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# PERSPECTIVES

## ON LABOUR AND INCOME

**AUTUMN 2007**

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- ABSENTEEISM
- WORKING AT HOME
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## 5 Labour inputs to non-profit organizations

*Leroy Stone and Hasheem Nouruz*

More than 160,000 non-profit and voluntary institutions provide employment for about two million Canadians. These organizations constitute one of the faster growing sectors of the Canadian economy, accounting for 7% of gross domestic product in 2003. They come in a variety of forms and deliver goods and services in many areas. However, their use of labour in most cases differs radically from that of profit-oriented businesses. This study describes and quantifies the multiple labour inputs used by non-profits.

## 13 Trends and seasonality in absenteeism

*Ernest B. Akyeampong*

Past studies of illness-related work absences have focused on annual figures and have not differentiated between full- and part-week absences. But the two have quite different seasonal patterns and long-term trends.

## 17 Working at home: An update

*Ernest B. Akyeampong*

The strong growth of telework in the 1990s seems to have stalled since the turn of the century. Despite significant improvements in the infrastructure, the fall-off in telework popularity has been pervasive.

## 21 Life after high tech

*Marc Frenette*

During the 1990s, the high-tech sector expanded at a much greater rate than the rest of the economy, its employment eventually representing 4.5% of the workforce in 2000. Then came the meltdown in 2001 with its headlines of large-scale layoffs. Many were unable to find other jobs in the sector, and some moved to other cities. The article looks at the statistics behind the headlines, in particular the permanent layoff rates and earnings of high-tech workers compared with those in other industries.

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## 31 Participation of older workers

*Katherine Marshall and Vincent Ferrao*

For some years now, attention has been focused on the predicted retirement patterns of the baby-boom generation since a wave of early departures could seriously disrupt the labour force. However, recent studies and indicators suggest that baby boomers may not in fact be collectively fleeing employment for 'freedom 55.' In 2006, a record proportion of 60 to 64 year-olds were in the labour force (45%) and the retirement age remained steady at 61.5. The article examines labour market trends of the population aged 55 to 64 and the employment characteristics of workers in this age group vis à vis those aged 25 to 54.

## 39 Public pensions and work

*Ted Wannell*

"Do I have enough money to retire?" is a question that older workers have been trained to ask themselves as they consider the transition out of the workplace. The financial tally includes employer pension plans, registered savings plans and other investments, as well as entitlement to public benefits—the Canada and Quebec Pension Plan (C/QPP) and Old Age Security/Guaranteed Income Supplement. These resources are balanced against projected spending and other considerations, such as health, family demands and leisure activities. Take-up rates of C/QPP benefits, co-receipt of C/QPP and other benefits, and employment following benefit take-up are examined for taxfilers in their 60s.

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- p preliminary
- r revised
- x confidential
- E use with caution
- F too unreliable to be published

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# Highlights

## *In this issue*

### ■ Labour inputs to non-profit organizations ... p. 5

- From 1997 to 2003, the gross domestic product of the non-profit sector grew at an annual rate of 6.4%, faster than the economy as a whole.
- The full-time equivalent distribution of labour in non-profit organizations is 36% volunteers and 64% employees and contractors.
- Of the total volunteer full-time equivalents, 77% are supplied by frequent volunteers.

### ■ Trends and seasonality in absenteeism ... p. 13

- The weekly number of employees missing work because of an illness or disability increased from 431,000 in 1997 to 758,000 in 2006—from 3.8% to 5.4% of total employees.
- Full-week absences increased by about one-third, but part-week absences more than doubled between 1997 and 2006.
- Illness-related absences peak in the winter months (December to February). Most of the peak is due to part-week absences.

### ■ Working at home: An update ... p. 17

- The estimated number of teleworkers climbed from just over 600,000 in 1991 to 1.4 million in 2000.
- Since 2000, telework has seen virtually no growth, except among older employees and those with lower levels of education.

### ■ Life after high tech ... p. 21

- The high-tech sector experienced a sharp decline in 2001 after leading economic growth during the 1990s. Nationally, the permanent layoff rate in this sector jumped from 2.1% in 2000 to 5.3% in 2001.
- Among the major high-tech centres, Ottawa-Gatineau registered the largest increase in its high-tech permanent layoff rate, from 2.2% in 2000 to 10.9% in 2001.
- Among high-tech workers who were laid off in 2001, average annual earnings declined from \$50,200 in 2000 to \$37,800 in 2002. Two years after layoff, average earnings were still well below their pre-layoff level (\$42,300 in 2003).

### ■ Participation of older workers ... p. 31

- Over the last decade the proportion of older workers (those aged 55 to 64) has risen, with 6 in 10 employed or looking for work in 2006. This group represented 12% of the labour force (2.1 million).
- The main thrust behind the upward trend is women's labour force participation rate, which rose from 38% to 62% between 1976 and 2006 for those aged 55 to 59, and from 24% to 37% for those aged 60 to 64.
- One in 4 older workers is self-employed and 1 in 5 works part time. Part-time work is one of the few job characteristics that is notably different for older and core-aged workers (those aged 25 to 54), suggesting transitional changes before retirement.
- Two-thirds of older workers who work part time do so from choice compared with only 28% of core-aged, part-time workers.

## ■ Public pensions and work ... p. 39

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- The vast majority of workers take up Canada and Quebec Pension Plan (C/QPP) benefits before the age of 65, and an increasing proportion start them at age 60.
- Among those with employer pension benefits and no employment earnings, nearly 4 in 5 started C/QPP benefits at age 60. For those combining work and employer pension benefits at age 59, the take-up rate was 3 in 5. Take-up rates at age 60 were only 26% for workers without employer pension coverage and 17% for those with coverage.
- In 1996, 39% of new C/QPP beneficiaries did some work for pay. By 2004, the proportion had jumped to 48%. Post-retirement work was more common among men and highest among persons not covered by an employer pension in their pre-retirement job.
- Between 1996 and 2004, the proportion of C/QPP pensioners earning \$5,000 or less declined. This decline was more than offset by strong growth among those earning between \$5,000 and \$20,000, and even more among those earning over \$20,000.

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Employment dynamics: small and large firms over the business cycle

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### Perspectives

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# Labour inputs to non-profit organizations

Leroy Stone and Hasheem Nouroz

**N**on-profit institutions (NPIs) constitute a significant and growing segment of the Canadian economy. From 1997 to 2003, the gross domestic product of the non-profit sector grew at an annual rate of 6.4%, faster than the economy as a whole (Hamdad et al. 2006). In 2003, the sector accounted for 7% of GDP, and more than 160,000 non-profit and voluntary organizations provided employment for about two million persons (Hall et al. 2004). Close to 20% of non-government employees worked for NPIs in that year, according to the Workplace and Employee Survey.

But the importance of NPIs extends beyond their share of GDP or their contribution to job creation. Non-profit organizations assume a wide variety of forms and deliver goods and services in many areas of society. This article classifies NPIs into 12 groups: arts and culture; sports and recreation; education and research; health and hospitals; social services; environment; housing and development; law and advocacy; grant-making, fundraising and voluntarism promotion; international; religion; and professional associations.<sup>1</sup>

In the face of major challenges in the field of human resources management and planning, leaders of NPIs need to be well informed about the composition of their human resources. For example, an aging of the labour force and a slowdown in the pace of labour force growth are leading to increased competition for good workers among organizations—NPIs included. And this in an era when operational financing is becoming more difficult (Hall et al. 2003).

So far, analysts have tended to quantify human-resource inputs merely in terms of the numbers of volunteers, employees and contractors. Unfortunately,

simply adding the numbers for these three classes is rarely useful. Even among employees, adding the number of full-time and part-time employees has very limited usefulness for analysis and planning. Moreover, some employees work in two or more establishments, and thus risk being double-counted. This problem seems to be even worse with volunteers.

Instead of counting workers, it is better to use a unit of measurement such as hours of work per week, collected for every type of labour. The National Survey of Non-profit and Voluntary Organizations (NSNVO) of 2003 has gone a long way toward providing hours-of-work information for multiple kinds of labour inputs to NPIs. However, its handling of hours of work varies among the sources of labour. As a result, assumptions are required to integrate its hours-of-work data. These assumptions emerged from the Labour Inputs to Non-Profit Organizations Project, which aims to develop a procedure for

## Key concepts

Both the volume and composition of the labour inputs to NPIs are important. 'Composition of labour inputs' means the percentages of different types of labour. Seven types have been identified for this study: full-time employees, part-time employees, full-time contractors, part-time contractors, board members, frequent (more than twice a year) volunteers, and infrequent (only once or twice a year) volunteers.

To compute this percentage distribution, a standard unit of measure—the full-time equivalent (FTE) is used. The FTE is based on an arbitrary but widely accepted convention: a full-time employee working for one week represents one FTE, which is often considered to represent 40 hours of work. (This number is assumed to be the usual average weekly hours for full-time employees.) No other class of worker has an FTE value greater than 1, and the other classes' typical FTEs (also called 'standard labour units') are expressed as fractions of 1. For example, a typical part-time employee usually working an average of 20 hours would have an FTE of 0.5. To prepare the estimates in this paper, typical FTEs were established for each of the seven kinds of labour. (For further details see Nouroz and Stone 2007, Appendix A.)

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comprehensive estimation of the use of human resources by non-profit organizations (see Nouroz and Stone 2007 for technical details).

This article provides some of the project's results concerning the composition of labour inputs to NPIs (see *Key concepts*). The project represents a key, even if small step toward filling a major information gap. According to a Conference Board vice-president: "The 21st century will belong to human resources and to organizational capabilities, leading management guru Dave Ulrich assured The Conference Board of Canada. And the Board agrees." (Benimadhu 2006).

### Labour inputs in various organizations

For-profit and non-profit sectors are alike in one notable respect: Close to 40% of organizations are very small—over 60% of establishments have less than 10 employees (Table 1). However, more non-profit organizations have 50 or more employees (11% versus 5%).

Consequently, employees in the non-profit sector are more likely to work in large establishments. According to the Workplace and Employee Survey, 82% work in establishments of 50 or more employees, compared with only 46% in the for-profit sector. In the NSNVO, with a different universe and different questions, the corresponding percentage is 78%.<sup>2</sup> This reflects the pre-eminence of educational and health institutions in the total volume of paid labour supplied to NPIs. However, even when these institutions are excluded, NPI employees still tend to have a greater concentration in large establishments than do business employees.

A distinctive feature of non-profit organizations is that they rely heavily on volunteers—the percentages of volunteers in government and business organizations are probably much smaller<sup>3</sup> (Chart A). Moreover, recruiting and retaining volunteers has become a major challenge and source of worry for a large proportion of NPI leaders. Most reported declines in the availability

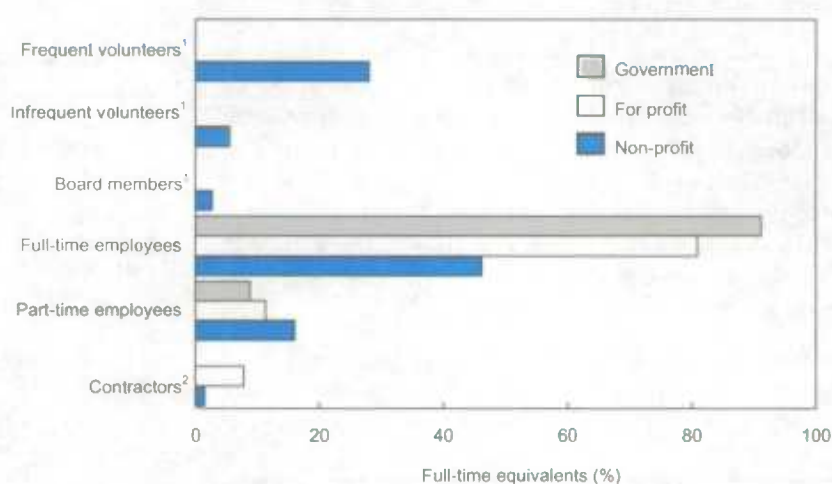
**Table 1 Employees and organizations by size-class of organization and sector**

	Total	Employees in organization				
		1-4	5-9	10-19	20-49	50 or more
	'000					
<b>Employees</b>						
For profit	9,704	7.3	11.9	14.6	20.0	46.2
Not for profit (NPI)	2,417	2.1	3.8	4.4	7.4	82.2
<b>Employers</b>						
For profit	667	43.2	26.7	16.0	9.6	4.5
Not for profit (NPI)	57	40.4	24.6	14.0	10.5	10.5

Source: Statistics Canada, Workplace and Employee Survey, 2003

of volunteers, and many were concerned about their over-dependence on a small core of volunteers (Hall 2003). And many of these volunteers work for more than one organization, helping to deliver programs, fundraising, campaigning or serving as board members.

**Chart A The non-profit sector relies heavily on frequent volunteers**



<sup>1</sup> Data for board members and volunteers in business and government are not available in the sources.

<sup>2</sup> Data for government contractors are not available in the source (Labour Force Survey). Sources: Statistics Canada, Labour Force Survey; National Survey of Non-profit and Voluntary Organizations; Workplace and Employee Survey, 2003



NPIs also seem to rely much more on part-time employees. Thus, among the three sectors, NPIs are least reliant on full-time employees. And, NPIs use contractors much less than business. The data source for government does not allow measurement of its reliance on contractors, but the percentage is also probably much less than 1%. The full-time equivalent (FTE) distribution of labour in NPIs is 36% volunteers and 64% employees and contractors (Table 2). In the business sector, volunteers are probably less than 1% of the workforce.

### Labour inputs to the non-profit sector

The use of different forms of labour input among NPIs is influenced by the type of organization (based on major field of activity and outputs), geographic location, and size and age of the organization, among other factors. Full-time employees are the most common labour input for the non-profit sector as a whole (46% of total FTEs), followed by frequent volunteers at 28% (Table 3). The FTE contribution from part-time employees amounts to 16%. The contributions of board members and infrequent volunteers are similar (around 5%), while contractors add just 1%.<sup>4</sup>

FTEs arising from frequent volunteers vastly outnumber those attributable to infrequent ones. Of the total volunteer FTEs, 77% are attributable to frequent volunteers. The shares for infrequent volunteers and board members are 15% and 8% respectively.

Of the total FTEs from employees and contractors, the contribution of full-time employees is of pre-eminent importance, as expected. Full-time employees contribute 72% of the FTEs arising from paid employees. Part-time employees make a much larger contribution than contractors.

### Labour input in quasi-governmental and core non-profit organizations

Within the non-profit sector, a major division exists between organizations that deliver health and educational services largely funded by taxes and borrowing, and organizations more heavily reliant on revenues from non-government sources. Sales are the largest revenue source for the latter group of NPIs (Nouroz and Stone 2007, Table 1). (The literature refers to these two classes as 'quasi-governmental' and 'core' NPI organizations.)

The labour profiles of core non-profit and quasi-governmental organizations are distinct (Chart B). Core non-profits rely much more on volunteers. Just less than half of their aggregate FTEs arise from volunteers. In contrast, quasi-governmental organizations derive around one-sixth of aggregate FTEs from volunteers and over 80% from employees. The greater reliance of core NPIs on volunteers also applies to FTEs contributed by board members—about 4% of total FTEs in core NPIs versus 1% in quasi-governmental NPIs.

Another aspect of the greater use of volunteers by core NPIs is their heavy reliance on frequent volunteers. Almost 40% of their total FTEs are attributable to frequent volunteers, more than twice that for quasi-governmental NPIs. In core NPIs, close to 10% of total FTEs arise from infrequent volunteers, compared with well below 5% among their quasi-governmental

**Table 2 Aggregate FTEs supplied to non-profit organizations**

	Organizations	Volunteers	Paid labour
		%	
<b>Total</b>	<b>12,682</b>	<b>36</b>	<b>64</b>
<b>Quasi-governmental</b>	<b>1,484</b>	<b>15</b>	<b>85</b>
Education and research	779	26	74
Health and hospitals	705	10	90
<b>Core NPI</b>	<b>11,198</b>	<b>48</b>	<b>52</b>
Arts and culture	1,369	38	62
Environment	471	70	30
Grant-making, fundraising and voluntarism promotion	1,427	77	23
Housing and development	658	8	92
International	150	65	35
Law and advocacy	411	58	42
Professional associations	963	32	68
Religion	1,527	53	47
Social services	1,783	40	60
Sports and recreation	2,439	73	27

Source: Statistics Canada, National Survey of Non-profit and Voluntary Organizations, 2003

**Table 3 FTEs by type of labour input for non-profit organizations**

	Volunteers		Board members	Employees		Contractors	
	Frequent	Infrequent		Full-time	Part-time	Full-time	Part-time
				%			
<b>Total</b>	<b>28</b>	<b>5</b>	<b>3</b>	<b>46</b>	<b>16</b>	<b>1</b>	<b>0</b>
<b>Quasi-governmental</b>	13	2	1	59	25	1	0
Education and research	22	2	1	49	24	2	0
Health and hospitals	8	2	1	64	25	1	0
<b>Core NPI</b>	36	8	4	39	11	2	0
Arts and culture	25	8	5	39	13	9	1
Environment	50	17	4	25	3	1	0
Grant-making, fundraising and voluntarism promotion	53	18	6	17	5	1	0
Housing and development	4	1	2	87	4	1	0
International	53	8	4	29	3	2	0
Law and advocacy	42	10	7	32	7	2	0
Professional associations	25	4	3	39	28	1	0
Religion	41	6	6	37	9	1	0
Social services	29	9	2	44	15	2	0
Sports and recreation	61	8	4	18	8	1	0

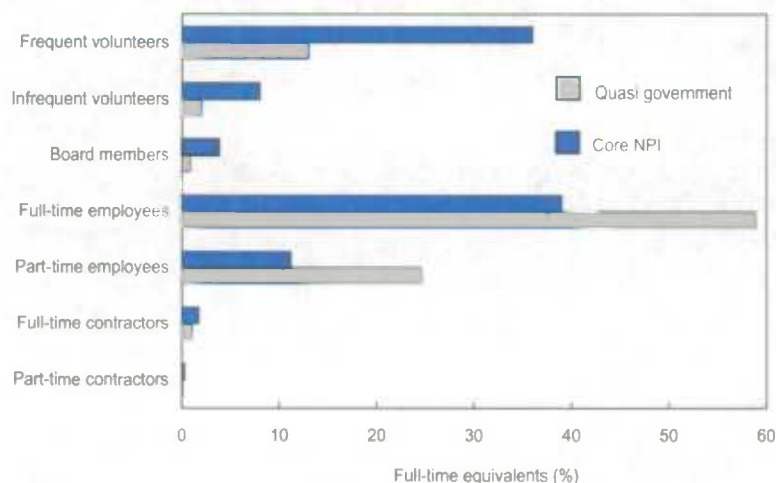
Source: Statistics Canada, National Survey of Non-profit and Voluntary Organizations, 2003; estimates developed by authors

counterparts. The ratio of infrequent to frequent volunteers is also greater for core NPIs.

The greater reliance of quasi-governmental NPIs on employees is true for both full-time and part-time employees—accounting for 59% and 25% of FTEs respectively. In contrast, among core NPIs, the corresponding shares are 39% and 11%. In both kinds of NPI organizations, full-time contractors contribute at most 2% of total FTEs.

### Variations within the two classes of NPIs

Among quasi-governmental health organizations and hospitals, the ratio of employees to volunteers is much higher than in education and

**Chart B Quasi-governmental non-profit organizations are much more reliant on paid employees**

Source: Statistics Canada, National Survey of Non-profit and Voluntary Organizations, 2003

research (Chart C). The ratio of full- to part-time employees is also higher. In consequence, education and research rely more on frequent volunteers.

The greatest reliance on frequent volunteers is found in the sports and recreation group. This is closely followed by international, fundraising and voluntarism promotion, environment, religion, and law and advocacy. Distinctly lower reliance is found in the remaining four groups of core NPIs.

The greatest reliance on infrequent volunteers is found in the fundraising and voluntarism promotion, and environment groups—over 15% of aggregate FTEs. The least reliance is found among housing, religion and professional associations.

Core NPIs can also be compared in terms of the degree of balance between the major sources of labour inputs. Social service has the closest to equal weight for infrequent volunteers, frequent volunteers, full-time employees, and part-time employees in its total FTEs. Next are professional associations, and arts and culture. Professional associations are also notable in having the greatest reliance on part-time employees.

The proportion of FTEs accounted for by board members varies widely among the NPIs. At the top of the ranking are religion; law and advocacy; arts and culture; and fundraising and voluntarism promotion. At the bottom are social services, housing and development, professional associations, environment, international, and sports and recreation.

## Summary

Non-profit organizations have a greater-than-average reliance on part-time employees, and especially on volunteers. They rely more on part-time employees than either government or business, and they use contractors much less than does business. However, full-time employees and frequent volunteers are the most common labour inputs for the non-profit sector as a whole—the heavy reliance on full-time employees arises largely from health and educational organizations (the quasi-governmental subsector).

The greatest reliance on frequent volunteers is in sports and recreation; international; fundraising and voluntarism promotion; and environment. At the other extreme, housing and development relies very little on volunteers of any kind.

Infrequent volunteers are much more likely to be found in core NPIs than in the quasi-governmental ones. The highest percentages for infrequent volunteers are in the fundraising and voluntarism promotion, and the environment groups.

The social services group had the closest approach to equal weight among infrequent volunteers, frequent volunteers, full-time employees and part-time employees. Professional associations and arts and culture followed, but were well behind.

Boards of directors can be expected to contribute very small shares of total FTEs to organizations, but the percentage varies widely among core NPIs. At the top are religion; law and advocacy; fundraising and voluntarism promotion; and arts and culture.

External changes, such as decreased funding for hiring paid staff, fewer volunteers in general, or shortages of certain kinds of volunteers are among the factors that have preoccupied NPI leaders (Hall et al. 2003; McMullen and Schellenberg 2003). An immediate concern in the presence of such changes is to monitor their consequences for the overall structure (or profile) of the labour supply to help pinpoint key vulnerabilities and review possible adjustments.

