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# PERSPECTIVES

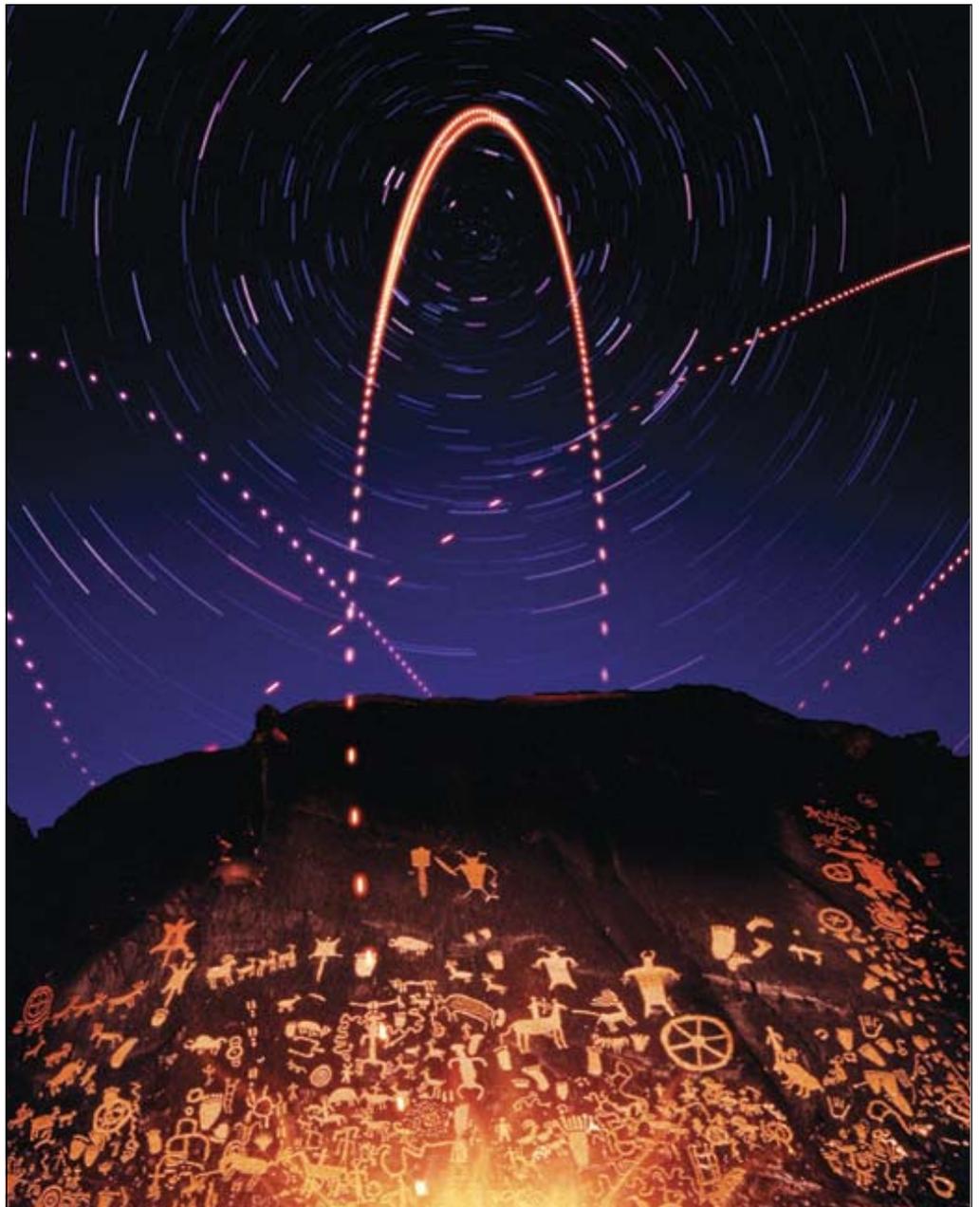
ON LABOUR AND INCOME

**SEPTEMBER 2002**

Vol. 3, No. 9

■ APPROACHING  
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.	not available for a specific reference period
...	not applicable
p	preliminary
r	revised
x	confidential
E	use with caution
F	too unreliable to be published

