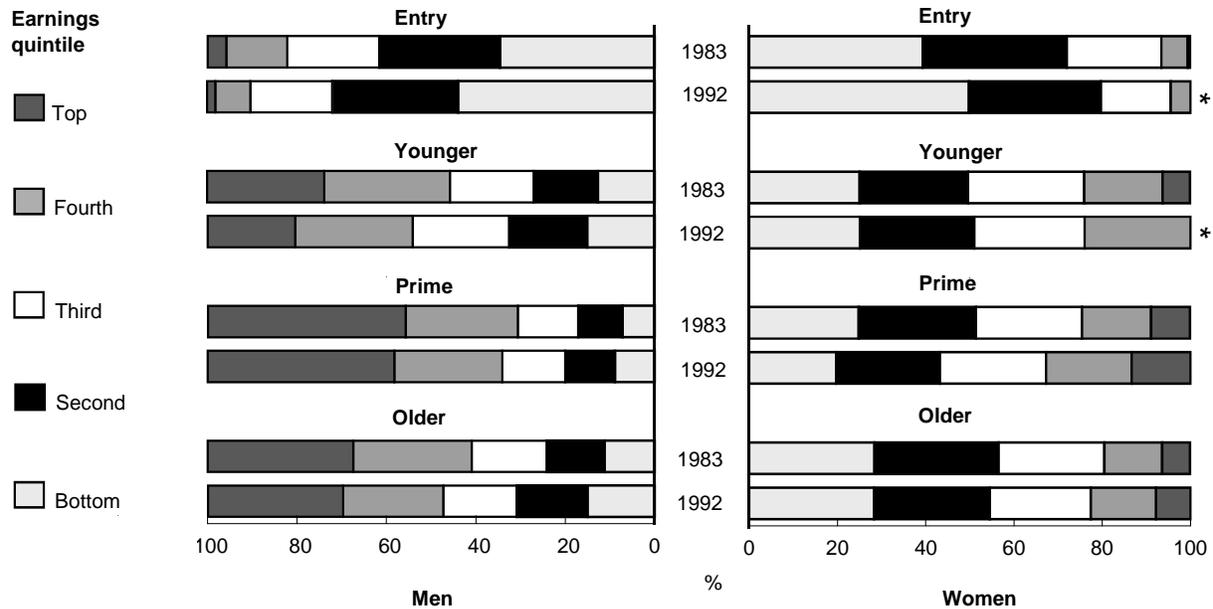
were similarly placed in 1992 (Table), while 65.2% and 57.6% of those in the bottom and second quintiles, respectively, remained in those positions. If those in adjacent quintiles are included, the percentage of persons who moved at least two quintiles from one year to the next was very low, between 4.2% and 7.3% across the different quintiles. Indeed, over different periods and lengths of interval, earnings stability was uniformly greatest at the top of the distribution.

Mobility was more evident over the longer term generally, especially among those in the bottom quintiles. For example, 76.8% of those in the top quintile in 1987 were there again in 1992, while only 40.0% and 37.0% of those in the bottom and second quintiles were similarly stable. Over 10 years,

while almost three-quarters (73.3%) of those in the top quintile in 1982 were similarly situated in 1992,⁶ barely one-quarter of those who started in one of the bottom two quintiles were still in the same low ranks (28.3% and 27.9%, respectively).

In short, earnings across the entire distribution tended to be stable over the one- and 2-year intervals, but – not surprisingly – far less so in the longer term (over 5 and 10 years). Furthermore, movement out of the lower levels was countered by relative stability at the top, especially over the longer term.⁷

This last observation should probably be taken as good news: over time, earnings have tended to improve for those at the bottom, while they have generally remained strong for those already at the top.

Chart A: Men were more heavily concentrated in the upper earnings quintiles.

Source: Longitudinal Administrative Databank

* Fourth and top combined.

But how can this be – how can there be more “winners” than “losers”? In other words, if a good number of earners are moving up in the distribution, and most who begin at the higher levels remain there, who is filling the void at the bottom? The answer is that new entrants are continually entering the labour market at lower earnings levels and moving up the distribution in turn (if they remain).

