

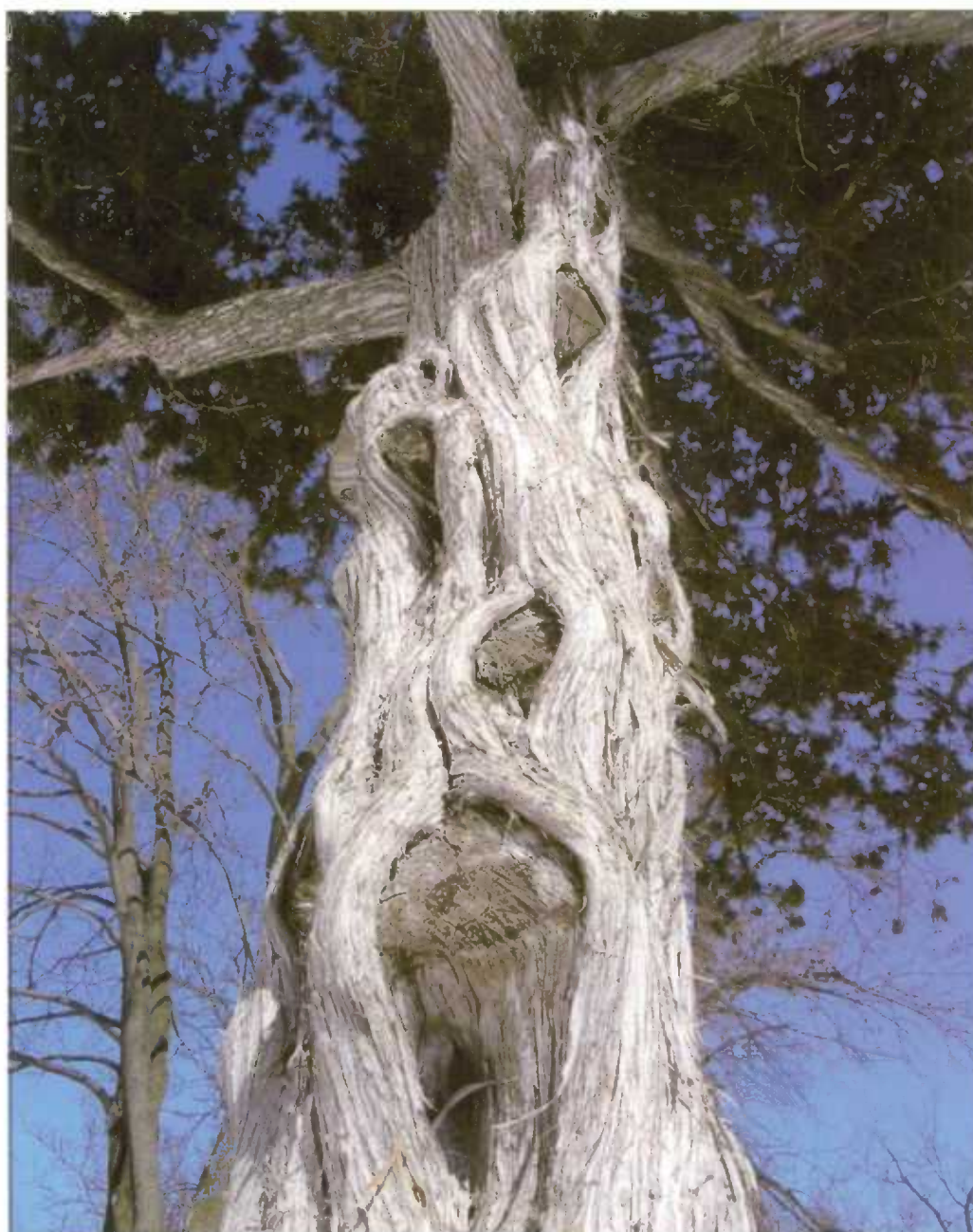
PERSPECTIVES

ON LABOUR AND INCOME

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Vol. 23, No. 1

- Why has the gender wage gap narrowed?
- Seniors' self-employment
- Retirement, health and employment among those 55 plus
- Inside the labour market downturn



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■ Articles

5 Why has the gender wage gap narrowed?

Marie Drolet

The gender gap in hourly wages narrowed between the late 1980s and the late 2000s. This article analyses the narrowing wage gap according to the changing characteristics of men and women in paid work, the changes in pay received for those characteristics, and the extent to which who works in each period affects the results.

17 Seniors' self-employment

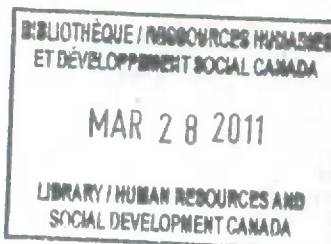
Sharanjit Uppal

A substantial proportion of working seniors are self-employed. This article uses census data to study self-employment among senior men and women. Trends in self-employment rates and categories are presented, along with occupational and industrial profiles. In addition, 2006 data are used to study factors associated with self-employment.

29 Retirement, health and employment among those 55 plus

Jungwee Park

This study examines four distinct states of retirement among older Canadians: fully retired; partially retired; previously retired but returned to work; and never retired. Using the 2009 Canadian Community Health Survey (CCHS) – Healthy Aging, it presents the socio-economic characteristics of each group, and discusses their differing work patterns and health.



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ON LABOUR AND INCOME

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- r revised
- x suppressed to meet the confidentiality requirements of the *Statistics Act*
- ⚠ use with caution
- F too unreliable to be published

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39 Inside the labour market downturn

Jason Gilmore and Sébastien LaRochelle-Côté

The Canadian labour market recently experienced its most significant downturn since the 1990–1992 recession. Although employment rebounded more quickly than during the downturns of the early 1980s and early 1990s, the number of individuals without a job remains significantly higher than at the beginning of the downturn. This article investigates how various categories of non-workers grew in the past two years. It also discusses alternative measures of unemployment that include some of these categories in the calculations. Several of the alternative measures also include part-time workers who would prefer to work full time.

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Perspectives on Labour and Income

The quarterly for labour market and income information

Highlights

In this issue

■ Why has the gender wage gap narrowed? ... p. 5

- The gap in pay between men and women can be examined in a number of different ways. Many studies focus on the earnings gap—the difference in the amount of pay received weekly or yearly. Yet men and women, on average, work a different number of hours in these periods. To account for the difference in working time, this study focuses on the wage gap—the difference in the amount of pay received per hour of work.
- The gender gap in hourly wages narrowed by 7.6 percentage points between the late 1980s and the late 2000s. This study attributes the narrowing wage gap to three key factors.
- First, the growth in women's relative wages outpaced that of men. This implies that the changing composition of the labour force and changes in how the labour market compensates workers played a role in narrowing gender wage gap.
- Second, men and women entering today's labour market are more alike in terms of characteristics and wages than they were in the past. Thus as younger workers 'replace' older workers, the wage gap declines simply because the gap is smaller in the new cohorts than in those that preceded them.
- Third, part of the decrease in the gender wage gap is related to the fact that men and women's wages did not diverge as they aged to the same extent as in the past.
- The majority of self-employed seniors were unincorporated. About two-thirds of self-employed men and three-quarters of self-employed women did not own a separate business entity.
- One-third of self-employed men were in primary goods and one-third of self-employed women in consumer services industries. Self-employed seniors were also concentrated in a few occupations. The most frequently reported occupation was farmer or farm manager, accounting for 24.2% of self-employed men and 17.2% of self-employed women.
- Senior men and women with higher family income from sources other than individual employment earnings were more likely to be self-employed as opposed to being paid employees.
- Seniors who had another self-employed family member were more likely to be self-employed themselves than those who had another family member working as a paid employee.
- Immigrants who arrived in the preceding 10 years were less likely to be self-employed than more established immigrants or the Canadian-born.
- Those with activity limitations were more likely to be self-employed than senior workers who reported no limitations.

■ Seniors' self-employment ... p. 17

- The self-employed comprise a substantial portion of the employed labour force among seniors. Among those who had a job in 2006, 44.1% of men and 28.6% of women were self-employed.
- This study examines four distinct states of retirement among Canadians age 55 and older: fully retired; partially retired; previously retired but returned to work; and never retired.

■ Retirement, health and employment among those 55 plus ... p. 29

- This study examines four distinct states of retirement among Canadians age 55 and older: fully retired; partially retired; previously retired but returned to work; and never retired.

Highlights

- Almost 60% of the fully retired belonged to the two lowest income groups compared to less than 30% of those who had never retired. Retirees also reported poorer health than other groups even after controlling for age differences.
- The partially retired were the most likely to report that they retired because they were financially able to do so. Accordingly, two-thirds of the partially retired worked less than 30 hours per week compared to 11% of the never-retired and 22% of returnees.
- Those who had returned to work were the most likely to be in the top income bracket, corresponding to their high average level of education. Nevertheless, one-half reported that financial considerations contributed to their decision to return to work.
- Almost 40% of never-retired workers reported that their financial plans for retirement were less than adequate. A larger proportion of this group still had a mortgage on their homes compared to the fully and partially retired.
- Immigrants and visible minorities were over-represented in the never-retired group.

■ Inside the labour market downturn

... p. 39

- The Canadian labour market lost more than 400,000 jobs during the first 12 months of the recent downturn.
- Although initial job losses were steeper in the recent downturn, employment rebounded earlier than in the downturns of the 1980s and 1990s.
- As in previous downturns, the number of working-age people without a job increased. Between October 2008 and October 2010, the number of non-workers increased by 800,000. Increases occurred in both the unemployed population (341,000) and individuals not participating in the labour force (458,000).
- Changes in the unemployed population were not just due to layoffs. Although the number of layoffs increased by 30% over the period, other categories, like new entrants and re-entrants coming back after

a period of labour market inactivity, also increased (33%). In the previous downturns, layoffs made up a larger portion of the unemployment increase.

- The growth of the non-participant population was mainly attributable to increases in the number of students and, to a lesser degree, the number of seniors. Although the number of discouraged searchers increased, that group consistently represented less than 1% of non-participants.
- Even though employment rebounded sooner than in earlier downturns, the number of individuals who worked part time but who would have liked to work full time increased by 20% over the period. As of October 2010, the Canadian labour market still had 113,000 fewer people working full time than in October 2008.
- Alternative measures of unemployment that incorporate discouraged searchers, the marginally attached and involuntary part-timers can be calculated. Regrouping these three populations with the unemployed population would boost the unemployment rate by about 25%, but would produce a rate moving in tandem with the standard unemployment rate.

■ What's new?

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Highly educated immigrants in the Canadian and U.S. labour markets

Paid work among women in Canada

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Labour productivity in the provinces and territories

■ From other organizations

Who creates jobs? Small companies or young companies?

Trends in U.S. hours and the labour wedge

■ Upcoming events

From data to decision-making: Socio-economic conference

Why has the gender wage gap narrowed?

Marie Drolet

The fact that men continue to earn more than women is not new but it is an issue that demands frequent re-examination. The female-to-male earnings ratio—based on the annual earnings of full-year, full-time workers—has held steady at 0.72 since the early 1990s (Statistics Canada 2009). This contrasts with the preceding 20 years during which there was a steady, if modest, narrowing of the earnings gap (Baker et al. 1995). Does this mean that progress towards equal pay has stalled?

Restricting male–female comparisons to full-year, full-time employees does not ensure that equal quantities of work are being compared. That requires a measure that includes both pay and a precise unit of work: hourly wages. On an hourly wage basis, the gap in pay between full-time women and men closed by more than 5 percentage points from the early 1990s to the late 2000s (Baker and Drolet [forthcoming]).¹

The main purpose of this article is to examine the factors that contributed to the narrowing of the wage gap (see *Data sources and definitions*). This article first shows how the relative position of women in the labour market has changed since the 1980s. Next, changes in the wages *among* men and *among* women are examined before changes in the wage gap *between* men and women are addressed. The core analyses estimate the effects of changes in the relative characteristics of male and female workers, the compensation they receive for these characteristics, and labour force participation relative to the evolution of the wage gap. Finally, whether the changing labour market participation of women affects measurement of the wage gap is addressed by way of a selection model.

Women in the labour market

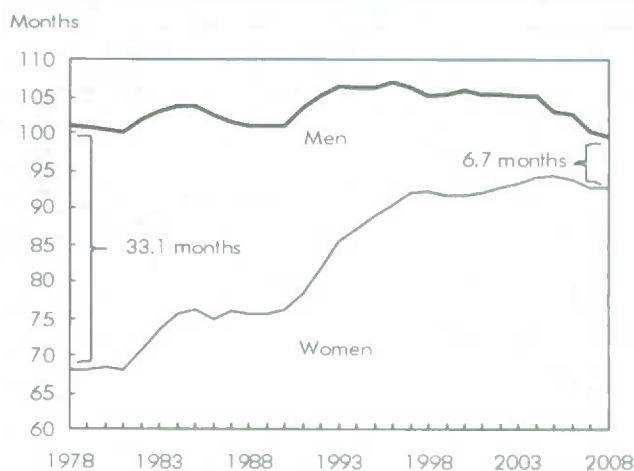
Of women between the ages of 25 and 54, 4 out of 5 participated in the labour market in 2009. That year, women accounted for just over one-half of all

employees. But it is the changing *relative position* of men and women in the Canadian labour market that can be linked to shifts in their labour market outcomes (namely wages).

Job tenure is a case in point. The gender difference in ‘in-progress’² job tenures fell from 33.1 months in 1978 to 6.7 months in 2008 (Chart A). This is due to an increase in average tenure among women: from 68.1 months in 1978 to 92.7 months in 2008—a difference of about 2 years. Alternatively, women were more likely to be in jobs that just started (1 to 3 months tenure) than were men until the early 1990s. After that point there was no appreciable gender difference in the proportion of new starts (Chart B).

The educational attainment of women has been rising in recent decades and now surpasses that of men (Chart C). For example, the proportion of women

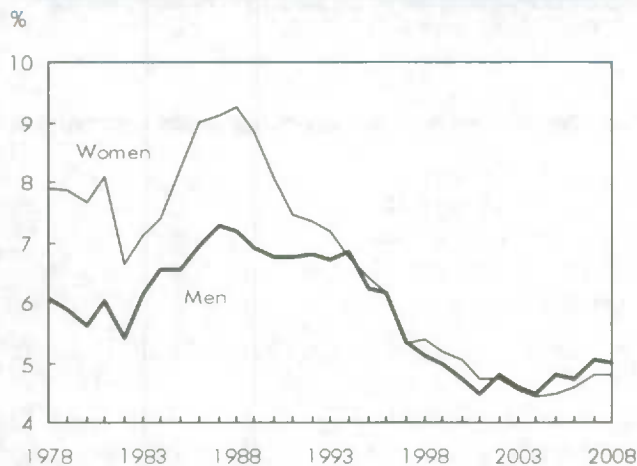
Chart A Average job tenure



Source: Statistics Canada, Labour Force Survey, 1978 to 2008.

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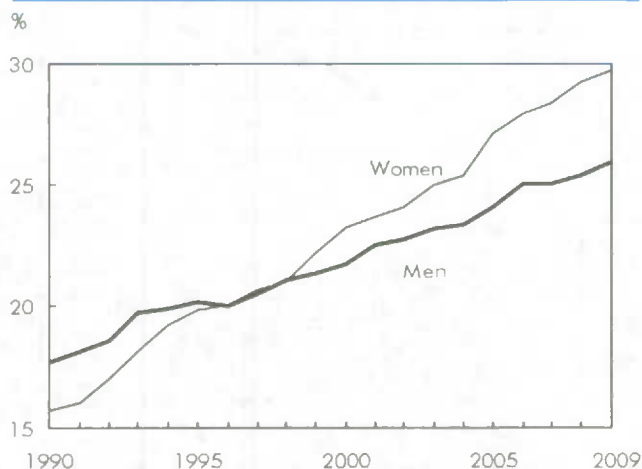
Chart B Proportion of jobs considered 'new start' (job tenure 1 to 3 months)



Source: Statistics Canada, Labour Force Survey, author's calculations, 1978 to 2008.

age 25 to 54 in the labour force that held a university degree rose from 15.7% in 1990 to 29.3% in 2008. The corresponding numbers for men are 17.7% and 25.3%.³ In 2008, 62% of undergraduate degrees and 54% of graduate degrees were granted to women.⁴

Chart C Proportion of labour force with a university education



Source: Statistics Canada, Labour Force Survey, 1990 to 2009.

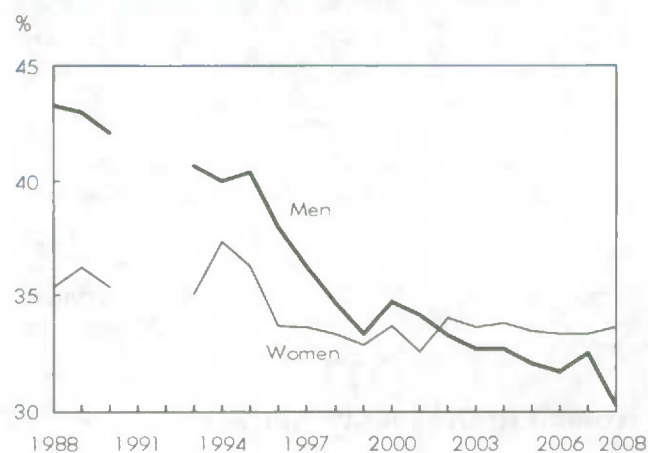
Structural changes in the Canadian economy—like a shift away from manufacturing jobs—had a disproportionately larger impact on the unionization rates of men. As a result, the male–female unionization gap disappeared. In fact, in recent years the proportion of women in unionized jobs⁵ has been higher than the corresponding figure for men (Chart D).

Women's wages grew faster than men's

Before changes in wage differences *between* men and women over time are addressed, changes in the relative hourly wages *among* men and *among* women must be documented separately (Chart E). On average, women's real wages increased by 11.6% between 1988 and 2008. While increases occurred across all age and wage groups, the most dramatic improvement was among women age 45 to 49 (17.8%) and those at the higher end of the wage distribution (16.0%).

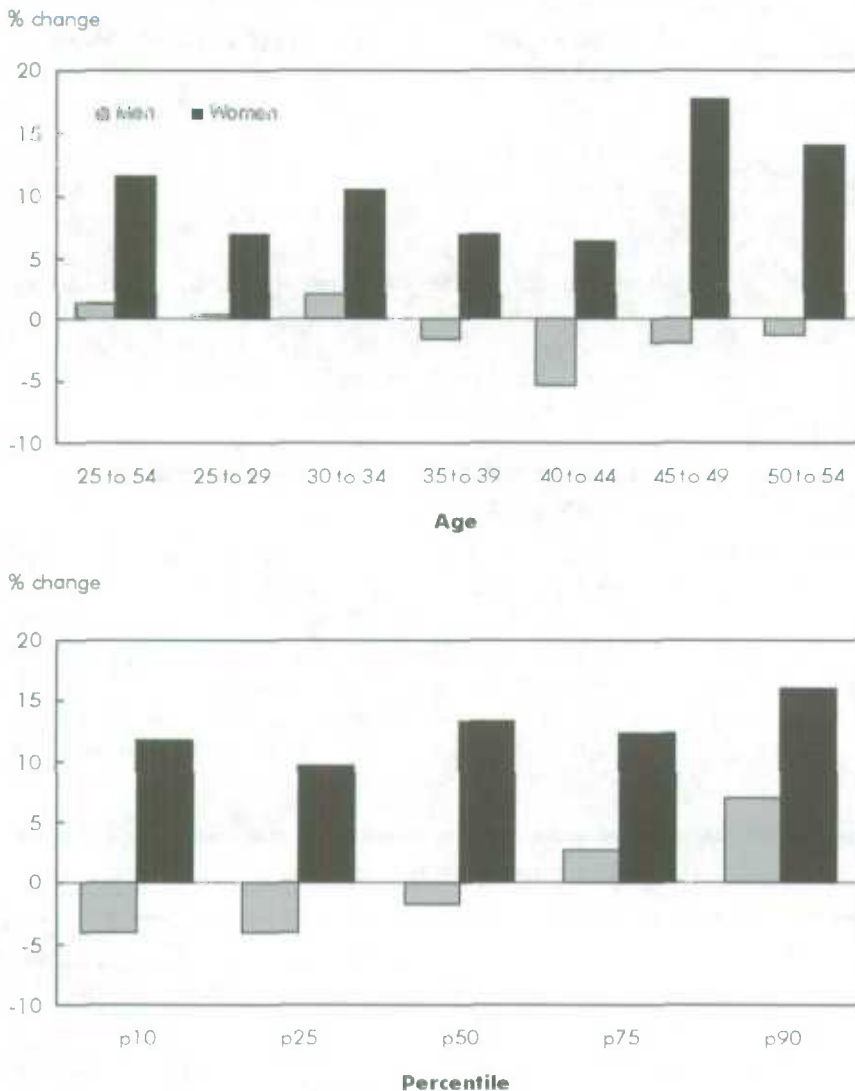
The situation among men is quite different. Overall, men's real wages edged up by 1.3% between 1988 and 2008. However, changes were not consistent across age and wage groups. On average, men age 35 and over and men at the lower end of the wage distribution saw their real wages decline between 1988 and 2008.

Chart D Unionization rates of workers age 25 to 54



Sources: Statistics Canada, Labour Market Activity Survey, 1988 to 1990; Survey of Labour and Income Dynamics, 1993 to 1997; Labour Force Survey, 1998 to 2008.

Chart E Percentage change in real hourly wages of 25- to 54-year-olds, 1988 and 2008, by sex



Sources: Statistics Canada, Labour Market Activity Survey, 1988; Labour Force Survey, 2008.

Unadjusted wage gap narrowed

The ratio of women's to men's average hourly wages (Chart F) rose from 0.757 to 0.833. In other words, the unadjusted wage gap narrowed by 7.6 percentage points. The gap converged by 5.4 percentage points between

1988 and 1998 and then by 2.2 percentage points the following decade. This is consistent with trends in wage ratios of full-time workers reported in Baker and Drolet (forthcoming).