# Highlights

## *In this issue*

### ■ Approaching retirement

- Just under half of workers in their 50s and 60s who ended a full-time career job between 1993 and 1997 were working 24 months later. Three in 10 began a new full-time job, while 1 in 10 began a part-time job. Among those aged 50 to 54, almost 60% began a new full-time job, while 26% were still not working after two years. Among those aged 55 to 59, less than one-third began a new full-time job, and just over half were not working two years later.
- Transition patterns differed between employees and the self-employed: 55% of those ending a full-time, paid job remained without a job for two years, compared with 37% of those ending a full-time, self-employed job. Almost half of those ending a self-employed job began a new full-time job within 24 months.
- Most workers (62%) who ended a career job voluntarily did not work again during the following two years, while only 21% started a new full-time job. For those who left involuntarily, the proportions were reversed, with most (61%) finding a new full-time job. Almost one-third of workers who claimed to have retired from their career job returned to work within two years.
- For workers who found a new job within 24 months, the average jobless period was 5.6 months. The amount of time without a job varied by age group, with older age groups taking longer between jobs. The self-employed spent less time without a job—3 months compared with roughly 6 months for employees. Those who ‘retired’ and then began a new job took more time (7 months) between jobs, on average, than those leaving for other reasons.

### ■ Union wage premium

- In 1999, the average unionized worker earned \$20.36 per hour while the average non-unionized worker earned \$17.82, an overall union wage premium of 14.3%. After adjusting for employee and workplace characteristics, the differential was reduced to 7.7%.
- Differences between unionized and non-unionized workers may explain part of the wage differential. For example, unionized workers were somewhat better educated: more had trade school education (15% versus 11%) or undergraduate or higher education (21% versus 18%). They also had longer job tenure (9 versus 6 years).
- Workplace characteristics also differed. Unionized workers were more likely to be in primary manufacturing, communications and utilities, or education and health-care industries. They were also more likely to be found in larger firms (45% versus 11%).
- The greatest adjusted union wage premium was in the construction industry. Similarly, construction occupations showed the greatest adjusted wage premium (15%). Management and professional occupations had the smallest differential (-1%), followed by the financial, administrative and clerical group (2%).
- The adjusted union wage premium was higher than the average in British Columbia (14%), the Atlantic provinces (12%), Manitoba and Saskatchewan (9%), and Alberta (8%). Quebec, the most unionized region in Canada, showed a modest gap of 5%; Ontario, a relatively less unionized province, had a premium of 6%, somewhat below the national average.

### Perspectives

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# Approaching retirement

Wendy Pyper and Philip Giles

*When will I retire? Will I have enough money to live and do the things I want?*

*How will I spend my time? Will I travel? Take up new hobbies? Will I be content not working?*

*Should I find a part-time job to help pass the time—or to help pay the bills?*

AS THE BABY BOOM GENERATION approaches retirement, more and more older workers will be making decisions that will affect the labour market now and for many years to come. Today's younger workers will soon be forced to deal with the effects of these decisions. If the majority of older workers stop working abruptly (the traditional retirement route), labour demand will jump sharply to replace them. If they delay retirement and continue to work, jobs or career advancement may be less available for younger workers. Are there other possibilities? Could workers approaching retirement slow down—continuing to work but cutting back on their hours? Could they start their own business and take advantage of a more flexible work schedule? What could employers offer to entice their experienced employees to remain, sharing their knowledge with younger employees?

Using the longitudinal Survey of Labour and Income Dynamics (SLID), this article looks at the transitions of older Canadian workers by several characteristics including age, sex, and class of worker. It also examines the voluntary and involuntary nature of job loss.