On the other hand, these tendencies – especially the upward movements – should not be exaggerated. For example, although “only” 28.3% of those who started out in the bottom quintile were still there 10 years later, over half of the low earning entrants (56.1%) were in one of the lower two quintiles and just 7.2% had made it to the top. In contrast, only 7.9% of those beginning in the top quintile

were in one of the bottom two groups 10 years later, while 73.3% remained at the top and 87.1% were in one of the top two quintiles. The same general pattern holds over the shorter intervals.

So, while many of those starting in the lower quintiles moved to higher levels in the earnings distribution over time, their gains were often not very large and their starting position remained a good predictor of where they would be in later years – even if the probability of moving up did increase over the long term.

Short-term upward mobility by age and sex

Regardless of their age or sex, those in the lower earnings quintiles experienced greater upward mobility from one year to the next than those in the higher ones. The gen-

eral nature of this finding is hardly surprising, but its strength and uniformity are notable, while setting the stage for what follows.

This observation also reveals the importance of looking at the dynamics by starting quintile – in order to assess the underlying *structures* of earnings mobility (Chart B). For example, although younger groups tended to have generally higher rates of short-term upward mobility, their earnings were lower to begin with. In fact, once the starting quintile is controlled for, mobility patterns tended to favour older groups of workers (except the oldest).

Men were generally more likely than women to move to higher earnings quintiles. However, short-term upward mobility declined over the 1982-92 period for all

Table: Quintile movements, all earners

Starting quintile	Period of dynamics									
	One year				2 years			5 years		10 years
	1982-83	1985-86	1988-89	1991-92	1982-84	1987-89	1990-92	1982-87	1987-92	1982-92
	%									
Moved up										
All	19.1	18.4	17.7	17.0	24.4	23.0	22.0	33.4	31.0	39.5
Top	...	...	...	...	...	...	...	...	...	...
Fourth	14.8	13.2	13.3	12.5	19.2	17.3	17.4	27.7	24.7	33.1
Third	20.7	19.4	18.7	18.0	26.2	24.4	24.6	37.0	34.7	44.2
Second	27.2	26.8	25.3	24.6	35.7	33.3	32.0	47.4	44.8	55.8
Bottom	37.3	36.7	35.6	34.7	47.2	46.2	43.0	62.3	60.0	71.8
Moved down										
All	13.6	12.5	13.8	13.8	14.6	16.0	16.5	16.5	19.0	19.2
Top	14.9	12.6	13.7	13.1	17.0	16.9	17.7	20.9	23.1	26.7
Fourth	16.9	15.0	17.3	16.9	17.8	20.5	21.0	21.0	25.2	25.3
Third	16.7	16.4	18.2	18.2	18.2	21.1	20.9	20.4	23.6	23.7
Second	16.4	16.1	17.3	17.8	16.8	18.4	18.6	16.9	18.2	16.4
Bottom	...	...	...	...	...	...	...	...	...	...
Stayed the same										
All	67.4	69.1	68.4	69.2	61.1	61.0	61.5	50.1	50.0	41.3
Top	85.1	87.4	86.2	86.9	83.1	83.1	82.4	79.1	76.8	73.3
Fourth	68.3	71.7	69.4	70.5	63.1	62.2	61.6	51.4	50.1	41.6
Third	62.6	64.2	63.1	63.9	55.6	54.5	54.5	42.6	41.7	32.1
Second	56.4	57.0	57.3	57.6	47.5	48.3	49.4	35.7	37.0	27.9
Bottom	62.6	63.2	64.4	65.2	52.8	53.8	56.9	37.7	40.0	28.3

Source: Longitudinal Administrative Databank

Note: The figures represent the percentage of individuals who moved up or down or stayed the same.

groups of men (except older men in the second quintile), with the declines most apparent at the onset of the early 1990s recession.

In contrast, women's upward mobility increased in some cases, remained essentially unchanged in others, and declined less steeply than men's in most of the remaining situations. Thus, although women's rates of upward mobility remained below those of men, their relative situation improved over the period, in some cases substantially.