Wage gap narrowed at all levels of pay

The wage gap narrowed throughout the wage distribution between 1988 and 2008, but it is at the lowest end of the wage distribution where the gap shrank the most (by 11.5 percentage points) and the upper end where the gap shrank the least (6.7 percentage points).⁶

That the gap shrank the most at the lower end of the pay scale corresponds to other results. Between 1988 and 2008, the gap shrank substantially among part-time workers (by 14.1 percentage points) and among workers in clerical occupations (by 12.1 percentage points).

Most female-dominated occupations, like those in health and education, had relatively small wage gaps in 1988 and experienced little change over the period. The exception is clerical occupations—with a wage gap of 24% that was halved by 2008.

Although women dramatically increased their representation in high-wage occupations like management, the wage gaps within these occupations are clearly larger than average. This is not surprising since increasing representation is first apparent in lower-level positions within the occupations. In 2006, for example, women comprised 26% of senior managers compared to 37% of managers at other levels (Statistics Canada 2007).

Chart F Gender wage ratio among workers age 25 to 54



Source: Author's calculations, hourly wage ratios based on data from various sources (see text).

The wage gap among university graduates remained at 16% over the 1998 to 2008 period. Frenette and Coulombe (2007) attribute the lack of movement in the gap to persistent differences in the fields of study

chosen by men and women. Women continue to outnumber men in education and the humanities, while men outnumber women in mathematics and engineering.⁷

Wage gap narrowed most among older workers

While the wage gap converged in all age groups, older workers experienced the greatest change.⁸ Reading down the columns in Table 1, the wage gap among workers age 25 to 29 shrank by 5.6 percentage points between 1988 and 2008 (Table 1). Over the same period, the gender wage gap shrank by 16.2 percentage points among 50- to 54-year-olds. Most of the convergence of the gap among younger workers occurred before 1998, while it continued throughout the period for older workers.

Factors contributing to the narrowing wage gap

Factors contributing to the decline in the gender wage gap have not been extensively studied in Canada. Baker and Drolet (forthcoming) show that almost two-thirds of the narrowing wage gap among full-time workers between 1981 and 2008 can be accounted for by changes in the relative characteristics of male and female workers. They conclude that although no

Table 1 Female-to-male hourly wage ratio and gap, 1988 to 2008

	All	Age					
		25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54
ratio							
1988	0.757	0.846	0.794	0.768	0.736	0.681	0.645
1993	0.794	0.905	0.886	0.772	0.762	0.700	0.709
1998	0.811	0.901	0.851	0.805	0.808	0.750	0.749
2003	0.825	0.920	0.868	0.843	0.804	0.768	0.771
2008	0.833	0.901	0.858	0.837	0.825	0.784	0.807
gap							
1988	0.243	0.154	0.206	0.232	0.264	0.319	0.355
1993	0.206	0.095	0.114	0.228	0.238	0.300	0.291
1998	0.189	0.099	0.149	0.195	0.192	0.250	0.251
2003	0.175	0.080	0.132	0.157	0.196	0.232	0.229
2008	0.167	0.099	0.142	0.163	0.175	0.216	0.193
change in gap (2007\$)							
1988 to 2008	-0.076	-0.056	-0.064	-0.068	-0.089	-0.103	-0.162
1988 to 1998	-0.054	-0.055	-0.057	-0.037	-0.073	-0.069	-0.104
1998 to 2008	-0.022	-0.001	-0.007	-0.032	-0.017	-0.034	-0.058

Sources: Statistics Canada, Labour Market Activity Survey, 1988 to 1990; Survey of Labour and Income Dynamics, 1993 to 1996; Labour Force Survey, 1998 to 2008.

Data sources and definitions

For clarity and consistency, this article refers to the **gender wage gap** although other measures are presented in the tables. The **female-male wage ratio** is calculated by dividing the female wage rate for a particular group or cohort by the male wage rate for the same group or cohort. The wage gap for women is calculated by subtracting the female-male wage ratio from 1.0 and expressing it as a percentage (e.g., .169 = 16.9%). The narrowing (or widening) of the gap is calculated by subtracting the gap in the second period from the gap in the first period.

The data are drawn from the 1988 to 1990 Labour Market Activity Survey (LMAS), the 1993 to 1996 Survey of Labour and Income Dynamics (SLID), and the 1998 to 2008 Labour Force Survey (LFS). The unit of measurement is hourly wages expressed in 2007 dollars. Wages refer to usual wages or salaries before taxes and other deductions. Tips, commissions and bonuses are included and paid overtime is excluded.

Following Baker and Drolet (forthcoming), this study looks at paid employees, age 25 to 54, in their main job in May of the reference year. The age restriction limits the impact of social and economic trends: by age 25 most individuals have completed their schooling,¹⁶ while the trend towards early retirement did not affect those under age 55.¹⁷

The years 1988, 1998 and 2008 were selected since they occur at roughly comparable points in the business cycle. If women's progress is sensitive to business-cycle fluctuations as suggested by Baker et al. (1995), choosing years at comparable points in the cycle should minimize any business cycle effects and any change in the gender wage gap would represent a structural change. The longer period also allows time for compositional changes to occur.

This study uses a proxy measure of experience based on age. This proxy overstates women's actual labour market experience and deviates further from the actual measure as workers age.¹⁸ The experience gap widens among female workers as they age, partially reflecting the fact that older women were part of a generation that was less inclined to combine work and family than younger women. As long as older female workers in 2008 had, on average, longer work experience than their counterparts in 1988, actual work experience would explain part of the wage gap convergence. The findings of Drolet (2001) suggest that the omitted variable—actual labour market experience—was increasing for women during the period.

one characteristic dominates, changes in educational attainment and the occupations in which men and women work play important roles.

This study adds information on factors contributing to the narrowing wage gap within age groups since compositional changes may have occurred differently for workers of different ages (see *Accounting for changes in the wage gap*).

For older workers, longer job tenure and shifts in occupation reduced the gap

Between 1988 and 2008, the female-male wage gap closed by 16.2 percentage points among 50- to 54-year-olds. The real wages of women age 50 to 54 grew by 23.4% compared to a slight decline in the real wages of their male counterparts (-1.4%). Roughly two-thirds of the narrowing gender wage gap can be explained by compositional changes (Table 2). In particular, older men were less likely to hold management jobs in 2008 (about 14.0%) than their 1988 counterparts (about 20.0%). This shift, combined with the fact that managers generally earn higher wages, accounted for over one-quarter of the decline in the gender pay

gap. Changes in job tenure accounted for another 14.6% of the decline in the wage gap. This was driven by a significant increase in the proportion of women holding long-term jobs⁹ (14.2 percentage points).

Higher education and declining unionization narrowed gap for younger workers

The growth in real wages of younger women (7.8%) outpaced that of younger men (0.5%) between 1988 and 2008, contributing to the narrowing wage gap among 25- to 29-year-olds. Roughly two-thirds of the narrowing gender wage gap can be explained by compositional changes.

Changes in educational attainment and choice of occupation increased the real wages of younger women. By 2008, 24.1% of younger men and 36.5% of younger women held a university degree. Since education is positively correlated with wages, the increasing educational attainment of younger women accounts for about one-quarter of the narrowing gender wage gap.¹⁰ Younger women also moved away from low-paying occupations—like clerical and sales occupa-

Accounting for changes in the wage gap

For each year (t), men's and women's wage structures ($i=m,f$) were estimated by the relationship between hourly wages and observed characteristics using ordinary least squares (OLS)

$$\ln w_{it} = X_{it}' \beta_i + u_{it}, i = m, f \text{ (Equation 1)}$$

where the natural logarithm of hourly wages is the dependent variable, X is a vector of wage-determining characteristics (age, age squared, education [3 groups], part-time, union, married or common law, tenure [6 groups], industry [17 groups], occupation [10 groups], and province [10 groups]);¹⁹ β is a vector of regression coefficients showing the return to each characteristic; and u is a normally distributed error term. Each coefficient is the percentage change in hourly wage rates associated with a one-unit change in the explanatory variable.

The literature has developed using Blinder-Oaxaca's decomposition procedure that allows for an identification of the proportion of the gender wage gap owing to differences in worker characteristics and a portion owing to differences in the returns to those characteristics as well as differences in the constant term. The decomposition is based on the OLS property that the sample average wage, \bar{w} , is equal to the product of the average vector of characteristics, \bar{X} , and the estimated regression coefficients $\hat{\beta}$.

The log wage differential for each year (t) can then be expressed as:²⁰

$$(\ln \bar{w}_m - \ln \bar{w}_f) = (\bar{X}_m - \bar{X}_f)' \hat{\beta}_m + (\hat{\beta}_m - \hat{\beta}_f)' \bar{X}_f \quad \text{(Equation 2).}$$

Following Baker et al. (1995), the change in the unadjusted wage differential over time can be decomposed into a part due to changes in the mean characteristics within the sample and changes in the returns to those characteristics. The change between periods ($t-1$) and t may be expressed as

$$(\bar{w}_t^M - \bar{w}_{t-1}^M) - (\bar{w}_t^F - \bar{w}_{t-1}^F) = [\hat{\beta}_t^M (\bar{X}_t^M - \bar{X}_{t-1}^M) - \hat{\beta}_t^F (\bar{X}_t^F - \bar{X}_{t-1}^F)] + [\bar{X}_{t-1}^M (\hat{\beta}_t^M - \hat{\beta}_{t-1}^M) - \bar{X}_{t-1}^F (\hat{\beta}_t^F - \hat{\beta}_{t-1}^F)] \quad \text{(Equation 3).}$$

The first component is the change in the wage gap due to changes in the relative mean characteristics across groups weighted at group-specific prices at time t . The second term is the change due to trends in the relative returns of these characteristics across groups, weighted by group-specific period ($t-1$) means of the explanatory variables.

tions—towards high-paying occupations in health and education, further contributing to the decline in the gender wage gap.

On the other hand, structural changes in the economy had a larger impact on younger men. Younger men experienced a drop in union coverage of 11.3 percentage points. Because unionized workers earn more than non-unionized workers, the contraction of the gender unionization gap lowered the wages of men relative to women. This accounted for 26.8% of the narrowing gender wage gap.

Changes in the pay structure within some industries also contributed to the narrowing gap. For example, men traditionally held most high-paying manufacturing jobs—like auto assembly and metal fabricating—while women held jobs in lower-paying sectors like textiles and clothing. However, the average hourly

wages of younger men in manufacturing fell by about 2% between 1988 and 2008 but rose by roughly 10% for younger women.

Declining correlation between wage gap and age

One clear result is that the gender wage gap generally increases with age (reading across the rows of data Table 1, second panel). Since women's characteristics have changed significantly since the earlier cohorts entered the workforce, at any point in time older women's characteristics will be quite different from those of younger women. Women's characteristics, although similar to men's early in their careers, may diverge due to differing educational, occupational and career interruption decisions. When combined, the

Table 2 Accounting for the narrowing wage gap, 1988 to 2008

	Age					
	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54
Change in						
Female-to-male wage ratio	0.056	0.064	0.068	0.089	0.103	0.162
Gap of log wages	-0.072	-0.103	-0.118	-0.120	-0.156	-0.217
Real log wages						
Men	0.005	0.012	-0.026	-0.045	-0.001	-0.021
Women	0.078	0.115	0.092	0.074	0.155	0.196
% due to differences						
in characteristics	66.0	52.7	40.2	57.1	47.1	65.4
Age	2.3	0.9	0.7	-0.1	-0.4	-0.9
Education	28.4	27.8	8.5	-7.0	-0.8	3.6
Province	-11.2	-7.2	-7.0	-3.3	-4.9	1.1
Tenure	5.3	6.5	21.6	26.5	13.9	14.6
Marital status	0.8	4.2	2.5	6.0	3.0	1.8
Union	26.8	9.3	3.1	5.0	4.8	6.6
Part time	8.7	11.1	5.5	4.0	1.6	6.8
Industry	-12.0	-4.3	-5.8	11.1	1.6	4.0
Occupation	18.7	4.3	11.0	15.7	28.2	27.7
% due to differences in returns	34.0	47.3	59.8	42.8	52.9	34.6

Sources: Statistics Canada, Labour Market Activity Survey, 1988 to 1990; Survey of Labour and Income Dynamics, 1993 to 1996; Labour Force Survey, 1998 to 2008.

large gender wage gap among older workers and the smaller wage gap among younger workers are easily explained.

Although there is a correlation between the wage gap and age in all survey years, this correlation becomes smaller each successive year. The gender wage gap was 20.1 percentage points smaller among workers age 25 to 29 than among workers age 50 to 54 in 1988. By 2008, the difference in the gap between younger and older workers shrank to 9.4 percentage points.

The weakening correlation between the wage gap and age suggests a 'cohort replacement effect': as younger cohorts replace older ones, the overall gap declines sim-

ply because the gap is smaller (and remains smaller) in new cohorts than in those that preceded them.

Does the gender wage gap increase as workers age?

The comparison made above is between workers from different birth periods. It does not answer the question, "Does the gender wage gap increase as workers age?" The change in the gender wage gap for a given cohort¹¹ over time can be found by reading Table 1 diagonally.¹²

Using this approach, the gender wage gap was 15.4 percentage points among workers age 25 to 29 in 1988. Ten years later, when the cohort was age 35 to 39, there

was a gender wage gap of 19.5 percentage points. Finally, in 2008, when the cohort was age 45 to 49, the wage gap was 21.6 percentage points. These numbers show that the wage gap widened by about 6.2 percentage points for the 1988 cohort over 20 years. This is quite a different finding from the cross-sectional evidence in 2008 where the gap among workers age 45 to 49 in 2008 was 11.7 percentage points higher than among those age 25 to 29. The cross-sectional data tend to overstate the correlation between the wage gap and age.

Repeating the same exercise for the other age groups casts further doubt on the strength of the correlation between age and the gender wage gap observed in cross-sectional data. In fact, the gender wage gap remained stagnant for some cohorts as they aged. For example, among workers age 30 to 34, the gender wage gap was 20.6 percentage points in 1988 and 19.3 points in 2008. For other cohorts, the data show no clear pattern. So for at least some cohorts, part of the narrowing wage gap may be attributable to the fact that men's and women's wages no longer diverged as they aged.

Why did the wages of men and women in these cohorts stop diverging as they aged? Two possible explanations are related to career paths. First, as women's children age, they may be able to devote more time and energy to the paid labour market (by accepting promotions or acquiring training). As a result, the wage gap within a given cohort may have narrowed or remained stagnant since women's enhanced work effort improved their relative earnings capacity. Second, female workers have traditionally been

Addressing selection issues: Simple selection correction

Following Baker et al. (1995), the wages of those in the sample of participants (or those with wages observed) are estimated by the regression $w_{ipt}^g = \alpha^g + X_{ipt}^g \beta_t^g + e_{ipt}^g$ where w_{ipt}^g is the natural logarithm of the hourly wage of worker i , within the sample of participants p , of gender g , in time t ; and X_{ipt}^g is a vector of wage determining characteristics (age, education, marital status, presence of preschool children, and region). Second, the wages of those not in the sample of participants n (or those with unobserved wages) w_{int}^g are estimated using the regression results β_t^g and their mean characteristics, \bar{X}_{int}^g . Using 1998 as the designated base year ($t=0$), a weighted estimate of the mean log wages is calculated for men and women as: $\bar{w}_t^g = \bar{\omega}_t^g \bar{w}_{pt}^g + (1 - \bar{\omega}_t^g) \bar{w}_{nt}^g$, where $\bar{\omega}_t^g = pr_t^g / pr_0^g$ and pr_t^g is the employment rate of gender g in year t . Finally, by construction w_{nt}^g controls for observable differences between participants and non-participants, however, it may be prudent to control for unobservable differences by multiplying by k . If those not participating in the paid labour market are assumed to receive wage offers lower than those participating in the labour market, then $k < 1$. Following Baker et al. (1995), adjusted results are presented for $k = 1.0$ and $k = 0.9$.

viewed as more likely to quit and be absent from work (Hill 1979), and these predetermined notions of job performance may influence pay as well as job placement (Chandler et al. 1994). However, recent empirical evidence shows that there is little gender difference in permanent quit rates and absenteeism (Zhang 2007). As a result, the wage gap within a given cohort may have narrowed or remained stagnant since quits and absenteeism can no longer be viewed as important explanations for women's lower wages.

The role of changing 'selection bias'

Since women's employment rates were lower in the past, the possible contribution of changing participation rates to the narrowing of the

earnings gap should be considered. For instance, if women working in the 1980s had 'above-average' earnings potential relative to those not working in the 1980s, it would constitute a selection bias. As women's employment rates increased, more women with 'average' earnings potential entered the labour market. Such a scenario would represent a change in the selection bias, altering the measurement of the wage gap.

To isolate the impact of changing selection bias, wages must be linked to a consistent mix of characteristics at different points in time. Baker et al. (1995) illustrate a technique to control for changing selection biases that may affect comparisons of unadjusted differentials over time. The technique can also include an adjustment that

allows the analyst to make assumptions about unobserved characteristics.

After selection bias is taken into account (see *Addressing selection issues: Simple selection correction*), the adjusted wage gap shrinks more than previously reported for 1988 to 2008: an additional 1.6 percentage-point increase over the 7.6 percentage-point change in the unadjusted gap. This indicates that the average skills of new entrants in the labour market command lower wages than those who participated both years. If this assumption is extended to unobservable characteristics,¹³ the gap shrinks an additional 5.1 percentage points compared to the change in the unadjusted gap. According to these assumptions, addressing the selection issue further reduces the gender wage gap between 1988 and 2008 by between 1.6 and 5.1 percentage points.¹⁴

For those age 25 to 29 in 1988, the unadjusted gender wage gap widened by 6.2 percentage points over the following 20 years (Table 3). Using selectivity-adjusted wages, the gap widened by 5.4 percentage points or by 2.4 percentage points when unobserved characteristics were taken into account. According to these assumptions, the growth of the wage gap for this cohort is overstated by between 0.8 and 3.8 percentage points when selection effects have not been taken into account. This provides further evidence that the correlation between the wage gap and age is overstated in cross-sectional tabulations.¹⁵

Summary

This article explored factors contributing to the decline in the gender pay gap over time. The first

Table 3 Addressing selection bias: Selectivity-adjusted gender wage ratios

	1988	1998	2008	1988 to 2008
	ratio			change
All workers age 25 to 54				
Employment rates				
Men	0.876	0.845	0.865	-0.011
Women	0.675	0.722	0.781	0.106
Unadjusted wage ratio	0.757	0.811	0.833	0.076
Selectivity-adjusted wage ratio				
k = 1.0	0.742	0.807	0.834	0.093
k = 0.9	0.721	0.807	0.848	0.127
Synthetic cohort: Workers age 25 to 29 in 1988 and 45 to 49 in 2008				
Employment rates				
Men	0.853	0.863	0.867	0.014
Women	0.694	0.732	0.804	0.110
Unadjusted wage ratio	0.846	0.805	0.784	-0.062
Selectivity-adjusted wage ratio				
k = 1.0	0.835	0.805	0.781	-0.054
k = 0.9	0.827	0.805	0.803	-0.024

Note: Sample of non-participants includes persons who are unemployed, not in the labour force and self-employed.

Sources: Statistics Canada, Labour Market Activity Survey, 1988 to 1990; Survey of Labour and Income Dynamics, 1993 to 1996; Labour Force Survey, 1998 to 2008.

major finding—that the growth in women's relative wages outpaced that of men—suggests that the changing composition of the labour force and changes in how the labour market compensates workers played a role in narrowing the gender wage gap.

The second major finding—that men and women entering today's labour market are more alike in terms of characteristics and wages than they were in the past—suggests that part of the decline in the gender wage gap may be due to a cohort-replacement effect. As the younger cohorts 'replace' older cohorts, the overall wage gap declines simply because the gap is smaller for the new cohorts than for those who preceded them.

The third major finding—that cross-sectional evidence tends to overstate the correlation between the wage gap and age—suggests that part of the decrease in the gender wage gap is related to the fact men and women's wages did not diverge as they aged to the same extent as in the past.

These findings provide some insight into the functioning of the Canadian labour market. First, the gender wage gap early in an individual's career is an increasingly good predictor of the wage gap throughout a generation's working life. Second, further declines in the gender pay gap may be difficult to determine since, after the 1988

cohort, there are only moderate declines in the wage gap for younger women from cohort to cohort.

Perspectives

Notes

1. A complete analysis of the differences in the level and trend of the gender earnings gap and the gender wage gap can be found in Baker and Drolet (forthcoming).
2. These measures do not reflect completed job tenure—they measure job length at the time of the survey. Job tenure measures the number of consecutive months or years a person has worked for the current (or most recent) employer. The employee may have worked in one or more occupations or in one or more locations or businesses and still be considered to have continuous tenure if the employer has not changed. But if a person has worked for the same employer over different periods of time, job tenure measures the most recent period of uninterrupted work. A temporary layoff does not constitute an interruption.
3. Author's calculations from Labour Force Survey estimates, CANSIM Table 282-0004.
4. Author's calculations from CANSIM Table 477-0014.
5. Includes those not represented by a union but covered by a collective bargaining agreement.
6. The percentile rankings refer to each sex's own wage distribution. An alternative method is to calculate the average female percentile ranking in the male wage distribution. This indicator shows that women 'moved up' in the male pay distribution—on average, women out-earned 32% of men in 1988, 37% in 1998 and 39% in 2008.