## The aging population and labour force

The oldest baby boomers are now in their early 50s. The proportion of the population in the 50 to 69 age group remained fairly steady from the mid-1970s to the mid-1990s, but since then, it has increased to

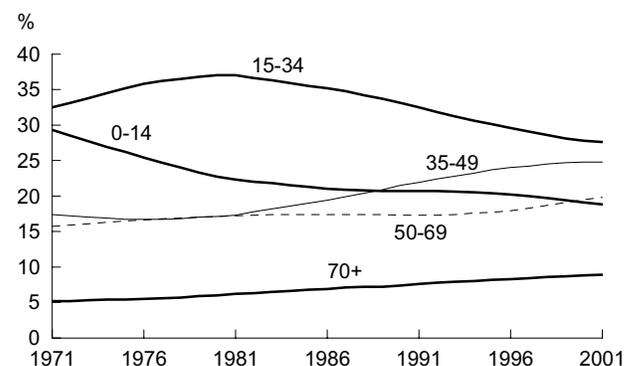
*Wendy Pyper is with Labour and Household Surveys Analysis Division. She can be reached at (613) 951-0381 or perspectives@statcan.ca. Philip Giles is with the Income Statistics Division. He can be reached at (613) 951-2891 or perspectives@statcan.ca.*

roughly 20% (Chart A). In fact, the proportions for each age group over 35 have increased, while both groups below 35 have declined.

The participation of older men in the labour market fell from the mid-1970s to the mid-1990s. However, by the late 1990s, the trend had levelled off or reversed slightly (Chart B). The pattern can be attributed partially to economic conditions (Sunter 2001). Women in their 50s saw increased participation rates over the period, reflecting the increased participation of younger women in the labour market starting in the 1970s. As these women entered the older age groups (replacing the older cohort), the participation rates increased.

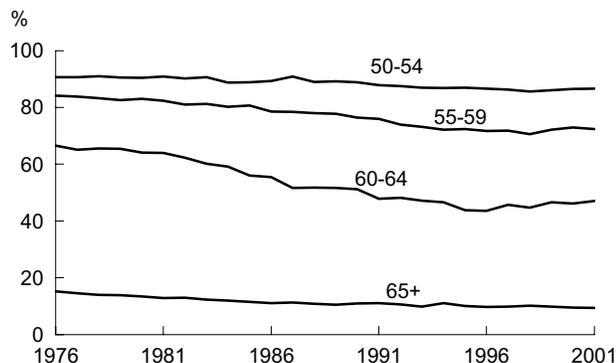
While these measures are important for understanding the labour market situation of older workers, they do not tell how much time older workers spend in the

**Chart A: The proportion of older people has increased.**



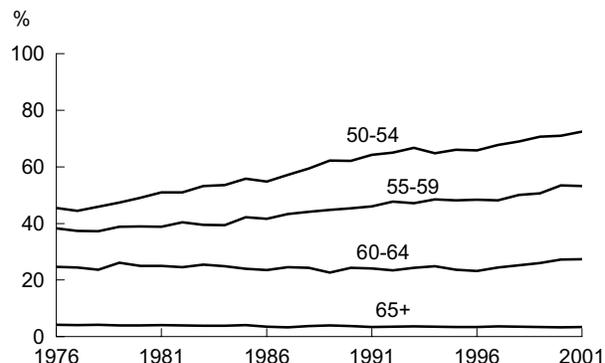
Source: Census of Population

**Chart B: The participation rate has been generally falling for older men ...**



Source: Labour Force Survey

**... but rising for older women.**



labour market. One clue is provided by the ratio of part-time employment to total employment (Chart C). For both men and women, older age groups have higher incidences of part-time work, and these have increased for each age group since 1976. The rate is consistently higher for women than for men. However, these overall trends do not shed light on how individuals move into or out of the labour market. For this, longitudinal data must be used.