Short-term downward mobility by age and sex

As might be expected from what was shown earlier, short-term downward mobility was generally less common than upward mobility for all groups except older men

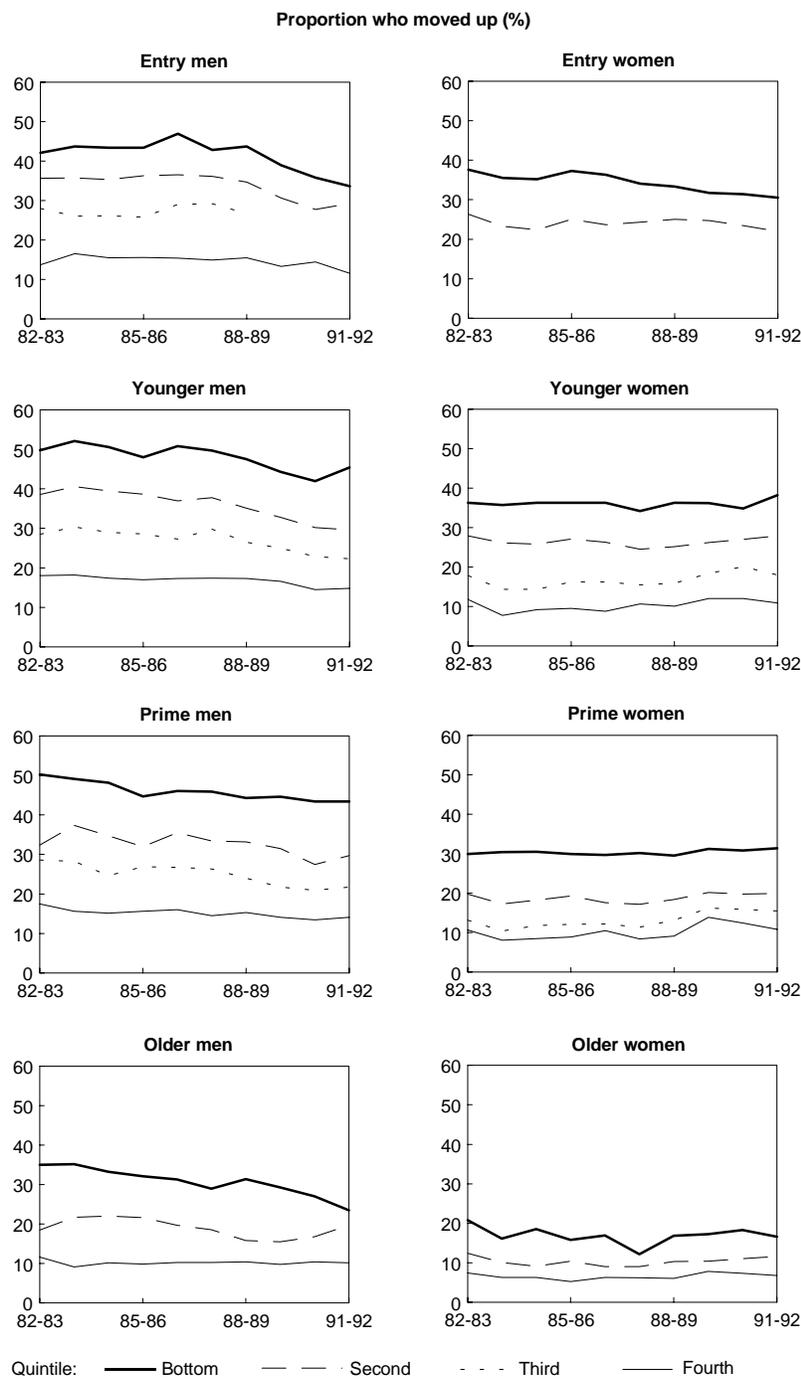
and women (Chart C). More precisely, in almost every case, the probability of moving up from the bottom and second quintiles was more common than the roughly comparable probability of moving down from the top or fourth quintiles; likewise, upward movements from the middle quintile were more common than downward ones. (Younger and prime age women in the middle quintile were, however, moderately more likely to move down than up in a number of cases.)

While short-term downward mobility was less common for entry age men than for younger or prime age men *overall*, this was largely because entry age men tended to be already more concentrated at the lower earnings levels.

Furthermore, the likelihood of their moving down from the top two quintiles, in particular, tended to be considerably *higher* than that of the two older groups. Prime age men were the most stable of all in the top quintile. Not surprisingly, older men were more likely to move down than the younger groups, reflecting their shift toward retirement.