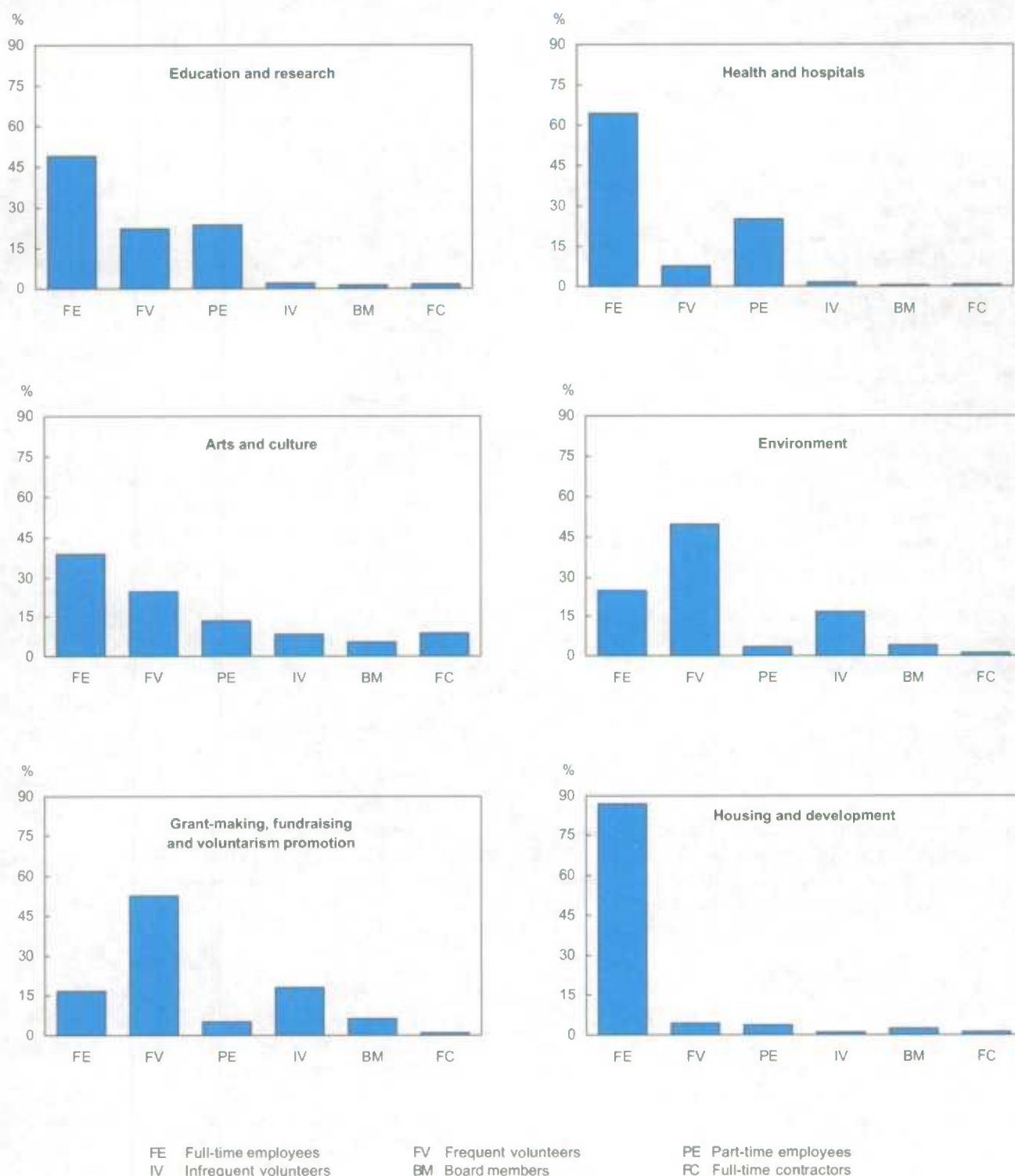
Its profile of labour inputs may be a key aspect of an organization's resilience and adaptability (McMullen and Brisbois 2003). While the size and stability of revenues are critical, the mix of human resources available to the organization (even after taking size and funding into account) is also important.

Despite the many advantages of largeness, size and adaptability may not be meaningfully correlated (very large size may inhibit adaptability). At more modest sizes, the exposure of paid staff or volunteers to a variety of other kinds of co-workers may be a powerful factor in promoting adaptability—thus the need to analyze the linkages between organizational adaptability and resilience and the composition of total human resources.

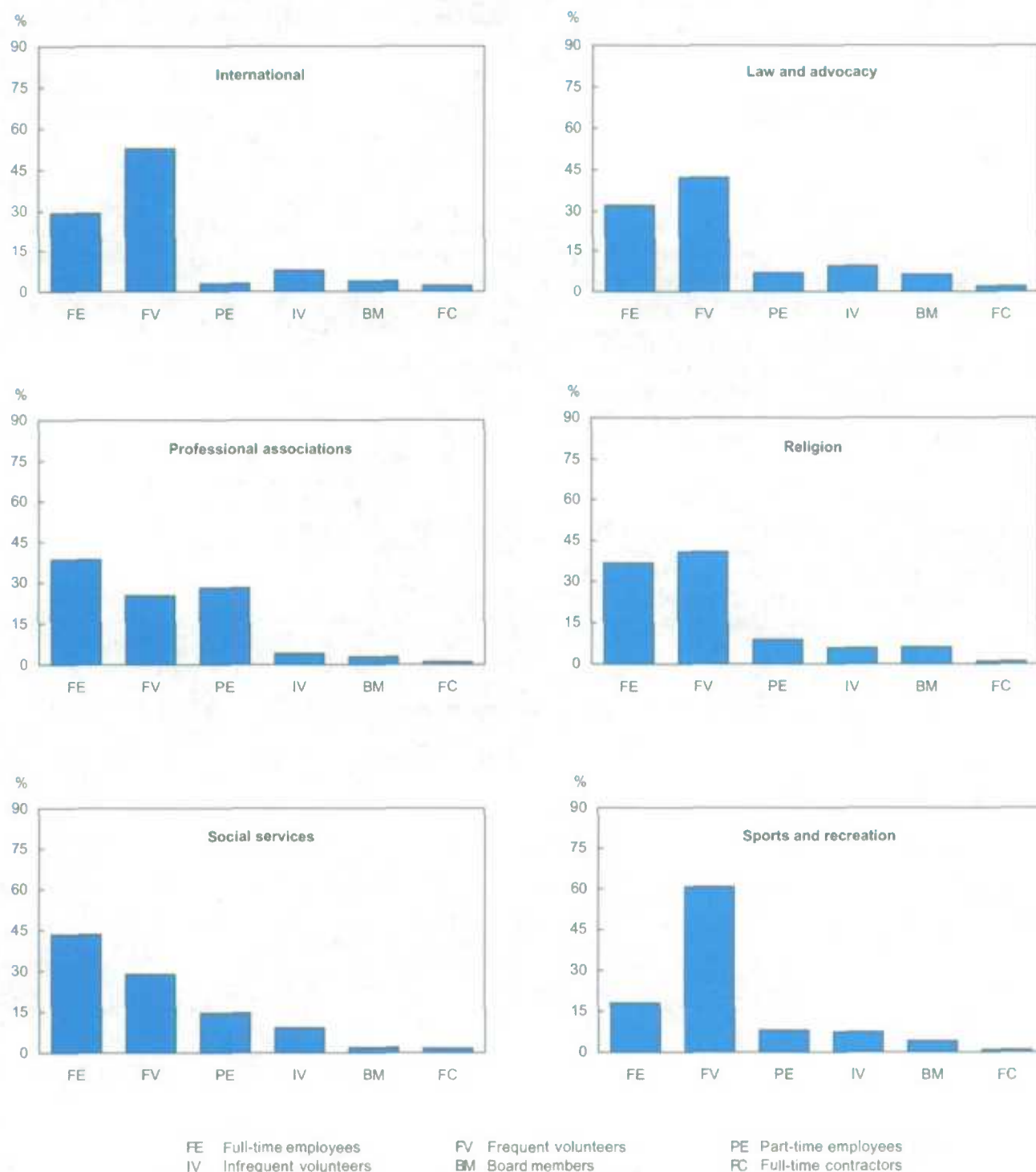
A large segment of the workforce wants part-time employment—and this may become more prevalent as baby boomers phasing into retirement seek to remain connected to the labour market to some degree. This development would provide an opportunity for NPIs to strengthen their performance through greater reliance on paid part-time employees



**Chart C The use of human resources (based on FTEs) varies considerably among non-profit organizations**



**Chart C The use of human resources (based on FTEs) varies considerably among non-profit organizations (concluded)**



Source: Statistics Canada, National Survey of Non-profit and Voluntary Organizations, 2003

with much labour-market experience, assuming the necessary financing is available. However, they will be competing with businesses that also seek to use part-timers more intensively. In getting ready to meet this competition, NPI leaders would do well to pay increased attention to analyzing the composition of their human-resource inputs.

### Perspectives

#### ■ Notes

- 1 This is based on the International Classification of Non-profit Organizations, as modified by Hall et al. 2004.
- 2 It is important to keep in mind that the reference here is to paid workers. A very different picture emerges when the volunteer workforce is taken into account.
- 3 The sources used for this paper provide no information about volunteers in businesses and government. The number of volunteers in these sectors may exceed 100,000 in one year; however the relative size of their labour input to government and to businesses would need to be measured in terms of a standard unit such as the FTE.
- 4 Frequent volunteers contribute their time more than twice a year; infrequent volunteers only once or twice a year. These volunteers have been termed 'systematic' and 'occasional' respectively by Brunnetti and Moreschi (2000). In the NSNVO, board members are separated from other kinds of volunteers, and this separation is maintained here.

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# Trends and seasonality in absenteeism

Ernest B. Akyeampong

Employee absences from work because of an illness or disability are of constant interest. These absences can be for either part or all of a week (see *Data sources and definitions*).<sup>1</sup> Past studies have examined in detail trends and differences among various work groups with respect to overall illness-related work absences—full- and part-week combined. (Akyeampong 1988, 1992, 1995, 1999).<sup>2</sup> Until now, no work has been done on the two separately, even though part-week absences are more likely to be unannounced and so may be relatively more disruptive to managers for planning and production purposes, and to co-workers. This note examines not only separate trends for the two types of absences, but also their seasonality over the decade 1997 to 2006—namely, since the latest Labour Force Survey redesign.

## Rising trend in part-week absences during past decade

The weekly number of employees failing to report for work because of an illness or disability has increased steadily over the past 10 years—from 431,000 in 1997 to 758,000 in 2006. Controlling for employment growth does not change the picture (Table and Chart A); the incidence rose consistently, climbing from 3.8% in 1997 to 5.4% in 2006. Contributing factors include the aging of the workforce and improvements in sick-leave entitlements.<sup>3</sup>

The trend for each type of illness-related absence has been generally upward, but much more pronounced for part-week absences. For example, while the number of employees reporting a full-week absence rose by almost one-third (from 199,000 in 1997 to 262,000 in 2006), part-week absences more than doubled (from 232,000 to 496,000). Similarly, the incidence

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## Data source and definitions

The **Labour Force Survey** collects information each month on labour market activity during the survey reference week from the civilian, non-institutionalized population 15 years of age and over. The territories are excluded from the national total, as are persons living on Indian reserves. The survey samples approximately 53,000 households, with each remaining in the sample for six consecutive months.

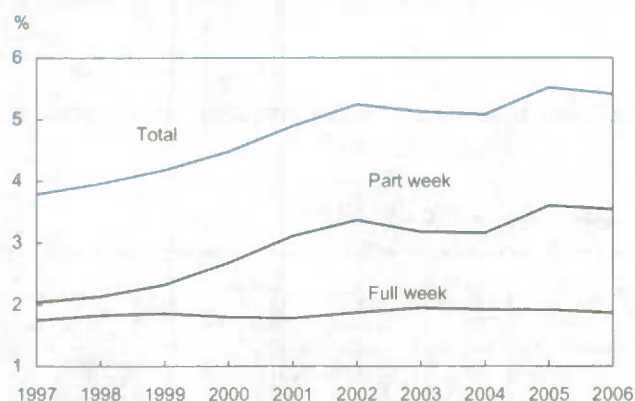
Among other things, the Labour Force Survey asks respondents if they were absent from work during the reference week, and if so the reason for the absence. If they reported an absence because of their own illness or disability, they are further asked the hours they missed as a result. The full-week and part-week absence designations are assigned by comparing usual weekly hours with hours lost as a result of the illness or disability.

To simplify the analysis, seasonality in this note is based on the four seasons, rather than each month—Winter (December to February), Spring (March to May), Summer (June to August), and Fall (September to November). The seasonal index was constructed with the annual average data being 1.00.

**Table Employees absent from work each week due to own illness or disability**

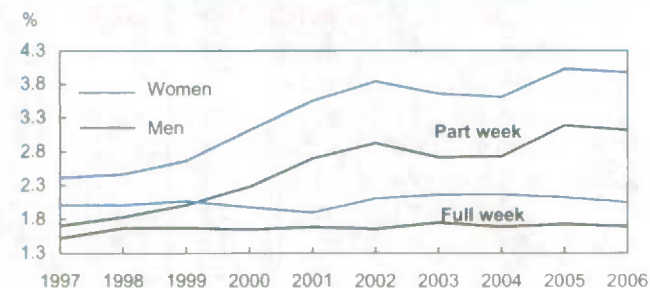
	Total		Full week		Part week	
	'000	%	'000	%	'000	%
1997	430.7	3.8	199.0	1.8	231.8	2.0
1998	461.4	4.0	212.9	1.8	248.5	2.1
1999	501.0	4.2	222.7	1.9	278.3	2.3
2000	555.9	4.5	223.5	1.8	332.4	2.7
2001	620.9	4.9	226.4	1.8	394.5	3.1
2002	681.9	5.2	243.6	1.9	438.3	3.4
2003	680.9	5.1	258.9	2.0	422.1	3.2
2004	686.5	5.1	259.5	1.9	427.0	3.2
2005	754.8	5.5	262.5	1.9	492.3	3.6
2006	757.9	5.4	261.8	1.9	496.1	3.5

Source: Statistics Canada, Labour Force Survey

**Chart A Part-week absences increased by about half; full-week, virtually flat**

Source: Statistics Canada, Labour Force Survey

of full-week absences rose marginally from 1.8% to 1.9% between 1997 and 2006, while that of part-week absences jumped from 2.0% to 3.5%. Simply stated, part-week absences have been the major driving force for the increase in overall work absences due to illness or disability during the past decade. Throughout the period, women showed a higher incidence of both full- and part-week illness-related absences than men (Chart B). For both women and men, though, the incidence of full-week absences remained little changed over the period, while that of part-week absences rose rapidly.

**Chart B Whether full- or part-week, women's absence rates are higher**

Source: Statistics Canada, Labour Force Survey

### Seasonality a factor in part-week absences

Perhaps not unexpectedly, illness-related absences are highly seasonal, reaching a peak during the winter months (December to February) and a trough during the summer (June to August) (Chart C). The high incidence in winter is likely related to the prevalence of communicable diseases at that time, especially colds and influenza. The low incidence during the summer may be partly because many employees take their vacation during these months. Because of survey design, those who fall ill during vacation will likely report 'vacation' rather than 'sickness or disability' as the main reason for being away from work.

Compared with the annual average, part-week absences are roughly 30% more prevalent in the winter months and almost 20% less so during the summer months. Seasonality is much less evident in full-week absences.

### Hours lost per absence remains steady

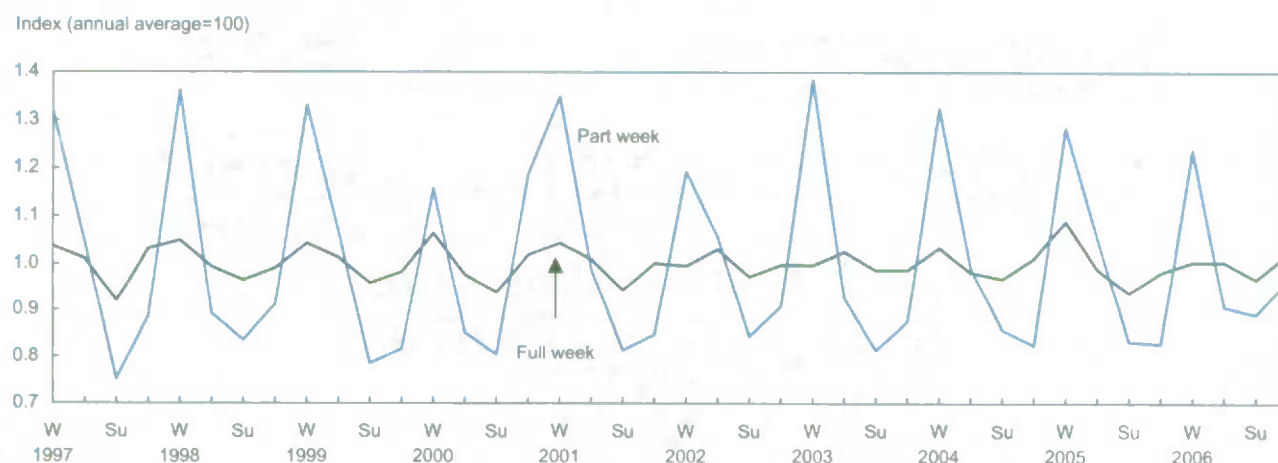
Hours lost for full-week illness absences by definition reflect average usual hours worked—about 37 between 1997 and 2006. Similarly, time lost for part-week absences has been concentrated around 11 hours (roughly a day and a half).

### Summary

The number and proportion of employees absent from work for all or part of a week due to own illness or disability have risen over the past 10 years. The growth has been much greater for part-week absences. The number of employees absent for a full week rose from 199,000 in 1997 to 262,000 in 2006, and the incidence grew slightly from 1.8% to 1.9%. The corresponding increases for part-week absences were from 232,000 to 496,000, and from 2.0% to 3.5%.

Both men and women shared in the rising incidence, with rates for both full-week and part-week absences being higher for women. Reasons for the growing trends in both number and incidence include the aging of the workforce and improvements in sick-leave entitlements for employees. While full-week absences have shown minimal seasonal patterns, the same cannot be said for part-week absences. Compared with the annual average, part-week illness absences are roughly 30% more common in the winter months and 20% less so in the summer months.

**Chart C** Illness-related absences tend to be at their peak during winter (W) months and at their trough in summer (Su) months



Source: Statistics Canada, Labour Force Survey

## ■ Notes

1 Whether an illness-related absence is designated as full- or part-week is dictated by the Labour Force Survey design. The survey results are based on labour market activity during a reference week, usually the week containing the 15th day of the month. As well, absences are snapshots within the reference week and do not necessarily mean completed spells of absence. Such information can only be obtained from a longitudinal survey such as the Survey of Labour and Income Dynamics.

2 In these previous studies, the focus of interest was absenteeism, and hence, in accordance with international practices, part-time employees, who normally have low absence rates, were excluded from the analyses. In this note however, the universe includes both full-time and part-time workers.

3 Studies have found that illness-related work absences increase with age (Statistics Canada 2007).

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# Working at home: An update

Ernest B. Akyeampong

Various Statistics Canada surveys have suggested strong growth in the number and proportion of employees doing some or all of their regularly scheduled work at home during the 1990s.<sup>1</sup> The estimated number (and incidence) of teleworkers rose from just a little over 600,000 (6%) in 1991 to 1 million (9%) in 1995, and to 1.4 million (10%) in 2000. With continuing growth in employment, growing computer use both at home and at work, advancements in information and telecommunications technology, and lobbying by telework advocacy groups, one would have expected the trend to continue into the 2000s.<sup>2</sup> Instead, virtually no increase has been seen. This note uses the 2000 and 2005 General Social Survey (see *Data source*) to examine changes in telework by sex, age, education, occupation, industry, and marital status. The focus is on employees because the self-employed have relatively more freedom with respect to workplace location. However, the decision to allow a telework arrangement rests on negotiations between employee and employer (see *Main reason for working at home*).

## Stall in telework numbers and incidence

The number and incidence of teleworkers appear to have levelled off in recent years—actually dipping from 1,426,000 (10.2%) in 2000 to 1,322,000 (9.8%) in 2005 (Table). The stall is surprising in light of past trends (see *Possible impediments to telework growth*).

With few exceptions, the fall-off in telework popularity between 2000 and 2005 was pervasive. It occurred for male and female employees alike, irrespective of marital status. However, employees aged 55 and over recorded a rise in incidence over the period, as did those without a high school diploma, and those with some college or university education but no diploma or degree.

## Data source

The information in this update is from the 2000 and 2005 **General Social Survey**. In 2000, a representative sample of 25,000 non-institutional respondents aged 15 and over in all provinces were surveyed about their use of computers and the Internet. Data were collected over 12 months from January to December 2000. In 2005, 20,000 respondents used a 24-hour diary to record the time they spent on various activities.

In most major industries, the incidence remained little changed or declined slightly. Notable declines occurred in business, building and other support, and in public administration.<sup>3</sup> In both 2000 and 2005, employees in professional, scientific and technical services, and in educational services recorded the highest incidence of telework—roughly one-quarter. Manufacturing had one of the lowest rates (about 6% in 2005).

The incidence in most of the major occupational groups also remained about the same or declined slightly. Just as in 2000, employees in social sciences and education had the highest incidence in 2005 (29%). Sales and service occupations registered a low incidence (6%).

## Main reason for working at home

When employees in 2005 were asked the main reason for working at home, approximately a quarter said it was a requirement of the job, one-fifth said conditions were better at home, one-sixth said the arrangement helped save money, and one-twelfth said it helped them in caring for children and other family members and in meeting personal obligations.