### Transitions of older Canadian workers

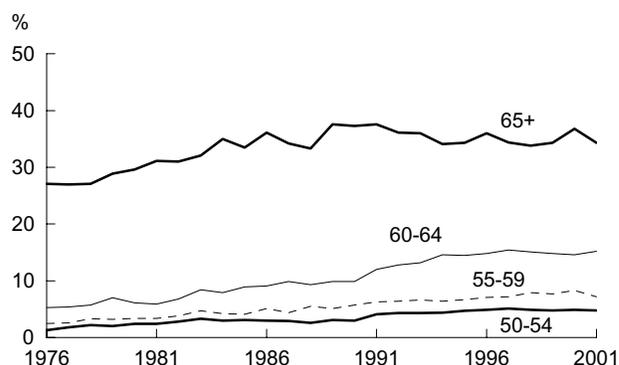
This study uses SLID data from 1993 to 1999 (see *Data source and definitions*). The population chosen comprised persons aged 50 to 67 with a full-time career job (one held for at least eight years) that ended within the five-year period 1993 to 1997. These persons were studied for 24 months following the end of a career job for re-entry into employment.

### Ending a career job is not always complete retirement

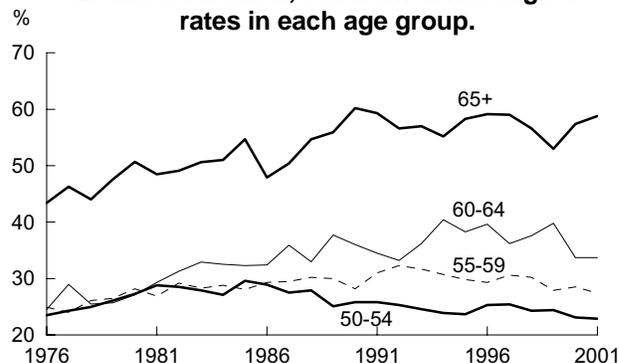
Just over half of older workers who ended a full-time career job were not working 24 months later, while almost one-third had begun a new full-time job (Table 1). A smaller, but still significant portion began a part-time job (10%). The remainder consisted of various types of non-response.

Partly, these patterns may arise because of the age of the workers in this study—50 to 67—so perhaps the results are influenced by the younger portion of this population. To some extent, this is true. For the

**Chart C: The incidence of part-time employment increased with age for men ...**



**... and for women, but women had higher rates in each age group.**



Source: Labour Force Survey

**Table 1: Persons whose career job ended, by age, sex, and class of worker**

	Total	Job status over the following 24 months			
		No job	Full-time	Part-time	Don't know*
	'000	%			
<b>Both sexes</b>	<b>656</b>	<b>52</b>	<b>31</b>	<b>10</b>	<b>7</b>
Men	436	49	36	9	7
Women	221	59	21	12	F
<b>Age</b>					
50 to 54	220	26	58	11	F
55 to 59	194	54	27	12	F
60 to 64	164	73	11 <sup>E</sup>	F	F
65 to 67	78	79	F	F	F
<b>Employees</b>	<b>566</b>	<b>55</b>	<b>28</b>	<b>10</b>	<b>7</b>
Men	370	51	32	10	7
Women	196	63	20	9 <sup>E</sup>	F
<b>Self-employed</b>	<b>90</b>	<b>37</b>	<b>47</b>	<b>F</b>	<b>F</b>
Men	66	39	54	F	F
Women	25	F	F	F	F

Source: Survey of Labour and Income Dynamics, 1993-1997

\* Includes various types of non-response.

youngest age group (50 to 54), the majority of those ending a full-time career job began a new full-time job within two years (58%). These changes may have been part of their career progression. However, another substantial proportion (26%) still had no job.

For those aged 55 to 59, less than a third left a career job to begin another full-time job. Most of them (54%) did not work again within the two years, suggesting that they could be early retirees. For both age groups under 60, around 11% switched from a full-time career job to a part-time job. It appears that these workers are phasing out of employment more gradually.

Women were more likely than men to remain without a job—almost 60%. Almost half of the men remained jobless, while one-third began a new full-time job. Around 10% of both men and women

switched to part-time work, suggesting that easing into retirement is a real phenomenon.<sup>2</sup>

Transition patterns differed between employees and the self-employed. Over half (55%) of those ending full-time paid jobs remained without a job for two years, compared with 37% of those ending a full-time self-employed job. This suggests a stronger attachment to employment for the self-employed (which may be due partly to their ability to have more control over their hours of work). Many (47%) of those ending a self-employed job began a new full-time job.<sup>3</sup>

### Data source and definitions

The Survey of Labour and Income Dynamics (SLID) is a longitudinal household survey that began in 1993. Every three years, a new panel of approximately 15,000 households enters the survey and is surveyed for six years.