The patterns by sex are mixed. Younger women were more likely to move down from the higher quintiles than were younger men, reflecting their looser attachment to the labour force during the principal child-bearing years. In contrast, prime age women were in many cases *less* likely to move down from a given quintile than were men in the same age group. A similar

Chart B: Men were generally more likely than women to move to higher earnings quintiles.



Source: Longitudinal Administrative Databank

pattern exists for older women and men. Thus, women have experienced greater stability at the top than have men.⁸

Finally, although mixed, the evidence generally suggests stable or reduced probabilities of moving down from the top two quintiles over the period (“increased stability at the top”) across the various groups, and increased downward movement in the lower quintiles (“increased volatility at the bottom”).

Long-term quintile dynamics by age and sex

Upward movement in earnings in the longer term – previously seen for all workers taken together – was especially strong among the entry age and younger groups (Chart D), particularly for those at lower levels. For example, of entry age men who had earnings in the bottom or second quintile in 1982, some 82.6% and 73.0%, respectively, had moved to a higher quintile by 1992. Younger men had moderately lower rates of upward mobility than the entry group, but even the prime age and older workers experienced substantial movement over the longer intervals.

Women’s lower rates of upward mobility generally held over the long term (Chart D), but the shifts in these patterns over time were again in their favour. For entry age, younger, and prime age men, longer-term upward mobility declined across the board. In contrast, entry age, younger, and prime age women had almost uniform *increases* in the rates of upward mobility.⁹

Rates of downward mobility were generally much lower than rates of upward mobility in the longer term, especially for entry age and younger workers, but also for the prime age groups. For example, among younger men, 38.2% moved to higher levels over the 1982-92 period, while only 16.8% moved down. Longer-term (5-year) downward mobility increased almost uniformly for all men and decreased for women. As a result, longer-term earnings mobility patterns of men and women have also become more similar.

Summary

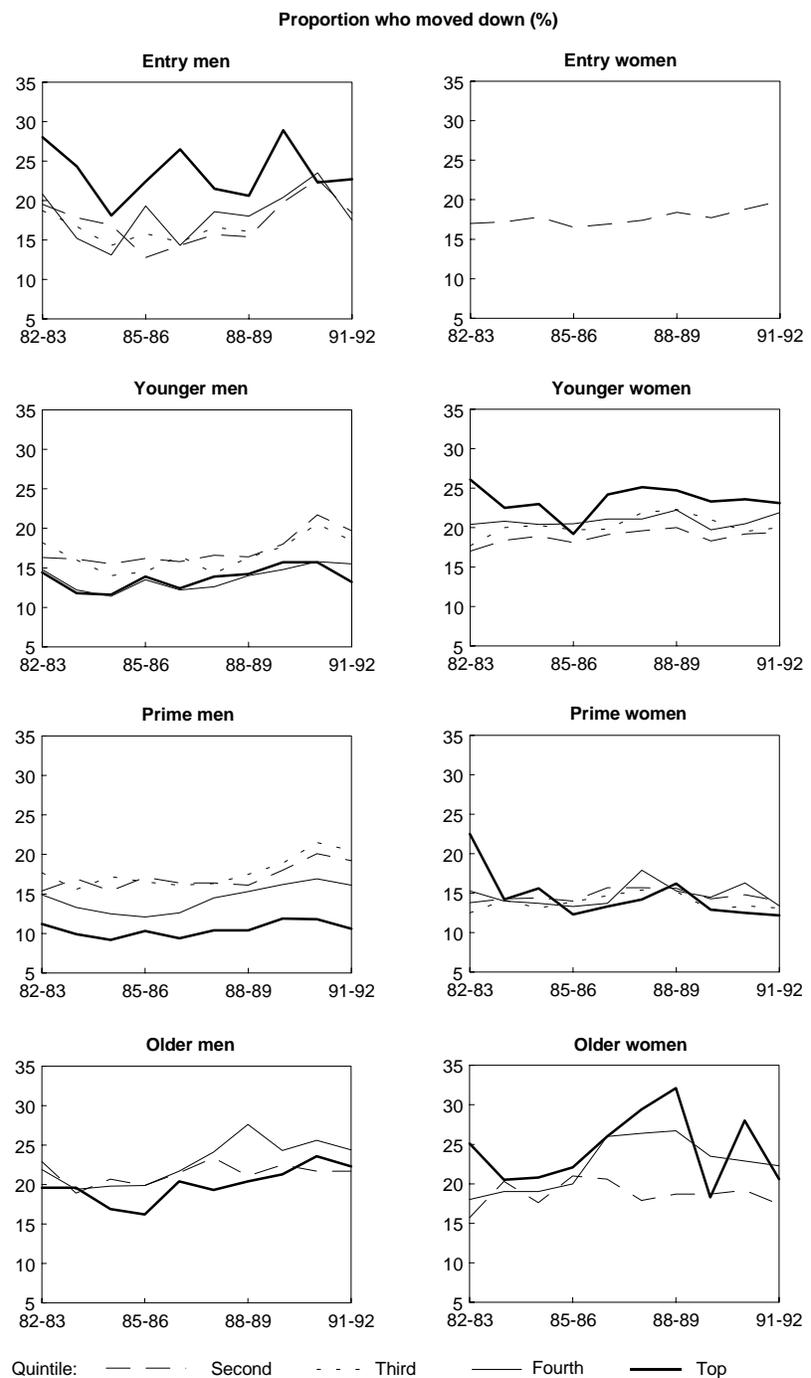
The 1982-92 period was characterized by both earnings mobility and earnings stability – a classic, “Is the glass half-empty or half-full?” issue.