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**Table People working from home, by selected characteristics**

	Employees				Self-employed			
	2000		2005		2000		2005	
	'000	%	'000	%	'000	%	'000	%
<b>Both sexes</b>	<b>1,426</b>	<b>10.2</b>	<b>1,322</b>	<b>9.8</b>	<b>1,369</b>	<b>49.5</b>	<b>1,554</b>	<b>54.6</b>
Men	782	10.5	744	10.5	826	45.9	949	51.1
Women	644	9.8	578	9.1	544	56.2	605	61.3
<b>Age</b>								
15 to 24	137	4.6	120	4.9	60	42.3	44 <sup>E</sup>	30.3 <sup>E</sup>
25 to 54	1,174	11.9	1,025	10.8	1,046	50.0	1,141	56.5
55 and over	114	9.8	177	11.7	263	49.3	368	54.2
<b>Education</b>								
Some high school or less	86	3.9	78	4.8	166	37.9	125	37.2
High school diploma	147	5.5	121	5.2	202	42.1	174	43.8
Some postsecondary	189	7.9	191	8.7	204	52.6	232	56.3
Diploma or certificate	347	9.3	254	6.8	368	53.3	478	59.2
Bachelor's degree or more	655	22.6	674	18.9	426	56.3	540	61.9
<b>Marital status</b>								
Married, common-law	1,009	12.1	968	11.7	1,065	50.7	1,212	55.3
Separated, divorced, widowed	99	9.8	108	9.9	119	56.1	130	56.3
Single (never married)	304	7.0	247	6.1	159	39.8	212	50.1
<b>Industry</b>								
Agriculture	F	F	26 <sup>E</sup>	24.1 <sup>E</sup>	166	65.0	151	66.5
Forestry, fishing, mining, oil and gas	28	9.6	34 <sup>E</sup>	12.3 <sup>E</sup>	27	35.5	19 <sup>E</sup>	45.2 <sup>E</sup>
Utilities	F	F	16 <sup>E</sup>	12.7 <sup>E</sup>	F	F	F	F
Construction	44	7.0	39 <sup>E</sup>	5.8 <sup>E</sup>	114	41.6	136	42.8
Manufacturing	164	7.4	99	5.8	70	47.2	61	44.9
Trade	149	7.1	162	7.8	141	43.1	156	49.7
Transportation and warehousing	50	8.2	41 <sup>E</sup>	6.5 <sup>E</sup>	36	22.8	32 <sup>E</sup>	26.7 <sup>E</sup>
Finance, insurance, real estate and leasing	107	14.0	90	11.3	105	61.9	164	67.8
Professional, scientific and technical	155	22.9	174	21.9	244	68.7	285	66.4
Business, building and other support	44	11.0	19 <sup>E</sup>	4.5 <sup>E</sup>	68	37.4	70	40.5
Educational services	242	23.4	239	23.2	33	53.7	44	63.8
Health care and social assistance	107	8.6	125	8.7	127	63.2	137	57.3
Information, culture and recreation	90	12.9	92	13.7	87	64.2	120	69.4
Accommodation and food services	36	3.6	22 <sup>E</sup>	2.4 <sup>E</sup>	35	36.1	36 <sup>E</sup>	41.4 <sup>E</sup>
Other services	62	12.9	69	13.4	77	35.1	94	46.5
Public administration	95	10.5	66 <sup>E</sup>	7.5 <sup>E</sup>	F	F	F	F
<b>Occupation</b>								
Management	229	25.4	196	19.8	222	43.6	155	40.7
Business, finance and administrative	301	11.7	234	9.2	191	64.7	272	72.3
Natural and applied sciences	175	18.4	150	14.6	99	64.5	101	57.1
Health	28	4.5	35 <sup>E</sup>	4.5 <sup>E</sup>	40	39.2	55	42.3
Social science, education	271	26.4	305	28.5	76	70.0	83	58.9
Art, culture, recreation and sport	52	16.5	60 <sup>E</sup>	16.1 <sup>E</sup>	134	65.4	184	70.2
Sales and service	220	6.1	211	6.2	246	48.7	337	55.4
Trades, transport and equipment operators	74	4.0	64 <sup>E</sup>	3.7 <sup>E</sup>	110	29.7	127	34.3
Unique to primary industry	20	5.4	35 <sup>E</sup>	13.2 <sup>E</sup>	182	54.4	169	61.9
Unique to processing, manufacturing and utilities	35	2.9	23 <sup>E</sup>	2.6 <sup>E</sup>	32	38.8	36 <sup>E</sup>	54.5 <sup>E</sup>

Source: Statistics Canada, General Social Survey



### Possible impediments to telework growth

Several things could account for the stall in telework growth. An obvious possibility is that continuing re-evaluation of the advantages and disadvantages of telework may have lowered its attractiveness for both employees and employers (see *The pros and cons of working at home*). For example, growth in employer-assisted day-care programs (including on-site day-care centres) and improved transportation networks may have helped reduce the need to work at home. Also, the growing need for greater information security, especially after 9/11, as well as for closer communication among workers may make telework less desirable for employers. Another possibility is continuing advancements in information technology. The use of laptops, BlackBerries and mobile phones, and the growing proliferation of communication centres may facilitate work from many other places, such as cars, airports, railway and bus terminals, and satellite offices.

### Teleworkers put in relatively few hours at home

The majority of teleworkers put in just a few hours of work (10 or less) at home each week, but the proportion doing so in 2005 was higher than in 2000 (71% versus 65%). In both years, only 3% of teleworkers put in over 40 hours. The average in 2005 was 17 hours.

### Summary

Contrary to expectation, the strong growth in telework during the 1990s was not sustained in the 2000s. Indeed, the number of employees doing some or all of their regularly scheduled work at home stalled at 1.3 to 1.4 million. The overall incidence remained unchanged at about 10%. The reasons for the stall, which was widespread, are unclear. It could have been partly caused by employees and employers re-evaluating the advantages, disadvantages and effectiveness of this type of work arrangement. In addition, continuing developments in information and telecommunications technology now permit many employees to work effectively from many places other than home.

### Perspectives

### Pros and cons of working at home

Working at home has both advantages and disadvantages. For the employee, this arrangement allows more flexibility to schedule activities; makes it easier to balance work and personal or family demands; reduces expenses for transportation, clothing and food; and cuts commuting time. On the negative side, working at home may reduce one's social circle, stifle career advancement, or even increase workload.

For the employer, a work-from-home arrangement may increase employee productivity, reduce expenses for work space, improve recruitment and retention of employees, and reduce absenteeism. Among the most commonly cited disadvantages are problems related to co-ordination and communication, lack of control over quality of work, and problems associated with information security.

### Notes

1 Estimates of the number of people working at home date back to the 1971 Census. Since then, the Survey of Work Arrangements (SWA), the Survey of Labour and Income Dynamics, the General Social Survey (GSS), and the Workplace and Employee Survey have all collected data on the subject. However, these surveys differ in question wording, reference period, and sample design. Indeed, for some surveys, such as the census, the questions were not identical in all years. As a result, no consistent time series exist, making it impossible to be precise on trends over the past three decades. Nevertheless, the SWA 1991 and 1995, and the GSS 2000 and 2005 are fairly comparable (see Akyeampong and Nadwodny 2001 for questions and estimates from the various surveys).

2 Among the better-known telework advocacy groups are the Canadian Telework Association, a non-profit, telework-promoting organization, and Innovations Canada, a telework and flexible-work consulting organization.

3 The decline of telework in public administration is particularly puzzling, since the federal Treasury Board actively supported this type of work arrangement in a policy statement dated December 6, 1999.

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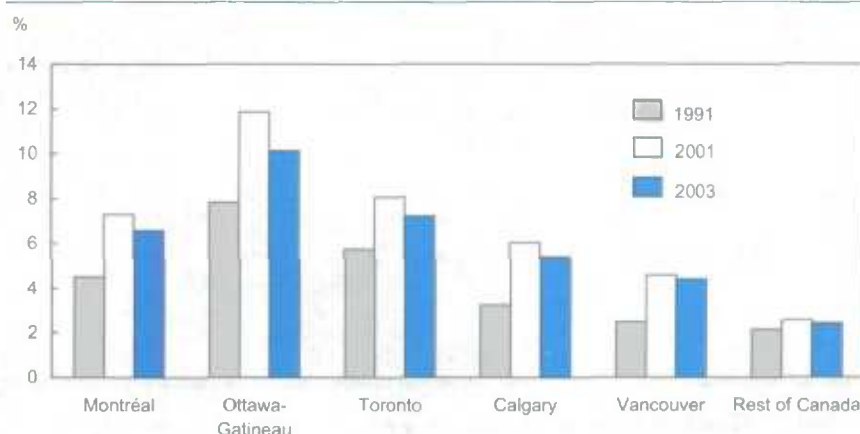
The leading role of the high-tech sector<sup>1</sup> in the economic recovery of the second half of the 1990s has been well documented. In 1991, this sector accounted for 3.2% of employees. During the 1990s, it expanded at a greater rate than the rest of the economy, eventually representing 4.5% of the workforce in 2000. Much of the increase was fuelled by explosive growth in the high-tech sector in Ottawa-Gatineau. Prior to the boom, this area led the country with 7.8% of its workforce employed in the high-tech sector, but this jumped to 11.8% by 2000 (Chart A).

As demand for workers increased, so too did real earnings. Between 1991 and 2000, average earnings in the industry rose from \$48,000 to \$58,900 (2003 dollars) while those in the rest of the economy grew at a much slower pace. Ottawa-Gatineau showed dramatic increases—from \$54,500 to \$77,000 (Chart B).

Then came the meltdown in 2001 with its headlines of large-scale layoffs. But what was the statistical evidence of the downturn and how it affected employment numbers and average earnings in the sector?<sup>2</sup> In 2001, high-tech employment

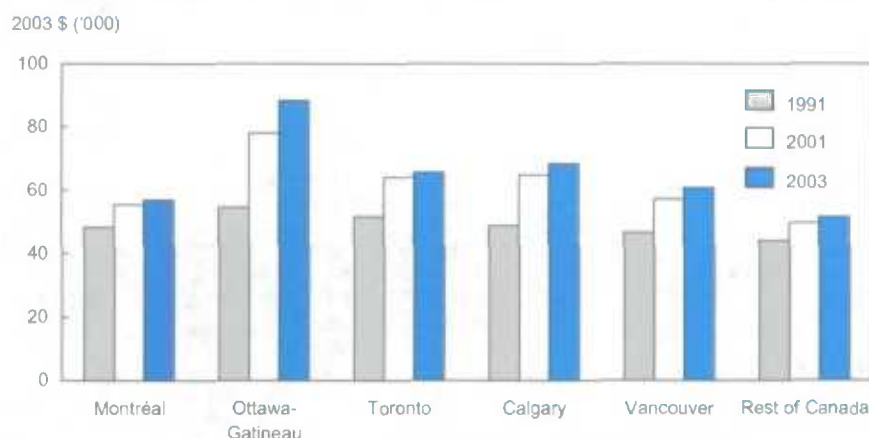
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**Chart A** Ottawa-Gatineau has consistently had the highest ratio of CT workers



Source: Statistics Canada, Longitudinal Worker File

**Chart B** Mean earnings of CT workers increased most dramatically in Ottawa-Gatineau



Source: Statistics Canada, Longitudinal Worker File



began to stabilize and shortly thereafter showed signs of contracting, accounting for 4.2% of the overall workforce in 2003 compared with 4.6% in 2001. Once again, Ottawa-Gatineau led the way, its share of high-tech employment declining sharply from 11.9% in 2001 to 10.1% in 2003. But earnings showed no decline at the national level—not surprising given the downward rigidity of nominal wages and the modest inflation at the time. High-tech workers in Ottawa-Gatineau, however, did see a substantial decline in earnings between 2001 and 2002 (\$78,000 to \$73,600). Nevertheless, they rebounded quickly, reaching \$88,300 in 2003. Given the large declines in employment at the time, the sudden increase in earnings may have been due to a change in the composition of the workforce in the high-tech sector as manufacturing jobs, which are typically lower-paying than service jobs, disappeared (Bowlby and Langlois 2002).

Although employment numbers suggest an important reversal, they may leave the impression that the sector ceased to grow. While this may be true in the aggregate, little can be said about how many workers were

actually affected by the meltdown. Overall employment can decline as a result of reduced hiring and natural attrition. And average earnings among high-tech workers say nothing about the fortunes of those laid-off workers who had to find a new job, possibly in a different sector. The well-being of laid-off workers is of particular concern given the rapid growth of 'technology clusters' (Jackson and Khan 2003). In such a cluster, employment opportunities may be limited for workers not considered part of the elite, which includes engineers, computer scientists and consultants. In a downturn, however, technology clusters may not have the infrastructure in place to accommodate a sudden influx of elite job seekers.

Using longitudinal administrative data, this study seeks to answer two questions (see *Data sources and definitions*). First, how likely were high-tech workers to face permanent layoffs during the downturn relative to other industries and time periods? Second, how substantial were the earnings losses of those who were laid off?

**Table 1 Means of the explanatory variables used in model**

	CT			Non-CT manufacturing			All other industries		
	At risk	No change	Laid off	At risk	No change	Laid off	At risk	No change	Laid off
	%								
<b>Firm size (employees)</b>									
Less than 20	12.1	7.5	21.4	11.0	6.9	20.7	23.5	15.1	42.7
20 to 99	15.6	12.0	23.1	20.2	17.0	28.1	16.5	13.2	22.3
100 to 499	15.9	13.6	18.1	21.0	21.0	21.1	13.0	12.4	12.3
500 and over	56.5	67.0	37.5	47.9	55.1	30.1	47.0	59.3	22.7
<b>Earnings</b>									
Less than \$50,000	55.5	47.8	69.8	71.1	62.9	87.9	78.8	70.5	90.9
\$50,000 to \$99,999	37.1	44.4	24.2	26.6	34.4	11.4	19.5	27.4	8.6
\$100,000 and over	7.4	7.8	6.1	2.3	2.7	0.7	1.7	2.1	0.6
<b>Men</b>	61.7	61.0	60.4	71.0	73.7	67.7	48.2	47.2	59.7
<b>Women</b>	38.3	39.0	39.6	29.1	26.3	32.4	51.8	52.8	40.3
<b>Montréal</b>	17.4	17.6	14.8	12.9	12.0	14.3	11.2	11.4	11.1
<b>Ottawa-Gatineau</b>	9.9	10.2	15.5	1.2	0.9	2.6	4.1	4.7	2.9
<b>Toronto</b>	28.0	27.2	25.1	17.8	16.9	17.1	14.6	14.4	10.8
<b>Calgary</b>	4.2	3.3	5.5	2.2	1.8	2.1	3.6	3.2	2.8
<b>Vancouver</b>	5.6	4.4	8.8	4.7	4.1	6.0	6.7	6.5	6.2
<b>Rest of Canada</b>	35.0	37.3	30.3	61.3	64.3	58.0	59.9	59.9	66.2
<b>Age</b>	35.8	36.5	35.0	36.7	37.4	35.9	36.6	37.7	35.7

Note: The explanatory variables correspond to the year prior to the potential permanent layoff, for the years 1991, 1996, and 2000.  
Source: Statistics Canada, Longitudinal Worker File

## High-tech workers profiled

Most of the analysis focuses on 1992 (end of the general recession and beginning of the 'jobless recovery'), 1997 (the beginning of a rapid growth period), and 2001 (beginning of the meltdown in high tech, despite continued growth in the rest of the economy).

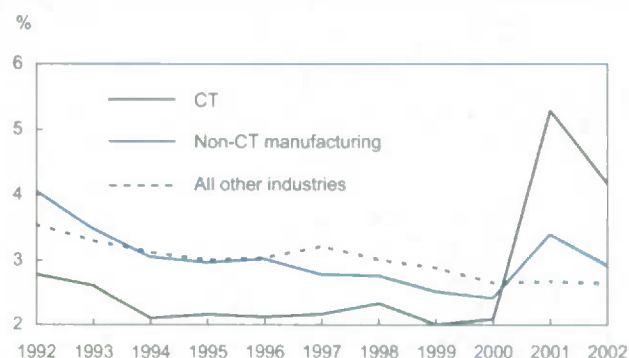
High-tech workers were more likely than other workers to be employed in large firms (500 employees or more) (Table 1). Not surprisingly, they had higher earnings than other workers; 7% earned \$100,000 or more, compared with only 2% in other industries. High tech is also male-dominated (62%), although not as much as manufacturing outside the computer and telecommunications (CT) sector (71%). On average, high-tech workers were about one year younger than other workers (35.8 compared with 36.7 in non-CT manufacturing and 36.6 in other industries). They were also far more likely to reside in major centres (especially Ottawa-Gatineau).

As in other industries, laid-off high-tech workers were more likely than those not laid off to be employed in small firms. However, this was less the case in CT and in non-CT manufacturing than in other industries. Also as in other industries, laid-off high-tech workers earned less than those not laid off. Laid-off workers in CT industries were as likely as those not laid off to be women. Laid-off workers in all industries were on average somewhat younger than those not laid off. Finally, laid-off high-tech workers were far more likely than those who kept their jobs to reside in Ottawa-Gatineau.

Focusing on a much less restrictive sample, an earlier study found that the permanent layoff rate rose from about 6% during the peak of the economic cycle in the late 1980s to about 7% during the recession of the early 1990s (Morissette 2004). The present study with its more stringent definition found a permanent layoff rate of only about 4% in the entire economy in 1992 (Chart C). Workers in the CT sector had a lower probability of experiencing a permanent layoff than workers in other industries. Over the remainder of the 1990s, permanent layoff rates declined slowly in CT industries and non-CT manufacturing, while remaining steady in other industries.

The relative stability of permanent layoff rates came to an abrupt end in 2001. First, non-CT manufacturing saw a sudden jump from 2.4% in 2000 to 3.4% in 2001. However, its magnitude was dwarfed by the

**Chart C The permanent layoff rate in CT spiked in 2001**

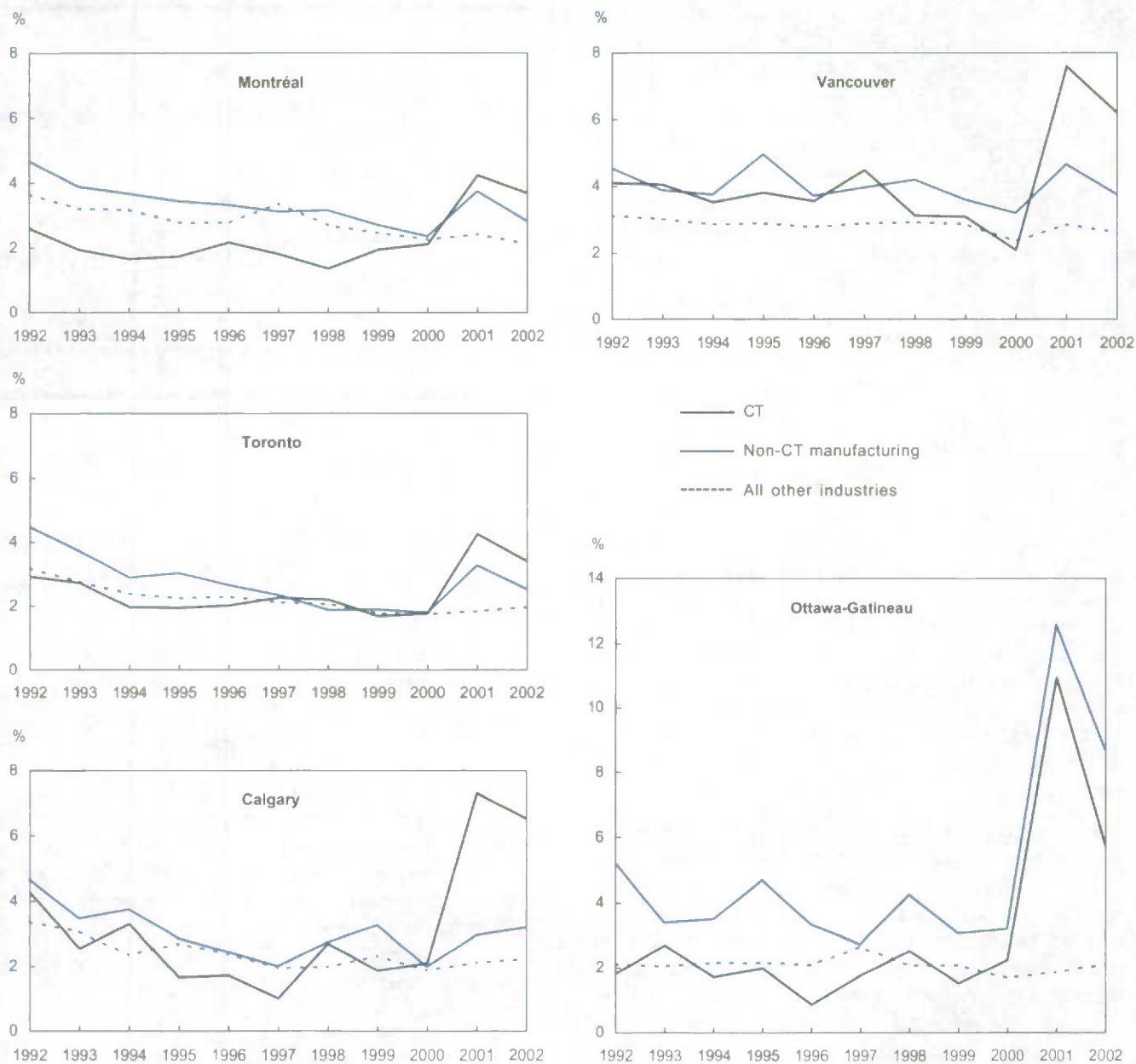


Source: Statistics Canada, Longitudinal Worker File

increase in layoffs in the CT sector. Here the rate more than doubled, from 2.1% in 2000 to 5.3% in 2001. In 2002, the probability of layoff was still relatively high (4.2%). Historically, the permanent layoff rates associated with the high-tech meltdown were unprecedented.