This study examined all main jobs held by persons aged 50 to 67<sup>1</sup> that ended between 1993 and 1997. Some jobs had invalid date information, which prohibited assignment of a job duration. These records were dropped. Job duration was determined, and all jobs held for less than eight years were dropped. Jobs held for eight years or longer were classified as career jobs. All jobs held full time at the time of the job loss were selected as the population under study and observed for a period of 24 months following the end of the career job. The first job obtained during these 24 months was categorized as the next job held.

Each year, between 2.4 and 2.9 million jobs were held as main jobs by workers aged 50 to 67, and of these jobs roughly 40% had been held for less than eight years. The

remaining 1.4 to 1.7 million had been held for eight years or more, and roughly 10% (between 121,000 to 202,000) of these ended each year. Once pooled, this represents 763,000 jobs that ended between 1993 and 1997, of which 656,000 were full-time at the time of the job loss. These are the jobs used in this study—full-time career jobs that ended within the five-year period from 1993 to 1997.

Since this study examines labour market transitions of older workers, the population selected included those as young as 50. Although too young for 'traditional' retirement, it is important to examine what people this age are doing. Gower (1997) found that 10% of those who retired between 1991 and 1995 were between 50 and 54. While the term 'retired' does not necessarily mean the end of work, it does imply that these workers are making some changes to their employment situation that are generally associated with older workers.

**Main job:** the job with the most scheduled hours (usual hours) in the month.

### What role does choice play?

SLID asks the reason a job ended, thereby allowing a distinction to be made between voluntary and involuntary job loss. The majority of career jobs ended voluntarily, ranging from almost 60% for those aged 50 to 54 to over 80% for those 55 and older (Chart D). Retirement was given as the reason for ending the majority of jobs, with higher proportions in the older age groups. Even for the 50 to 54 age group, one-third of career jobs ended in retirement. Although the majority of this youngest group started a new full-time job within two years, a substantial portion claimed to have retired.

The majority (62%) of workers who ended a career job voluntarily did not work again during the following two years, while 21% started a new full-time job (Table 2). For those who left involuntarily, the figures were 21% and 61% respectively. This indicates that choice plays a role in transitions.

For those who ended their job voluntarily, different patterns exist across age groups. Of those 50 to 54, almost 40% did not have a job after two years; however, the majority found other employment. This contrasts with older age groups where most who left voluntarily remained without a job. While the vast majority of older workers who listed retirement as the reason for ending their career job remained without a job for two years, almost one-third returned to employment. This illustrates that ‘retirement’ and ‘not working’ are not considered synonymous.

### How long before people started a new job?

Although the transition tables show how many people began a new job following the end of a career job, they do not indicate how much time elapsed between

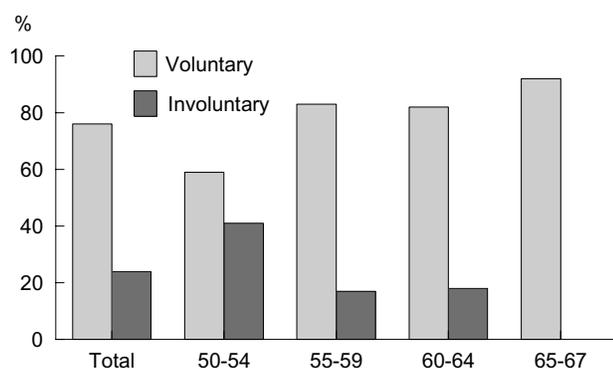
#### The American experience

Quinn, Burkhauser and Myers (1990) examined the exit patterns of older Americans from career jobs using the Retirement History Study. This longitudinal survey followed 58 to 63 year-olds over a 10-year period. The sample consisted of nearly 2,100 respondents in 1969 who ended a career job (at least 35 hours per week and held for 10 years or more). The authors chose to examine exits from career jobs because of the importance of jobs with long durations (nearly 80% of respondents had at least 10 years experience in their longest job).