7. CANSIM Table 477-0013.
8. Baker and Drolet (forthcoming) note similar results for full-time workers.
9. Long-term jobs are those that last at least 20 years.
10. Information on major field of study is missing from this analysis. See Frenette and Coulombe (2007) for a more detailed discussion.
11. Here the term 'cohort' is used to describe a 'synthetic cohort' defined by date of birth. A synthetic cohort is constructed from repeated cross-sectional surveys. This permits the *average* labour market outcomes (in this case wages) of workers in different birth periods to be tracked over time. This differs from studies using panel data that track the outcomes of *individual* workers over time. As long as the cross-sectional sample is representative, this approach should approximate changes in the gender wage ratio over time for workers within the same birth period. A drawback of this approach is the assumption that the population is fixed. In other words, individuals observed working at age 25 to 29 in 1988 are assumed to be the same individuals working at age 45 to 49 in 2008. *Addressing selection issues: Simple selection correction* addresses this assumption and re-estimates changes in the gender wage differential over time.
12. Baker and Drolet (forthcoming) present similar results graphically in their Figure 6.
13. Setting $k=0.9$ as indicated in *Addressing selection issues: Simple selection correction*.
14. Similar results are noted by workers of specific age groups.
15. The sample of non-participants includes persons who are unemployed, persons who are not in the labour force but able to work, and persons who are self-employed. Alternative samples of non-participants (unemployed only, unemployed, and those not in the labour force) were used to perform a similar analysis. All samples produced similar results.
16. Neill (2009) reports that, for the 18- to 24-year-old population, enrolment in full-time university studies increased between 1979 and 2003. This may affect the gender wage ratio for this age group since the type of younger adult working may be systematically changing.
17. Milligan and Schirle (2008) document significant changes in the employment rates of older (55 and over) men and little change in the employment rates of older women. Changing retirement patterns may influence the gender wage ratio among older workers since the type of older adult working may be systematically changing.
18. Drolet (2001) shows that, in 1997, younger women (25 to 34) spent 84% of their potential years of work experience working full-year, full-time compared to 74% of older women (45 to 54), while men spent over 90% of their potential years of work experience working full-year, full-time, regardless of age. These numbers were calculated using data from the Survey of Labour and Income Dynamics.
19. The variables used have been harmonized to provide a consistent concept over the survey years. Concordances for industry coding (from the Standard Industrial Classification [SIC]—used up until 1998—to the North American Industry Classification System [NAICS]) and occupation coding (from the Standard Occupational Classification [SOC] to the National Occupational Classification [NOC]) were used to match, as consistently as possible, at aggregate levels. See Baker and Drolet (forthcoming) for a complete description.
20. Results from this specification should be interpreted cautiously since access to occupations, industries and unionized workplaces may be affected by differential treatment of men and women in the labour market.
21. The male wage structure is used for comparative purposes. While it is recognized that the choice of wage structure matters (Drolet 2001), questions related to pay differentials are often framed in a manner that asks whether women are paid the same as comparable men.

References

- Baker, Michael and Marie Drolet. (forthcoming). "A new view of the male-female pay gap in Canada." *Canadian Public Policy*. Vol. 36, no. 4. December 2010.
- Baker, Michael, Dwayne Benjamin, Andrée Desautniers and Mary Grant. 1995. "The distribution of the male/female earnings differential, 1970-1990." *Canadian Journal of Economics*. Vol. 28, no. 3. August. p. 479-501.
- Chandler, Timothy D., Yoshinori Kamo and James D. Werbel. 1994. "Do delays in marriage and childbirth affect earnings?" *Social Science Quarterly*. Vol. 75, no. 4. December. p. 838-853.
- Drolet, Marie. 2001. "The male-female wage gap." *Perspectives on Labour and Income*. Vol. 2, no. 12. December. Statistics Canada Catalogue no. 75-001-XIE. p. 5-13. <http://www.statcan.gc.ca/pub/75-001-x/75-001-x2001012-eng.pdf> (accessed November 25, 2010).

- Frenette, Marc and Simon Coulombe. 2007. *Has Higher Education Among Young Women Substantially Reduced the Gender Gap in Employment and Earnings?* Statistics Canada Catalogue no. 11F0019M – No. 301. Analytical Studies Branch Research Paper Series. Ottawa. 26 p.
<http://www.statcan.gc.ca/pub/11f0019m/11f0019m2007301-eng.pdf> (accessed November 25, 2010).
- Hill, Martha S. 1979. "The wage effects of marital status and children." *The Journal of Human Resources*. Vol. 14, no. 4. Autumn. p. 579-593.
<http://www.jstor.org/stable/pdfplus/145325.pdf> (accessed November 25, 2010).
- Milligan, Kevin and Tammy Schirle. 2008. *Working While Receiving a Pension: Will Double Dipping Change the Elderly Labour Market?* Mimeo. Paper prepared for the John Deutsch Institute Conference on Retirement Policy Issues in Canada, October 25-26, 2007, Kingston, Ontario. University of British Columbia. 18 p.
<http://faculty.arts.ubc.ca/kmilligan/research/doubledip2.2.pdf> (accessed November 25, 2010).
- Neill, Christine. 2009. "Tuition fees and the demand for university places." *Economics of Education Review*. Vol. 28, no. 5. October. p. 561-570.
http://www.sciencedirect.com/science?_ob=MIimg&_imagekey=B6VB9-4VWB1CY-2-3&_cdi=5921&_user=1516053&_pii=S0272775709000211&_origin=search&_coverDate=10%2F31%2F2009&_sk=999719994&view=c&wchp=dGl.bVtb-zSkzV&md5=b95a2b692b2e2ad1382f8329cfd45c0&ie=/sdarticle.pdf (accessed November 25, 2010).
- Statistics Canada. 2009. *Income Trends in Canada*. Statistics Canada Catalogue no.13F0022XCB. Ottawa.
- Statistics Canada. 2007. *Women in Canada: Work Chapter Updates 2006*. Statistics Canada Catalogue no. 89F0133XIE. Ottawa. 23 p.
<http://www.statcan.gc.ca/pub/89f0133x/89f0133x2006000-eng.pdf> (accessed November 25, 2010).
- Zhang, Xuelin. 2007. *Gender Differences in Quits and Absenteeism in Canada*. Statistics Canada Catalogue no. 11F0019M – No. 296. Analytical Studies Branch Research Paper Series. Ottawa. 36 p.
<http://www.statcan.gc.ca/pub/11f0019m/11f0019m2007296-eng.pdf> (accessed November 25, 2010).

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Seniors' self-employment

Sharanjit Uppal

The potential impact of workforce aging is widely discussed as baby boomers enter their retirement years. The Minister of Human Resources and Social Development Canada established the Expert Panel on Older Workers in 2007 in response to two issues that could affect the standard of living in Canada. First, population aging could reduce the growth potential of the Canadian economy since income generally declines with retirement. The second question is how to provide for the older workers who are displaced as the economy adapts to a changing environment.

The risks associated with an increase in the old-age dependency ratio—defined as the ratio of retired individuals to the number of working people—are often debated. On the one hand, many believe that the increase in the number of retirees will put a strain on public resources, and possibly also lead to labour shortages in certain areas. Others argue that recent cohorts are likely to work longer since they tend to be healthier, better-educated, and more entrepreneurial than previous generations of retirees.

Indeed, the employment rate among seniors has increased in recent years (Uppal 2010). Between 1996 and 2006, the share of working seniors (65 and over) climbed from 11.8% to almost 14.8% among men, and from 4.0% to 5.8% among women. However, the fact that many of these employed seniors are self-employed has not been widely reported. According to the latest census data, 44.1% of senior men and 28.6% of senior women who had a job in 2006 were self-employed. Moreover, self-employment among older Canadians increased by more than 100,000 during the recent economic downturn (LaRochelle-Côté 2010).

Self-employment is typically seen as providing more flexibility and imposing fewer constraints on retirement timing, which could explain why many working seniors choose self-employment (Quinn 1980 and Hochguertel 2010). In addition, seniors typically have higher levels of human and financial capital to invest in a small business, two conditions thought to stimulate entrepreneurial activity (Beaucage and Najem 2006, and Zissimopoulos and Karoly 2007). Alternatively, some seniors may be pushed into self-employment through a lack of paid employment opportunities.

Despite the high incidence of self-employment among the senior population, little has been published on the topic recently.¹

The first objective of this study is to present new information on self-employment trends among seniors and examine their industrial and occupational profiles. The second is to examine factors associated with self-employment after age 64. Since a large sample is required to obtain a detailed description of seniors' self-employment, this study uses census data (see *Data source and definitions*).

Many working seniors are self-employed

Although participation in the job market drops significantly at age 65, many of those who remain on the job are self-employed. In 2006, 14.8% of senior men held a job (Table 1). As a proportion of senior men, 8.2% were paid employees and 6.6% were self-employed. Among senior women, the employment rate was 5.8%, consisting of 4.0% who were paid employees and 1.7% who were self-employed.² Thus, among seniors, 44.1% of working men and 28.6% of working women were self-employed.

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Table 1 Labour force status of seniors, 2006

	65 and over		65 to 69		70 to 74		75 to 79		80 and over	
Men		%		%		%		%		%
Total										
population	1,888,905	100.0	597,800	100.0	491,065	100.0	391,240	100.0	408,810	100.0
Not in the										
labour force	1,519,935	80.5	424,460	71.0	411,175	83.7	343,430	87.8	340,870	83.4
Institutionalized	75,195	4.0	6,320	1.1	8,565	1.7	13,190	3.4	47,115	11.5
Unemployed	13,450	0.7	8,560	1.4	2,580	0.5	1,225	0.3	1,080	0.3
Employed	280,330	14.8	158,455	26.5	68,750	14.0	33,390	8.5	19,740	4.8
Employees	154,860	8.2	95,250	15.9	35,410	7.2	14,740	3.8	9,460	2.3
Self-employed	123,670	6.6	62,370	10.4	32,830	6.7	18,320	4.7	10,160	2.5
Non-farm	88,010	4.7	49,235	8.2	22,430	4.6	10,885	2.8	5,465	1.3
Farm	35,660	1.9	13,135	2.2	10,400	2.1	7,435	1.9	4,695	1.2
Unpaid family worker	1,800	0.1	840	0.1	510	0.1	330	0.1	125	0.0
Women										
Total										
population	2,445,890	100.0	635,335	100.0	564,285	100.0	494,610	100.0	751,665	100.0
Not in the										
labour force	2,111,120	86.3	539,930	85.0	518,340	91.9	456,160	92.2	596,700	79.4
Institutionalized	185,300	7.6	6,430	1.0	11,520	2.0	23,350	4.7	144,010	19.2
Unemployed	8,100	0.3	4,030	0.6	1,855	0.3	1,020	0.2	1,200	0.2
Employed	141,360	5.8	84,950	13.4	32,570	5.8	14,085	2.9	9,760	1.3
Employees	97,250	4.0	61,765	9.7	20,585	3.7	8,640	1.8	6,270	0.8
Self-employed	40,400	1.7	21,385	3.4	10,800	1.9	4,990	1.0	3,230	0.4
Non-farm	31,510	1.3	17,830	2.8	8,055	1.4	3,490	0.7	1,090	0.1
Farm	8,890	0.4	3,555	0.6	2,745	0.5	1,500	0.3	2,140	0.3
Unpaid family worker	3,700	0.2	1,800	0.3	1,190	0.2	455	0.1	260	0.0

Source: Statistics Canada, Census of Population.

The proportion of workers who are self-employed is even higher among older seniors.³ For example, the proportion of the self-employed among working men age 65 to 69 was 39.4% in 2006, but was greater than one-half of those who were still working after age 75.⁴ Among women, the self-employed made up one-quarter of workers age 65 to 69, rising to more than one-third of working women age 70 and over.

Self-employed seniors are more likely to work full year, full time than paid employees (Chart A). Among men, 43.8% of self-employed seniors worked full year, full time in 2005 compared to

Chart A Work activity among employed seniors in 2005

Source: Statistics Canada, Census of Population, 2006.

Data source and definitions

This study uses data on men and women, 65 years of age and over, from the censuses of 1981, 1986, 1991, 1996, 2001 and 2006. Census data are required to conduct detailed analyses for relatively small population groups, like self-employed seniors. The census is conducted every five years. One-fifth of households receive the long form which, in addition to basic demographic information, asks more detailed questions including some on labour market activities. The 20% sample is weighted to represent all Canadians.

Variable definitions

Employed: a person is considered to be employed if he or she had a job in the week preceding the census, including those who were temporarily absent for the entire week because of vacation, illness, a labour dispute at work, maternity/parental leave, bad weather, fire, family responsibilities, or same other reason.

Employment rate: the number of employed persons expressed as a percentage of the relevant population.

Employee: paid worker – working for wages, salary, tips or commission.

Self-employed: includes individuals who had a job in the reference week and belonged to one of the following categories: self-employed without paid help, incorporated; self-employed with paid help, incorporated; self-employed without paid help, not incorporated; or self-employed with paid help, not incorporated.

Unpaid family worker: worked without pay for a relative in a family business or on a farm.

Work activity: based on data prior to the census year since data on weeks worked are for the previous year. An individual was classified to be working full year, full time if he or she worked 49 to 52 weeks full time (30 hours or more per week).

Other family income: this variable is calculated by first subtracting employment income (if any) from total economic family income and then adjusting for family size by dividing it by an adjustment factor that takes the lower relative needs of additional family members, compared to a single person living alone, into account. Income quintiles are then calculated using the adjusted other family income. Information on income variables is for the year prior to the census year.

Education: education levels are constructed using the highest certificate, diploma or degree variable. The lowest level, Level 1, is below high school graduation certificate or equivalency diploma. Level 2 is high school graduation certificate or equivalency diploma. Level 3 includes other trades certificate/diploma or registered apprenticeship certificate. Level 4 consists of college, CEGEP or other non-university certificate or diploma from a program of 3 months to less than 1 year, college, CEGEP or other non-university certificate or diploma from a program of 1 year to 2 years, college, CEGEP or other non-university certificate or diploma from a program of more than 2 years, or certificate or diploma below bachelor. The highest level, Level 5, includes bachelor's degree, certificate or diploma above bachelor, degree in medicine, dentistry, veterinary medicine or optometry, master's degree, or earned doctorate degree.

Activity limitations: are based on questions that refer to conditions or health problems that have lasted or are expected to last six months or more:

1. "Does this person have any difficulty hearing, seeing, communicating, walking, climbing stairs, bending, learning or doing any similar activities?"
2. "Does a physical condition or mental condition or health problem reduce the amount or kind of activity this person can do: (a) at home? (b) at work or at school? (c) in other activities, for example, in transportation or leisure?"

Responses to either question indicating "yes, often" and "yes, sometimes" are used to create the corresponding activity-limitation variables.

Occupation: Based on National Occupational Classification (520 occupations).

Industry: Based on the 2002 North American Industry Classification System.

Recent immigrants: Individuals who immigrated to Canada between 1997 and 2006.

Established immigrants: Individuals who immigrated to Canada before 1997.

Aboriginal peoples: Self-reported aboriginal status.

39.8% of senior employees. Similarly, 32.0% of self-employed senior women worked full year, full time versus 29.6% of their paid counterparts. In contrast, paid employees age 25 to 54 were more likely than the self-employed to work full year, full time in 2005 (data not shown). Therefore not only is self-employment more prevalent among senior workers than younger workers (see *Comparisons with younger age groups*), but self-employed seniors are also more likely to report that they work full time for the full year.

Self-employment growing at slower pace than paid jobs among seniors⁵

Uppal (2010) found that the proportion of seniors who work past age 64 has increased since 1996, following 15 years of decline. For example, the employment rate for senior men increased from 11.8% to 14.8% between 1996 and 2006. Over the same period, the share of paid employees as a proportion of senior men increased from 5.4% to 8.2% (Chart B).

Chart B Paid employment and self-employment as a proportion of total population, 1981 to 2006



Source: Statistics Canada, Census of Population.

Similar patterns were found among women. Did self-employment also contribute to the recent increase in employment among seniors?

The answer is yes, but the number of paid employees increased faster than the number of self-employed seniors and the proportion of senior workers in self-employment fell as a consequence (Chart C). Between 1996 and 2006, the share of the self-employed among working seniors declined from 53.5% to 44.4% among men, and from 33.7% to 29.4% among women.^{6,7}

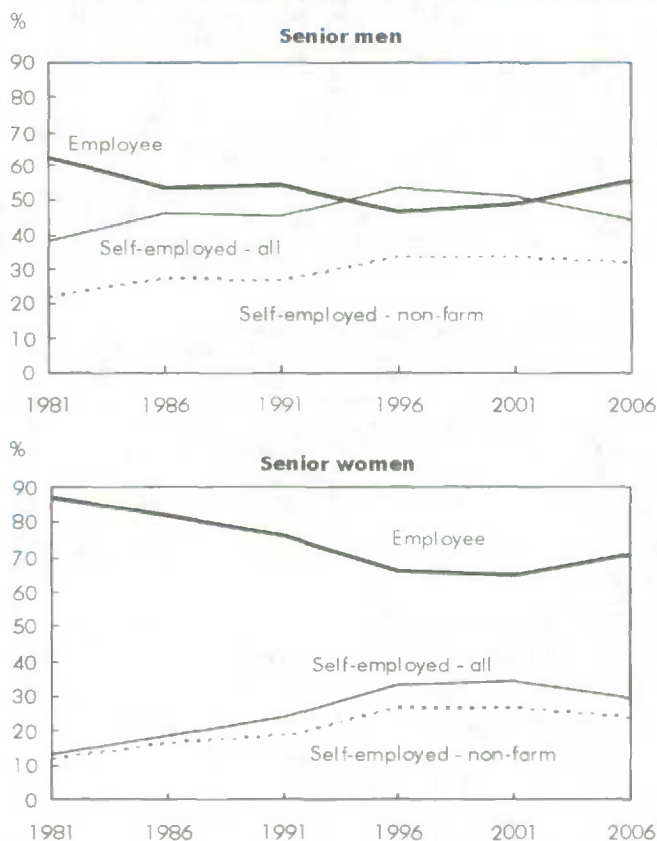
By historical standards, self-employment was still relatively high among seniors in 2006. Among senior workers in 1981, 37.8% of men and 13.0% of women

were self-employed. The relative importance of self-employment for seniors increased rapidly over the next 15 years, especially among men: by 8.5 percentage points from 1981 to 1986 and by 7.9 points from 1991 to 1996. Both periods were characterized by relatively weak labour markets. Other studies suggest that many workers are 'pushed' into self-employment during periods of economic stagnation (Kuhn and Schuetze 2001).

Long-term growth among the incorporated self-employed

The self-employed can be classified into two categories: the 'incorporated,' who own a separate business entity, and the 'unincorporated,' who do not. Both the

Chart C Paid employment and self-employment as a proportion of the employed, 1981 to 2006



Source: Statistics Canada, Census of Population.

incorporated and unincorporated may have paid employees resulting in four categories (Table 2). The majority of self-employed seniors were unincorporated: about two-thirds of self-employed men and three-quarters of self-employed women. And the vast majority of those who were unincorporated did not have paid employees: 80.4% among women and 74.2% among men.⁸ In contrast, more than one-half of incorporated seniors had paid employees in 2006.

While the unincorporated without paid help—also referred to as own-account workers—still comprise the majority of self-employed seniors, their share has declined. Between 1981 and 2006, the share of self-employed men who were unincorporated without paid help fell steadily from 67.7% to 50.5% (Chart D). There was also a modest decline among women—from 61.8% to 58.9%.

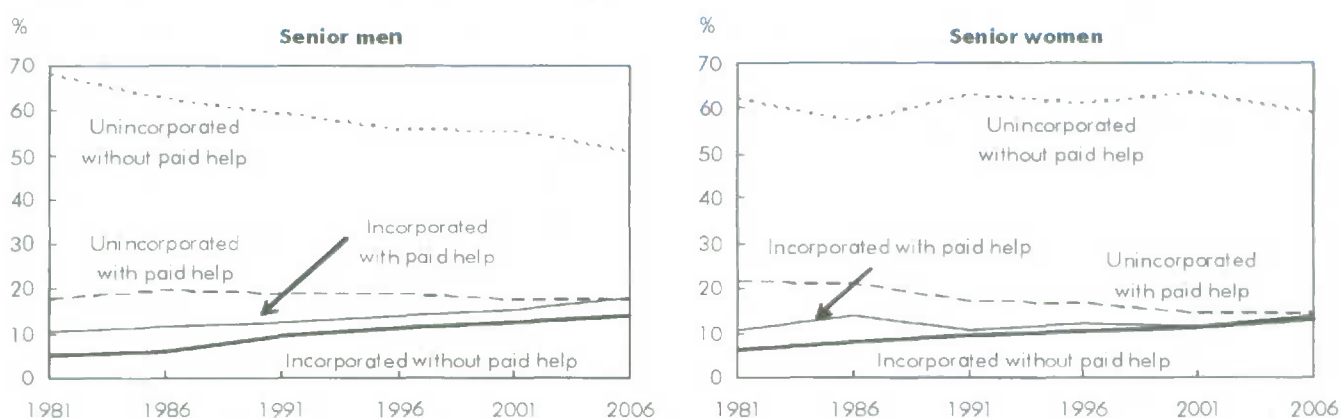
Table 2 Self-employment categories for seniors, 2006

	65 and over	65 to 69	70 to 74	75 to 79	80 and over
Men					
			%		
Incorporated	31.9	34.5	31.3	27.7	26.0
Without paid help	14.0	14.9	14.1	12.2	11.6
With paid help	17.9	19.6	17.2	15.5	14.4
Unincorporated	68.1	65.6	68.6	72.3	74.1
Without paid help	50.5	47.4	51.6	55.0	57.5
With paid help	17.6	18.2	17.0	17.3	16.6
Women					
Incorporated	26.8	27.4	25.1	27.8	26.1
Without paid help	13.1	12.5	13.0	13.8	15.8
With paid help	13.7	14.9	12.1	14.0	10.3
Unincorporated	73.3	72.7	74.9	72.2	73.9
Without paid help	58.9	58.1	60.9	59.1	57.5
With paid help	14.4	14.6	14.0	13.1	16.4

Source: Statistics Canada, Census of Population.