High-tech workers in all the major technology clusters appeared to face a greater risk of being laid off at the onset of the meltdown (Chart D). In no city was this more evident than in Ottawa-Gatineau, where the permanent layoff rate in high-tech jumped fivefold, from 2.2% in 2000 to 10.9% in 2001. Interestingly, a similar increase was registered in the non-CT manufacturing sector, all of which can be attributed to one particular industry: NAICS 3359, which includes communication and energy wire and cable manufacturing. This is part of the broader high-tech sector (information and communication technology, or ICT), and it cannot be separately identified with the Longitudinal Worker File used for this study. Ottawa-Gatineau was the only city that saw a substantial increase in the permanent layoff rate among non-CT manufacturing workers. High-tech workers in Calgary and Vancouver were also hard hit, each registering more than a threefold increase. In Toronto and Montréal, the rate doubled.

Based on a probit model, the probability of experiencing a permanent layoff was more or less equal across all three industry groups prior to the high-tech

**Chart D Ottawa-Gatineau CT workers were hardest hit by permanent layoffs**

Source: Statistics Canada, Longitudinal Worker File

meltdown (Chart E). Moreover, these probabilities were relatively stable prior to the downturn. In 2001, however, the high-tech sector saw a dramatic increase

in permanent layoff rates, even after accounting for pre-layoff differences in firm size, earnings, sex, and city of residence (see *Sample design*).



## Data sources and definitions

The term **high tech** is generally associated with the information and communication technology (ICT) sector, which requires the 5-digit North American Industry Classification System (NAICS) code, whereas the 4-digit code allows identification of the computer and telecommunications (CT) sector. CT is an important sub-sector of ICT, accounting for approximately 88% of its workforce. 'High tech' in this paper refers to the CT sector, which includes the following NAICS industries:

**Manufacturing:** commercial and service industry machinery (3333), computer and peripheral equipment (3341), communications equipment (3342), audio and video equipment (3343), semiconductor and other electronic components (3344)

**Services:** navigational, measuring, medical and control instruments (3345), computer and communications equipment and supplies wholesaler-distributors (4173), software publishers (5112), telecommunications (517), Internet service providers, web search portals, and data processing (518), computer systems design and related services (5415), and electronic and precision equipment repair and maintenance (8112). See Bowlby and Langlois (2002) for more details on the CT sector.

The requirements for the study are substantial: identifying high-tech workers and those who have been permanently laid off, a sample large enough for analysis, longitudinal data, and information on earnings as well as worker and firm characteristics.

Given that the high-tech sector accounts for less than 10% of the Canadian economy, and that reasons for separation are rarely available in large data sources, it should come as no surprise that virtually all Canadian sources are much too small for the required detail. The one exception is the **Longitudinal Worker File**, which is constructed from four administrative sources:

- The **Record of Employment (ROE)** file. The Employment Insurance Act requires employers to submit a form when an employee in insurable employment has an interruption in earnings. For this study, ROEs showing a layoff due to shortage of work were selected.
- The **T4** file. Virtually all workers receive a T4 slip from their employer to file with their income tax return. The T4 file contains earnings information from each firm in which the worker was employed during a given year. The worker's postal code is used to determine the city of residence.

- The **T1** tax file provides the worker's age and sex.
- The **Longitudinal Employment Analysis Program (LEAP)** file contains company-level industry and employment information. Industry is coded to the 4-digit NAICS for 2002 and is available back to 1991. Since not all workers spend the entire year with the same firm, employment is estimated by dividing the firm's total annual payroll by the average T4 earnings of all workers in the same industry and province.

The ROE, T4, and T1 were linked by social insurance number (SIN) for each year from 1983 to 2003. These 21 files were then linked to LEAP by a company identifier. The Longitudinal Worker File is a 10% random sample of all employees in this linked file. In any given year, those selected will appear more than once if they worked for more than one employer. Selected individuals remain in the sample as long as they are in the paid workforce and the last digit of their SIN does not change.<sup>3</sup> If workers become self-employed and have no paid job in a given year, they leave the sample.

This study looks at the probability of experiencing a permanent layoff in a given year  $t$ . The sample consists of workers who are 25 to 49 years old in the year prior to the reference year. Since older workers may opt to retire following a permanent layoff, they are excluded. Only the main job (the one with the highest T4 earnings in the year before the layoff) is considered. In the event of more than one job with the same earnings, one is chosen at random. A permanent layoff occurs when a worker is laid off from their main job and does not return to the same employer in the same or following year. As a result of these criteria, this study focuses more on significant jobs than other studies of permanent layoff rates. The result is lower permanent layoff rates than those usually reported. For example, Morissette (2004) reports that the overall permanent layoff rate among all jobs generally varies between 6% and 7%. In the current study, the permanent layoff rate is usually around 3%.

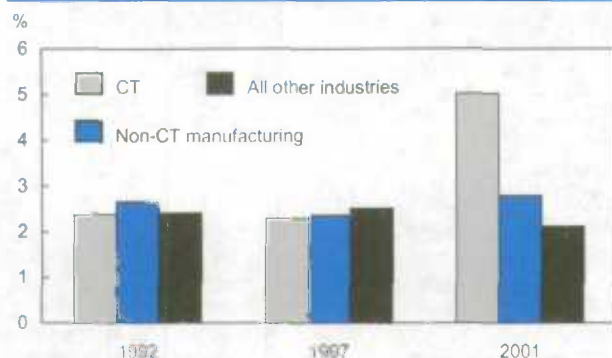
The study also looks at the change in earnings between year  $t-1$  and year  $t+2$ . Only workers with positive earnings in year  $t+2$  were included. For workers who were not permanently laid off in year  $t$ , only those who had the same main job in years  $t-1$  through  $t+2$  were selected.

The same model was estimated for each city in 2001 (Chart F).<sup>4</sup> Again, the results confirm that among the major cities, high-tech workers in Ottawa-Gatineau faced the highest probability of permanent layoff during the meltdown. Calgary and Vancouver ranked second and third, followed by Montréal and Toronto.

## Earnings losses of high-tech workers

In the business cycle, the early to mid-1990s was known as the jobless recovery. This was reflected in substantial earnings losses among workers laid off in 1992 from all industries excluding non-CT manufacturing, and computer and telecommunications (Chart G).

**Chart E The predicted probability of experiencing a permanent layoff jumped significantly for CT in 2001**



Source: Statistics Canada, Longitudinal Worker File

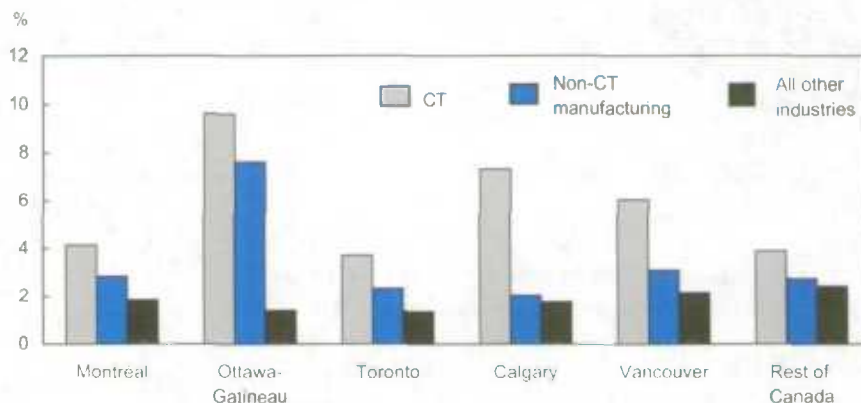
Among this group, average earnings declined from \$25,500 in the year prior to the layoff to \$21,200 in the year following the layoff. However, in the second year after the layoff they bounced back to \$25,600 so that over the three-year period, average earnings increased by \$100. By comparison, workers not laid off saw their earnings increase by \$2,800 over the same period. In contrast, workers laid off in the midst of the economic recovery (1997) saw their average earnings increase by \$4,800 between 1996 and 1999. This bettered the gains registered among workers not laid off at this time (\$4,100). Since 2000, the economy has been operating at a 'sustained peak.' Among workers laid off in 2001, average earnings increased by \$1,700, compared with \$3,400 for those not laid off. In general, it appears that laid-off workers outside the non-CT manufacturing and computer and telecommunications sectors did not incur large earnings losses. The one exception was during the jobless recovery of the first half of the 1990s, when earnings of permanently laid-off workers dipped suddenly but then recovered quickly.

In the non-CT manufacturing sector, earnings losses appear to be more substantial (Chart G). Here,

workers laid off in 1992 saw a decline of \$1,100 between 1991 and 1994, while those not laid off experienced an increase of \$5,400. During the economic recovery of the late 1990s, laid-off workers saw average gains of about \$3,400 over the three-year period surrounding the layoff, compared with \$5,200 among their counterparts who were not laid off. For those laid off in 2001, the loss was about \$2,600, compared with a gain of about \$1,500 for those not laid off. Clearly, non-CT manufacturing workers experienced larger earnings losses if they were laid off than those in the other industries category. This is true in absolute terms and also relative to the gains experienced by workers who were not laid off.

Although earnings losses in the non-CT manufacturing sector were large, they were nowhere near those experienced by laid-off CT workers. High-tech workers laid off in 1992 experienced a loss of about \$700 in annual earnings between 1991 and 1994. The nascent high-tech boom had already begun driving wages upwards, with increases among those not laid off of about \$4,600 during this time. In 1997, even laid-off workers saw substantial earnings gains over the three-year period surrounding their layoff (about \$6,500)—not surprising given that the sector was expanding rapidly and jobs were plentiful (Chart A). However, some may have missed opportunities for advancement and higher earnings since their counterparts who remained employed saw gains of about

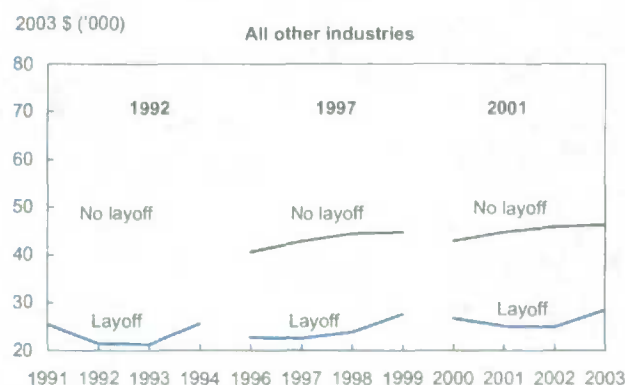
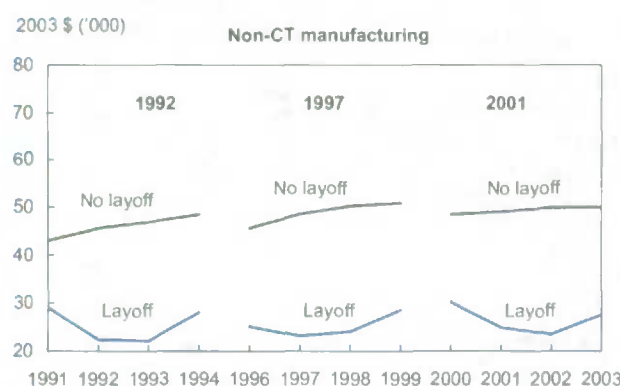
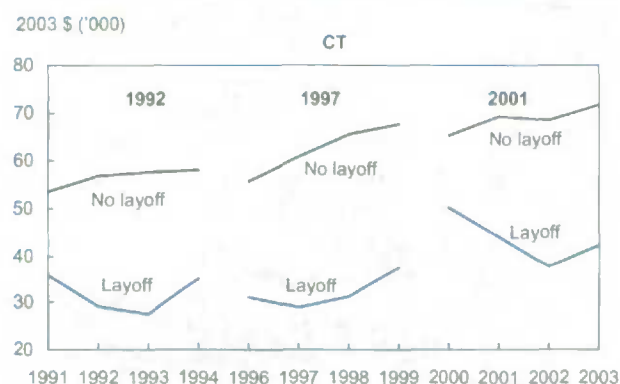
**Chart F Ottawa-Gatineau and Calgary CT workers had the highest predicted probabilities of experiencing a permanent layoff in 2001**



Source: Statistics Canada, Longitudinal Worker File



**Chart G Mean earnings of CT workers, even those laid off, continued above average**



Source: Statistics Canada, Longitudinal Worker File

\$11,900. During the meltdown, the situation was very different. Laid-off high-tech workers had earnings losses of about \$7,900 while those who managed to keep their jobs saw increases of about \$6,600.

Two points are evident: First, laid-off high-tech workers experienced far greater earnings losses than workers in other industries (Chart H). Second, those who were laid off during the meltdown saw the greatest losses of all, including workers laid off during the jobless recovery of the 1990s. Only time will tell the extent to which these losses will be recovered.

### Mobility of laid-off CT workers

Another potential consequence of being laid off is failure to find a job in the same industry. Moving to another city may become necessary to continue one's career or find a job in a different industry. Both cases may entail significant financial and psychological costs. Only one in five laid-off CT workers found a job in the same sector. Among those who moved out of CT, the most common destination was business services, followed by consumer services and manufacturing.

Among laid-off CT workers living in the five major cities, about 1 in 3 moved to another city. Most targeted a non-major centre. Ottawa-Gatineau ranked last in terms of retaining laid-off CT workers, with only 3 in 5 remaining in the city (Table 2).

### Conclusion

The high-tech sector made tremendous economic gains throughout the 1990s. Jobs were plentiful and pay was high. However, the momentum generated by the sector came to a sudden halt in 2001, as Canada and the rest of the industrialized world experienced a

**Chart H Laid-off CT workers had the largest predicted net loss in earnings in 2001**



Source: Statistics Canada, Longitudinal Worker File



**Table 2 High-tech workers permanently laid off in 2001 by city in 2000 and 2003**

	City in 2000				
	Montréal	Ottawa-Gatineau	Toronto	Calgary	Vancouver
<b>City in 2003</b>			%		
Montréal	74.4	1.0	0.3	0.0	0.7
Ottawa-Gatineau	0.0	60.6	0.6	0.0	0.0
Toronto	1.3	2.0	69.9	0.0	0.7
Calgary	0.0	0.7	0.0	76.1	0.0
Vancouver	0.0	1.0	0.3	0.9	71.2
Rest of Canada	24.4	34.8	28.9	23.0	27.3

Source: Statistics Canada, Longitudinal Worker File

high-tech meltdown. Despite countless news reports of mass layoffs and the plight of unemployed high-tech workers, very little statistical evidence exists on these two fronts.

This study shows that the high-tech meltdown resulted in an unprecedented increase in the probability of experiencing a permanent layoff, the likes of which had never

been seen in the sector or the rest of the economy. High-tech workers in Ottawa-Gatineau, a major technology cluster, were hit particularly hard. Those laid off saw a steep decline in their earnings—well above that experienced by any other group, even during the jobless recovery of the 1990s. Among laid-off high-tech workers overall, about 4 in 5 did not find jobs in the sector, and about 1 in 3 moved to another city. In Ottawa-Gatineau, about 2 in 5 left the city.

The meltdown may also have had a significant impact on workers who kept their jobs. Workers with a high level of job insecurity generally report higher levels of long-term psychological and physical health problems (Dekker and Schaufeli 1995; De Witte 1999; Van Vuuren et al. 1990). In the case of the high-tech meltdown, evidence

### Sample design

Year	t-1	t	t+2
Sample	All workers aged 25 to 49 in their main job	Permanent layoff (from main job in t-1)	Positive earnings (from all jobs)
		No permanent layoff (from main job in t-1)	Positive earnings (from all jobs) and same main job from t-1 to t+2

For each cohort of workers at risk of losing their main job in year  $t$ , two models were estimated. The first was a probit model on the probability of experiencing a permanent layoff (PLO) in year  $t$ , expressed as a function of several characteristics from year  $t-1$ : the industry of the main job (IND), firm size in the main job (SIZE), total earnings from all jobs (EARN), a female dummy variable (FEM), age and age squared (AGE and AGE<sup>2</sup>), and the city of residence (CITY).

$$1 \quad \Pr(PLO_{i,t} = 1) = \Phi(\alpha_0 + \alpha_1 IND_{i,t-1} + \alpha_2 SIZE_{i,t-1} + \alpha_3 EARN_{i,t-1} + \alpha_4 FEM_i + \alpha_5 AGE_{i,t-1} + \alpha_6 AGE_{i,t-1}^2 + \alpha_7 CITY_{i,t-1} + \varepsilon_i)$$

The second model, estimated by ordinary least squares (OLS), looked at the absolute change in earnings ( $\Delta EARN$ ) as a function of similar variables, except that the industry variables were interacted with a dummy variable indicating a permanent layoff.

$$2 \quad \Delta EARN_{i,t-1,t+2} = \beta_0 + \beta_1 IND_{i,t-1} + \beta_2 PLO_{i,t} + \beta_3 IND_{i,t-1} * PLO_{i,t} + \beta_4 SIZE_{i,t-1} + \beta_5 EARN_{i,t-1} + \beta_6 FEM_i + \beta_7 AGE_{i,t-1} + \beta_8 AGE_{i,t-1}^2 + \beta_9 CITY_{i,t-1} + \mu_i$$

suggests that job insecurity has a greater impact on stress than employment status. A survey of employed and unemployed high-tech workers during the meltdown found that unemployed high-tech workers reported higher levels of stress than those who were employed (Mantler et al. 2005). The difference was fully explained by a higher level of job uncertainty among unemployed workers.

### Perspectives

#### ■ Notes

1 High tech is defined in this article as the computer and telecommunications sector. See *Data sources and definitions* for more details.

2 See Bowlby and Langlois (2002), Bowlby (2003), and Vaillancourt (2003) for some documented evidence.

3 In most instances, a change in social insurance number occurs after a temporary resident working in Canada with a temporary number becomes a permanent resident and is issued a permanent one.

4 Small sample sizes did not permit detailed analysis for Calgary in earlier years.

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# Participation of older workers

Katherine Marshall and Vincent Ferrao

Interest in the labour market behaviour of the baby-boom generation (those born between roughly 1946 and 1965) continues unabated—and for good reason. The activity rate of this population bulge can affect employment levels, the economy in general, the use of public services, as well as individual and family economic well-being of boomers themselves. For some years now, special attention has been paid to their predicted retirement patterns since a mass wave of early departures could cause serious disruption to the labour force.

However, recent studies and indicators suggest that baby boomers may not in fact be collectively fleeing employment for 'freedom 55' (Copeland 2007; Martel et al. 2007; Wannell 2007). The oldest boomers turned 60 in 2006, the same year that saw a record proportion of 60 to 64 year-olds in the labour force (45%). Furthermore, the average age of retirement remained steady at 61.5—still up from a low of 60.9 in 1998. The non-exodus of older workers may be dampening the threat of a sudden and severe labour shortage.

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This article examines the labour market trends of the population aged 55 to 64.<sup>1</sup> As well, it looks at the employment characteristics of those with a job in 2006 vis-à-vis core-age workers (aged 25 to 54). Are older workers starting to reduce their work hours or change jobs, or is it business as usual? This age range is of particular interest as most people are expected to retire sometime between 55 and 65. Indeed, labour force participation falls dramatically for those 65 and over. In 2006, only 13% of women and 23% of men aged 65 to 69 were in the labour force, and for those aged 70 and over the rates dropped to 2% and 7% respec-

tively. (For more information on the employed 65-and-over age group, see Walsh 1999 and Duchesne 2004.)

## An older population, and more working

Over two million people aged 55 to 64 were employed or looking for work in 2006, representing 12% of the total labour force—up from one million (10%) in 1976 (Table 1). The two principal forces behind these increases are an aging population and rising labour force participation rates<sup>2</sup> among older workers. For example, as a proportion of the total population,

Table 1 Characteristics of the 55-to-64 age group

	1976			2006		
	Both sexes	Men	Women	Both sexes	Men	Women
Population ('000)	1,916	926	990	3,615	1,780	1,836
% of total population	11	5	6	14	7	7
Labour force ('000)	1,017	703	314	2,123	1,180	943
% of total labour force	10	7	3	12	7	5
%						
<b>Education</b>						
University degree	5	7	4	19	22	17
Less than university	95	93	96	81	78	83
<b>Labour force participation rate</b>	<b>53</b>	<b>76</b>	<b>32</b>	<b>59</b>	<b>66</b>	<b>51</b>
University degree	75	86	53	67	72	60
Less than university	52	75	31	57	65	50

Source: Statistics Canada, Labour Force Survey

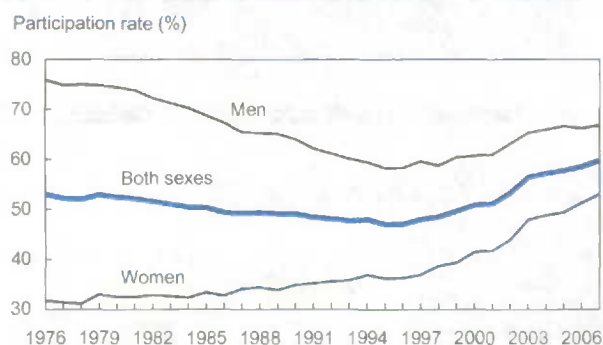
those aged 55 to 64 represented 11% in 1976 and 14% in 2006—a proportion predicted to grow as the later and larger part of the baby-boom generation ages (Chart A). At the same time, the overall labour force participation rate for this group increased from 53% to 59%. However, behind this increase are two different trends for men and women. The participation rate for older men went from a high of 76% in 1976 to a low of 58% in 1995, rebounding by 2007 to 67%. Women, on the other hand, have seen a constant increase, from 32% to 53% (Chart B).<sup>3</sup>

### Majority in their late 50s still working

A breakdown by age shows that the majority of men aged 55 to 59 were attached to the labour force in 2006 (76%). This rate was below the 1976 high of 84% but above the 1998 low of 71% (Chart C). Meanwhile, women of the same age saw their participation rate climb steadily, from 38% in 1976 to 62% in 2006. Not surprisingly, a smaller proportion of people in their early 60s (60 to 64) participated in the labour force, but again recent increases have occurred for men (from 43% in 1995 to 53% in 2006) and women have seen continued gains (reaching a record of 37% in 2006).