Earnings were more stable at the top of the distribution, and movement was generally more upward than downward, especially over longer periods and particularly for younger workers, while the lower end was continually restocked with new entrants. For example, nearly three-quarters of all those in the top earnings quintile in 1982 were still in the highest group 10 years later, while only about one-quarter of those who started in the lowest quintile remained in the bottom rank.

Mobility patterns varied substantially by age and sex. Younger workers tended to be more mobile than older ones, especially upward, while women were generally less likely to reach the top quintile.

Upward mobility declined overall from the early 1980s to the early 1990s, but the shifts in the patterns varied considerably by age and sex

Chart C: Younger women were more likely than younger men to move down from the higher earnings quintiles.



Source: Longitudinal Administrative Databank

Chart D: Rates of downward mobility were generally much lower than rates of upward mobility in the longer term.



Source: Longitudinal Administrative Databank

(as did cross-sectional earnings patterns). Women in their core working years (25 to 54) were considerably more likely to move up through the earnings distribution in later years. Men of similar age experienced a slight decline in their rates of relative earnings growth, while the youngest groups of women and men (under 25) saw less upward mobility, especially those who began at the lower levels.

Perspectives

Notes

1 See Banting and Beach (1995) and Beach and Slotsve (1996) for literature reviews and recent empirical work.

2 For example, the measures of earnings mobility from 1982 to 1983 are based on identifying individual's positions in the cross-sectional distribu-

tions for persons in the working samples in both years. A similar approach is used over longer intervals and different periods.

3 Age is that at the end of the relevant year (as reported on tax forms).

4 See Finnie (1997) for supporting tables.

5 This greater stability at the top is due in part to the greater width (proportion of the median wage) of the upper quintile in real dollar terms. OECD (1996) addresses this point, and provides alternative results based on "equal width" earnings bands.

6 The stability at the top becomes even clearer when movements into the adjacent fourth quintile are taken into account. For example, the percentage of those starting in the top fifth of all earners who remained at or near the top was 89.7% over the 1987-92 period and 87.1% over the full 10-year interval.

7 Some 17.0% of all earners moved to a higher quintile in the most recent one-year transition, while 13.8% moved down and 69.2% remained in the same quintile (Table). Over 2 years, 22.0% moved up, 16.5% moved down, and 61.5% did not move. Over the most recent 5-year interval, 31.0% moved up, 19.0% moved down, and 50.0% stayed in the same quintile. Finally, over the full 10-year interval, 39.5% of all those who remained in the labour market had moved to a higher earnings quintile by the final year, 19.2% had moved to a lower one, and 41.3% remained in the same quintile.

8 Comparisons for the entry groups were not possible, because of their small numbers at the top.

9 See Finnie (1997), Table 9b, for 5-year intervals.

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