In contrast, the share of incorporated self-employed men more than doubled, from 15.1% in 1981 to 31.9% in 2006. Incorporated women also increased their share of self-employed seniors: from 16.9% in 1981 to 26.8% in 2006. Thus self-employment among seniors is increasingly comprised of incorporated business owners, as opposed to own-account workers.

Chart D Self-employment categories, self-employed, 1981 to 2006



Source: Statistics Canada, Census of Population.

Table 3 Seniors' employment by industry, 2006

Men	Employee (%)
Consumer services	33.3
Business services	19.5
Manufacturing	11.0
Construction and utilities	8.6
Transport	7.4
Education	5.7
Primary goods	5.3
Public administration	5.1
Health	4.0
	Self-employed (%)
Primary goods	31.6
Consumer services	23.1
Business services	22.0
Construction and utilities	8.6
Health	5.5
Manufacturing	5.0
Transport	3.1
Education	1.0
Public administration	0.0
Women	Employee (%)
Consumer services	37.8
Health	17.8
Business services	17.3
Education	9.4
Manufacturing	5.5
Public administration	4.4
Primary goods	3.4
Construction and utilities	2.3
Transport	2.1
	Self-employed (%)
Consumer services	34.3
Primary goods	26.0
Business services	19.6
Health	8.4
Manufacturing	4.7
Education	3.8
Construction and utilities	2.2
Transport	1.0
Public administration	0.0

Source: Statistics Canada, Census of Population.

Self-employed seniors concentrated in a few industries

In comparison with paid employees, self-employed seniors were more concentrated in a few industries. More than three-quarters of self-employed seniors could be found in three industries: primary goods, consumer services and business services (Table 3). One-third of self-employed men were in primary goods and one-third of self-employed women were in con-

sumer services. By way of comparison, senior men who were paid employees were typically employed in consumer services, business services and manufacturing (63.8%). Senior women working as paid employees were likely to work in consumer services, health and business services (72.9%).

Self-employed seniors were also more likely to be concentrated in a few occupations (Table 4). Almost one-half were employed in the top 10 occupations (out of 520). The most frequently reported occupation was farmer or farm manager, accounting for 24.2% of self-employed men and 17.2% of self-employed women. Concentration in the top 10 occupations was much lower for paid employees: 28.4% for men and 37.6% for women.

Factors associated with seniors' self-employment⁹

Research suggests that self-employment is related to a number of factors, including financial capital, education, and personal characteristics (Fuchs 1982, Bruce et al. 2000, and Zissimopoulos and Karoly 2007).

The financial capital hypothesis suggests that individuals in wealthier families are more likely to be self-employed because the associated risks and investments are more easily addressed when individuals are financially sound (Georgellis et al. 2005). Even though the census does not contain any information on financial wealth, it is possible to test that hypothesis by using "adjusted family income" as a proxy.¹⁰ It is calculated by subtracting the employment income of the respondent from the total family income,¹¹ and next adjusting to account for the size of the family (see *Data source and definitions*). Individuals can then be classified across quintiles in order to verify whether those with higher financial capital also have higher self-employment rates.

Self-employment rates can also vary by educational attainment. Higher education may give individuals the skills to start and remain in business. Certain fields of study, like law and medicine, also lead graduates into occupations with relatively high rates of self-employment. Past studies have produced mixed results on the link between education and self-employment.

Other personal characteristics are also known to influence the probability of being self-employed. For example, those with another self-employed family member (usually the spouse) tend to be self-employed themselves. The link is less clear for other characteris-

Table 4 Top 10 occupations: Seniors who were paid employees versus the self-employed, 2006

Men	Employee (%)
Retail salespersons and sales clerks	5.2
Janitors, caretakers and building superintendents	3.9
Truck drivers	3.8
Security guards and related occupations	3.6
Bus drivers and subway and other transit operators	2.7
Sales representatives, wholesale trades (non-technical)	2.1
Ministers of religion	2.0
Real estate agents and salespersons	1.8
Delivery and courier service drivers	1.7
Retail trade managers	1.6
	Self-employed (%)
Farmers and farm managers	24.2
General farm workers	4.3
Retail trade managers	3.5
Financial auditors and accountants	2.4
Lawyers and Quebec notaries	2.1
Retail salespersons and sales clerks	2.0
Truck drivers	1.8
General practitioners and family physicians	1.8
Senior managers - goods production, utilities, transportation and construction	1.6
Senior managers - trade, broadcasting and other services, n.e.c. ¹	1.6
Women	Employee (%)
Retail salespersons and sales clerks	8.1
Secretaries (except legal and medical)	6.9
Registered nurses	3.6
General office clerks	3.6
Bookkeepers	3.3
Light duty cleaners	2.8
Receptionists and switchboard operators	2.5
Cashiers	2.4
Administrative officers	2.3
Visiting homemakers, housekeepers and related occupations	2.1
	Self-employed (%)
Farmers and farm managers	17.2
Secretaries (except legal and medical)	5.3
Bookkeepers	4.8
General farm workers	4.6
Retail trade managers	4.4
Retail salespersons and sales clerks	3.3
Light duty cleaners	2.8
Property administrators	2.3
Painters, sculptors and other visual artists	2.1
Babysitters, nannies and parents' helpers	1.9

1. n.e.c. = not elsewhere classified

Source: Statistics Canada, Census of Population.

tics. Might those with activity limitations be more likely to be self-employed in order to work around their constraints? Are new immigrants more entrepreneurial than the Canadian-born or more established immigrants?

Modelling self-employment among senior workers

The probability that a working senior would be self-employed as opposed to a paid worker was estimated using probit models. In addition to the aforementioned factors, a number of other demographic variables were included as controls.

Since farmers and farm managers comprise the largest sub-group of self-employed seniors and their characteristics differ from those of other self-employed workers, alternative models were estimated excluding this sub-group. A third set of models, using industry controls, was also estimated to control for this heterogeneity without subdividing the sample.

These models are estimated using cross-sectional data. The results are thus descriptive in nature—they do not address the probability of *becoming* self-employed. Such inferences would require longitudinal data. Currently available longitudinal data sets lack either the sample size or the range of variables to conduct such an analysis focusing on seniors.

The results are presented as marginal effects which measure the change in the odds of being self-employed for a certain characteristic in comparison to a reference group (Table 5). These marginal effects can generally be interpreted as the difference in probability between the groups being compared. For example, the value of -0.04 in the upper-left-most cell in Table 5 indicates that those in the first quintile of "other income" are 4% less likely to be self-employed than those in the third quintile.

Higher-income seniors are more likely to be self-employed

According to the model, adjusted family income was positively related to self-employment among seniors. For working men, the probability of being self-employed as opposed to being a paid employee was higher by 0.04 in the fourth income quintile and by 0.11 in fifth income quintile than for those in the

Table 5 Marginal effects from a probit model of seniors' self-employment, 2006^{1,2}

	Men				Women			
	All		Non-form		All		Non-form	
	Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8
Other family income								
First quintile	-0.04*	-0.03*	-0.03*	-0.03*	-0.01	-0.02**	-0.02	-0.02**
Second quintile	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00
Third quintile (ref.)	...	...	...	...	...	...	...	...
Fourth quintile	0.04*	0.05*	0.04*	0.04*	0.02*	0.02**	0.03*	0.03*
Fifth quintile	0.11*	0.11*	0.11*	0.11*	0.07*	0.06*	0.07*	0.06*
Highest level of education								
Less than high school (ref.)	...	...	...	...	...	...	...	...
High school or equivalent	-0.06*	-0.03*	-0.01	-0.01	-0.03*	-0.01	-0.01	0.00
Trodes/apprenticeship certificate	-0.04*	0.01	0.04*	0.03*	-0.01	0.02	0.02	0.02**
Non-university certificate/diploma	-0.03*	0.01	0.04*	0.03*	-0.01	0.03*	0.01	0.04
University degree	0.02	0.09*	0.10*	0.11*	0.07	0.17*	0.09*	0.17*
Activity limitations								
None (ref.)	...	...	...	...	...	...	...	...
Limited sometimes	0.03*	0.02*	0.02*	0.02*	0.04*	0.04*	0.04*	0.03*
Limited often	0.04*	0.04*	0.03*	0.04*	0.04*	0.04*	0.04*	0.03*
Age								
65 to 69	-0.09*	-0.05*	-0.04*	-0.02**	-0.06*	-0.03**	-0.03**	-0.02
70 to 74	-0.03*	-0.01	0.00	0.00	0.00	0.02	0.02	0.02
75 to 79	0.02**	0.03*	0.04*	0.04*	0.02	0.02	0.03**	0.03
80 and over (ref.)	...	...	...	...	...	...	...	...
Employment status of other family member								
Paid employee (ref.)	...	...	...	...	...	...	...	...
Self-employed	0.17*	0.15*	0.14*	0.14*	0.18*	0.14*	0.13*	0.13*
Not working	0.03*	0.03*	0.01**	0.02*	0.07*	0.07*	0.06*	0.06*
Immigrant status								
Immigrated between 1997 and 2006	-0.16*	-0.16*	-0.14*	-0.14*	-0.10*	-0.10*	-0.08*	-0.08*
Immigrated before 1997	0.03*	0.05*	0.04*	0.05*	0.03*	0.04*	0.04*	0.04*
Aboriginal peoples	-0.17*	-0.13*	-0.10*	-0.07*	-0.15*	-0.11*	-0.11*	-0.09*
Other (ref.)	...	...	...	...	...	...	...	...
Industry								
Consumer services (ref.)	...	...	...	...	...	...	...	...
Business services	...	0.08*	...	0.07*	...	0.02**	...	0.02**
Manufacturing	...	-0.10*	...	-0.09*	...	-0.02	...	-0.02
Construction and utilities	...	0.09*	...	0.09*	...	0.00	...	0.00
Transportation	...	-0.10*	...	-0.09*	...	-0.10*	...	-0.09*
Primary goods	...	0.40*	...	0.06*	...	0.41*	...	0.15*
Public administration and education	...	-0.37*	...	-0.32*	...	-0.22*	...	-0.19*
Health	...	0.09*	...	0.08*	...	-0.14*	...	-0.12*

* significantly different from the reference group (ref.) at the 1% and ** 5% levels, respectively

1. Dependent variable = 1 if self-employed and employed in the reference week, 0 if paid employee and employed in the reference week.

2. Marginal effect is for a discrete change in dummy variable from 0 to 1.

Note: Models also controlled for marital status, official language, type of region and province.

Source: Statistics Canada, Census of Population.

Comparisons with younger age groups

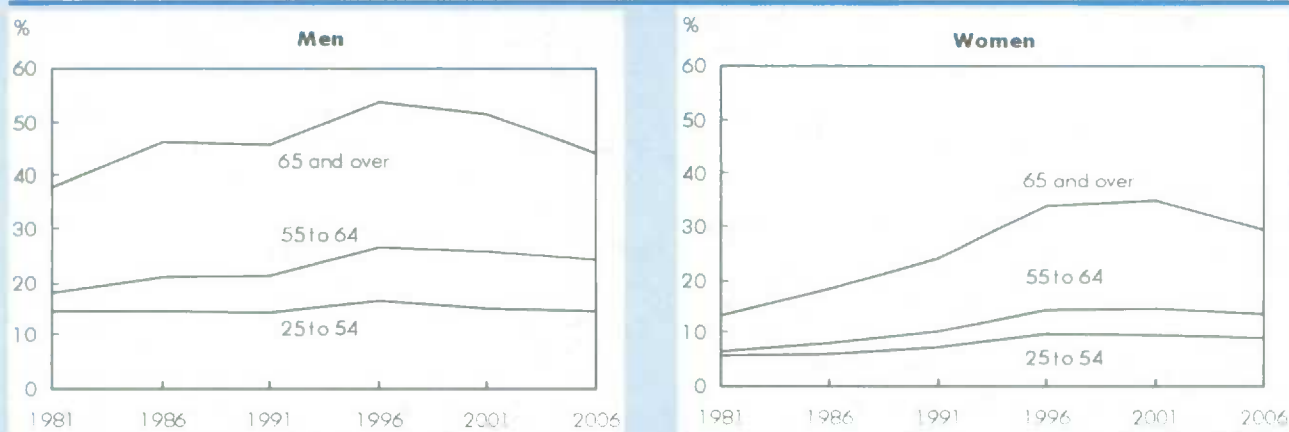
Self-employment as a percentage of the total population is higher for younger age groups than seniors because more individuals are working in the former age range.

The rate has been more stable among senior men than younger age groups. While the rate among senior men remained around 6% between 1981 and 2006, for those age 25 to 54 it decreased from 13.1% in 1981 to 11.9% in 1991, increased to 13.6% over the next five years, and fell to 12.5% in 2006 (data not shown). For 55- to 64-year-olds, after registering a small increase between 1981 and 1986 and a decline to 12.9% during the next five years, it was on the rise until 2001 and remained at 15.5% in 2006.

Among women, all three age groups experienced a steady increase over time. The rate increased from 0.7% to 1.7% for seniors, from 2.1% to 6.6% for women age 55 to 64, and from 3.2% to 6.9% for 25- to 54-year-olds.

When self-employment among seniors was looked at as a proportion of those working, it was found to be much more prominent than among the younger age groups (Chart E). Employed senior men and women were almost twice as likely to be self-employed as workers age 55 to 64, and almost three times as likely as 25- to 54-year-olds. Also, regardless of age, men were much more likely to be self-employed than women.

Chart E Self-employed as a percentage of total employed, by age, 1981 to 2006



Source: Statistics Canada, Census of Population.

middle quintile. For those in the bottom quintile, it was lower by 0.04, while the difference between those in the second and the third quintiles was not statistically significant. Among working women, those in the fourth and fifth quintiles were also more likely to be self-employed than those in the middle quintile. However, the differences were not statistically significant between the bottom two quintiles and the middle quintile.¹²

University degree increases probability of self-employment

With respect to education, men and women with university degrees were more likely to be self-employed than those with less than a high school education. The predicted probabilities of self-employment were

higher by 0.02 for university-educated men and by 0.07 for university-educated women. On the other hand, men who were either high school or postsecondary graduates, but without a university degree, were less likely to be self-employed than those who had not completed high school. Among women, the differences between middle levels of education and high school graduates were either small or not significant.

Evidence for the education hypothesis was stronger, especially for men, when farmers were removed from the sample. In this sample, both postsecondary and university graduates had higher predicted probabilities than high school graduates. These results suggest that factors other than education play a large role for farmers and farm managers.

Seniors' self-employment is often a family affair

For many seniors, self-employment is a family affair. Men and women with another self-employed family member were more likely to be self-employed themselves than those who had another family member working as a paid employee. The probability was higher by 0.17 for men and by 0.18 for women.

Conditional on the fact that they were working, senior men age 75 and over were more likely to be self-employed than younger seniors. If they were working, women age 65 to 69 were less likely to be self-employed than those 80 and over. Similar patterns held when farmers were excluded from the sample: the relative probability of self-employment peaked in the 75-to-79 age group for both men and women.

Controls for other demographic variables yielded some interesting results. Men and women with activity limitations were more likely to be self-employed than those without limitations. On the other hand, recent immigrants (who immigrated in the preceding 10 years) and Aboriginal peoples were less likely to be self-employed.

An alternative model included industry as a control. Similar to the effect of dropping farmers from the sample, adding industry controls strengthened the relationship between a university degree and self-employment.

Looking at particular industries, seniors working in business services, construction and utilities, and primary goods industries were more likely to be self-employed than those in consumer services. The opposite was true for men and women employed in manufacturing, transportation, and public administration and education. The relationship was strongest between working in primary goods and self-employment, but weakened considerably when farmers were excluded.

Summary

Recent studies have documented the increasing employment among seniors in Canada. However, much less is known about the extent of self-employment among working seniors. Using detailed information from the census, this article presented new information on self-employed seniors. It also examined the factors associated with self-employment among working seniors.

The self-employed comprised a substantial portion of the employed labour force among seniors. Among those who had a job in 2006, more than 1 in 3 seniors were self-employed. Although the number of self-employed seniors continues to increase, between 1996 and 2006 the number of employed seniors increased even faster. As a result, the proportion of self-employed seniors declined. Since self-employment increased rapidly among seniors in the 1980s and the 1990s, its share of working seniors in 2006 was still relatively high by historical standards.

In 2006, the majority of self-employed seniors were unincorporated without paid help. Over the past few decades, however, a new class of self-employed seniors—those with incorporated businesses—became increasingly prevalent.

Self-employed seniors were concentrated in a few industries and had a much less diverse occupational profile than younger self-employed workers. Farmers and farm managers accounted for one-quarter of senior men and one-sixth of senior women in self-employment.

This study also looked at factors associated with self-employment among seniors. Self-employment was positively associated with other family income, indicating that individuals with more financial capital were more likely to be self-employed. The presence of a self-employed family member (most often the spouse) and having a university degree were other factors associated with a higher probability of being self-employed. Although these results persisted in models that excluded farmers and included controls for industry, they varied somewhat in magnitude.

Perspectives

■ Notes

1. Existing studies tend to focus on the population age 15 to 64 (see, for example, Lin et al. 1999 and Moore and Mueller 2002). Gardner (1994) and Turcotte and Schellenberg (2007) provide some general numbers on self-employment among seniors but do not delve into the details of that specific population.
2. Farm self-employment constitutes an important portion of total self-employment. Among men, 35,660 out of the 123,670 self-employed were farmers. The corresponding numbers for women were 8,890 out of 40,400.

3. This is not surprising since paid employees typically retire earlier than the self-employed. In addition, some people who retire from paid employment enter self-employment.
4. Out of 158,455 (84,950) employed men (women) age 65 to 69, 62,370 (21,385) were self-employed. Among those age 75 and over, of the 53,130 and 23,845 men and women who were working, 28,480 and 8,220 were self-employed, respectively.
5. In the remainder of the paper, 'employed' refers to the paid employed and self-employed. Unpaid family workers are excluded.
6. The numbers (44.4% and 29.4%) differ from those mentioned earlier (44.1% and 28.6%) since unpaid family workers are excluded here.
7. Examining non-farm self-employment is also important since it removes the effect of the relative decline of the agriculture sector within the ranks of the self-employed over that period. As a proportion of working senior men, total self-employment declined by 9.1 percentage points between 1996 and 2006, but the proportion of the non-farm self-employed declined by only 1.8 percentage points.
8. Of the 84,205 (29,610) men (women) who were unincorporated, 62,430 (23,805) did not have paid employees.
9. This section pertains only to 2006.
10. This proxy was also used by Uppal (2010).
11. It is necessary to remove the employment income of individuals from our definition of adjusted family income since there is a direct relationship between self-employment (and paid employment) and employment income. However, other sources of income from all family members were included (e.g., pension income, transfers, dividends, and capital gains) as well as the employment income of other family members.
12. Similar results were found when self-employed farmers were removed from the sample.

■ References

- Beaucage, André and Elmustapha Najem. 2006. "Une analyse longitudinale de la pérennité des expériences des travailleuses et des travailleurs autonomes canadiens." *Industrial Relations*. Vol. 61, no. 2. Spring. <http://www.erudit.org/revue/R1/2006/v61/n2/014173ar.html> (accessed December 20, 2010).
- Bruce, Donald, Douglas Holtz-Eakin and Joseph Quinn. 2000. *Self-employment and Labor Market Transitions at Older Ages*. CRR Working Paper 2000-13. Center for Retirement Research at Boston College. Chestnut Hill, Massachusetts. 29 p. http://crr.bc.edu/images/stories/Working_Papers/wp_2000-13.pdf (accessed December 20, 2010).
- Fuchs, Victor R. 1982. "Self-employment and labor force participation of older males." *The Journal of Human Resources*. Vol. 17, no. 3. Summer. p. 339-357. <http://www.jstor.org/stable/pdfplus/145584?acceptTC=true> (accessed December 20, 2010).
- Gardner, Art. 1994. *The Self-employed*. Statistics Canada Catalogue no. 96-316E. Ottawa. 52 p.
- Georgellis, Yannis, John G. Sessions and Nikolaos Tsitsianis. 2005. "Self-employment longitudinal dynamics: A review of the literature." *Economic Issues*. Vol. 10, no. 2. 39 p. http://papers.ssrn.com/sol3/papers.cfm?abstract_id=921029 (accessed December 20, 2010).
- Hochguertel, Stefan. 2010. *Self-employment Around Retirement Age*. Tinbergen Institute Discussion Paper TI 2010-067/3. Amsterdam, The Netherlands. Tinbergen Institute. 47 p. http://www.politiquesociales.net/IMG/pdf/o3_10067.pdf (accessed December 20, 2010).
- Kuhn, Peter J. and Herb J. Schuetze. 2001. "Self-employment dynamics and self-employment trends: A study of Canadian men and women, 1982-1998." *Canadian Journal of Economics*. Vol. 34, no. 3. August. p. 760-784. <http://www.jstor.org/stable/pdfplus/3131894.pdf> (accessed December 20, 2010).
- LaRochelle-Côté, Sébastien. 2010. "Self-employment in the downturn." *Perspectives on Labour and Income*. Vol. 11, no. 3. March. Statistics Canada Catalogue no. 75-001-X. p. 5-13. <http://www.statcan.gc.ca/pub/75-001-x/2010103/pdf/11138-eng.pdf> (accessed December 20, 2010).
- Lin, Zhengxi, Garnett Picot and Janice Yates. 1999. *The Entry and Exit Dynamics of Self-employment in Canada*. Statistics Canada Catalogue no. 11F0019MPE - No. 134. Analytical Studies Branch Research Paper Series. Ottawa. 32 p. <http://www.statcan.gc.ca/pub/11f0019m/11f0019m1999134-eng.pdf> (accessed December 20, 2010).

Moore, Carol S. and Richard E. Mueller. 2002. "The transition from paid to self-employment in Canada: The importance of push factors." *Applied Economics*. Vol. 34, no. 6. March. p. 791-801.

Quinn, Joseph F. 1980. "Labor-force Patterns of Older Self-employed Workers." *Social Security Bulletin*. Vol. 43, no. 4. April. p. 17-28.