Although the long-term trends are similar in Canada and the United States, the U.S. participation rates are generally higher for both men and women. Women

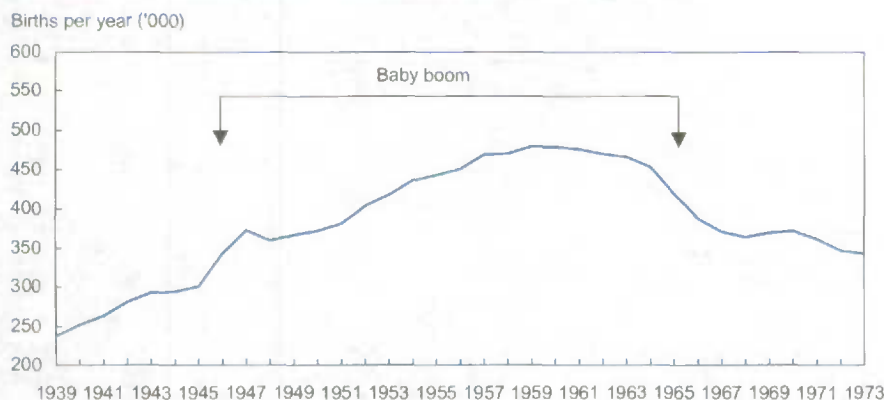
**Chart B Six in ten 55 to 64 year-olds in the labour force in 2007**



Note: 2007 is a January-to-June average.  
Source: Statistics Canada, Labour Force Survey

show larger gaps, with 67% of Americans aged 55 to 59 and 47% aged 60 to 64 in the labour force in 2006—4 and 10 percentage points higher respectively than their Canadian counterparts. This is intriguing given that younger Canadian women have consistently higher labour force participation rates than their American counterparts.<sup>4</sup> One possible reason could be that some older Americans purposely remain employed in order to have continued access to employment-based health insurance (Copeland 2007) since universal health care coverage (Medicare) is offered to Americans only at age 65.

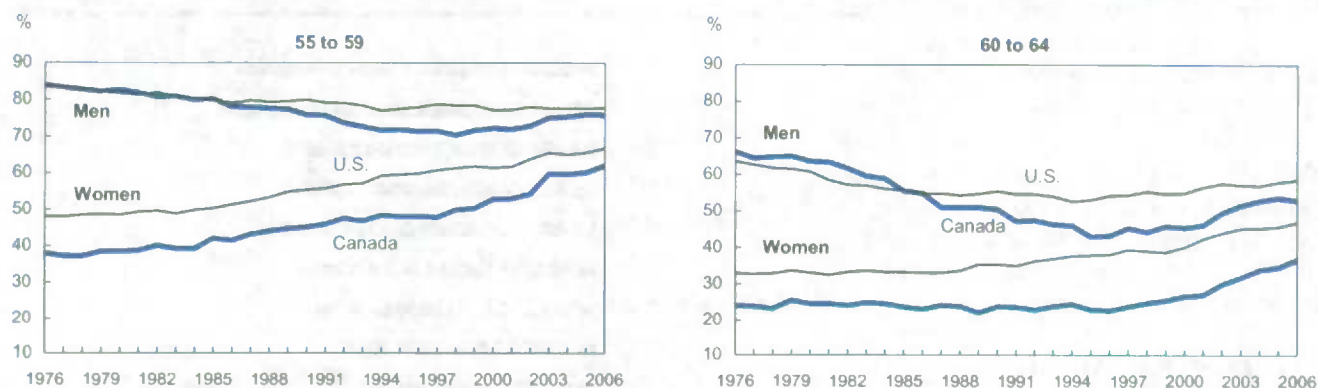
**Chart A The baby boom consisted of roughly 20 years of above-average births**



Source: Statistics Canada, Vital Statistics

### Women and education levels likely to keep trend line rising

Women's labour force attachment today is much stronger throughout the life cycle than in the past. Therefore, as younger generations of women reach their retirement years, they will have higher rates of labour force participation than their predecessors. For example, differences are evident among those aged 55 to 64 in 2006 (the age group under study) and those 10 years older. Women in the younger cohort were much more likely than those in the older one to be attached to

**Chart C Labour force participation rates for those 55 to 64 generally higher in the United States**

Sources: Statistics Canada, Labour Force Survey; US Department of Labor, Bureau of Labor Statistics

the labour force when they were aged 35 to 44—72% compared with only 53% (Chart D).<sup>5</sup> In contrast, little difference is seen for labour market activity and life cycle between the two different cohorts of men except at the near-retirement age when the younger group was more likely to be participating in the labour market (66% versus 58%).

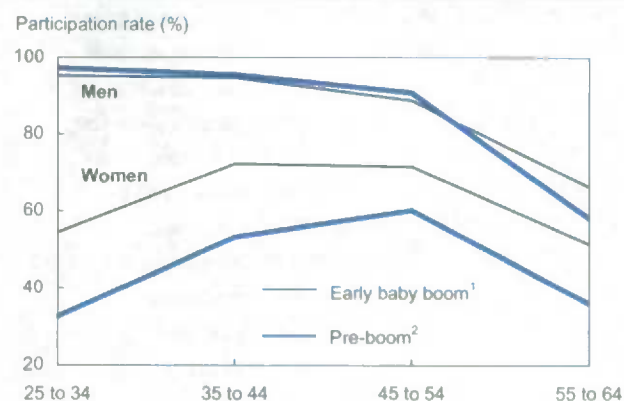
A second reason to expect continued growth in the participation rate of those aged 55 to 64 is the increasing level of educational attainment. The higher the level of education, the greater the likelihood of being employed since more schooling often translates into higher-quality job opportunities and higher earnings. Those with a university degree, for example, have much higher participation rates than those without a degree; in 1976, only 5% of those aged 55 to 64 had graduated from university, but by 2006 this proportion had increased to 19% (Table 1).

The second half of this article focuses on those aged 55 to 64 who were employed sometime in 2006.

### Alberta leads the way

Despite variation, the employment rates of 55 to 64 year-olds are higher in every province than ever before (Chart E). The country is in the midst of a tight labour market and employer demand is boosting employment levels.

In 2006, Alberta had the highest employment rate of older workers (68%). Because of the oil boom, the province has been experiencing labour shortages in many industries and occupations and is attracting workers of all ages. It is therefore not surprising to see Alberta continuing to lead the way in the proportion

**Chart D Participation rates for early baby-boom women consistently higher than for pre-boom cohort**

1 Age 55 to 64 in 2006 and born between 1942 and 1951. (Not all birth years are strictly in the designated cohort label.)

2 Age 65 to 74 in 2006 and born between 1932 and 1941.

Source: Statistics Canada, Labour Force Survey, 1966, 1976, 1986, 1996 and 2006

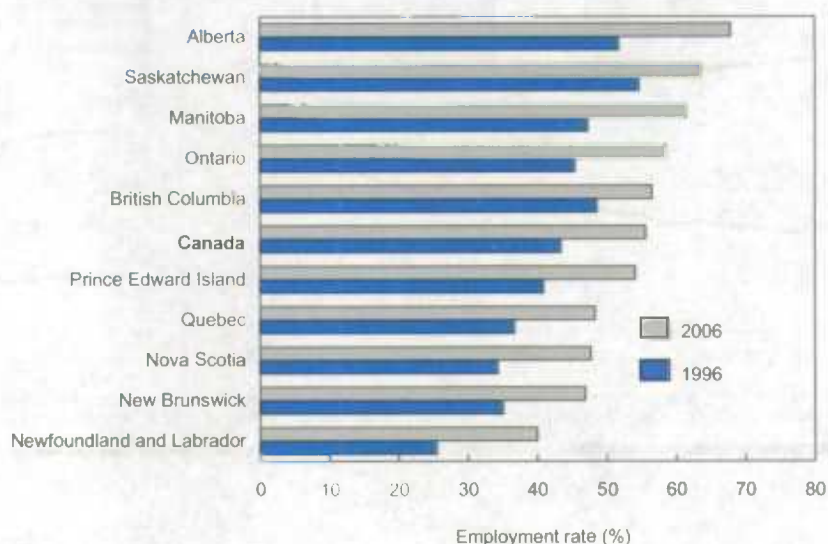


of older workers with a job. Saskatchewan and Manitoba also had rates of over 60%. The proportions in Ontario and British Columbia were also slightly above the national rate of 56%, while Prince Edward Island was just below (54%). Quebec, Nova Scotia, New Brunswick as well as Newfoundland and Labrador were further below the national average, although they have also shown upward trends in recent years.

### Most older workers are employed in services

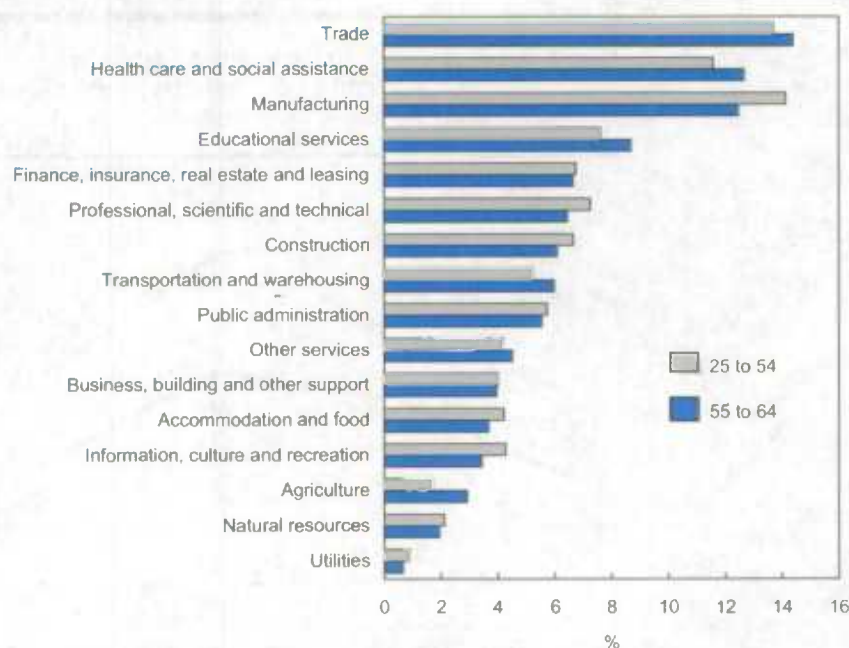
About 3 in 4 workers aged 55 to 64 were employed in the service sector in 2006, similar to the proportion for those aged 25 to 54. Retail and wholesale trade had the largest share of older workers, followed by health care and social

**Chart E Almost 7 in 10 Albertans aged 55 to 64 had a job in 2006**



Source: Statistics Canada, Labour Force Survey

**Chart F Employment by industry generally similar for core-age and older workers**



Source: Statistics Canada, Labour Force Survey, 2006

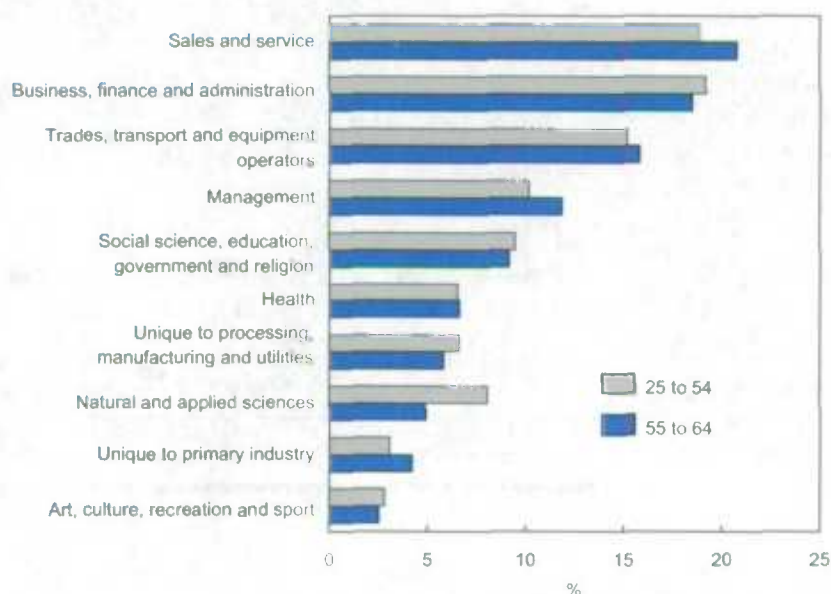
assistance (Chart F). Within the goods sector, which employed 25% of older workers in 2006, about half worked in manufacturing.

The distribution of older workers by occupation is also not much different from their core-age counterparts. In 2006, just over 20% of 55 to 64 year-olds were employed in sales and service occupations, followed by business, finance and administration; and trades, transport and equipment operators (Chart G). In 2006, relatively more older workers than persons aged 25 to 54 were employed in management occupations (12% versus 10%). Accumulated experience may explain the slight difference.

### Self-employment and part-time work rates notable among older workers

Even though core-age and older workers may have similar occupation and industry employment pat-

**Chart G More than 1 in 5 older workers held sales and service jobs**



Source: Statistics Canada, Labour Force Survey, 2006

terns, their work arrangements vary. Self-employment is much higher for older workers, for example, and particularly for men—18% of core-age men were self-employed in 2006 compared with 30% of those aged 55 to 64 (Table 2). Although the difference was less striking, older women also had a higher rate of self-employment than core-age women.

Workers aged 55 to 64 have shorter average weekly work hours than core-age workers (37.7 versus 39.0), although the gap is narrower for men (40.9 versus 42.1) than for women (33.6 versus 35.6). This is because more older workers, particularly women, tend to work part time—11% of men and 28% of women, compared with 5% of men and 19% of women aged 25 to 54.

The shift towards non-standard work arrangements among older workers suggests that some are making a conscious transition towards retirement. One indication is that two-thirds of older part-time workers reported working a shorter work week from preference, compared with only one-quarter of core-age part-timers.

### Older men earn the most

Older men who remain employed appear to be economically rewarded. Despite having shorter work hours, their higher hourly earnings (\$24.31) are sufficient to place them first in terms of average weekly earnings (Chart H). Since the hourly rate for older women (\$19.23) is below core-age women (\$19.59), and more than 1 in 4 work part time, their weekly earnings are more than \$300 less than their male counterparts (\$643).

**Table 2 Job characteristics of core-age and older workers**

	25 to 54				55 to 64		
	Both sexes	Men	Women		Both sexes	Men	Women
Employed	11,620	6,127	5,493	'000	2,012	1,117	895
Employment rate <sup>1</sup>	82	86	77	%	56	63	49
<b>Class of worker</b>							
Employee	85	82	88		76	70	83
Public sector	22	16	28		22	16	30
Private sector	63	66	60		54	54	53
Self-employed	15	18	12		24	30	17
Unionized (employees)	35	34	35		39	38	39
<b>Type of work</b>							
Full-time	88	95	81		81	89	72
Part-time	12	5	19		19	11	28
Part-time by preference	28	26	29		66	64	67
Average usual hours (all jobs)	39.0	42.1	35.6	Hours	37.7	40.9	33.6

<sup>1</sup> Number employed expressed as a percentage of the population.  
Source: Statistics Canada, Labour Force Survey, 2006



### Older workers take more time off from work

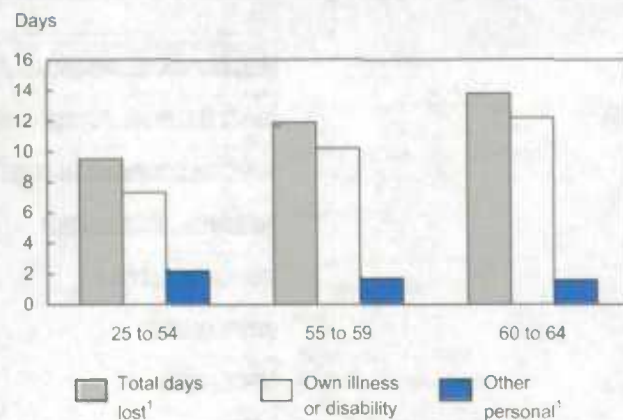
Older employees tend to be absent from their job because of illness or disability more often than their core-age counterparts. In 2006, 55 to 59 year-olds working full time lost just over 10 days for this reason while 60 to 64 year-olds lost just over 12 days; 25 to 54 year-olds were absent only 7 days (Chart I). Health issues could be more common among older workers, but unionization and working in the public sector are also linked with higher absenteeism rates—characteristics more prevalent among older workers (Statistics Canada 2007).

### Summary

Although a higher proportion of workers aged 55 to 64 are self-employed and have shorter workweeks than core-age workers, the majority are employees (76%) and work full time (81%). Furthermore, earnings and occupations of older and core-age workers are strikingly similar.

During the past decade, the participation rate of men and women aged 55 to 64 has climbed steadily, reaching 60% in the first half of 2007. This is an important trend since most of this age group are members of the front end of the baby-boom cohort (those aged 55 to 61 in 2007), and their labour market attachment suggests a strengthening participation rate in the near future. Women's increasing labour force participation and rising educational attainment in particular imply a

**Chart I Days lost per year increase with age among full-time employees**



1 Excluding maternity leave.

Source: Statistics Canada, Labour Force Survey, 2006

continued upward trend. A third influence may be an increasing desire among those over 55 to continue working, either out of interest, financial concern, or a social shift brought about by a tighter labour market, skill shortages and the virtual elimination of mandatory retirement at age 65. Whatever the reasons, the increasing labour force participation rate among older workers will likely soften the eventual economic impact of the aging baby-boom cohort.

### Perspectives

#### Notes

1 The data for this article come from the Labour Force Survey (LFS), a monthly household survey that collects information on labour market activity from all persons 15 years and over. For detailed information about the LFS, look on the Statistics Canada's Web site under *Definitions, data sources and methods* for an alphabetical listing of surveys and statistical programs.

2 The labour force (the employed plus the unemployed) expressed as a percentage of the population.

3 The 2007 figure is a January-to-June average.

4 In 2006, 70% of Canadian women aged 16 to 24, and 81% of those aged 25 to 54, were in the labour force; this compared with 58% and 75% respectively for American women.

**Chart H Older men retain their earning power**



Source: Statistics Canada, Labour Force Survey, 2006



5 LFS participation rates from 1976 and 1986 were used for these figures. For example, those born between 1942 and 1951 were aged 35 to 44 in 1986, and those born between 1932 and 1941 were this age in 1976.

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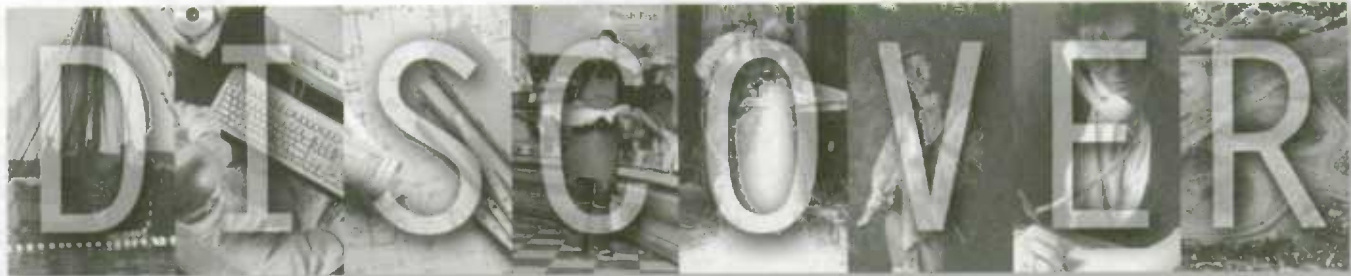
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# Public pensions and work

Ted Wannell

**D**o I have enough money to retire? is a question that older workers have been trained to ask themselves as they consider the transition out of the workplace. The financial tally includes employer pension plans, registered savings plans and other investments, as well as entitlement to public pension benefits—the Canada and Quebec Pension Plans (C/QPP) and Old Age Security/Guaranteed Income Supplement (OAS/GIS). These resources are balanced against projected spending and other considerations, such as health, family demands and leisure activities.

*Do I really want to retire?* is the question that more and more employers and policy analysts may want workers to consider. With tight labour markets and baby boomers entering the transitional years, impediments to remaining on the job are receiving increased attention. Mandatory retirement is largely being written out of provincial labour codes, and the federal government is proposing adjustments to registered pension plan legislation that would facilitate phased retirement. Labour market factors may also influence employers to adopt more senior-friendly policies, such as leave for eldercare and flexible working hours.

Indeed, a long-term trend toward earlier retirement faltered in the late 1990s and the median retirement age began to inch upward. Similarly, the labour market participation rates of older men turned a corner in the mid 1990s, while the participation rates of older women continued to climb unabated. Apparently changes are afoot.

Although research on the retirement process is growing by leaps and bounds, some gaps in knowledge persist. Studies that integrate the many factors involved in the retirement process are hampered by the lack of a dedicated aging survey in Canada. Several proposals are currently with funding agencies to fill that gap. Yet

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## Data source and definitions

The **Longitudinal Administrative Databank (LAD)** is based on a 20% sample of T1 tax records covering a 22-year period ending in 2004 at the time of this analysis. Records are linked over time for individuals, and each year's information is used to ascertain the current family structure.

The study uses three-year mini-panels. Each panel consists of a start year identifying those with employment or RPP income, a mid-year to track take-up of C/QPP benefits, and a following year to capture new income patterns. More precisely, the mini-panels are selected according to the following criteria:

- aged 60 to 69 in the middle year
- no C/QPP benefits in the start year
- positive employment or RPP income in the start year
- no disability deduction in the first two years
- C/QPP and RPP receipts do not fall between the second and third years

Three mini-panels were drawn to examine long-term trends: 1994 to 1996, 1999 to 2001, and 2002 to 2004.

even a dedicated survey may not be the best instrument to examine some issues. Sample surveys typically cannot provide consistent estimates of relatively rare events, such as taking up a pension, for small populations. However, both public and employer pension plans have features that are best assessed by examining single years of age: take-up rates at initial eligibility or interaction effects between public and private pensions.

This study uses a large sample of tax data to examine the take-up rate of C/QPP benefits, the co-receipt of C/QPP and other benefits, and employment following benefit take-up. The focus will be on taxfilers in their 60s, since this is the age range of eligibility for C/QPP retirement benefits. The first goal is to establish take-up patterns by age and to determine whether the patterns have changed over time. The database also follows individuals over time, allowing post-pension work patterns to be inferred by receipt of employ-



ment or self-employment income. Since work patterns should vary according to the trajectory into retirement and may be affected by features of the pension programs themselves, the population is divided into groups whose behaviour should vary.

## Public pensions

Economists use life-cycle models to explain work patterns by age. In the absence of pension plans and with a preference for leisure over work, individuals save from earnings until their accumulated wealth can support projected lifetime expenditures; then they retire. Since people differ in earnings, spending and savings rates, retirement should be spread out smoothly across the older age ranges.

In reality, much of the saving takes place in employer and government pension plans. Collection of benefits is based on formulas that tend to concentrate retirement at specific points determined by eligibility requirements. For example, a previous study on registered pension plan (RPP) take-up among workers in their 50s found a distinct peak at age 55, the age at which several large plans begin to offer unreduced benefits (Wannell 2007). These early pensioners had much higher than average pre-pension earnings and low-intensity paid work patterns following receipt of pension benefits. These results suggest that RPP eligibility rules create a pent-up demand for retirement, particularly among high-earnings workers. Overall, roughly one-fifth of workers begin to collect RPP benefits before they become eligible for C/QPP retirement benefits at age 60.

The Canada and Quebec Pension Plans are mandatory for almost all employees and are funded by employer and employee contributions. C/QPP contributions and benefits are designed to replace up to 25% of a benchmark earnings indicator—the average industrial wage—assuming retirement at age 65 and an adequate contribution history. The earnings replacement rate for those earning more than this benchmark—\$41,100 in January 2005—would thus be less than 25% (Social Development Canada 2005a).

C/QPP changes in 1987 gave contributors more choice in timing their retirement. Although 65 remains the benchmark age for benefit calculation, benefits can be commenced earlier or later, with penalties or premiums designed to equalize the lifetime value of benefits received. Contributors can collect benefits as soon as 60 with a 30% penalty or as late as age 70 with a 30% premium.

Given the healthy financial situation of typical young RPP recipients and their weak attachment to the workforce, they should have a high take-up rate of C/QPP at age 60 and further reduce their paid work. Workers with RPPs who did not retire in their 50s should also have higher early take-up rates and subsequently work less than similar workers without RPPs because of the wealth locked in their employer pensions.<sup>1</sup>

However, another program effect of the C/QPP may be an impediment to post-benefit work. Unlike RPPs, the C/QPP requires contributors aged 60 to 64 not to work at any job during the month in which they first collect benefits. Although this provision does not apply to those who earn less than the monthly maximum benefit, this period of unemployment may help some pensioners sever ties to the job market.<sup>2</sup> So all else equal, workers retiring with C/QPP benefits may be less likely to re-enter the job market compared with those receiving RPP benefits only.

Old Age Security and the Guaranteed Income Supplement constitute the other public pillar of income support for seniors. OAS benefits are based on length of residence in Canada, while the GIS is specifically targeted at low-income seniors. For well-paid workers with a lengthy contribution record to the C/QPP, the GIS will not come into play, and the OAS entitlement is equivalent to a significant boost in wealth. This adds another powerful incentive for these workers to further reduce their labour market participation at age 65.

Other features of the OAS and GIS may have more specific effects for high- and low-income seniors. Unlike the C/QPP, both programs are means-tested—benefits are clawed back when income exceeds set thresholds (Social Development Canada 2005b). GIS benefits are reduced by 50 cents for every dollar of income above the threshold (\$13,464 for singles in the last quarter of 2004). OAS benefits are clawed back at 15 cents for every dollar past its threshold (\$59,790 for singles in 2004). These features increase the effective tax rate on employment earnings for those in the shoulder ranges, likely reducing their work incentive relative to other seniors.

Interaction between the C/QPP and the GIS could hasten the retirement of older, low-income workers (Guillemette 2004). For some workers, extending their C/QPP contribution period past age 60 could reduce their eventual GIS entitlement. For this group, continuing to work adds little to their lifetime income relative to previous work. Thus some may choose to

retire even though it does result in an immediate and ongoing drop in income. Since co-receipt of C/QPP benefits and the GIS is fairly common, this effect is potentially non-trivial.

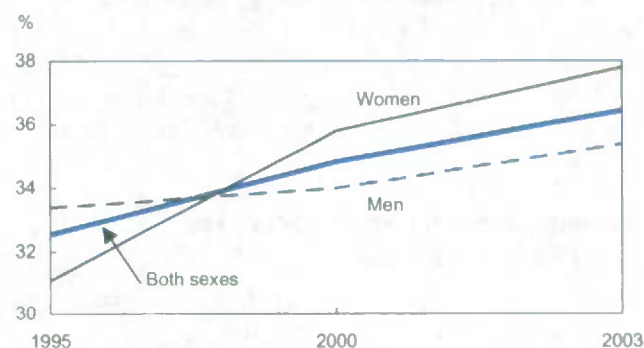
The retirement decision is obviously complex. Studies that explore the program effects mentioned above typically use simulation studies of hypothetical individuals (Pollock and Sargent 2004) or models based on estimated pension/wealth accrual (Baker, Gruber and Milligan 2001). The intention of this paper is not to formally test such program effects. Rather, it describes the uptake and receipt of program benefits by various individual characteristics, as well as employment earnings following benefit receipt.

The focus is on take-up of C/QPP benefits by four groups for whom take-up incentives should differ: those with RPP income only, RPP and employment income, employment income only and current RPP coverage, and employment income only and no current RPP coverage.

### C/QPP early take-up rates increasing

The changes to the C/QPP in 1987 allowed more flexibility in the timing of retirement. An increasing proportion of workers are choosing to take their benefits at age 60, the earliest possible. From 1995 to 2003, take-up at age 60 increased by almost 4 percentage points, from 32.5% to 36.4% (Table 1). The increase was greater for women (6.7 percentage points) than for men (2.0) (Chart A).

**Chart A More women taking up C/QPP benefits at age 60**



Source: Statistics Canada, Longitudinal Administrative Databank

Although the single-year retirement rate is still highest at age 65, the base population in each cohort has been greatly diminished by retirement between 60 and 64. As a result, more than twice as many people retired at age 60 in 2003 as retired at age 65 (data not shown).<sup>3</sup>

The take-up rates at older ages generally declined over the period, although there was a distinct dip in 2000 for nearly every subgroup, followed by a partial recovery by 2003.<sup>4</sup>

Single-year take-up rates can also be used to calculate the cumulative proportion of a cohort that would take up benefits if exposed to the period-specific rates as they aged. This is similar to the method of constructing life expectancy based on cross-sectional mortality rates (see Wannell 2007). Since the trough in single-year take-up rates creates a corresponding dip in the cumulative rates, 1995 to 2003 changes should be more indicative of long-term trends. These data indicate that the trend to retirement at age 60 has been offset by lower take-up rates at ages 61 to 64, such that a smaller proportion had retired by age 65 in 2003 than in 1995 (Chart B). This suggests a polarization in C/QPP take-up, whereby an increasing proportion are col-

**Table 1 C/QPP take-up rates by age and sex**

	1995			2000			2003		
	Both sexes	Men	Women	Both sexes	Men	Women	Both sexes	Men	Women
<b>Age</b>	<b>%</b>								
60	32.5	33.4	31.1	34.8	34.0	35.8	36.4	35.4	37.8
61	19.3	18.8	19.9	14.0	13.2	15.1	17.9	17.4	18.7
62	16.1	15.7	16.6	12.0	11.2	13.3	12.8	12.3	13.4
63	17.0	17.0	17.0	11.4	10.6	12.6	12.4	12.1	12.8
64	17.7	17.5	18.0	12.6	12.1	13.7	13.3	12.9	13.9
65	80.2	83.5	75.2	76.8	78.1	75.0	78.0	78.4	77.3
66	46.0	57.8	35.0	15.6	17.6	14.6	42.7	48.5	36.6

Note: Had employment or RPP earnings in previous year.  
Source: Statistics Canada, Longitudinal Administrative Databank



lecting benefits at age 60 while a much smaller, but growing proportion is delaying take-up until after age 65.

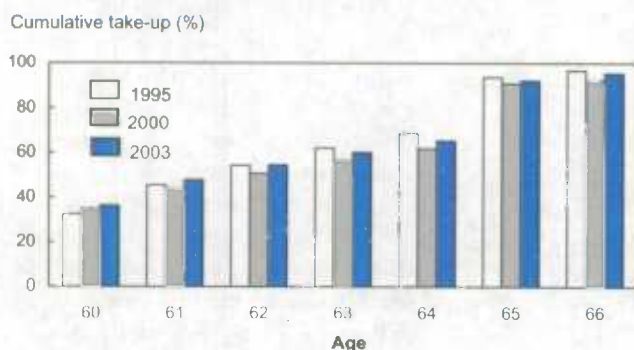
Despite the premium for delaying C/QPP take-up past age 65, less than 1 in 10 do so. Apparently the effect of other forms of wealth accumulation (RPPs, OAS/GIS eligibility, RRSP savings) has a greater impact on the retirement decision than the C/QPP late retirement premium.

### Private pension benefits increase early C/QPP take-up

The hypothesis that having RPP income generates a pent-up demand for early C/QPP take-up receives strong support from the data. Nearly 4 in 5 RPP beneficiaries with no employment in 2002 began receiving C/QPP benefits at age 60 in 2003—the highest rate of all the groups (Chart C). This was also the only group where the take-up rate at age 60 exceeded the rate at age 65 (data not shown). The proportion was somewhat less among those combining work and RPP benefits: 3 in 5 began collecting C/QPP at age 60.

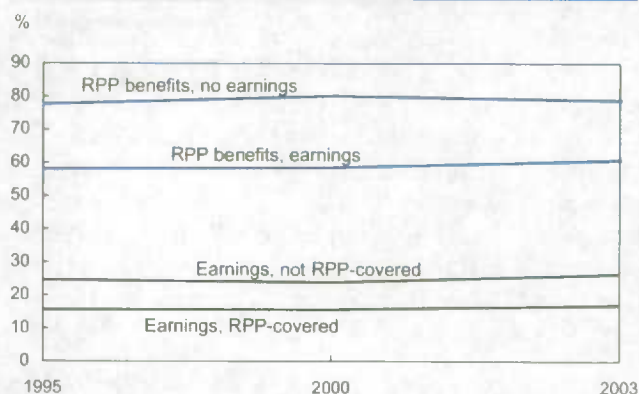
Those who were working and not collecting RPP benefits were much less likely to commence their C/QPP benefits at age 60. Somewhat surprisingly, those without RPP coverage in their current job were more likely to start benefits at age 60 than those with RPP coverage: 26.4% compared with 17.0%. This result is most likely related to selection effects.<sup>5</sup> For example, those with a preference for leisure, with greater wealth, or

**Chart B C/QPP take-up at age 60 has gone up, but so has take-up after 65**



Note: Had employment or RPP earnings in previous year.  
Source: Statistics Canada, Longitudinal Administrative Databank

**Chart C C/QPP take-up at age 60 more than double for those with RPP benefits**



Source: Statistics Canada, Longitudinal Administrative Databank

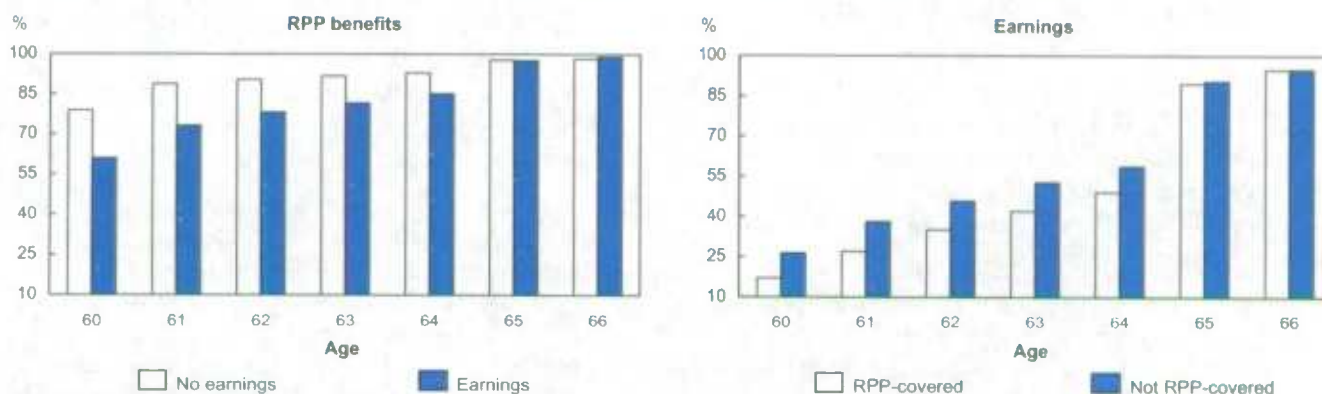
with accumulated pension benefits would have commenced RPP benefits before their 60<sup>th</sup> birthday, leaving those relatively less likely to retire for these reasons in the workplace.

The increasing trend to collect C/QPP benefits at age 60 was dampened by those with earnings but no RPP benefits. The proportion in each group grew by 1 or 2 percentage points between 1995 and 2003. Because of the much higher incidence of C/QPP take-up at age 60, the cumulative C/QPP take-up for those already receiving RPP benefits remained much higher than for those without RPP income until age 64 (Chart D). High take-up rates among all groups at ages 65 and 66 significantly narrowed but did not close the gap. By age 66, less than 1 in 50 RPP beneficiaries had not begun receiving C/QPP compared with about 1 in 20 non-beneficiaries.

### Widespread increases in employment among 60-somethings

As noted earlier, the Labour Force Survey has documented a trend to increasing labour market participation among older workers beginning in the late 1990s. The LAD data verify this trend using earnings-based measures of labour market participation. The data also indicate that the increase in paid work occurred in all groups—before or after starting C/QPP payments, with or without RPP benefits.



**Chart D Cumulative C/QPP take-up rates in 2003 much higher for RPP recipients until age 64**

Source: Statistics Canada, Longitudinal Administrative Databank

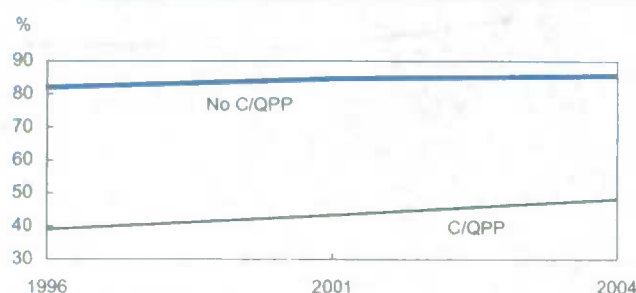
The mini-panels (see *Data source and definitions*) enable paid work in the third year (measured by the presence of employment income) to be related to characteristics or activities from the previous two years. The clearest distinction in work patterns is between those who did and did not begin collecting C/QPP in the middle year. Obviously, the decision to stop working and start collecting benefits should suppress subsequent labour market participation—and it does. Employment rates are nearly double among those who did not start C/QPP benefits the previous year compared with those who did (Chart E). Nevertheless, a substantial and increasing proportion of C/QPP beneficiaries are doing some work for pay the year following their

'retirement.' Indeed, the incidence of paid work increased much faster among C/QPP pensioners than among non-pensioners.

Women were less likely to work for pay than men in each group in each period (Table 2). Over time, the gap narrowed among non-beneficiaries. Among C/QPP recipients, rapid employment gains by men widened the gap even though employment gains were substantial for women as well.

### Employment rate increasing regardless of RPP coverage

Among the three groups who were working and did not start C/QPP benefits in the reference year, employment levels remained very high the following year. The employment rate was highest among those

**Chart E The incidence of earnings increased more among C/QPP recipients**

Source: Statistics Canada, Longitudinal Administrative Databank

**Table 2 Persons with earnings by C/QPP status**

	1996	2001	2004
<b>Men</b>			
Did not start C/QPP	85.7	88.0	87.8
Started C/QPP	39.8	45.4	49.9
<b>Women</b>			
Did not start C/QPP	76.8	80.3	82.8
Started C/QPP	37.7	40.7	45.8

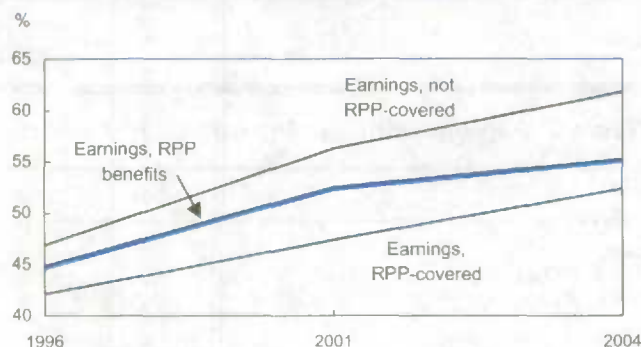
Source: Statistics Canada, Longitudinal Administrative Databank

with RPP coverage in their current job, followed by those working without RPP coverage, and finally those combining earnings and RPP benefits. Each of these groups also showed some growth in employment rate between 1996 and 2004.

Very few workers who started a period with RPP benefits and no employment earnings were working at the end of the period. The movement into employment was greater among those who started to collect C/QPP, although the rate was also increasing for those with or without C/QPP benefits.

Among those who worked at the start of each period and began C/QPP benefits in the middle year, at least 4 in 10 continued with some level of employment in the third year. And this post-benefit employment increased by at least 10 percentage points between 1996 and 2004 (Chart F). The incidence of continuing employment was highest and increased the most for those without RPP benefits or RPP coverage in the first year. Their situation indicates relatively weak retirement resources, so it is not surprising that many continued to work after starting C/QPP benefits. What is perhaps more surprising is that by 2004, the majority of those who started the period in RPP-covered jobs or by combining work and RPP benefits continued to do some paid work while collecting C/QPP benefits. Even those with multiple sources of pension income are contributing to the trend to more paid work among 60-somethings.

**Chart F The proportion of employed C/QPP pensioners has increased**



Source: Statistics Canada, Longitudinal Administrative Databank

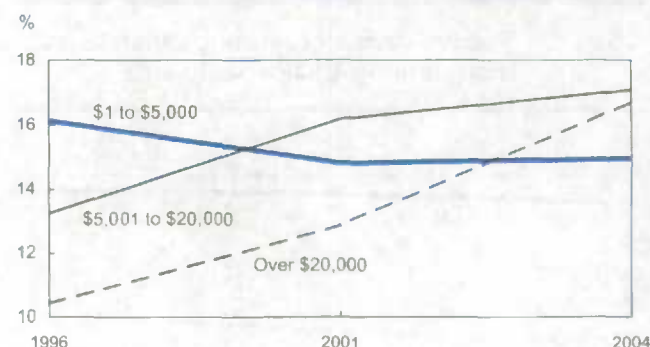
### Work intensity of C/QPP recipients increasing

An earlier study found that more than half of those who began receiving RPP benefits in their 50s did some work the year following 'retirement,' but work intensity was relatively low (Wannell 2007). Although the incidence of work grew among this group from 1996 to 2004, most of the growth was at the lowest level of intensity (less than \$5,000).

The overall incidence of work among new C/QPP recipients was somewhat lower than among their younger counterparts at each time point but was growing faster, particularly at higher levels of intensity (Chart G). Those earning more than \$20,000 accounted for just over a quarter of employed new C/QPP recipients in 1996. By 2004, they made up more than a third of a much larger pool of working pensioners. The 16.7% of new C/QPP pensioners who earned more than \$20,000 in 2004 nearly equalled the proportion of 50-something new RPP recipients (17.3%) who surpassed that benchmark.

Prior receipt of RPP benefits had a large effect on work intensity among new C/QPP recipients (Chart H). Those who were already receiving RPP benefits were much less likely to be earning more than \$20,000 in 2004 (14.6%) than those who had been working in a job without RPP coverage (23.5%). Those who had worked at a job with RPP coverage were in the middle at 20.4%. Thus work intensity among C/QPP

**Chart G Work intensity has increased among C/QPP pensioners**



Note: Zero earnings (not working) excluded.

Source: Statistics Canada, Longitudinal Administrative Databank



## The Guaranteed Income Supplement and employment

The GIS is a means-tested social transfer for low-income seniors. Approximately one-third of those aged 66 to 70 receive at least some benefits. Once recipients pass a family income threshold based on the number, age and pension status of family members, benefits are clawed back at a rate of 50 cents for each dollar of additional income. Since other benefits for seniors (such as public-housing subsidies) may also be means-tested, additional income may result in very little additional spending power for GIS recipients (Shillington 2003). These clawbacks may well be a strong disincentive—except for those already near the upper limit—to seek paid work.

Among 66 to 70 year-olds, GIS recipients are only about one-third as likely to work for pay as those receiving other public pension benefits but no GIS. The work gap between GIS recipients and non-recipients is greater among women than men. As with most groups examined in this study, the incidence of paid work increased among GIS recipients from 1996 to 2004.