<http://www.ssa.gov/policy/docs/ssb/v43n4/v43n4p17.pdf> (accessed December 20, 2010).

Turcotte, Martin and Grant Schellenberg. 2007. *A Portrait of Seniors in Canada, 2006*. Statistics Canada Catalogue no. 89-519-XIE. Ottawa. 301 p.
<http://www.statcan.gc.ca/pub/89-519-x/89-519-x2006001-eng.pdf> (accessed December 20, 2010).

Uppal, Sharanjit. 2010. "Labour market activity among seniors." *Perspectives on Labour and Income*. Vol. 11, no. 7. July. Statistics Canada Catalogue no. 75-001-X. p. 5-18.
<http://www.statcan.gc.ca/pub/75-001-x/2010107/pdf/11296-eng.pdf> (accessed December 20, 2010).

Zissimopoulos, Julie M. and Lynn A. Karoly. 2007. "Transition to self-employment at older ages: The role of wealth, health, health insurance and other factors." *Labour Economics*. Vol. 14, no. 2. April. p. 269-295.

http://www.sciencedirect.com/science?_ob=MImg&_imagekey=B6VFD-4H45GWG-1-1&_cdi=6008&_user=1516053&_pii=S0927537105000552&_origin=browse&_zone=rslt_list_item&_coverDate=04%2F30%2F2007&_sk=999859997&wchp=dGLbVtzzSkWb&md5=f40d7bc9a7b0d85d767a575adbac4114&ie=/sdataarticle.pdf (accessed December 20, 2010).

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Retirement, health and employment among those 55 plus

Jungwee Park

For older workers, control over the timing and circumstances of their retirement is crucial to their economic well-being. At the same time, the retention of older workers is a significant issue for policy makers and employers in an aging society. The motivations to remain on the job vary according to the circumstances of older workers and those who remain on the job have different preferences in the workplace than their younger counterparts. Thus, a better understanding of the characteristics of older workers in various stages of retirement may help inform employer practices and public policies.

Since older workers are not a homogeneous group, information on the socio-economic, employment, and health-related characteristics of specific groups will contribute to understanding their labour supply patterns (Wegman and McGee 2004). Retirement decisions are closely associated with workers' capabilities, limitations and needs in the labour market. Older workers' health is an especially important aspect of their labour market activity: some hypothesize that physical and mental health and associated disabilities may be barriers to the employability of older workers (Nauta 2005). Similarly, poor health has been associated with early exits from the labour market (Park 2010).

Many studies, however, treat older workers as a single group with little attention paid to their retirement history. Due to data limitations, retirement experience or partial retirement status were rarely included in analyses. This study attempts to fill the information gap on distinct states of retirement among older workers in terms of their links to health and labour market characteristics. It presents the sociodemographic characteristics of four different retirement situations:

- never retired
- partially retired
- fully retired
- previously retired but returned to work.

The article outlines the characteristics of these four groups and discusses how they are associated with work hours, work patterns and occupation. Most findings are adjusted to account for the differing age and sex characteristics of the groups.

Data originate from the 2009 Canadian Community Health Survey (CCHS) – Healthy Aging, designed to better understand the aging process of Canadians. It contains information on health and well-being, social support and participation, and work and retirement transitions (see *Data source and definitions*). Since the CCHS is a cross-sectional survey, it is not possible to trace the employment and retirement histories of respondents. On the other hand, this data source contains new information on the association between retirement characteristics and the socio-economic and health status of older Canadians. Moreover, some retrospective questions included in the survey are useful in determining past retirement experiences.

Four retirement groups

Using several CCHS questions on retirement, four mutually exclusive groups of older people were identified:¹ never retired, partially retired, fully retired, and returned workers.

The never-retired are currently in the labour force and have never retired from a job. Partial retirement is based on self-reporting. The retired population includes those who report themselves as completely retired, not in the labour force and receiving 50% or more of their total income from retirement income sources such as Old Age Security (OAS) and the Guaranteed Income Supplement (GIS), the Canada Pension Plan or the Quebec Pension Plan (CPP/QPP), investments, dividends, retirement pensions, superannuation and annuities. Returned workers are currently in the labour force and not retired, either fully or partially, but indicate that they had previously been retired.

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Data source and definitions

The Canadian Community Health Survey (CCHS) – Healthy Aging is one of the focused-content cycles of the CCHS. The survey was designed to collect new information on the factors, influences and processes that contribute to healthy aging through a multidisciplinary approach including health, social and economic determinants. The survey focuses on the health of Canadians age 45 and over by examining the factors that affect healthy aging, such as general health and well-being, physical activity, use of health care services, social participation, as well as work and retirement transitions.

The CCHS – Healthy Aging targets persons age 45 years and over living in private dwellings in the ten provinces and was conducted between December 2008 and November 2009. Residents of the three territories, persons living on Indian Reserves or Crown lands, those residing in institutions, full-time members of the Canadian Forces and residents of certain remote regions are excluded from this survey. In total, 41,496 of the selected households were in-scope for the survey. Out of this sample, 33,517 agreed to participate in the survey, resulting in an overall household-level response rate of 81% (Statistics Canada 2010). This study includes those age 55 to 84 and provides complete information on retirement. Those who never worked for pay are excluded. The retirement status of those age 75 to 84 was measured using the information on income sources and self-reported retirement status since the CCHS asked the question on working status only to respondents age 74 and younger the previous week. For the calculation of retirement age, respondents indicating they had retired before age 40 were excluded. The final sample size for the analysis was 19,774.

To account for the survey design effects, coefficients of variation and p-values were estimated and significance tests were performed using the bootstrap method. The significance level was set at $p < 0.05$.

Shift work refers to anything other than a regular daytime schedule (evening, night, rotating or split shifts).

The self-employed are those who worked mainly in their own businesses or professional practices, or on their own farms.

Occupation was collapsed into three groups: white collar (management; professional; technologist, technician or technical occupation; and administrative, financial or clerical), sales or service, and blue collar (trades, transport or equipment operator; farming, forestry, fishing or mining; and processing, manufacturing or utilities).

Self-perceived health: excellent, very good, good, fair or poor. Respondents who answered that their health was fair or poor were considered to have negative self-perceived health.

Self-perceived mental health: excellent, very good, good, fair or poor. Respondents who answered that their mental health was fair or poor were considered to have negative self-perceived mental health.

Life satisfaction: very satisfied, satisfied, neither satisfied nor dissatisfied, dissatisfied, or very dissatisfied. Respondents who answered very dissatisfied or dissatisfied were considered to have life dissatisfaction.

Self-perceived life stress: response categories for the amount of stress experienced most days included: not at all stressful, not very stressful, a bit stressful, quite a bit stressful, or extremely stressful. Respondents who answered "quite a bit" or "extremely" stressful were classified as having high self-perceived life stress.

Self-perceived work stress at the main job or business in the past 12 months was measured by asking whether most days at work were not at all stressful, not very stressful, a bit stressful, quite a bit stressful, or extremely stressful. Respondents who answered quite a bit or extremely stressful were classified as having high self-perceived work stress.

Functional health indicators provide a description of an individual's overall functional health based on the following attributes: vision, hearing, ambulation (ability to get around), cognition (memory and thinking) and pain (for more information, see Feeny et al. 2002).

Daily smokers were defined as those who smoked cigarettes every day.

Heavy drinking was measured by asking respondents the number of times in the past year they had had 5 or more alcoholic drinks on one occasion. Having done so at least once per month (or 12 or more times in the past year for cycle 1) was classified as heavy monthly drinking.

Physical inactivity was based on total accumulated energy expenditure (EE) during leisure time. EE was calculated using the reported frequency and duration of all of a respondent's leisure-time physical activities in the three months before the interview and the metabolic energy demand (MET value) of each activity, which was independently established. Respondents with high or moderate EE (1.5 or more) were considered **physically active**, while those with low EE (less than 1.5) were considered **inactive** (for more information, see Statistics Canada 1995 and Stephens et al. 1986).

Body mass index (BMI) is calculated by dividing weight in kilograms by height in metres squared. **Obesity** is defined by a BMI of 30 or more.

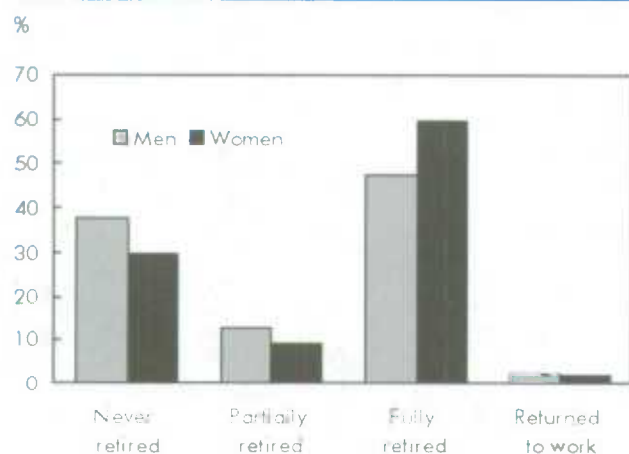
Nutritional risk measures whether respondents are at high nutritional risk. The questions ask about respondents' eating habits on a typical day. They are based on an 8-item nutritional risk screening index (SCREEN II-AB) designed to identify risk for impaired nutritional states of older adults in community living. Each response category for each item is assigned a score. The maximum score for all summed items is 48, with a cut-off point of < 38 , indicating high nutritional risk (for more information, see Keller et al. 2005, and Beath and Keller 2007).

Social Support measures four categories of social support:

- **emotional or informational support**—the expression of positive affect, empathetic understanding, and the encouragement of expression of feelings; the offering of advice, information, guidance or feedback
- **tangible support**—the provision of material aid or behavioural assistance
- **positive social interaction**—the availability of other persons with whom to positively interact
- **affection**—involving expressions of love and affection.

Higher scores indicate higher levels of social support (for more information, see Sherbourne and Stewart 1991).

Sense of belonging to local community was measured using answers falling into four categories: very strong, somewhat strong, somewhat weak, or very weak. Respondents who answered very strong or somewhat strong were classified as having high community belonging.

Chart A More men age 55 to 84 in labour force than women

Source: Canadian Community Health Survey (CCHS) – Healthy Aging, 2009.

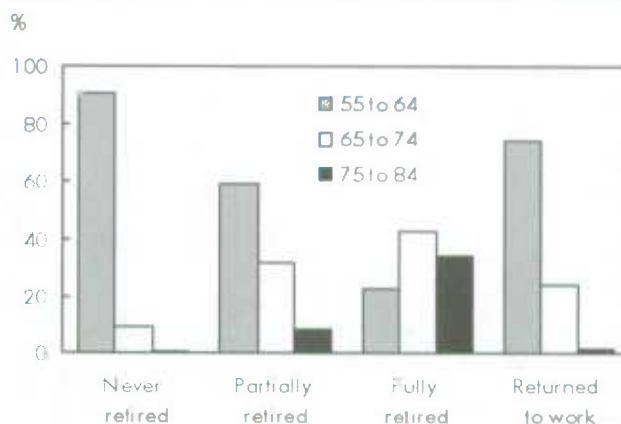
Women more likely to be retired

The demographic make-up of the four retirement groups varied considerably. Compared with women age 55 and over, a higher proportion of similarly aged men was still attached to the labour force. While 60% of women were fully retired and out of the labour force, just under one-half of men were in similar circumstances (Chart A). Men were more likely than women to be never-retired (38% versus 30%) and partially retired (13% versus 9%). Less than 3% of both women and men reported returning to work from retirement.

Among those who had never retired, the majority was under the age of 65 (Chart B). Almost three-quarters of those who returned to work were between the ages of 55 and 64. Many may have taken early retirement before returning to the labour force.

About one-third of partial retirees were age 65 to 74. Barely 1% of the never-retired, 8% of the partially retired and 2% of returnees were age 75 and over, whereas more than one-third of the fully retired belonged to this age group.

Since the four retirement groups differ by age and sex, most inter-group comparisons in this study are tested on age–sex standardized rates.² The adjusted statistics are used to determine whether differences exist in certain variables after controlling for age and sex. It is

Chart B Majority of the never-retired under age 65

Source: Canadian Community Health Survey (CCHS) – Healthy Aging, 2009.

particularly important to eliminate the age–group effect when comparing conditions potentially affected by age, like health.

Retirees at bottom of income distribution

The fully retired were more likely than the never-retired to be in lower income quintiles (Table 1). Almost 60% of retirees (55% of men and 62% of women) belonged to the lowest two income quintiles compared with less than 30% of those who never retired (24% of men and 30% of women [data not shown]). Moreover, more than 40% of the retired reported that they had less than \$25,000 in savings and investments.³

These data indicate that a sizeable minority of older workers may continue working out of necessity. On the other hand, financially secure and well-educated older workers are also more likely to remain employed (Uppal 2010). And there seems to be a ready market for their skills. More than one-third of returned workers were among the highest income quintile compared with only 8% of those who were fully retired.

Although income is closely related to current employment status, that may not be the case for wealth. Almost two-thirds of fully or partially retired workers were mortgage-free homeowners compared with about one-half of the never-retired and returnees. The implicit income generated by home equity is an

Table 1 Population age 55 to 84 by selected sociodemographic characteristics and retirement status, 2009

	Never retired	Partially retired	Fully retired	Returned to work
			%	
Income quintile				
First	10.0	16.3**	31.5*	5.9*
Second	16.4	20.0**	27.7*	18.0*
Third	20.1	20.3	19.2	17.3
Fourth	23.8	21.8	13.8*	24.0
Fifth	29.7	21.5*	7.8*	34.9
Source of personal income				
Earnings	93.0	41.8*	1.5*	77.4*
Transfers	1.7	7.4**	25.6*	F
Savings	1.2	45.3*	70.1*	16.8*
Other income	2.7	4.2*	2.9	F
No income	1.4*	F	F	F
Home ownership				
Mortgage paid off	47.6	62.9*	66.7*	50.3
Mortgaged	36.9	24.1*	11.6*	38.3
Rent	13.3	11.0*	18.3**	8.8*
Other	1.2*	1.4*	2.2**	F
Educational attainment				
Less than high school graduation	15.2	17.5	35.8*	12.5*
High school graduation	20.1	18.0	17.3**	18.6
Some postsecondary education	6.1	5.7	4.7**	4.1*
Postsecondary degree	58.7	58.9	42.3*	64.8
Marital status				
Married/common-law	79.1	79.0	67.9*	77.7
Divorced/separated	11.8	9.2**	8.4**	13.5
Widowed	3.9	6.6**	19.7*	4.9*
Never married	5.2	5.2	4.0**	3.9*
Family type				
Unattached individual	15.1	17.8*	25.8*	14.8
Couple without children	49.8	61.8**	57.7**	57.1
Couple with children	22.3	12.6*	6.2*	17.4*
Single parent	4.3	2.4**	3.5**	3.8*
Other	8.5	5.3**	6.9**	6.9*
Visible minority	15.0	5.3*	7.5*	F
Immigrant	30.7	21.0*	24.6*	17.9*

* significantly different from the never-retired before and after age-sex adjustment ($p < 0.05$)** significantly different from the never-retired before but not after age-sex adjustment ($p < 0.05$)

Source: Canadian Community Health Survey (CCHS) – Healthy Aging.

important source of economic well-being for homeowners. Mortgage-free home ownership may thus partially compensate for the income reduction due to full or partial retirement.⁴

The main source of income tends to differ among the four groups. Not surprisingly, the never-retired rely mainly on earnings including wages, salaries and self-employment income. Similarly, almost 80% of returnees reported earnings as their main source of personal income.

The main income sources of the completely retired were savings, including pension benefits (70%) and government transfers (26%), like OAS and GIS. Women retirees tend to rely on transfers more than men (32% versus 17%). The proportion of savings in personal income for men was 78% while that for women was 63%.

The income of partial retirees comes from a combination of employment earnings and personal savings including dividends and interest, benefits

from CPP/QPP, job-related retirement pensions and RRSPs.

Returnees have highest levels of education

Those who returned to work had the highest average level of educational attainment. Among this group, 65% had postsecondary degrees compared with 42% of the fully retired. Only 13% of returned workers had less than a high school education compared to 36% of retirees. These differences were statistically significant after adjusting for age and sex. Thus, it is not merely a result of the relatively younger average age of returned workers. A relatively high level of human capital is an advantage for those wishing to come out of retirement and re-enter the workforce. Other research shows that returned workers tend to have valuable skills and experience gained from previous employment (Schellenberg et al. 2005).

Fully retired groups showed significantly higher rates of being widowed even after controlling for age composition. With similar controls in place, fully retired women were most likely to live alone. Of the fully retired, 20% were widowed and more than one-quarter were unattached individuals compared with 4% and 15%, respectively, for those who never retired.

Compared with the retired, a higher proportion of employed women were married or living common-law. Unlike younger cohorts, married women over the age of 55 were more likely to work than single women the same age.

The proportion of immigrants was highest in the never-retired group (31%). Similarly, the proportion of visible minority workers was high-

est among those who never retired (15%). This corresponds with data on retirement age. Among workers fully retired in 2009, the members of visible minority groups and immigrant workers had retired, on average, two years later than other retirees.

Never retired most likely to work full time

In general, partial retirement equates to part-time work. Almost 70% of partial retirees worked part time—less than 30 hours per week—compared with only 11% of the never-retired (Table 2). More than 1 in 5 returnees also worked part time (22%). Of those who never retired, 31% worked more than 40 hours per week, as did 28% of returned workers. On the other hand, only 8% of partial retirees worked more than 40 hours per week.

Non-standard work arrangements were also more prevalent among the partially retired and returnee groups. More than one-third of

those who had returned to the labour force from retirement worked as shift workers compared to 21% of the never-retired.

Partial retirement may occur in the main job before retirement as some employers have transitional programs offering reduced hours or responsibilities. More often, it involves a job change or a transition into self-employment (Honig and Hanoch 1985). The partially retired had a significantly higher rate of self-employment than those who had never retired (43% versus 24%). They may have chosen the self-employment path to stay involved in the labour market. Many partial retirees may also prefer self-employment as it usually provides more flexibility and imposes fewer constraints on the timing of retirement (Uppal 2011).

Almost two-thirds of returned workers held white-collar jobs (see *Data source and definitions*), which was significantly higher than the rates for the never-retired and partially retired groups. The high

Table 2 Population age 55 to 74¹ by selected labour market characteristics and retirement status, 2009

	Never retired	Partially retired	Returned to work
Work hours per week		%	
Less than 30	11.1	68.8*	21.7 [†]
30 to 40	58.3	23.6*	50.3
More than 40	30.6	7.6*	28.0
Shift work	21.1	32.5*	36.0*
Self-employed	23.7	42.6*	32.8*
Occupation			
White collar	56.5	54.1	64.4*
Sales/services	20.0	24.8**	20.8
Blue collar	23.6	21.1	14.7*

* significantly different from the never-retired before and after age-sex adjustment ($p < 0.05$)

** significantly different from the never-retired before but not after age-sex adjustment ($p < 0.05$)

1. The CCHS collects the information on labour market characteristics for individuals age 45 to 74.

Source: Canadian Community Health Survey (CCHS) – Healthy Aging.

incidence of white-collar jobs among returned workers is consistent with their higher levels of educational attainment.

Overall, the work arrangements of the never-retired 55 and over are similar to those of workers age 45 to 54. Similar proportions of each group were self-employed, working shifts or in full-time jobs, and their occupational distributions were nearly identical.

Retirees have poorer health

Health varies by retirement status. The fully retired population has lower health status, according to several measures, than groups still attached to the labour force. Health status includes information based both on a five-category scale of self-perceived health and

the number of chronic conditions. The number of chronic conditions⁵ was included to capture the effect of objective health status and minimize potential biases of self-assessed health (Park 2010).

Even after adjusting for age differences, a higher proportion of retirees had multiple chronic conditions. More than one-half had at least three chronic conditions and one-quarter had five or more conditions (Table 3). Retired women were more likely than retired men to have chronic conditions. Almost 60% of women reported three or more chronic conditions compared with 49% of men. One-half of all retired women reported having high blood pressure (50%) or arthritis (48%) (see *Most prevalent chronic conditions*).

Table 3 Population age 55 to 84 by selected health indicators and retirement status, 2009

	Never retired	Partially retired	Fully retired	Returned to work
Health status				
3 or more chronic conditions	26.4	34.4**	52.5*	29.2***
5 or more chronic conditions	6.3	8.1	21.4*	9.5 [†]
Negative self-perceived health	11.6	10.5	23.6*	4.7**
Negative self-perceived mental health	3.8	3.4	6.0*	F
Life dissatisfaction	8.4	6.9	10.8*	5.6 [†]
High self-perceived life stress	25.2	11.9*	10.9*	23.7 [†]
High self-perceived work stress	31.4	12.8*	..	23.0*
Functional problem				
Memory and cognition	20.0	20.8	28.4*	19.1
Hearing	1.7	3.2 [†] *	6.0*	F
Walking	1.6	2.4 [†]	12.0*	F
Vision	79.2	79.3	82.3*	81.1
Pain	22.5	22.3	29.9*	20.2
Health behaviour				
Daily smoking	16.7	11.0*	11.2**	11.2 [†] *
Heavy drinking	5.8	5.2	2.7**	3.0 [†] **
Physical inactivity	14.9	16.0	36.7*	10.5 [†] **
Obesity	22.1	21.4	20.6	26.6 [†]
High nutritional risk	35.9	33.2	35.2	29.9
Community support and participation				
Community belonging	33.9	29.1**	31.2*	36.1***
Participation in volunteer/charity activity (weekly or more)	68.9	78.2*	76.6*	78.9**
Social support				
Emotional support (out of maximum 32)	27.2	27.2	26.8*	28.1
Tangible support (16)	13.5	13.6	13.4	13.7
Affection (12)	10.7	10.8	10.5*	10.8
Positive social interaction (16)	13.9	13.9	13.6*	14.1

* significantly different from the never-retired before and after age-sex adjustment ($p < 0.05$)

** significantly different from the never-retired before but not after age-sex adjustment ($p < 0.05$)

*** significantly different from the never-retired ($p < 0.05$) only after age-sex adjustment

Source: Canadian Community Health Survey (CCHS) – Healthy Aging.

Almost 1 in 4 retirees (24%) perceived their overall health as fair or poor compared with 11% for the partially retired. And 11% of retirees, or more than 1 in 10, expressed life dissatisfaction, versus 7% for the partially retired. In terms of functional health, again a higher proportion of retirees had problems with cognition, hearing, walking and vision than the never-retired, partially retired and return-to-work groups. Chronic pain was also experienced by 30% of retirees.

Retirees were much more likely than the other groups to be physically inactive (37% versus 11% of returned workers). The lower level of physical activity of the retired is in line with other indicators of relatively poor health for this group.

In addition to the relatively low health status of the retired, they reported receiving less social support. On average, their levels of emotional support, positive social interaction, affection, and community belonging were significantly lower than those of never-retired workers. Retirement may separate many from the social support that the workplace and co-workers can provide.

Perhaps reflecting the flexibility of their work arrangements, partial retirees seemed to be the least stressed workers. Only 13% perceived their work to be quite a bit or extremely stressful compared with 31% of never-retired workers and 23% of returned workers. The preference of older workers for less-demanding employment is an important motivation for partial

retirement (Honig and Hanoch 1985). Less-demanding jobs are usually related to lower levels of work stress. Due to their overall lower employment hours, the partially retired would have more personal and leisure time, contributing to a more positive work-life balance. Accordingly, partial retirees participated in community activities like volunteer and charity work more frequently than never-retired workers.

Retirement plans and perceptions

The lower health status of retirees is reflected in their self-perceived ability to work. Ability to work was scored on a 10-point scale, where 10 indicates a full ability to work and 0 denotes a complete inability to work. The mean ability-to-work score for the retired was 5.3, compared with 9.2 for never-retired and 9.3 for returned workers (Table 4).

Compared with the age of retirement of previously retired groups, the planned age for those who had not yet retired was much higher (a mean of 66 for men and 64 for women). In comparison, the average age of retirement for the partially retired was 60 for men and 58 for women, while that of the fully retired was also 60 for men and 58 for women. The mean retirement age of returned workers was 53 for both men and women.

The relatively late planned retirement of the never-retired may be associated with their level of financial preparedness. Almost 40% of never-retired workers

Table 4 Population age 55 to 84 by retirement patterns and perceptions, and retirement status, 2009

	Never retired	Partially retired	Fully retired	Returned to work
Mean retirement age ¹	65.4	59.0	58.9	53.3
Median retirement age ¹	65.0	60.0	60.0	54.0
Self-perceived ability to work (maximum 10)	9.2	8.2*	5.3*	9.3
Financial plan for retirement				
More than adequate/adequate	62.6	70.5**	..	..
Barely adequate	23.7	17.7**	..	..
Inadequate	13.7	11.8	..	..
Employer pension plan other than CPP/QPP	60.7	62.0***	..	77.7*

* significantly different from the never-retired before and after age-sex adjustment ($p < 0.05$)

** significantly different from the never-retired before but not after age-sex adjustment ($p < 0.05$)

*** significantly different from the never-retired ($p < 0.05$) only after age-sex adjustment

1. Refers to age at first full or partial retirement, or planned age of retirement for the never-retired.

Note: CPP/QPP = Canada Pension Plan/Quebec Pension Plan.

Source: Canadian Community Health Survey (CCHS) – Healthy Aging.

reported that their financial plans for retirement were less than adequate. Moreover, more than one-third reported that they had less than \$25,000 in savings and investments. The never-retired were also less likely to contribute to employer pension plans compared with returned workers and partial retirees.

Reasons for retirement and return

The groups who had retired at least once—the fully retired, the partially retired and returnees—were asked to choose which of 11 reasons contributed to their decision to retire.⁶ The most common reason for retirement was that it was financially possible (Table 5). However, while 46% of the partially retired reported retiring because they were financially able to do so, only 34% of the fully retired and 28% of returnees did so.⁷ Men were more likely than women to retire because of financial security: 40% of men stated this reason compared to 29% of women.

Among returnees, one-half indicated financial considerations as a reason for returning to the labour force (Table 6). Women were more likely than men to return to work for financial reasons (57% versus 48%). On the other hand, one-half of returnees also reported they were back on the job because they liked to work or wanted to be active.

Table 5 Reasons for full or partial retirement,¹ 2009

	Partially retired	Fully retired	Returned to work
		%	
Financially possible	46*	34	28
Completed required years of service	41*	29	26
Wanted to stop work	31	33	20 [†]
Pursue other activities	23*	13	18 [†]
Employer incentives	19*	8	15 [†]
Health/disability	16*	24	14 [†]
Agreement with spouse/partner	14	16	8 [†]
Organizational restructuring	12	9	17 [†]
Caregiving	6 [‡]	7	4 [†]
Mandatory policy	4 [‡]	4	F
Other	5 [‡]	7	17 [‡]

* significantly different from the retired ($p < 0.05$)

†. For those with a single retirement experience.

Source: Canadian Community Health Survey (CCHS) – Healthy Aging.

Table 6 Reasons for returning to work, 2009

	%
Like working/being active	52
Financial considerations	52
Interesting work opportunity	30
Do not like retirement	29
Want challenge	25
Want to make contribution	13
Prefer gradual retirement	8
Improvement in health	5
Caregiving duties no longer required	2
Other	5

Source: Canadian Community Health Survey (CCHS) – Healthy Aging.

Conclusion

Older workers end their employment careers in different ways and for a variety of reasons. Many remain on the job past the point when others retire, some opt for partial retirement, and others who have retired subsequently re-enter the workforce. Many returnees and partial retirees work part time or as shift workers, or are self-employed.

The challenges faced by the four groups are quite different. Many who had never retired were concerned about their financial preparedness for retirement; partial and full retirees had relatively low levels of income; many of the fully retired reported poor health, which may be related to their withdrawal from the labour force; and many returned workers had apparently retired involuntarily.

The results indicate that employers and policy makers cannot treat older workers as a homogenous group. Many older workers will have difficulty remaining on the job due to poor health, even if they are not financially ready to retire. Economic conditions will force some into retirement before they are ready, and they will be likely to look for opportunities to continue their careers. Others will stay on the job as long as they can to improve their financial security in their senior years. Many would prefer a more

Most prevalent chronic conditions

For men age 55 to 84, the most prevalent chronic condition was high blood pressure (33% for the employed and 46% for the retired) (Table 7). For employed women, arthritis was the most prevalent (34%) chronic condition. Other common conditions reported by older workers include back problems, diabetes, heart disease, thyroid conditions, osteoporosis, migraines, cataracts and asthma. The five most prevalent chronic conditions for the retired include high blood pressure, arthritis, back problems, heart disease and cataracts.

Table 7 Most prevalent chronic conditions among population age 55 to 84,¹ 2009

	Employed			Retired		
	All	Men	Women	All	Men	Women
				%		
High blood pressure	32	33	31	48	46	50
Arthritis	27	21	34	41	34	48
Back problems	24	23	24	29	27	30
Diabetes	11	13	8	17	21	15
Heart disease	9	12	6	20	26	16
Thyroid condition	9	4	16	14	7	19
Osteoporosis	8	2	15	17	5	27
Migraine headaches	8	5	12	5	3	7
Cataracts	7	6	7	21	17	23
Asthma	6	5	8	9	7	10
Anxiety disorder	5	3	6	5	3	6
Bowel disorder	5	3	7	7	4	9
Stomach or intestinal ulcers	4	3	5	5	4	5
Urinary incontinence	4	2	5	10	8	12
Cancer	3	3	3	5	5	4

1. Five most prevalent conditions for each group appear in **bold**.
Source: Canadian Community Health Survey (CCHS) – Healthy Aging.

gradual transition into retirement by way of reduced or more flexible hours. And finally, some are financially and psychologically prepared for retirement and thus unlikely to be enticed back into the labour market.

Perspectives

Notes

- The questions are both subjective and objective. If subjective and objective retirement indicators of a respondent conflict with each other, the data are excluded from analysis—the number of excluded cases is less than 4% of the sample for each group. Since partial retirement is a subjective concept, all individuals who self-report partial retirement are considered partial retirees.
- Adjusted rates have no direct meaning in themselves. They are meaningful only in comparison with other similarly computed rates. Tables in this article present non-adjusted rates as well as results of significance tests based on adjusted rates.
- The value of the principal residence and any employer pension plans were excluded.
- When estimates of the services provided by the equity invested in housing are added to traditional estimates of income, the income of retirement-age households is increased by 10% to 13% for those age 60 to 69 and by 12% to 15% for those age 70 and over (Brown et al. 2010).
- The number of chronic conditions was calculated based on respondents' answers to questions about whether they had been diagnosed by professionals as having any of the following chronic conditions: asthma, arthritis, osteoporosis, high blood pressure, back problems, migraine headaches, chronic bronchitis, emphysema, chronic obstructive pulmonary disorder (COPD), diabetes, stroke, heart disease, cancer, stomach or intestinal ulcers, urinary incontinence, Alzheimer's disease or other dementia, bowel disorder/Crohn's disease or colitis, Parkinson's disease, thyroid conditions, cataracts, glaucoma, mood disorders, and anxiety disorders.
- Retirement for health reasons may be underestimated. Older retirees who retired due to health problems might have died in the meantime and not be included in the survey.
- To obtain reasons for partial retirement, cases with multiple retirement experiences were excluded in Table 5.

References

- Beath, Heather and Heather H. Keller. 2007. "Nutrition screen showed good agreement when self- and interviewer administered." *Journal of Clinical Epidemiology*. Vol. 60. p. 1085-1089.
- Brown, W. Mark, Feng Hou and Amélie Lafrance. 2010. *Incomes of Retirement-age and Working-age Canadians: Accounting for Home Ownership*. Statistics Canada Catalogue no. 11F0027M – No. 064. Economic Analysis Research Paper Series. Ottawa. 42 p.
<http://www.statcan.gc.ca/pub/11f0027m/11f0027m2010064-eng.pdf> (accessed January 4, 2011).
- Feeny, David, William Furlong, George W. Torrance, Charles H. Goldsmith, Zenglong Zhu, Sonja DePauw, Margaret Denton and Michael Boyle. 2002. "Multiattribute and single-attribute utility functions for the Health Utilities Index Mark 3 System." *Medical Care*. Vol. 40, no. 2. p. 113-128.
- Honig, Marjorie and Giora Hanoch. 1985. "Partial retirement as a separate mode of retirement behavior." *The Journal of Human Resources*. Vol. 20, no. 1. Winter. p. 21-46.
<http://www.jstor.org/stable/pdfplus/145783.pdf?acceptTC=true> (accessed January 5, 2011).
- Keller, H.H., R. Goy and S.-L. Kane. 2005. "Validity and reliability of SCREEN II (Seniors in the Community: Risk Evaluation for Eating and Nutrition, Version II)." *European Journal of Clinical Nutrition*. Vol. 59. p. 1149-1157.
<http://www.nature.com/ejcn/journal/v59/n10/pdf/1602225a.pdf> (accessed January 5, 2011).
- Nauta, Aukje. 2005. *Health and Employability of Older Workers*. European Working Conditions Observatory.
<http://www.eurofound.europa.eu/ewco/2005/04/NL0504NU02.htm> (accessed January 5, 2011).
- Park, Jungwee. 2010. "Health factors and early retirement among older workers." *Perspectives on Labour and Income*. Vol. 11, no. 6. June. Statistics Canada Catalogue no. 75-001-X. p. 5-13.
<http://www.statcan.gc.ca/pub/75-001-x/2010106/pdf/11275-eng.pdf> (accessed January 4, 2011).
- Schellenberg, Grant, Martin Turcotte and Bali Ram. 2005. "Post-retirement employment." *Perspectives on Labour and Income*. Vol. 6, no. 9. September. Statistics Canada Catalogue no. 75-001-X. p. 14-17.
<http://www.statcan.gc.ca/pub/75-001-x/10905/8622-eng.pdf> (accessed January 4, 2011).
- Sherbourne, Cathy Donald and Anita L. Stewart. 1991. "The MOS Social Support Survey." *Social Science & Medicine*. Vol. 32, no. 6. p. 705-714.
<http://cmcd.sph.umich.edu/assets/files/Repository/Women%20Take%20Pride/The%20MOS%20Social%20Support%20Survey.pdf> (accessed January 5, 2011).
- Statistics Canada. 2010. *Canadian Community Health Survey (CCHS) – Healthy Aging: User Guide*. Ottawa. 65 p.
- Statistics Canada. 1995. "Appendix F: Derived variables." *National Population Health Survey: 1994–95 Public Use Microdata Files*. Statistics Canada Catalogue no. 82F0001XCB. Ottawa. p. 1-38.
<http://www.statcan.gc.ca/dli-ild/meta/nphs-ensp/1994/nphs1996-ensp1996-1-eng.pdf> (accessed January 4, 2011).
- Stephens T., C.L. Craig and B.F. Ferris. 1986. "Adult physical activity in Canada: Findings from the Canada Fitness Survey I." *Canadian Journal of Public Health*. Vol. 77, no. 4. July–August. p. 285-290.
- Uppal, Sharanjit. 2011. "Seniors' self-employment." *Perspectives on Labour and Income*. Vol. 23. January. Statistics Canada Catalogue no. 75-001-X. p. 3-14.
<http://www.statcan.gc.ca/pub/75-001-x/2011001/pdf/11400-eng.pdf> (accessed January 31, 2011).
- Uppal, Sharanjit. 2010. "Labour market activity among seniors." *Perspectives on Labour and Income*. Vol. 11, no. 7. July. Statistics Canada Catalogue no. 75-001-X. p. 5-18.
<http://www.statcan.gc.ca/pub/75-001-x/2010107/pdf/11296-eng.pdf> (accessed January 4, 2011).
- Wegman, David H. and James P. McGee (eds.). 2004. *Health and Safety Needs of Older Workers*. Committee on the Health and Safety Needs of Older Workers. National Research Council and Institute of Medicine of the National Academies. Washington, DC. The National Academies Press. 320 p.

Inside the labour market downturn

Jason Gilmore and Sébastien LaRochelle-Côté

Many labour market reports focus on standard labour market measures, such as the number of employed persons, the number of jobs lost, and the unemployment rate. For example, LaRochelle-Côté and Gilmore (2009) reported that of the 400,000 drop in employment over the first 12 months of the downturn, much of the decrease was in manufacturing, construction, natural resources, transportation, and trades industries. Younger workers, men, and individuals with lower educational attainment experienced disproportionate job losses. The unemployment rate, the most common measure of labour market slack, increased to a peak of 8.7% in August 2009 and subsequently declined to reach 7.6% in December 2010.

While employment and unemployment trends are the main labour market indicators, subpopulations, like involuntary part-timers, provide further information about the state of the labour market. Moreover, the numbers of those not participating in the labour force (or 'non-participants') can vary considerably with economic conditions (Statistics Canada 1999 and Hipple 2010). As such, a broader slate of labour market indicators can provide a more complete picture of how labour supply and demand adjust to economic events.

This article examines recent changes within the employed, unemployed, and not-in-the-labour-force populations, and investigates whether some subcategories contributed more to the changes within each group. It also examines, where possible, how these changes compared to those which occurred during the downturns of the early 1980s and early 1990s. Finally, the paper discusses alternative measures of unemployment that include some of these subcategories in the calcula-

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Data source and definitions

This study uses data from the monthly Labour Force Survey (LFS). The LFS collects information on the labour market activities of the population age 15 years and over, excluding residents of collective dwellings and aboriginal settlements, and full-time members of the Canadian Forces. Employed individuals are defined as those who worked at a job or business during the reference week of the survey.

In the LFS, seasonally adjusted information is available for major indicators, but not for a number of detailed demographic and job characteristics. These characteristics must therefore be examined on a year-over-year (unadjusted) basis. Since employment began to drop in November 2008, the period from October 2008 to October 2010 represents an opportunity to study the evolution of the non-working population through decline and recovery. Unless otherwise stated, the data in this paper are not seasonally adjusted.

In the LFS, the working-age population (15 years and over) is divided into three categories: the employed, who were working either as paid employees or in self-employment during the survey reference week; the unemployed, or those who were *actively* looking for a job during the reference week; and individuals not in the labour force—those who were not actively looking for work (for instance because they were retired or students, or staying at home). However, some of these people could have been available for work even though they did not search for work during the survey reference week. Discouraged workers, for example, fall into this category and are therefore not counted as unemployed.

tions. The article covers the period from October 2008, just prior to the employment downturn, to October 2010 (see *Data source and definitions*).

Working or not?

In October 2008, the working-age population was 27 million (Table 1). Of these, 17.2 million were employed—an employment rate of 64%. With 1.1 million unemployed, the labour force numbered 18.3 million and the unemployment rate was 6.1%. Another

8.7 million were not participating in the labour force, just under one-third of the working-age population.

As has been well-documented, employment declined in the first year of the downturn and then recovered during the second year, for little net change over the entire period. At the same time, unemployment increased by 341,000 (or 31%), while the number of non-participants increased by 458,000 (5%). Because employment declined over the period (by 66,000), the unemployed and not-in-the-labour-force components entirely accounted for the increase of 733,000 in the working-age population between October 2008 and October 2010.

Three downturns, three stories

The recent labour market downturn has taken a much different course than the downturns of the early 1980s and early 1990s. However, each of the earlier downturns also had its own unique profile.

The downturn of the early 1980s was characterized by the greatest drop in employment (Chart A). After the employment peak in June 1981, employment fell sharply and was still 5% below the peak 17 months later. Employment finally recovered to its pre-recession level 39 months after the beginning of the downturn.

In the early 1990s, employment did not initially decline as steeply as in the early 1980s, but took longer to recover. In the first 12 months of the downturn, employment declined by about 2%, remained stable for a while, and fell again to a new low in August 1992. The labour market then picked up and

Table 1 Employed, unemployed, and individuals not in the labour force

	October 2008	October 2009	October 2010	Change from October 2008 to October 2010	
		'000		'000	%
Total population	27,032	27,418	27,765	733	2.7
Employed	17,175	16,804	17,109	-66	-0.4
Unemployed	1,114	1,517	1,455	341	30.7
Not in the labour force	8,743	9,097	9,201	458	5.2

Source: Statistics Canada, Labour Force Survey, seasonally adjusted data.

surpassed the employment levels of its previous peak 52 months after the initial downturn.

In the recent downturn, employment fell faster in the first few months than in the 1980s and 1990s, but recovered quicker. This time, employment took 27 months to fully recover to its October 2008 level. The state of the labour market was therefore quite different in

the two years that followed the onset of the previous two downturns.

The number of unemployed persons and non-participants also differed across the downturns (Table 2). Two years after the beginning of the 1980s and 1990s downturns, the total 'not employed' population (comprising the unemployed and those not in

Chart A Index of employment during the last 3 downturns



Source: Statistics Canada, Labour Force Survey, seasonally adjusted data.

the labour force) was up by more than 12%, compared to 8% during the recent downturn. Two years into the recent downturn and into the 1990s downturn, the increase in the number of individuals without a job was almost evenly divided between the unemployed and those not in the labour force. In the early 1980s, unemployment was the main driving force behind the increase in the number of individuals without a job.

The unemployed

Between October 2008 and October 2010, the unemployed population increased by more than 30%. However, not all the unemployed were necessarily looking for a job because they had been laid-off. Quits, new entrants or re-entrants, and future starts¹ can also represent a sizeable portion of the unemployed. Some quit their jobs in anticipation of a better one, others enter the labour market after completing school, and others might come back to the labour market after spending time off with their families. Unemployment is therefore not predominantly the result of layoffs, even during downturns.

Examples of these lesser-known categories of the unemployed are 'new entrants' and 're-entrants,' who typically represent about 45% of the unemployed (Table 3). New entrants have no previous work experience and are predominantly younger individuals.² Re-entrants have some work experience and are re-entering the labour force from non-participation. Over the period, new entrants and re-entrants increased by about 33%, accounting for nearly one-half of the increase in unemployment (48%). Interestingly, more than 50% of the increase in new entrants and re-entrants was among those reporting that they

were "maintaining a home" prior to entering the labour force. New entrants and re-entrants are usually more likely to report that they were going to school.

Quits—individuals voluntarily leaving their jobs—represented another 12% of the unemployed at the beginning of the recent downturn, falling to 9% two years later. Quits tend to be pro-cyclical: the quit rate increases when job opportunities abound and it decreases in downturns.

Among those who were not looking for work, future starts increased little over the period (2%). Temporary layoffs³ increased by 14%, still less than one-half the rate of increase in total unemployment (30%). As a result, these two categories represented an even smaller portion of the unemployed at the end of the period than at the beginning.

Two other categories more closely related to prevailing economic conditions are those who *lost* their jobs as a result of a permanent layoff, and those who had been out of work for more than one year (reason unknown).⁴ Two years after the onset of the recent downturn, the number of permanent layoffs increased at the same pace as unemployment as a whole (30%), while the number of people for whom the reason was not known increased by 74%. Together, these two categories accounted for nearly 50% of the increase in the number of the unemployed over the two years (the other half was due to new entrants and re-entrants). During the first two years of the two earlier downturns, however, the number of permanent layoffs and the number of individuals who had been out of work for at least one year (reason unknown) increased much faster (Table 4). Permanent layoffs, for instance, increased by 57% in the early 1990s and by 116% in the early 1980s—compared to

Table 2 Comparisons with changes in earlier downturns, 2 years after the employment peak

	October 2008 to October 2010		April 1990 to April 1992		June 1981 to June 1983	
	'000	%	'000	%	'000	%
Total population	733.4	2.7	616.3	2.9	540.4	2.9
Total employed	-66.4	-0.4	-410.4	-3.1	-354.2	-3.1
Total not employed	799.9	8.1	1,026.7	12.8	894.6	12.0
Unemployed	341.4	30.7	453.2	42.1	669.4	75.4
Not in the labour force	458.4	5.2	573.5	8.3	225.2	3.4

Source: Statistics Canada, Labour Force Survey, seasonally adjusted data.