### Paid employment among public pension recipients

	1996	2001	2004
	%		
<b>Men with earnings</b>			
C/QPP and/or OAS, no GIS	25.8	28.8	31.9
Receiving GIS	8.9	10.8	11.2
<b>Women with earnings</b>			
C/QPP and/or OAS, no GIS	14.7	16.4	18.8
Receiving GIS	3.1	4.1	4.8

Note: Includes 66 to 70 year-olds not claiming the disability deduction.

Clawbacks are not the sole reason for the low employment rates of GIS recipients. Low education, declining health and an intermittent employment history may also contribute. For example, those who received the GIS at age 65 were less likely to be working at age 64 than other public pension recipients. Again the gap is greater among women.

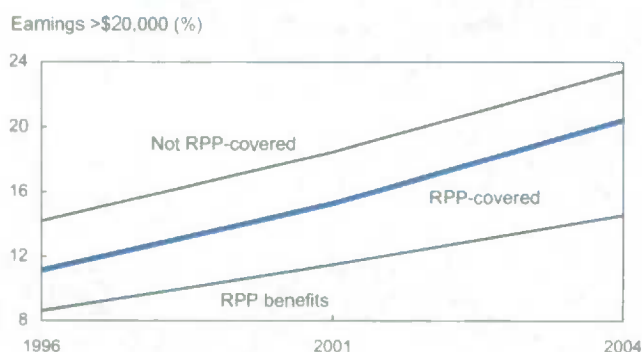
Clearly, a substantially smaller proportion of GIS recipients had recent work experience. Since the lack of recent experience may affect employability, the ratio of employment rates before and after age 65 may be a more valid comparison. Given employment at age 64, GIS recipients were still about half as likely as non-recipients to continue working after age 65. This gap was similar for men and women.

### Who was working at age 64?

	1995	2000	2003
	%		
<b>Men, at age 65</b>			
C/QPP and/or OAS, no GIS	50.0	47.9	50.0
Receiving GIS	28.1	27.7	27.7
<b>Women, at age 65</b>			
C/QPP and/or OAS, no GIS	35.3	33.3	34.9
Receiving GIS	13.7	12.7	14.3

Note: Includes 64 year-olds not claiming the disability deduction.

**Chart H Work intensity among C/QPP recipients strongly influenced by private pension status**



Source: Statistics Canada, Longitudinal Administrative Databank

recipients seems to be related to financial circumstances. Those without the financial backing of an RPP or those with an RPP who could not afford to retire early tended to work more.

## Summary

The primary goal of this analysis was to document patterns in the take-up rate of C/QPP benefits and employment following C/QPP take-up. Antecedent receipt of RPP benefits was of particular interest since this potentially represents a pent-up demand for C/QPP benefits at age 60. The recent increase in labour force participation among older age groups makes these issues particularly timely.

About one-third of those working for pay at age 59 began to collect C/QPP benefits when they first became eligible at age 60. The take-up rate then drops for ages 61 to 64, spiking to a peak above 75% at age



65 when most people also become eligible for Old Age Security benefits. Despite this spike in the rate at age 65, more people, in absolute terms, began collecting C/QPP at age 60 since the eligible population was larger.

Two time trends are notable in relation to C/QPP take-up. First, the proportion beginning receipt at age 60 is increasing over time—more so for women than for men. Second, the cumulative proportion of a cohort that starts benefits by age 65 is edging down. This result is somewhat clouded by a trough in take-up rates at some ages in the year 2000.

The early take-up of C/QPP benefits is not evenly distributed. Those who were already receiving RPP benefits at age 59 were far more likely to start C/QPP benefits the following year, especially if they were not still working. Counter to expectations, those in jobs with RPP coverage were less likely to start their public pension benefits at 60 than those without RPP coverage. Still, this difference was small compared with the gulf that separated these two groups from those already receiving RPP benefits.

The rise in paid work among 60-somethings crosses all groups examined: men and women, before and after starting C/QPP benefits, and with and without RPP benefits. Even those who received RPP benefits at age 59 and did not work are increasingly finding their way back into paid jobs in their 60s. Paid work is most prevalent and intense for those not covered by an RPP in their last job before retiring, and it is also increasing significantly.

Overall, the supply and demand factors related to older workers seem to be moving in the direction desired by many commentators: toward longer careers. However, even with the large sample sizes from the LAD, the data quickly thin out when examining groups of particular interest to policy analysts. As such, multivariate methods would be much better suited to more closely assess the work incentives or disincentives of public pension programs.

### Perspectives

#### ■ Notes

1 Although workers without RPPs could compensate by saving more than those with RPPs, a recent study concluded that registered retirement savings did not differ between the two groups after controlling for income and personal characteristics (Palameta 2001).

2 Pollock and Sargent (2004) used simulation techniques to estimate that removal of the stop work requirement could extend working careers by two to four years.

3 Comparisons for the same birth year cohort reveal similar, though slightly dampened patterns—58% more 60 year-olds in 1995 than 65 year-olds in 2000 started receiving C/QPP benefits.

4 Rates for ages 67 to 69 have been suppressed because of small sample sizes.

5 Since membership in an RPP is derived from a non-zero pension adjustment (PA) on the tax file, individuals who extend their careers for more than a year beyond the contributory period of their RPP will be misclassified.

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# What's new?

## *Recent reports and studies*

### ■ FROM STATISTICS CANADA

#### ■ *Persistence of low income among working-aged unattached individuals*

Although unattached individuals under 65 made up just 11% of the Canadian population in 2005, they represented over a third of those in low income that year. As well, they accounted for 47% of those in low income for six consecutive years.

People living alone were more likely than those in economic families to be in low income persistently, even when age, visible-minority status, educational attainment, work status, and work-limitation status were taken into account.

For more information, see the June 15, 2007 issue of *The Daily* on the Statistics Canada's Web site ([www.statcan.ca](http://www.statcan.ca)).

#### ■ *Labour productivity*

The year 2007 opened on a solid note for productivity in the Canadian business sector. Between January and March, quarterly labour productivity growth accelerated to 0.7%, more than three times the pace in the previous quarter (+0.2%).

Hours worked, on the other hand, increased at a more moderate pace. This surge in productivity in the first quarter of 2007 was the largest gain since the 1.0% recorded in the third quarter of 2005.

Both the services-producing and the goods-producing industries made positive contributions to the overall productivity performance in the first quarter. Gains were observed in manufacturing, construction, agriculture, forestry, fishing and hunting as well as in wholesale and retail trade, and finance and insurance services.

In the United States, quarterly productivity growth in the business sector remained lacklustre. With a slowdown in economic activity, American productivity increased only 0.1% between January and March, a slower growth than in the fourth quarter of 2006.

For more information, see the June 12, 2007 issue of *The Daily* on the Statistics Canada's Web site ([www.statcan.ca](http://www.statcan.ca)).

#### ■ *Income of individuals*

The median total income of individuals amounted to \$25,400 in 2005, up 1.9% from 2004 after adjusting for inflation. This is the largest annual increase since 2001.

Among census metropolitan areas, the largest percentage increases were in Edmonton (4.2%), followed by Saskatoon (3.3%), Calgary (3.2%) and Trois-Rivières (3.0%).

Median employment income in Canada increased 1.3% to \$26,300 in 2005. The Northwest Territories continued to have the highest median employment income at \$37,500, up 3.7% from 2004; Yukon had the second highest at \$30,000 (+3.8%), followed by Alberta at \$29,500 (+5.0%).

For more information, see the May 31, 2007 issue of *The Daily* on the Statistics Canada's Web site ([www.statcan.ca](http://www.statcan.ca)).

#### ■ *Family income*

Couple families in Ottawa-Gatineau had the highest median total income (\$86,100) among all census metropolitan areas (CMA) in 2005. Oshawa, which led for the two previous years, followed with a median of \$85,400.

Nationally, the median rose 2.1% to \$67,600 in 2005, after adjusting for inflation.



Among CMAs, the largest percentage increases were observed in Edmonton (4.6%), followed by Calgary (4.2%) and Greater Sudbury (3.8%).

For more information, see the May 29, 2007 issue of *The Daily* on the Statistics Canada's Web site ([www.statcan.ca](http://www.statcan.ca)).

### ■ ***Impact of immigration on labour markets in Canada, Mexico and the United States***

Immigration has tended to lower wages in both Canada and the United States. However, the impact of immigrants on the wages of domestic workers depends to a large extent on the skill mix of the newcomers.

A significantly higher proportion of immigrants to Canada are highly skilled. In 2001, around 4 in 10 individuals with more than an undergraduate degree were immigrants in Canada compared with about 1 in 5 in the United States. This tended to curtail the earnings growth of the most-educated Canadians relative to the least-educated.

In the United States, however, the opposite has happened. There, newcomers have depressed the earnings of low-paid Americans and increased the gap relative to the highest-paid.

Between 1980 and 2000, immigration increased the male labour force by 13.2% in Canada and 11.1% in the United States. However, Mexico experienced a 14.6% loss in the size of its potential male workforce.

For more information, see the May 25, 2007 issue of *The Daily* on the Statistics Canada's Web site ([www.statcan.ca](http://www.statcan.ca)).

### ■ ***Service offshoring and employment***

No clear evidence shows that occupations potentially subject to service offshoring displayed less employment growth than other occupations in recent years.

Furthermore, there is little evidence that employment in these occupations grew at a slower rate in industries that experienced substantial increases in service offshoring to non-OECD countries than in similar occupations located in other industries.

For more information, see the May 22, 2007 issue of *The Daily* on the Statistics Canada's Web site ([www.statcan.ca](http://www.statcan.ca)).

### ■ ***Income inequality and redistribution***

Inequality in after-tax family income has increased during the past 15 years, driven by widening differences in market income—the sum of employment earnings, net self-employment income, investment income and private retirement income for all family members.

On the other hand, while the tax-transfer system changed in many ways during the 1990s, it reduced income inequality by as much in 2004 as it did in 1989.

The trend in family market-income inequality does not appear to be primarily driven by rising differences in earnings among workers. It appears to be driven in part by increased inequality in family earnings. This would suggest that changing family characteristics, such as the increasing share of families with two highly educated earners, may be important.

For more information, see the May 11, 2007 issue of *The Daily* on the Statistics Canada's Web site ([www.statcan.ca](http://www.statcan.ca)).

## ■ **FROM OTHER ORGANIZATIONS**

### ■ ***Exporting and FDI with endogenous productivity***

This paper analyzes how a firm's decision to serve a foreign market by exporting or by engaging in foreign direct investment (FDI) affects its productivity, when productivity is endogenous as a function of training. With endogenous productivity, exporting results in lower productivity than does FDI, but exporting may result in higher or lower employment and output than does FDI. Also, FDI has lower employment, higher training, higher wages and higher productivity than does production for the home market. Exporting results in the same level of training and productivity as production for the home market. However, under the same demand conditions, exporting firms employ less labour for foreign production than for home production and, consequently, output for the foreign market is lower than for the home market. See *Exporting and FDI with Endogenous Productivity* by Oana Secieru and Marianne Vigneault, Bank of Canada, working paper 2007-14, March 2007, <http://www.bank-banque-canada.ca/en/topic/index.html>



### ■ **Overemployment mismatches: the preference for fewer hours**

While workers' preferences regarding work hours are not directly observable, restrictions on the choice of hours of work in a given job are widely acknowledged as a central feature of the labour market and, in many conventional economic studies, of labour supply. For this article, overemployment occurs when desired hours of labour supply fall short of the hours demanded at their current pay rate. This article identifies empirically the demographic and job factors associated with being 'overemployed,' and how willing employees may be to reduce hours of work at their current (or suitable alternative) job for less income. Unlike previous studies of hours constraints, the focus here is less on underemployment—the desire for more hours and income—even though underemployment is more common and may be more adverse to worker welfare. However, overemployment has considerable spillover (hidden) social costs. Facilitating a reduction in overemployment may potentially reduce the extent of underemployment, at least in sectors and workplaces where they co-exist. See "Overemployment mismatches: the preference for fewer hours" by Lonnie Golden and Tesfayi Gebreselassie, *Monthly Labor Review Online*, April 2007, Vol. 130, no. 4, U.S. Department of Labor, Bureau of Labor Statistics, <http://www.bls.gov/opub/mlr/2007/04/contents.htm>.

### ■ **Wage differentials associated with working at home**

This article presents an empirical test of wage differentials associated with working at home by frequency, stated reason, industry, major occupation, and sex of the worker. The test potentially reflects several factors, including hedonic differentials,

productivity effects, and risk sharing. The analysis presented quantifies such differentials; previous studies have not done so, although they have explored factors underlying the choice to work at home, the impact of working at home on travel and congestion, and other related issues. See "Wage differentials associated with working at home" by Bonnie Sue Gariety and Sherrill Shaffer, *Monthly Labor Review Online*, March 2007, Vol. 130, no. 4, U.S. Department of Labor, Bureau of Labor Statistics, <http://www.bls.gov/opub/mlr/2007/03/contents.htm>.

### ■ **Employment dynamics: small and large firms over the business cycle**

Who creates the most jobs: small businesses or large businesses? This subject has been widely discussed among economists and researchers and is often a topic of political debates citing the important role of small businesses in creating jobs. The small- versus large-firm issue is twofold: Do small firms create most of the new jobs, or is their share of net job gains greater than their base share of employment? Economists argue that the answer depends on which methodology is used. New statistics from the Business Employment Dynamics (BED) program of the U.S. Bureau of Labor Statistics (BLS) enable the analysis of many of the size class methodological issues. See "Employment dynamics: small and large firms over the business cycle" by Jessica Helfand, Akbar Sadeghi and David Talan, *Monthly Labor Review Online*, March 2007, Vol. 130, No. 4, U.S. Department of Labor, Bureau of Labor Statistics, <http://www.bls.gov/opub/mlr/2007/03/contents.htm>.

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#### Perspectives

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Personal debt – Spring 2007

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## CONTACTS

### Administrative data

*Small area and administrative data*  
Customer Services  
613-951-9720

### Business surveys

*Annual Survey of Manufactures and Logging*  
Client Services  
613-951-9497

*Annual surveys of service industries*  
Patti Dow  
613-951-4612

*Business Conditions Survey of Manufacturing Industries*  
Claude Robillard  
613-951-3507

### Census

*Labour force characteristics*  
Sandra Swain  
613-951-6908

*Income statistics*  
John Gartley  
613-951-6906

### Employment and income surveys

*Labour Force Survey*  
Marc Lévesque  
613-951-4090

*Survey of Employment, Payrolls and Hours*  
Sylvie Picard  
613-951-4003

*Employment Insurance Statistics Program*  
Robert Keay  
613-951-4008

*Major wage settlements*  
Workplace Information Directorate  
(Human Resources and Social Development Canada)  
819-997-3117 or 1 800 567-6866

*Labour income*  
Anna MacDonald  
613-951-3784

*Survey of Labour and Income Dynamics*  
*Survey of Financial Security*  
*Survey of Household Spending*  
Client Services  
613-951-7355 or 1 888 297-7355

### General Social Survey

*Education, work and retirement*  
*Aging and social support*  
*Time use*  
Client Services  
613-951-5979

### Pension surveys

*Pension Plans in Canada Survey*  
Michel Palardy  
613-951-7559

*Quarterly Survey of Trusteed Pension Funds*  
Gregory Sannes  
613-951-4034

### Special surveys

*Adult Education and Training Survey*  
Client Services  
613-951-7608 or 1 800 307-3382  
*National Graduates Survey*  
Client Services  
613-951-7608



# Unionization

## Unionization rates in first half of 2006 and 2007

At 14.1 million, average paid employment (employees) during the first half of 2007 was 283,000 higher than during the same period a year earlier (Table 1). On the other hand, union membership increased by 72,000 to 4.2 million. Compared with last year, employment grew less while union membership expanded more. As a result, the unionization rate (density) remained unchanged at 29.7%.

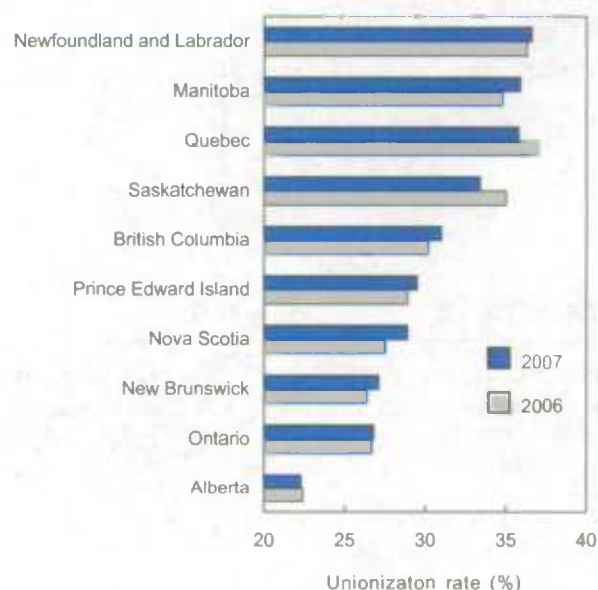
Both men and women registered marginal decreases in unionization rates. At 30.0%, the women's rate in 2007 continued to exceed the rate for men (29.3%).

Unionization rose slightly in the public sector (to 71.7%) but remained the same in the private sector (17.0%).

Seven provinces recorded increases. Decreases were seen in Quebec, Saskatchewan and Alberta (Chart A).

The rate fell from 23.2% to 22.9% for part-time workers and remained unchanged for full-time workers (31.2%).

**Chart A Newfoundland and Labrador the most unionized province; Alberta, the least**



Source: Statistics Canada, Labour Force Survey, January-to-June averages

## Data sources

Information on union membership, density and coverage by various socio-demographic characteristics, including earnings, are from the Labour Force Survey. Further details can be obtained from Marc Lévesque, Labour Statistics Division, Statistics Canada at 613-951-4090.

Data on strikes, lockouts and workdays lost, and those on major wage settlements were supplied by Human Resources and Social Development Canada (HRSDC). Further information on these statistics may be obtained from Client services, Workplace Information Directorate, HRSDC at 1 800 567-6866.

The unionization rate for permanent employees remained at 30.2%, but decreased to 25.8% for those in non-permanent jobs. The rate fell in workplaces with less than 20 employees, and those with 100 to 500, it increased in those with more than 500 employees and those with 20 to 99 employees.

Unionization rose in 8 of the 16 major industry groups: public administration; construction; information, culture and recreation; trade; business, building and other support; other services; finance, insurance, real estate and leasing; and accommodation and food. Professional, scientific and technical remained stable, while all other industry groups registered declines (Chart B).

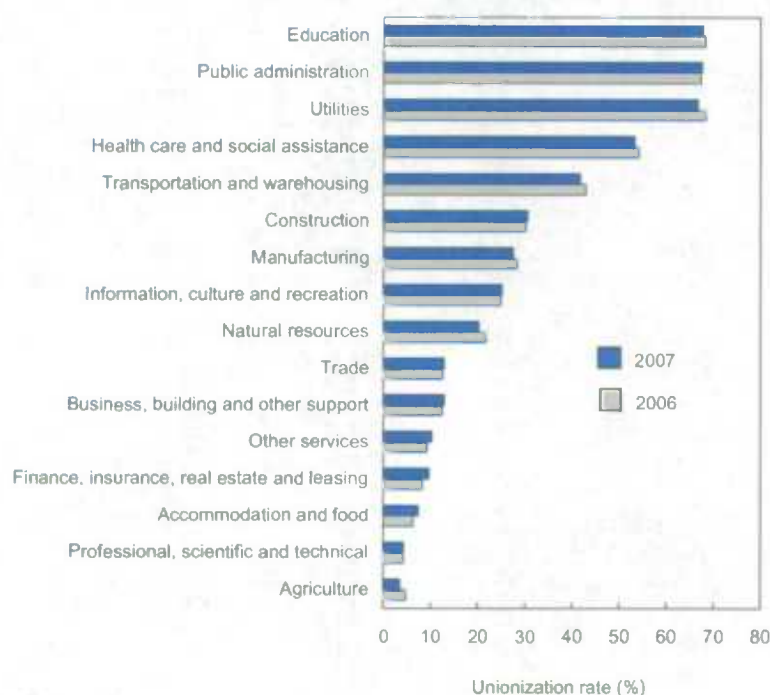
Among the 10 major occupational groups, unionization rose in 3: business, finance and administrative; natural and applied sciences;

**Chart C Unionization in community service occupations far outpaced that in others**



Source: Statistics Canada, Labour Force Survey, January-to-June averages

**Chart B The highest unionization rates were in public-sector industries**



Source: Statistics Canada, Labour Force Survey, January-to-June averages

and management. Trades, transport and equipment operators and sales and services remained stable, while the rest showed declines (Chart C).

The number of employees who were not union members but covered by a collective agreement averaged 308,000, down slightly from 316,000 a year earlier (see Akyeamong 2000 for a description of this group).