Table 3 Categories of unemployed

	October 2008	October 2010	Change		October 2008	October 2010	Change
	'000	'000	'000	%	% distribution		
All unemployed	1,024.1	1,331.7	307.6	30.0	100.0	100.0	100.0
Job searchers	946.3	1,246.6	300.3	31.7	92.4	93.6	97.6
Quits	120.3	121.3	1.0	0.8	11.7	9.1	0.3
Permanent layoffs	287.3	373.7	86.4	30.1	28.1	28.1	28.1
Reason unknown ¹	84.9	148.0	63.1	74.3	8.3	11.1	20.5
New and re-entrants	453.7	603.5	149.8	33.0	44.3	45.3	48.7
Temporary layoffs	46.2	52.8	6.6	14.3	4.5	4.0	2.1
Future starts	31.7	32.2	0.5	1.6	3.1	2.4	0.2

1. Last worked more than 1 year ago.

Source: Statistics Canada, Labour Force Survey, data not seasonally adjusted.

30% during the late 2000s. Hence, these two categories accounted for a much larger portion of the overall increase in the total unemployed population (more than 75%) in the 1980s and 1990s.

Overall, the unemployment rate increased faster during the two previous downturns. In seasonally adjusted terms, the unemployment rate increased from 6.1% to 7.8% between October 2008 and October 2010. Between April 1990 and April 1992, the unemployment rate increased from 7.6% to 10.7%; during the 1980s downturn, it rose from 7.2% to 12.4%.

Long-term unemployment

Some of those who lost their jobs in the immediate aftermath of the downturn might still be without a job, despite the employment growth from mid-2009 to mid-2010. Such long-term unemployment can impair an individual's ability to find a job when the economy improves (Blanchard and Diamond 1994, Jackman and Layard 1991, and Corak 1993)—it can also affect stress levels and psychological well-being (Clark and Oswald 1994, and Clark 2006), and household finances often deteriorate, especially for those who exhaust their employment insurance benefits (Micklewright and Nagy 1999).

Table 4 Change in categories of unemployed

	October 2008 to October 2010		April 1990 to April 1992		June 1981 to June 1983	
	'000	%	'000	%	'000	%
All unemployed	307.6	30.0	475.8	42.8	645.9	73.3
Job searchers	300.3	31.7	463.1	46.5	634.0	81.1
Quits	1.0	0.8	-15.3	-9.2	1.5	1.2
Permanent layoffs	86.4	30.1	274.5	57.3	331.9	115.8
Reason unknown ¹	63.1	74.3	109.5	142.0	143.1	265.0
New and re-entrants	149.8	33.0	94.4	34.6	157.4	50.2
Temporary layoffs	6.6	14.3	22.7	31.1	19.0	38.8
Future starts	0.5	1.6	-10.0	-22.8	-7.1	-14.1

1. Last worked more than 1 year ago.

Source: Statistics Canada, Labour Force Survey, data not seasonally adjusted.

Table 5 Unemployment duration measures

	October 2008	October 2010	Change		October 2008	October 2010	Change
	'000	'000	'000	%	% distribution		
All unemployed	1,024.1	1,331.7	307.6	30.0	100.0	100.0	100.0
1 to 4 weeks	425.8	455.3	29.5	6.9	41.6	34.2	9.6
5 to 25 weeks	414.5	541.6	127.1	30.7	40.5	40.7	41.3
26 to 51 weeks	72.4	146.5	74.1	102.3	7.1	11.0	24.1
52 weeks or more	79.8	156.1	76.3	95.6	7.8	11.7	24.8
Duration unknown ¹	31.7	32.2	0.5	1.6	3.1	2.4	0.2

1. Duration is unknown for unemployed future starts (i.e., job begins within 4 weeks).

Source: Statistics Canada, Labour Force Survey, data not seasonally adjusted.

The Labour Force Survey collects information on the duration of joblessness for those who are currently unemployed and do not have a job that starts in the next four weeks. In October 2008, more than 80% of the unemployed had been without a job for 25 weeks or less—and more than 40% had been without a job for less than one month (Table 5). Only 15% had been without a job for at least 26 weeks.

The number of those who had been without a job for at least 52 weeks doubled during the two years. Together with those who had been without a job for at least 26 weeks, these workers represented almost 1 in 4 unemployed persons in October 2010.⁵

Long-term unemployment also rose during the first two years of the two previous downturns (Table 6). In 1990–1992, the number of individuals who had

been unemployed for 52 weeks or more increased by 146%, and that number almost quadrupled during the downturn of the early 1980s. However, the share of the total unemployment increase that could be attributed to the long-term unemployed was about the same in all three downturns.

Some complementary measures to the unemployment rate that focus on long-term unemployment (Devereaux 1992 and Statistics Canada 1999) have been developed. The first of these rates, R1, includes only those who have been unemployed for at least one year. The second, R2, includes those who have been unemployed for at least three months. Both are meant to provide an indication of the economic hardship of long-term unemployment.

Table 6 Change in unemployment duration measures

	October 2008 to October 2010		April 1990 to April 1992		June 1981 to June 1983	
	'000	%	'000	%	'000	%
All unemployed	307.6	30.0	475.8	42.8	645.9	73.3
1 to 4 weeks	29.5	6.9	22.0	7.2	42.2	13.7
5 to 25 weeks	127.1	30.7	193.9	37.1	254.8	70.7
26 to 51 weeks	74.1	102.3	146.1	94.6	212.1	195.8
52 weeks or more	76.3	95.6	123.8	145.8	143.9	268.5
Duration unknown ¹	0.5	1.6	-10.0	-22.8	-7.1	-14.1

1. Duration is unknown for unemployed future starts (i.e., job begins within 4 weeks).

Source: Statistics Canada, Labour Force Survey, data not seasonally adjusted.

Table 7 Alternative measures of unemployment: Long-term unemployed

	October 2008	October 2009	October 2010	Change from October 2008 to October 2010
	'000			
Number				
Standard unemployment level (R4)	1,024.1	1,387.6	1,331.7	307.6
Out of work for at least 1 year (R1)	79.7	135.6	156.1	76.4
Out of work for at least 3 months (R2)	299.5	548.2	472.4	172.9
	%			
Rate				
Standard unemployment level (R4)	5.6	7.6	7.2	1.6
Out of work for at least 1 year (R1)	0.4	0.7	0.8	0.4
Out of work for at least 3 months (R2)	1.6	3.0	2.6	1.0

Source: Statistics Canada, Labour Force Survey, data not seasonally adjusted.

In October 2008, when the unemployment rate was at a historically low level, the long-term unemployment rate (R1) was 0.4% (Table 7). One year later, R1 had risen to 0.7%. Although the labour market continued to improve from October 2009 to October 2010, R1 continued rising to 0.8%. The R2 rate, meanwhile, rose from 1.6% in October 2008 to 3.0% one year later. By October 2010, it had eased slightly, to 2.6%.⁶

In terms of comparisons with the other downturns, R1 was 0.4% in June 1981; two years later it was 1.5%. In April 1990, R1 was 0.6%; two years later it was 1.5%. Similarly, R2 rose from 2.6% to 6.2% from June 1981 to June 1983, and from 3.8% to 6.5% from April 1990 to April 1992. So long-term unemployment in the recent downturn remained well below the levels experienced in earlier downturns.

Table 8 Categories of individuals not in the labour force

	October 2008	October 2010	Change		October 2008	October 2010	Change
	'000		'000	%	% distribution		
Total not in the labour force	8,765.2	9,250.0	484.8	5.5	100.0	100.0	100.0
Able to work, perceived							
labour market attachment	155.1	181.6	26.5	17.1	1.8	2.0	5.5
Discouraged searchers	21.7	29.9	8.2	37.8	0.2	0.3	1.7
Recently laid off and wanted work	49.3	67.7	18.4	37.3	0.6	0.7	3.8
Marginally attached	84.1	84.0	-0.1	-0.1	1.0	0.9	-0.0
Able to work, no perceived							
labour market attachment	7,980.8	8,416.1	435.3	5.5	91.1	91.0	89.8
Students ¹	1,440.3	1,688.9	248.6	17.3	16.4	18.3	51.3
Recently retired ¹	163.0	172.8	9.8	6.0	1.9	1.9	2.0
Other, at least 65 years of age ¹	3,663.8	3,833.1	169.3	4.6	41.8	41.4	34.9
Other, under 65 years of age ¹	2,713.7	2,721.3	7.6	0.3	31.0	29.4	1.6
Permanently unable to work	629.4	652.2	22.8	3.6	7.2	7.1	4.7

¹ And not included in any of the other definitions.

Note: 'Recent' is defined as within the previous 12 months.

Source: Statistics Canada, Labour Force Survey, data not seasonally adjusted.

How the supplementary measures of unemployment are calculated

Statistics Canada produces alternative measures of unemployment in accordance with the concepts and methods suggested by the International Labour Organization (Husmanns et al. 1992). The R1, R2 and R3 rates are available dating back to 1976; the others are available back to 1997. Formally, they are calculated as follows:

$$R1 = [\text{unemployed 52 weeks or more} / (\text{employed} + \text{unemployed})] * 100$$

$$R2 = [\text{unemployed 12 weeks or more} / (\text{employed} + \text{unemployed})] * 100$$

$$R3 = [(\text{unemployed} - (\text{15-year-olds} + \text{passive job searchers} + \text{short-term future starts} + \text{searchers unavailable for work due to personal or family responsibilities}) + \text{full-time students looking for full-time work}) / ((\text{employed} - \text{15-year-olds}) + (\text{unemployed} - (\text{15-year-olds} + \text{passive job searchers} + \text{short-term future starts} + \text{searchers unavailable for work due to personal or family responsibilities})) + \text{full-time students looking for full-time work})] * 100$$

$$R4 = [\text{unemployed} / (\text{employed} + \text{unemployed})] * 100$$

$$R5 = [(\text{unemployed} + \text{discouraged searchers}) / (\text{employed} + \text{unemployed} + \text{discouraged searchers})] * 100$$

$$R6 = [(\text{unemployed} + \text{waiting for recall} + \text{waiting for replies} + \text{long-term future starts}) / (\text{employed} + \text{unemployed} + \text{waiting for recall} + \text{waiting for replies} + \text{long-term future starts})] * 100$$

$$R7 = [(\text{unemployed looking for full-time work} + \text{unemployed looking for part-time work} * \text{average hours of part-time workers at main job} / \text{average hours of full-time workers at main job} + \text{involuntary part-timers} * (1 - \text{average hours of involuntary part-timers at main job} / \text{average hours of full-time workers at main job})) / (\text{employed full-time} + \text{employed part-time} * \text{average hours of part-time workers at main job} / \text{average hours of full-time workers at main job} + \text{unemployed looking for full-time work} + \text{unemployed looking for part-time work} * \text{average hours of part-time workers at main job} / \text{average hours of full-time workers at main job})] * 100$$

$$R8 = [(\text{unemployed} + \text{discouraged searchers} + \text{waiting for recall} + \text{waiting for replies} + \text{long-term future starts} + \text{involuntary part-timers} * (1 - \text{average hours of involuntary part-timers at main job} / \text{average hours of full-time workers at main job})) / (\text{employed} + \text{unemployed} + \text{discouraged searchers} + \text{waiting for recall} + \text{waiting for replies} + \text{long-term future starts})] * 100$$

Non-participants

Between October 2008 and October 2010, the 'not-in-the-labour-force' population—or non-participants—increased by 6%, or 485,000 people (Table 8). While non-participants include retirees, stay-at-home parents, students, and those not able to work, it also encompasses those with some attachment to the job market. Among these are individuals who are able and ready to work, but not actively searching, for instance because they are waiting to hear from potential employers or don't think work is available. One key question is whether these people contributed to the growing population of non-participants during the downturn.

In Table 8 non-participants are split into three major categories:

- those who were able to work and had some attachment to the labour market, even if they were not currently looking for a job
- those who were able to work but had no perceived attachment to the labour market
- those who were permanently unable to work.

The first category includes

- the discouraged: those who gave up searching since they believed no work was available
- recently laid-off individuals, who expressed a desire to go back to the labour market, were not discouraged, but did not look for work (for example, recently laid-off people who want to take some time off with their families before resuming their searches)
- the 'marginally attached,' including those who are waiting to hear from potential employers and long-term future starts (i.e., they have jobs they expect to start in 5 weeks or more).

All individuals in this category clearly expressed that they would like to stay involved in the job market, or were planning to rejoin the labour force at some point in the future.

Those who had a perceived labour market attachment represented about 2% of non-participants. The discouraged comprised just 0.2% of non-participants in October 2008 and 0.3% in October 2010. So even though their numbers increased (38%), it was from such a small base that their share remained relatively steady. Hence, the discouraged played a very minor role in the increase in non-participants during the downturn.

Rather, the number of non-participants swelled due to a strong increase in the 'able-to-work' population. The number of students grew by 17% over the period (or by almost 250,000), suggesting that some non-participants may have decided to upgrade their skills rather than enter a weak labour market or chose to remain in school due to the slowdown in hiring.⁷ In fact, students, who represented just 16% of the not-in-the-labour-force population at the beginning of the downturn, accounted for more than 50% of the increase in non-participants.

The number of seniors also increased as a consequence of the aging population. Between October 2008 and October 2010, the number of non-participants age 65 and over (not classified elsewhere) increased by 169,000 (5%), accounting for about one-third of the increase in the non-participant population. However, seniors typically represent a large portion of the non-participant population. Meanwhile, the number who retired in the previous 12 months increased by about 10,000 (6%), indicating that the downturn did not necessarily trigger a wave of early retirement.

Several alternative unemployment rates can be computed by combining the unemployed with groups outside of the labour force that indicated some attachment to the labour market. The first of these populations is 'discouraged searchers,' who want to work and are available to take work, but who do not look for a job because they believe no jobs are available. Discouraged searchers can be combined with the unemployed to calculate the R5 rate. The marginally attached comprise those who are available for work

and are waiting for employment, but are not currently looking for work. The R6 rate combines the marginally attached (excluding discouraged searchers) with the unemployed. In both cases, the populations are added to the numerator and the denominator to obtain conceptually consistent ratios of individuals without a job (see *How the supplementary measures of unemployment are calculated*).

Since these groups are not particularly large, both rates tend to be slightly higher than the standard unemployment rate (Table 9). In October 2008, R5 was 5.7%, compared to the standard rate of 5.6%. One year later, early in the labour market recovery, it was 7.7%, and by October 2010, it had fallen back to 7.3%. Similarly, R6 was 6.0% in October 2008, 8.1% in October 2009 and 7.6% in October 2010—only slightly higher than the standard unemployment rate.

The detailed non-participant groups could not be compared to previous downturns since information about discouraged and marginally attached workers was collected differently in those years.

The underemployed

Even if employment recovered all ground lost during the downturn, some of the workforce may remain underemployed. Underemployment can come in two forms: 'visible' underemployment, which happens when someone is employed but does not believe his or her work hours are sufficient; and 'invisible' underemployment, which occurs when skills are not fully used, or when the job occupied is considered

Table 9 Alternative measures of unemployment: Discouraged and marginally attached

	October 2008	October 2009	October 2010	Change from October 2008 to October 2010
	'000			
Number				
Standard unemployment rate (R4)	1,024.1	1,387.6	1,331.7	307.6
With discouraged workers (R5)	1,045.9	1,415.7	1,361.7	315.8
With marginally attached workers (R6)	1,108.2	1,479.3	1,415.7	307.5
	%			
Rate				
Standard unemployment rate (R4)	5.6	7.6	7.2	1.6
With discouraged workers (R5)	5.7	7.7	7.3	1.6
With marginally attached workers (R6)	6.0	8.1	7.6	1.6

Source: Statistics Canada, Labour Force Survey, data not seasonally adjusted.

Table 10 Change in categories of employed population

	October 2008	October 2010	Change		October 2008	October 2010
	'000	'000	'000	%	% distribution	
Total employed	17,242.5	17,183.5	-59.0	-0.3	100.0	100.0
Full-time workers	13,947.8	13,835.2	-112.6	-0.8	80.9	80.5
Part-time workers	3,294.8	3,348.3	53.5	1.6	19.1	19.5
Involuntary	700.5	840.9	140.4	20.0	4.1	4.9
Going to school	1,146.8	1,073.7	-73.1	-6.4	6.7	6.2
Other voluntary	1,447.6	1,433.8	-13.8	-1.0	8.4	8.3

Source: Statistics Canada, Labour Force Survey, data not seasonally adjusted.

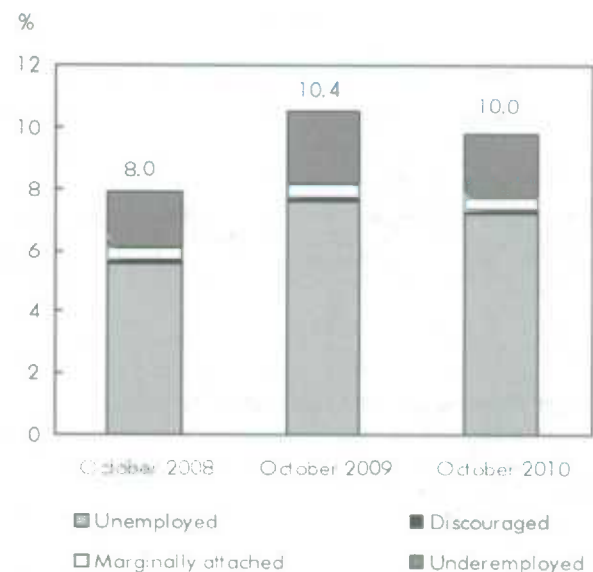
'substandard' because of wages or other job characteristics (Statistics Canada 1999). In the Labour Force Survey, visible underemployment can best be estimated by computing the number of part-time workers who would prefer to be working full time. Such involuntary part-timers represented 4% of the total employed workforce in October 2008 (Table 10).

Although employment regained a good portion of lost ground over the period, full-time employment⁸ declined by 112,600 (-0.8%), while the number of part-time workers increased by 53,500 (1.6%). The increase in the number of part-timers was the net result of a 20% increase in the number of involuntary part-time workers (140,400) and a decline of 86,900 among those who worked part time on a voluntary basis (including students). Both full-time and part-time employment declined in the first year and recovered during the second, but full-time employment did not recover as swiftly as part-time employment.

Another alternative measure of unemployment—R7—includes involuntary part-timers, or 'underemployed' workers.⁹ The R7 rate differs from the standard unemployment rate in both the numerator and denominator. The R7 rate takes the number of hours of potential labour supply lost due to underemployment into account, since the number of single-job involuntary part-timers are expressed as full-time equivalents. Hence, R7 can be interpreted as a combination of the unemployed and involuntary part-timers expressed in full-time equivalent hours (see *How the supplementary measures of unemployment are calculated*).

Taking the underemployed into account would increase the unemployment rate by a substantial margin. In October 2008, R7 was 7.4% compared to the

standard rate of 5.6%. One year later, R7 was 9.9% (standard rate of 7.6%). By October 2010, the R7 rate had eased down 0.6 percentage points, but was still much higher than it had been at the beginning of the downturn.

Chart B Unemployment and underutilization rate (R8), October 2008 to October 2010

Source: Statistics Canada, Labour Force Survey, data not seasonally adjusted.

An alternative rate for Canada-U.S. comparisons

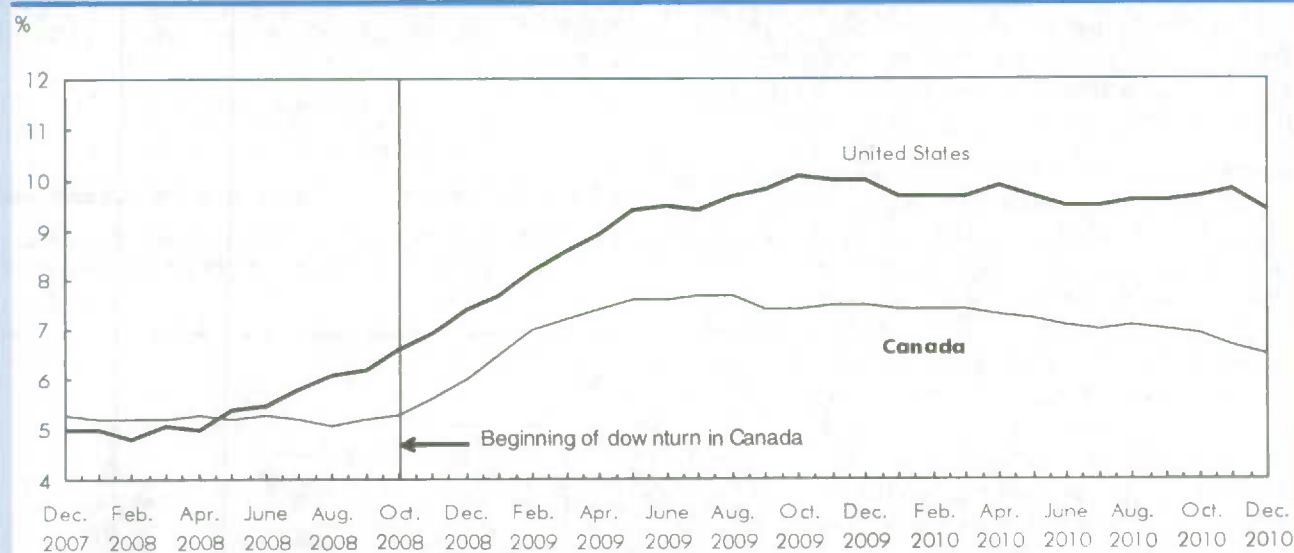
To allow comparisons to be made between Canada and the United States, Statistics Canada also produces a rate defined similarly to the U.S. unemployment rate (called the R3 rate). Like the U.S. official rate, the R3 rate is based on a working-age population of at least 16 years, and takes conceptual differences into account in defining the employed and unemployed populations (Chart C). Contrary to the other alternative rates, it is also produced on a seasonally adjusted basis. Because employment last peaked in December 2007 in the U.S., the figure below provides unemployment rates for the two countries between December 2007 and December 2010.