Table 1 Union membership and coverage by selected characteristics

	2006			2007		
	Total employees	Union density		Total employees	Union density	
		Members	Coverage <sup>1</sup>		Members	Coverage <sup>1</sup>
	'000	%	%	'000	%	%
<b>Both sexes</b>	<b>13,804</b>	<b>29.7</b>	<b>32.0</b>	<b>14,087</b>	<b>29.7</b>	<b>31.8</b>
Men	6,979	29.4	31.9	7,059	29.3	31.7
Women	6,825	30.1	32.1	7,027	30.0	32.0
<b>Sector<sup>2</sup></b>						
Public	3,229	71.4	75.1	3,257	71.7	75.2
Private	10,575	17.0	18.9	10,830	17.0	18.8
<b>Age</b>						
15 to 24	2,369	13.3	15.5	2,418	13.3	15.0
25 to 54	9,798	32.7	35.1	9,911	32.7	35.0
25 to 44	6,559	29.5	31.9	6,592	29.8	32.1
45 to 54	3,238	39.3	41.6	3,319	38.3	40.7
55 and over	1,638	35.5	37.7	1,758	35.1	37.4
<b>Education</b>						
Less than Grade 9	333	27.6	30.1	323	25.9	27.7
Some high school	1,497	21.9	23.5	1,490	21.1	22.8
High school graduation	2,848	27.1	28.8	2,874	25.8	27.4
Some postsecondary	1,214	21.6	23.7	1,188	20.9	22.9
Postsecondary certificate or diploma	4,799	33.4	35.9	4,937	33.8	36.2
University degree	3,113	33.7	36.7	3,274	34.1	36.9
<b>Province</b>						
Atlantic	931	28.9	30.5	945	29.9	31.2
Newfoundland and Labrador	180	36.3	38.1	187	36.6	38.3
Prince Edward Island	56	28.9	30.2	58	29.5	30.7
Nova Scotia	384	27.5	28.9	386	28.9	30.0
New Brunswick	311	26.4	28.1	314	27.1	28.4
Quebec	3,219	37.0	40.9	3,259	35.8	39.4
Ontario	5,494	26.7	28.4	5,548	26.8	28.5
Prairies	2,394	27.0	29.1	2,516	26.8	28.7
Manitoba	496	34.8	37.5	505	35.9	37.7
Saskatchewan	388	35.0	36.9	405	33.4	35.3
Alberta	1,510	22.4	24.4	1,606	22.3	24.2
British Columbia	1,766	30.2	32.0	1,818	31.0	32.9
<b>Work status</b>						
Full-time	11,276	31.2	33.6	11,483	31.2	33.5
Part-time	2,528	23.2	25.2	2,604	22.9	24.6
<b>Industry</b>						
Goods-producing	3,214	28.8	31.0	3,209	28.2	30.5
Agriculture	129	4.8	5.4	122	3.5	5.1
Natural resources	261	21.7	23.7	285	20.2	22.1
Utilities	119	68.5	72.5	131	66.7	71.2
Construction	685	30.2	32.2	727	30.6	32.8
Manufacturing	2,020	28.4	30.7	1,944	27.5	29.7
Service-producing	10,590	30.0	32.3	10,877	30.1	32.2
Trade	2,313	12.6	14.2	2,355	12.9	14.5
Transportation and warehousing	661	42.9	44.4	673	41.7	43.8
Finance, insurance, real estate and leasing	853	8.3	10.3	877	9.7	11.2
Professional, scientific and technical	717	4.3	5.4	743	4.3	5.5
Business, building and other support	517	12.5	14.8	519	12.9	14.7
Education	1,145	68.3	72.7	1,175	67.8	71.5
Health care and social assistance	1,546	54.2	56.5	1,605	53.3	55.5
Information, culture and recreation	626	24.9	26.9	642	25.1	26.8
Accommodation and food	895	6.3	7.4	961	7.4	8.3
Other	485	9.3	11.1	488	10.3	12.5
Public administration	833	67.3	72.5	839	67.6	72.6



**Table 1 Union membership and coverage by selected characteristics (concluded)**

	2006			2007		
	Total employees	Union density		Total employees	Union density	
		Members	Coverage <sup>1</sup>		Members	Coverage <sup>1</sup>
<b>Occupation</b>	'000	%	%	'000	%	%
Management	1,013	7.6	10.4	988	8.3	10.9
Business, finance and administrative	2,698	24.1	26.3	2,700	24.9	27.0
Professional	352	14.6	17.3	378	17.2	18.9
Financial and administrative	700	22.5	24.5	685	23.2	25.6
Clerical	1,645	26.7	28.9	1,637	27.3	29.4
Natural and applied sciences	981	23.4	26.1	1,030	23.7	25.8
Health	854	61.7	64.1	864	61.4	63.2
Professional	94	35.6	41.3	101	40.2	45.3
Nursing	264	81.4	83.2	266	81.2	82.9
Technical	211	59.3	60.9	229	56.5	58.0
Support staff	284	53.8	56.4	268	53.8	55.0
Social and public service	1,255	57.6	61.0	1,298	57.7	61.0
Legal, social and religious workers	564	35.8	38.4	589	36.8	40.0
Teachers and professors	690	75.4	79.5	710	75.1	78.4
Secondary and elementary	472	87.1	89.8	478	86.8	89.0
Other	219	50.2	57.2	232	50.8	56.6
Culture and recreation	331	26.1	28.4	301	23.7	26.1
Sales and service	3,444	20.0	21.7	3,674	20.0	21.7
Wholesale	359	6.1	7.4	381	5.4	6.5
Retail	1,013	11.8	12.9	1,062	12.3	13.6
Food and beverage	497	9.2	9.9	561	7.8	8.6
Protective services	215	54.6	60.7	231	54.9	62.0
Child care and home support	164	48.8	51.9	190	45.6	48.7
Travel and accommodation	1,195	25.5	27.3	1,250	26.1	27.7
Trades, transport and equipment operators	1,987	36.5	38.6	2,007	36.5	38.8
Contractors and supervisors	114	27.1	29.6	111	32.3	34.9
Construction trades	254	37.9	40.1	256	37.7	39.9
Other trades	781	38.4	40.4	793	39.6	41.9
Transportation equipment operators	504	38.1	39.9	511	36.3	38.1
Helpers and labourers	334	31.8	34.5	337	29.8	33.2
Unique to primary industry	273	15.4	17.0	277	14.9	16.9
Unique to production	970	36.8	39.4	946	33.9	36.2
Machine operators and assemblers	772	36.5	39.0	751	33.9	36.1
Labourers	198	38.0	41.1	196	33.6	36.5
<b>Workplace size</b>						
Under 20 employees	4,473	13.4	15.0	4,598	13.1	14.7
20 to 99 employees	4,548	29.7	32.2	4,638	30.0	32.3
100 to 500 employees	2,946	41.4	44.0	2,976	41.1	43.8
Over 500 employees	1,837	50.9	53.8	1,874	51.2	53.8
<b>Job tenure</b>						
1 to 12 months	3,147	14.6	17.2	3,341	14.9	17.3
Over 1 year to 5 years	4,361	23.0	25.2	4,448	23.1	25.1
Over 5 years to 9 years	2,194	32.1	34.1	2,206	32.9	35.1
Over 9 years to 14 years	1,278	36.7	38.7	1,308	36.6	38.7
Over 14 years	2,823	52.0	54.5	2,784	51.9	54.4
<b>Job status</b>						
Permanent	12,069	30.2	32.4	12,310	30.2	32.3
Non-permanent	1,735	26.3	29.4	1,777	25.8	28.5

1 Union members and persons who are not union members but covered by collective agreements (for example, some religious group members).

2 Public-sector employees are those working for government departments or agencies; Crown corporations; or publicly funded schools, hospitals or other institutions. Private-sector employees are all other wage and salary earners.

Source: Statistics Canada, Labour Force Survey, January-to-June averages

## 2006 annual averages

Approximately 4.1 million (29.4%) employees belonged to a union in 2006 (Table 2). An additional 320,000 (2.3%) were covered by a collective agreement.

Those in the public sector—government, Crown corporations, and publicly funded schools or hospitals—were four times as likely as their private-sector counterparts to belong to a union (71.0% versus 17.0%).

Almost 1 in 3 full-time employees belonged to a union, compared with about 1 in 4 part-time. Also, almost 1 in 3 permanent employees was a union member, compared with 1 in 4 non-permanent.

High unionization rates were found among employees aged 45 to 54 (39.0%); among those with a postsecondary certificate or diploma (33.3%) or a university degree (33.2%); in Quebec (36.4%) and Newfoundland and Labrador (35.6%); in educational services (68.2%), public administration (66.9%), and utilities (65.4%); and in health care occupations (61.4%).

Low unionization rates were recorded among 15 to 24 year-olds (13.4%); in Alberta (22.3%); in agriculture (4.0%) and professional, scientific and technical services (4.6%); and in management occupations (7.7%).

**Table 2 Union membership, 2006**

	Total employees	Union member	
		Total	Density
	'000	'000	%
<b>Both sexes</b>	13,986	4,108	29.4
Men	7,106	2,068	29.1
Women	6,881	2,040	29.7
<b>Sector<sup>1</sup></b>			
Public	3,198	2,271	71.0
Private	10,789	1,837	17.0
<b>Age</b>			
15 to 24	2,443	327	13.4
25 to 54	9,864	3,196	32.4
25 to 44	6,592	1,918	29.1
45 to 54	3,272	1,277	39.0
55 and over	1,679	586	34.9
<b>Education</b>			
Less than Grade 9	349	95	27.3
Some high school	1,519	319	21.0
High school graduation	2,906	767	26.4
Some postsecondary	1,192	258	21.7
Postsecondary certificate or diploma	4,861	1,620	33.3
University degree	3,159	1,048	33.2
<b>Province</b>			
Atlantic	948	270	28.5
Newfoundland and Labrador	188	67	35.6
Prince Edward Island	58	16	28.1
Nova Scotia	389	105	27.0
New Brunswick	313	82	26.2
Quebec	3,263	1,189	36.4
Ontario	5,558	1,460	26.3
Prairies	2,436	650	26.7
Manitoba	501	172	34.3
Saskatchewan	396	135	34.2
Alberta	1,540	344	22.3
British Columbia	1,782	538	30.2
<b>Work status</b>			
Full-time	11,527	3,541	30.7
Part-time	2,459	567	23.1
<b>Industry</b>			
Goods-producing	3,298	931	28.2
Agriculture	139	6	4.0
Natural resources	274	58	21.3
Utilities	122	80	65.4
Construction	737	217	29.5
Manufacturing	2,026	570	28.2
Service-producing	10,688	3,177	29.7
Trade	2,331	301	12.9
Transportation and warehousing	666	276	41.5
Finance, insurance, real estate and leasing	863	76	8.8
Professional, scientific and technical	721	33	4.6
Business, building and other support	538	69	12.8
Education	1,109	756	68.2
Health care and social assistance	1,570	841	53.6
Information, culture and recreation	638	158	24.8
Accommodation and food	925	59	6.3
Other	490	47	9.6
Public administration	837	560	66.9

### Differences between the sexes

For the third year in a row, the unionization rate for women in 2006 surpassed that of men (29.7% versus 29.1%).

Among men, part-time employees had a much lower rate than full-time (17.7% versus 30.4%). Among women, the gap was narrower (25.4% versus 31.1%).

The unionization rate of women in the public sector (72.7%) exceeded that of men (68.3%), reflecting women's presence in public administration, and in teaching and health positions. However, in the private sector, only 12.4% were unionized, compared with 20.9% of men. The lower rate among women reflected their predominance in sales and several service occupations.

A higher-than-average rate was recorded among men with a post-secondary certificate or diploma (33.5%). For women, the highest rate was among those with a university degree (38.9%), reflecting unionization in occupations such as health care and teaching.

Among those in permanent positions, the rate for men (29.9%) was almost identical to that for women (30.1%). Among those in non-permanent positions, women were more unionized than men (27.2% versus 23.1%).

**Table 2 Union membership, 2006 (concluded)**

	Total employees '000	Union member	
		Total '000	Density %
<b>Occupation</b>			
Management	1,006	78	7.7
Business, finance and administrative	2,730	648	23.7
Professional	371	56	15.0
Financial and administrative	707	154	21.8
Clerical	1,652	438	26.5
Natural and applied sciences	1,001	231	23.1
Health	860	528	61.4
Professional	101	35	34.9
Nursing	260	211	81.2
Technical	214	124	58.2
Support staff	285	157	55.1
Social and public service	1,122	678	60.4
Legal, social and religious workers	454	176	38.7
Teachers and professors	667	502	75.2
Secondary and elementary	449	391	87.0
Other	219	111	50.9
Culture and recreation	323	86	26.6
Sales and service	3,514	702	20.0
Wholesale	364	23	6.4
Retail	1,027	124	12.1
Food and beverage	521	49	9.4
Protective services	220	123	56.1
Child care and home support	156	74	47.4
Travel and accommodation	1,226	309	25.2
Trades, transport and equipment operators	2,032	728	35.8
Contractors and supervisors	116	35	29.7
Construction trades	270	98	36.3
Other trades	790	304	38.5
Transportation equipment operators	512	189	36.8
Helpers and labourers	344	103	29.9
Unique to primary industries	300	42	14.1
Unique to production	981	356	36.3
Machine operators and assemblers	778	285	36.6
Labourers	203	72	35.2
<b>Workplace size</b>			
Under 20 employees	4,586	603	13.2
20 to 99 employees	4,583	1,345	29.3
100 to 500 employees	2,959	1,216	41.1
Over 500 employees	1,858	944	50.8
<b>Job tenure</b>			
1 to 12 months	3,284	474	14.4
Over 1 year to 5 years	4,376	998	22.8
Over 5 years to 9 years	2,209	705	31.9
Over 9 years to 14 years	1,286	464	36.1
Over 14 years	2,832	1,467	51.8
<b>Job status</b>			
Permanent	12,163	3,648	30.0
Non-permanent	1,823	460	25.2

1 Public-sector employees are those working for government departments or agencies; Crown corporations; or publicly funded schools, hospitals or other institutions. Private-sector employees are all other wage and salary earners.

Source: Statistics Canada, Labour Force Survey



### Average earnings and usual hours

Unionized jobs generally provide higher earnings than non-unionized ones (Table 3). However, factors other than collective bargaining provisions play a role as well. These include varying distributions of unionized employees by age, sex, job tenure, industry, occupation, firm size, and geographical location.

Although these factors have not been examined, it is clear that unionized workers and jobs tend to have certain characteristics that are associated with higher earnings. For example, union density is higher among older workers, those with higher education, those with long tenure, and those in larger workplaces. Although differences in earnings and non-wage benefits cannot be attributed solely to union status (Akyeampong 2002), the union wage premium (after adjusting for employee and workplace characteristics) has been estimated at 7.7% (Fang and Verma 2002).

In 2006, the average hourly earnings of unionized workers were higher than those of non-unionized workers. This held true for both full-time (\$23.34 versus \$19.84) and part-time (\$19.36 versus \$12.00) employees.

In addition to having higher hourly earnings, unionized part-time employees generally worked more hours per

**Table 3 Average earnings and usual hours by union and job status, 2006**

	Hourly earnings			Usual weekly hours, main job		
	All employees	Full-time	Part-time	All employees	Full-time	Part-time
	\$					
<b>Both sexes</b>	<b>19.72</b>	<b>20.99</b>	<b>13.80</b>	<b>35.7</b>	<b>39.6</b>	<b>17.5</b>
Union member	22.79	23.34	19.36	36.0	38.7	19.3
Union coverage <sup>1</sup>	22.73	23.30	19.20	36.0	38.7	19.2
Not a union member <sup>2</sup>	18.33	19.84	12.00	35.5	40.0	16.9
<b>Men</b>	<b>21.43</b>	<b>22.44</b>	<b>12.78</b>	<b>38.3</b>	<b>40.8</b>	<b>16.6</b>
Union member	23.60	24.00	17.71	38.4	39.8	18.0
Union coverage <sup>1</sup>	23.58	24.00	17.57	38.4	39.9	17.8
Not a union member <sup>2</sup>	20.43	21.67	11.60	38.2	41.3	16.3
<b>Women</b>	<b>17.96</b>	<b>19.20</b>	<b>14.24</b>	<b>33.0</b>	<b>38.0</b>	<b>17.9</b>
Union member	21.96	22.54	19.85	33.5	37.3	19.7
Union coverage <sup>1</sup>	21.86	22.45	19.71	33.5	37.3	19.6
Not a union member <sup>2</sup>	16.15	17.58	12.20	32.7	38.4	17.3
<b>Atlantic</b>	<b>16.42</b>	<b>17.34</b>	<b>11.80</b>	<b>36.6</b>	<b>40.4</b>	<b>17.6</b>
Union member	21.25	21.46	19.39	37.6	39.5	20.4
Union coverage <sup>1</sup>	21.18	21.41	19.19	37.6	39.6	20.2
Not a union member <sup>2</sup>	14.38	15.40	10.09	36.2	40.8	17.0
<b>Quebec</b>	<b>18.87</b>	<b>19.94</b>	<b>14.01</b>	<b>34.7</b>	<b>38.3</b>	<b>18.3</b>
Union member	21.46	21.85	19.09	35.2	37.7	20.3
Union coverage <sup>1</sup>	21.33	21.75	18.75	35.3	37.8	20.2
Not a union member <sup>2</sup>	17.21	18.61	11.85	34.3	38.7	17.4
<b>Ontario</b>	<b>20.65</b>	<b>22.15</b>	<b>13.49</b>	<b>35.8</b>	<b>39.7</b>	<b>17.2</b>
Union member	24.07	24.81	19.11	36.3	38.9	18.6
Union coverage <sup>1</sup>	24.05	24.81	18.99	36.2	38.9	18.5
Not a union member <sup>2</sup>	19.32	21.04	12.00	35.6	40.0	16.8
<b>Prairies</b>	<b>19.90</b>	<b>21.13</b>	<b>13.82</b>	<b>36.7</b>	<b>40.6</b>	<b>17.3</b>
Union member	22.49	23.06	19.12	36.4	39.3	19.0
Union coverage <sup>1</sup>	22.54	23.11	19.21	36.4	39.4	18.9
Not a union member <sup>2</sup>	18.82	20.29	12.02	36.8	41.1	16.7
<b>British Columbia</b>	<b>19.91</b>	<b>21.03</b>	<b>15.21</b>	<b>35.3</b>	<b>39.6</b>	<b>17.4</b>
Union member	23.39	23.94	20.62	35.6	39.0	18.9
Union coverage <sup>1</sup>	23.40	23.96	20.55	35.7	39.0	18.8
Not a union member <sup>2</sup>	18.28	19.58	13.22	35.1	39.8	16.8

1 Union members and persons who are not union members but covered by collective agreements (for example, some religious group members).

2 Workers who are neither union members nor covered by collective agreements.

Source: Statistics Canada, Labour Force Survey

week than their non-unionized counterparts (19.3 hours versus 16.9). As a result, their average weekly earnings were nearly double (\$378.88 versus \$208.22).

On average, unionized women working full time received 94% as much in hourly earnings as their male counterparts. In contrast, women working part time earned 12% more.

## Wage settlements, inflation and labour disputes

Wage gains of 2.5% in 2006 matched the rate of inflation (Table 4). During the first four months of 2007, wage gains averaged 3.0%, over one percentage point higher than the rate of inflation (1.9%).

Wage gains in the private sector in 2006 (2.1%) fell short of those in the public sector (2.6%). The gap widened in the first four months of 2007. The corresponding figures were 2.5% and 3.6%.

Annual statistics on strikes, lockouts and person-days lost are affected by several factors, including collective

bargaining timetables, size of the unions involved, strike or lockout duration, and state of the economy. The number of collective agreements up for renewal in a year determines the potential for industrial disputes. Union size and strike or lockout duration determine the number of person-days lost. The state of the economy influences the likelihood of an industrial dispute, given that one is legally possible.

The estimated number of person-days lost through strikes and lockouts more than doubled from 1.7 million in 2003 to 4.1 million in 2005. In 2006, however, the number dropped sharply to 813,000.

**Table 4 Major wage settlements, inflation and labour disputes**

Year	Average annual increase in base wage rates <sup>1</sup>			Annual change in consumer price index <sup>1</sup>	Labour disputes and time lost <sup>3</sup>			
	Public sector employees <sup>2</sup>	Private sector employees <sup>2</sup>	Total employees		Strikes and lockouts <sup>4</sup>	Workers involved	Person-days not worked	Proportion of estimated working time
			%			'000	'000	%
1980	10.9	11.7	11.1	10.1	1,028	452	9,130	0.37
1981	13.1	12.6	13.0	12.4	1,049	342	8,850	0.35
1982	10.4	9.5	10.2	10.9	679	464	5,702	0.23
1983	4.6	5.5	4.8	5.8	645	330	4,441	0.18
1984	3.9	3.2	3.6	4.3	716	187	3,883	0.15
1985	3.8	3.3	3.7	4.0	829	164	3,126	0.12
1986	3.6	3.0	3.4	4.1	748	486	7,151	0.27
1987	4.1	3.8	4.0	4.4	668	582	3,810	0.14
1988	4.0	5.0	4.4	4.0	548	207	4,901	0.17
1989	5.2	5.2	5.2	5.0	627	445	3,701	0.13
1990	5.6	5.7	5.6	4.8	579	271	5,079	0.17
1991	3.4	4.4	3.6	5.6	463	254	2,516	0.09
1992	2.0	2.6	2.1	1.5	404	152	2,110	0.07
1993	0.6	0.8	0.7	1.8	381	102	1,517	0.05
1994	0.0	1.2	0.3	0.2	374	81	1,607	0.06
1995	0.6	1.4	0.9	2.2	328	149	1,583	0.05
1996	0.5	1.7	0.9	1.6	330	276	3,269	0.11
1997	1.1	1.8	1.5	1.6	284	258	3,608	0.12
1998	1.6	1.8	1.7	0.9	381	244	2,444	0.08
1999	2.0	2.7	2.2	1.7	413	160	2,443	0.08
2000	2.5	2.4	2.5	2.7	379	144	1,657	0.05
2001	3.4	3.0	3.3	2.6	381	221	2,199	0.07
2002	2.9	2.6	2.8	2.2	294	168	3,033	0.09
2003	2.9	1.2	2.5	2.8	266	81	1,736	0.05
2004	1.4	2.2	1.8	1.9	298	260	3,225	0.09
2005	2.2	2.4	2.3	2.2	260	199	4,149	0.12
2006	2.6	2.1	2.5	2.5	150	43	813	0.02
2007 <sup>5</sup>	3.6	2.5	3.0	1.9				

1 Involving 500 or more employees.

2 Public-sector employees are those working for government departments or agencies; Crown corporations; or publicly funded schools, hospitals or other institutions. Private-sector employees are all other wage and salary earners.

3 Involving 1 or more workers.

4 Ten person-days not worked.

5 2007 data refer to January to April only.

Sources: Statistics Canada, Prices Division; Human Resources and Skills Development Canada, Workplace Information Directorate



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