At the beginning of the downturn in the United States, the unemployment rates were similar in the two countries, at 5%. Although the U.S. rate began to increase earlier, both

rates increased in tandem in the first few months of the Canadian employment downturn. However, the Canadian rate stabilized in the spring of 2009, while it continued increasing until October 2009 in the U.S. At this point, the U.S. unemployment rate exceeded the comparable Canadian rate by more than 2.5 percentage points. Since then, the gap has persisted as the U.S. rate has remained around 10% during most of 2010 (while it has slowly declined in Canada).

During the downturn of the 1990s, the Canadian unemployment rate increased much faster than the U.S. unemployment rate and remained higher for many years afterwards.

Chart C Unemployment rates for Canada and the U.S. (R3)¹



1. Canadian rate adjusted to match U.S. definitions.

Source: Statistics Canada, Labour Force Survey; U.S. Bureau of Labor Statistics, Current Population Survey.

Comprehensive unemployment and underutilization rate

It is possible to derive a comprehensive rate by combining all the elements that were used to generate R5, R6 and R7 with the unemployed. This rate, called R8, combines the unemployed with discouraged searchers, those waiting for recall or replies, long-term future starts, and a portion of involuntary part-timers.

The R8 rate is often referred to as the overall 'underutilization' rate as it is the highest rate of all the measures, including the official rate.

Chart B shows the evolution of the rate over the period, and also indicates the relative contribution of each group. Adding the marginally attached, the discouraged and the underemployed to the unemployment rate, the comprehensive rate was 8.0% in October 2008, 10.4% in October 2009, and 10.0% in October

2010. Most of the difference from the official unemployment rate was due to the underemployed, as they represented about 20% of the total unemployed and underutilized population. In contrast, discouraged searchers represented only a small fraction of underutilized people, even after the downturn. In all, adding the marginally attached, the discouraged and the underemployed population boosted the unemployed population by about 25%.

Both the standard rate and the R8 rate increased at about the same pace over the period, as the underutilized population increased by 27% (or almost 400,000 people) and the number of unemployed workers increased by 30% (or more than 300,000 people). Hence, the downturn had little effect on the relative contribution of each group to the overall rate.

Summary

The Canadian labour market recently experienced a significant downturn in which more than 400,000 jobs were lost in the 12 months following October 2008. The labour market, however, recovered quite quickly as employment regained all lost ground by January 2011. In comparison, the labour market took much longer to recover during the recessions of the early 1980s and early 1990s.

As might be expected in an economic downturn, the number of individuals without a job increased significantly. Between October 2008 and October 2010, unemployment increased by 341,000, and the number of non-participants increased by 458,000 (in seasonally adjusted figures).

Unemployment changes were not just due to layoffs. Between October 2008 and October 2010, the number of permanent layoffs increased by about 30%, but other categories of unemployed workers also increased—particularly new entrants and re-entrants (33%) and those who were unemployed for more than one year (74%). In all, 28% of the increase in the unemployed population was due to permanent layoffs and almost 50% was due to an increase in the number of new and re-entrants. This differed from earlier downturns, when permanent layoffs accounted for a larger portion the total unemployment increase.

From October 2008 to October 2010, the increase in non-participants was mainly driven by increases in the number of students and, to a lesser degree, in the

number of seniors. The number of individuals marginally attached to the labour market (including discouraged searchers) also increased by about 27,000 (17%), but contributed little to the overall increase since they represent such a small portion of the non-participant population.

In contrast, the number of individuals working part time on an involuntary basis increased by about 140,000 over the period (20%). Even though they are counted as employed, this population is considered underemployed since they would like to work more hours.

Some of these groups can be used to generate alternative unemployment rates. Such alternative rates can be produced by focusing on those who have been without a job for a long time; by combining unemployed individuals with discouraged searchers and the marginally attached, or by adding involuntary part-timers (expressed as full-time equivalents). The most comprehensive of these rates, R8, is called the unemployment and underutilization rate and combines the unemployed, involuntary part-timers, discouraged searchers, and the marginally attached. Using this alternative definition would not have changed the pace of the increase in unemployment figures, but would have affected the level since the underutilization rate is approximately 25% higher than the unemployment rate.

Perspectives

■ Notes

1. 'Future starts' refers to persons who did not have a job during the survey reference week and did not search for work within the previous four weeks, but were available to work and had a job to start within the next four weeks.
2. Since the Labour Force Survey does not interview persons under the age of 15, new entrants can also be individuals who just turned 15, are not students, and are looking for work.
3. Persons on temporary layoff are employees who did not work during the reference week because they had been temporarily released by their employers due to business conditions (not enough work, drop in orders or sales, retooling, etc.). They must have a definite return-to-work date or an indication from the employer that they will be recalled in the future, and they must be available for work during the reference week.

4. The Labour Force Survey does not ask the reason for job loss for those who have been unemployed for more than one year.
5. The duration of unemployment estimates indicates incomplete spells of unemployment rather than completed spells because the data are based on currently unemployed individuals. See Corak and Heisz (1995) for an explanation of possible biases associated with incomplete unemployment spells.
6. While the increase in the R1 rate is notable, unlike the standard unemployment rate, the R1 rate typically lags economic cycles. In other words, R1 declines more slowly during periods of economic growth and increases more slowly during economic downturns. In comparison, the R2 rate tends to be much closer to economic cycles.
7. Between October 2008 and October 2010, the proportion of the total population age 15 to 29 who were either part-time or full-time students increased from 44% to 46%.
8. Full-time employment is defined as working at least 30 hours per week.
9. There are no comparable data with previous downturns as the concept of involuntary part-time workers changed in 1997.

■ References

- Blanchard, Olivier Jean and Peter Diamond. 1994. "Ranking, unemployment duration, and wages." *The Review of Economic Studies*. Vol. 61, no.3. July. p. 417-434.
<http://www.jstor.org/stable/pdfplus/2297897.pdf?acceptTC=true> (accessed January 11, 2011).
- Clark, Andrew E. 2006. *A Note on Unhappiness and Unemployment Duration*. IZA Discussion Paper No. 2406. Bonn, Germany. Institute for the Study of Labor. 28 p.
<http://ftp.iza.org/dp2406.pdf> (accessed January 11, 2011).
- Clark, Andrew E. and Andrew J. Oswald. 1994. "Unhappiness and unemployment." *The Economic Journal*. Vol. 104, no. 424. May. p. 648-659.
<http://www.jstor.org/stable/pdfplus/2234639.pdf> (accessed January 11, 2011).
- Corak, Miles and Andrew Heisz. 1995. *The Duration of Unemployment: A User Guide*. Statistics Canada Catalogue no. 11F0019MPE – No. 84. Analytical Studies Research Paper Series. Ottawa. 13 p.
<http://www.statcan.gc.ca/pub/11f0019m/11f0019m1995084-eng.pdf> (accessed January 10, 2011).
- Corak, Miles. 1993. "The duration of unemployment during boom and bust." *Canadian Economic Observer*. Vol. 6, no. 9. September. Statistics Canada Catalogue no. 11-010-XPB. p. 4.1-4.20.
- Devereaux, Mary Sue. 1992. "Alternative measures of unemployment." *Perspectives on Labour and Income*. Vol. 4, no. 4. Winter. Statistics Canada Catalogue no. 75-001-X. 16 p.
<http://www.statcan.gc.ca/studies-etudes/75-001/archive/c-pdf/140-eng.pdf> (accessed January 10, 2011).
- Hipple, Steven F. 2010. "The labor market in 2009: Recession drags on." *Monthly Labor Review*. March. United States Department of Labor. Bureau of Labor Statistics. p. 3- 22.
<http://www.bls.gov/opub/mlr/2010/03/art1full.pdf> (accessed January 11, 2011).
- Hussmanns, Ralf, Farhad Mehran and Vijaya Vermâ. 1992. *Surveys of Economically Active Population, Employment, Unemployment and Underemployment: An ILO Manual on Concepts and Methods*. International Labour Office. Geneva. 411 p.
- Jackman, Richard and Richard Layard. 1991. "Does long-term unemployment reduce a person's chance of a job? A time-series test." *Economica*. Vol. 58, no. 229. February. p. 93-106.
<http://www.jstor.org/stable/pdfplus/2554977.pdf> (accessed January 11, 2011).
- LaRochelle-Côté, Sébastien and Jason Gilmore. 2009. "Canada's employment downturn." *Perspectives on Labour and Income*. Vol. 10, no. 12. December. Statistics Canada Catalogue no. 75-001-X. p. 5-12.
<http://www.statcan.gc.ca/pub/75-001-x/2009112/pdf/11048-eng.pdf> (accessed January 10, 2011).
- Micklewright, John and Gyula Nagy. 1999. "Living standards and incentives in transition: The implications of UI exhaustion in Hungary." *Journal of Public Economics*. Vol. 73, no. 3. September. p. 297-319.
http://www.sciencedirect.com/science?_ob=MIImg&_imagekey=B6V76-40V4THC-1-D&_cdi=5834&_user=1516053&_pii=S0047272799000158&_origin=na&_coverDate=09%2F30%2F1999&_sk=999269996&view=c&wchp=dGLzVtbzSkzV&md5=b3228adc1b1e12ccf43c490bc8d36eff&ie=/sdarticle.pdf (accessed January 28, 2011).
- Statistics Canada. 1999. *Supplementary Measures of Unemployment*. Labour Force Update. Vol. 3, no. 3. Statistics Canada Catalogue no. 71-005-XPB. Ottawa. p. 32-39.

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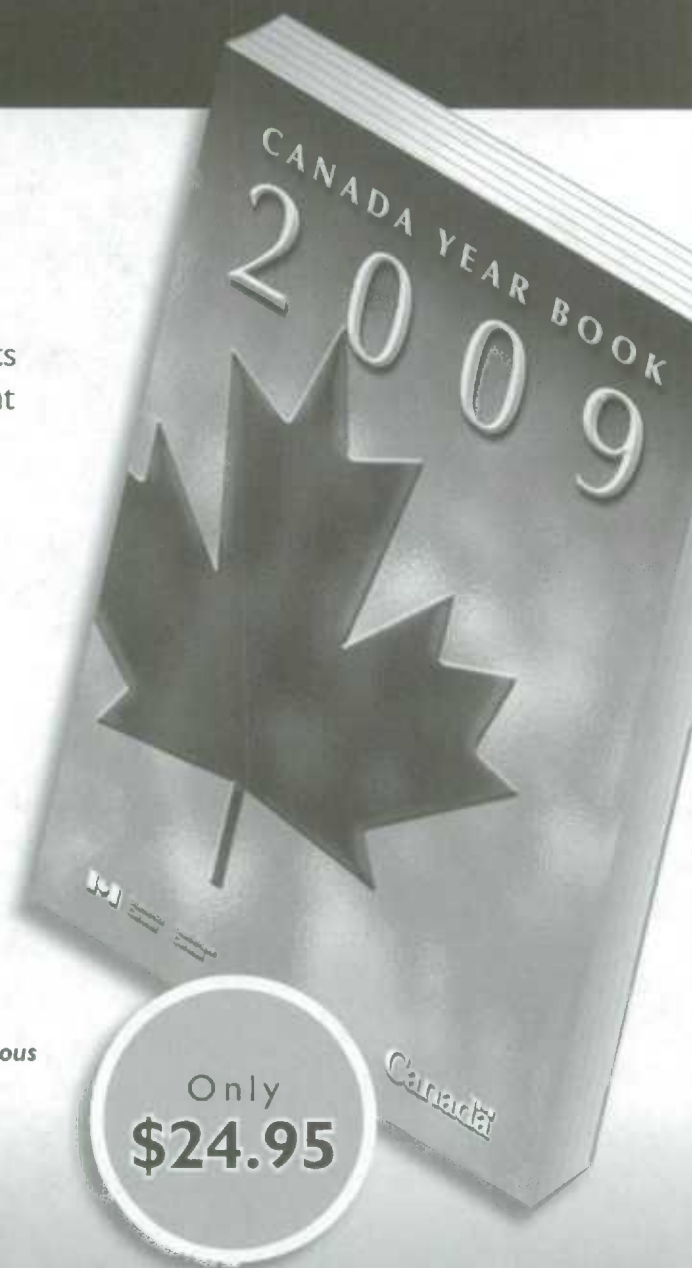
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What's new?

Recent reports and studies

■ From Statistics Canada

■ *Cohort differences in education and earnings of childhood Immigrants*

This study uses data from six Canadian censuses of population between 1971 and 2006 to examine cohort differences in the educational attainment and earnings of childhood immigrants who arrived in Canada in the 1960s, 1970s and 1980s. Childhood immigrants are defined as those who were born abroad and immigrated to Canada at the age of 12 or younger. They represented about 26% of immigrants who arrived in Canada in the 1960s, 24% in the 1970s and 21% in the 1980s. Their educational attainment and earnings are examined at age 25 to 34. The comparison group consists of Canadian-born individuals who reported Canadian, British, or French ethnic origin.

The outcome measures for childhood immigrants are derived from the 1986 Census of Population for the 1960s entry cohort, from the 1996 Census of Population for the 1970s cohort, and from the 2006 Census of Population for the 1980s cohort. Educational attainment is measured by whether a university degree was obtained.

The probability of obtaining a university degree by age 25 to 34 was higher among childhood immigrants than among their Canadian-born comparison group in all three cohorts, and this difference increased across the three cohorts. The continued success of more recent cohorts of childhood immigrants is due primarily to a shift in the composition of the immigrant population towards groups in which children of immigrants have traditionally had high educational attainment. Once shifts in composition (including source region, mother tongue, and visible-minority status) are taken into account, the difference no longer increases over time;

if anything, it shrinks for the 1980s cohort. This decline in university completion (relative to the Canadian-born) is associated with the decline in the earnings of immigrant parents relative to the Canadian-born.

For more information, see *Reversal of Fortunes or Continued Success? Cohort Differences in Education and Earnings of Childhood Immigrants* in the Analytical Studies Branch Research Paper Series, Statistics Canada, January 2011.

■ *Highly educated immigrants in the Canadian and U.S. labour markets*

Have highly educated recent immigrants to Canada fared as well economically as their counterparts entering the United States? This study examines how economic outcomes at entry for the highly skilled have changed in the two countries over the past quarter-century, and whether changes in the standard observable background characteristics of entering immigrants can account for the outcome trends.

Two economic outcome measures are used: the mean relative (to domestic-born) entry wages of highly educated new immigrants (i.e., the wage gap at entry), and the university wage premium (defined as the difference between the wages of university-educated and high-school-educated).

Relative entry earnings of university-educated immigrants followed a significantly different path in Canada and the U.S., with generally superior outcomes in the U.S., particularly since 1990. This occurred despite significant declines in entry earnings for successive groups of entering immigrants *as a whole* (i.e., immigrants with and without university education) being observed in both countries over the last quarter-century.

For more information, see *Do Highly Educated Immigrants Perform Differently in the Canadian and U.S. Labour Markets?* by Aneta Bonikowska, Feng Hou and Garnett Picot, in Analytical Studies Branch Research Paper Series, Statistics Canada, January 2011.

■ ***Paid work among women in Canada***

The labour force activity of women changed considerably during the past three decades. Although they are still less likely to be employed than men, their employment rate has followed an upward trend since 1976, when it was 41.9%. In 2009, over 8 million women in Canada had a paid job. This represents an employment rate of 58.3% compared with 65.2% for men.

The employment rate for women with children has been steadily on the rise. In 2009, 72.9% of women with children under the age of 16 living at home were employed, nearly twice the rate of 39.1% recorded in 1976.

While nearly three-quarters of employed women worked full time in 2009, women were more likely than men to work part time. Also, the majority of employed women continue to work in occupations in which they have been traditionally concentrated. However, they have increased their representation in several professional fields such as business and finance.

The impact of the recent economic downturn was less severe on women than on men. Between 2008 and 2009, the employment rate for men fell 2.9 percentage points to 65.2%, repeating a pattern set in the recessions of the early 1980s and 1990s. In contrast, the employment rate for women declined by only one percentage point in 2009, after reaching an historic high of 59.3% in 2008.

Men were more affected by the recent downturn because the industries hardest hit by employment losses were male-dominated, such as manufacturing, construction and natural resources. In contrast, more women worked in service industries, such as health care and social assistance as well as educational services, where employment continued to grow.

For more information, see the December 9, 2010 issue of *The Daily* on the Statistics Canada's website (www.statcan.gc.ca).

■ ***Survey of Household Spending***

Average household spending in Canada declined by 0.3% in 2009, following the economic slowdown that began in the fall of 2008. This was the first decline since the annual Survey of Household Spending was

introduced in 1997. During 2009, the annual average rate of inflation as measured by the Consumer Price Index was 0.3%.

Personal taxes accounted for 20.2% of the average household's budget in 2009, while shelter represented 19.8%, transportation, 13.7% and food, 10.2%. These shares were virtually unchanged from 2008. Excluding personal taxes, spending on goods and services was down 0.7% in 2009 from 2008.

Households reduced spending on discretionary items or those that could be postponed, such as recreation and household furnishings. One exception was spending for home repairs and maintenance, which increased 22% in 2009 over 2008. This was likely due to the federal government home renovation tax credit program.

Not all changes in spending were associated with the economic downturn; technological change continued to drive a number of long-term spending trends.

Food, shelter, clothing accounted for over half of spending by the lowest income households, while personal taxes represented 2.8% of their budget. In contrast, the one-fifth of households with the highest income allocated about 27% of their budget to food, shelter and clothing, while 30% went to personal taxes. These proportions were similar to 2008.

For more information, see the December 17, 2010 issue of *The Daily* on the Statistics Canada's website (www.statcan.gc.ca).

■ ***Labour productivity in the provinces and territories***

In 2009, labour productivity of the business sector increased in Prince Edward Island, Quebec, Manitoba and British Columbia as well as Yukon. At the national level, productivity was unchanged, after decreasing by 0.8% a year earlier.

The strongest growth in business productivity in 2009 was observed in Quebec. The largest declines occurred in the resource-based economies of Newfoundland and Labrador, Saskatchewan and Alberta. In Quebec, most industries contributed to the 2.0% productivity increase, with large advances occurring in retail trade, transportation and warehousing, and the information and cultural industries.

Businesses adjusted to the economic downturn in 2009 by sharply reducing hours worked. However, the weakness in output and employment was confined mostly to the first half of the year.

For more information, see the November 19, 2010 issue of *The Daily* on the Statistics Canada's website (www.statcan.gc.ca).

■ From other organizations

■ *Who creates jobs? Small companies or young companies?*

There has been a popular perception that small businesses are the drivers of job creation. However, the more telling characteristic for predicting job creation is the age of the firm, not its size: The younger companies are, the more jobs they create, regardless of their size.

This study shows that the real driver of disproportionate job growth is not small companies, but young companies. Many start-up firms fail after five years, leading to the loss of nearly half of the jobs created by all new companies. Nevertheless, the surviving firms tend to grow faster than more mature companies, creating a disproportionate share of jobs relative to their size. See *Who Creates Jobs? Small vs. Large vs. Young* by John Haltiwanger, Ron Jarmin and Javier Miranda, National Bureau of Economic Research, or *The NBER Digest*, February 2011.

■ *Trends in U.S. hours and the labour wedge*

From 1980 to 2007, average hours worked in the U.S. increased by about 13%. This growth was driven by a very large increase of married women's hours, while single women's hours rose only slightly and hours of men declined. In order to examine these trends, the standard growth model was augmented to allow for gender and marital status heterogeneity. The study considers the impact of various exogenous factors on labour supply, the most important of which are changes in effective labour income taxes and changes in the gender wage gaps.

The labour wedge is measured as the aggregate discrepancy between the marginal rate of substitution between consumption and leisure and the marginal product of labour. While shrinking gender wage gaps allow the model to generate a labour wedge that declines beginning in the early 1980s, a non-negligible discrepancy remains. The labour wedge measured from a representative household model partly reflects imperfect household aggregation. See *Trends in U.S. Hours and the Labour Wedge* by Simona E. Cociuba and Alexander Ueberfeldt, Bank of Canada, November 2010.

■ Upcoming events

■ *From data to decision-making: Socioeconomic conference, May 2-3, 2011*

The Statistics Canada Socioeconomic Conference provides an annual forum for empirical research focusing on issues of concern to Canadian decision-makers. *From data to decision-making* is the theme of the upcoming conference.

Studies targeted by the conference include topics such as innovation, productivity, international trade, environment–economy linkages, industrial development, urban and rural development, health, justice, education, families, income and wealth, immigration, and labour markets. The conference places a premium on empirical studies making innovative use of Canadian data. For more details, see <http://www.statcan.gc.ca/conferences/socioecon2011/index-eng.htm>.

Perspectives

In the works

Some of the topics in upcoming issues

■ Immigrant self-employment

This study traces trends in self-employment among immigrants and the Canadian-born, using census and Labour Force Survey data. Differing attitudes of immigrants and natives towards self-employment are highlighted with data from the 2000 Survey of Self-employment.

■ Immigrant educational outcomes

Making use of longitudinal administrative data, this study compares the labour market outcomes of immigrants who have studied in Canada since their arrival with other immigrants who have not undertaken such studies.

■ Income with savings and spending among the self-employed

Using several data sources, this article examines various income, wealth and spending indicators among the self-employed and compares them with the same indicators for paid employees.

■ Working low-income families

Using the 2009 Canadian Financial Capabilities Survey, this study examines the financial situation of employed families living in low income and compares it with non-employed families living in low income and employed families not living in low income.

Perspectives

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