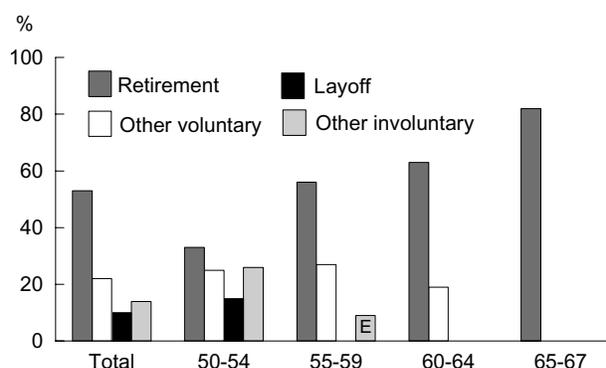
They found that 27% of the men returned to the labour market within the following four years. These workers either found a new full-time (12%) or part-time (10%) job, or reduced the hours worked at their career job to below 20 per week (5%). A similar pattern existed for non-married women, except that more women reduced their hours at their career job.

Exit patterns for self-employed men were very different, with half of them remaining employed. Of those who continued to work, 25% reduced the hours in their career job—the most common kind of transition. The remainder were evenly split between beginning a new full- or part-time job. Many characteristics were found to be related to the transition process. Health and age of the worker played important roles, as did industry, occupation, pension eligibility, and wage rate of the career job.

**Chart D: Most jobs ended voluntarily, especially for those 55 and older ...**



**... and ‘retirement’ was a reason for all age groups, even the youngest.**



Source: Survey of Labour and Income Dynamics, 1993-1997

**Table 2: Persons whose career job ended, by type of job separation**

	Total	Job status over the following 24 months			
		No job	Full-time	Part-time	Don't know*
	'000	%			
<b>Voluntary separation</b>	<b>496</b>	<b>62</b>	<b>21</b>	<b>9</b>	<b>7</b>
50 to 54	129	39	43	F	F
55 to 59	161	59	22	F	F
60 to 64	134	80	F	F	F
65 to 67	72	80	F	F	F
Men	327	59	24	10	7 <sup>E</sup>
Women	169	69	15	F	F
Employees	433	65	18	10	8
Self-employed	63	45	45	F	F
Retirement	349	70	14	10	F
Other	147	44	38	F	F
<b>Involuntary separation</b>	<b>160</b>	<b>21</b>	<b>61</b>	<b>F</b>	<b>F</b>
50 to 54	91	F	78	F	F
55 to 59	33	F	50 <sup>E</sup>	F	F
60 to 64	30	F	F	F	F
65 to 67	F	F	F	F	F
Men	108	18 <sup>E</sup>	70	F	F
Women	52	F	40 <sup>E</sup>	F	F
Employees	133	22	62	F	F
Self-employed	27	F	F	F	F
Layoff	66	F	66	F	F
Other	94	21 <sup>E</sup>	57	F	F

Source: Survey of Labour and Income Dynamics, 1993-1997  
 \* Includes various types of non-response.

work. Among those not employed after 12 months, the vast majority remained without work; only 1 in 20 began a new full-time job.

One-third of those who started another job within 24 months of ending a full-time career job spent less than a month without a job (Chart E). More men spent less time between jobs, suggesting that they have a stronger attachment to work. Since the population in this study includes people as young as 50, the short duration without a job could partly be explained by job-switching, which is common with younger workers. In fact, 32% of those aged 50 to 54 who went from a full-time career job to another job spent less than one month without a job, compared with 40% of those aged 55 to 59. For the younger age group, the difference may partly reflect the voluntary or involuntary ending of the job.

Older workers who leave their job involuntarily will likely find it more difficult—and may therefore take longer—to find a new job. It is also possible that older workers who

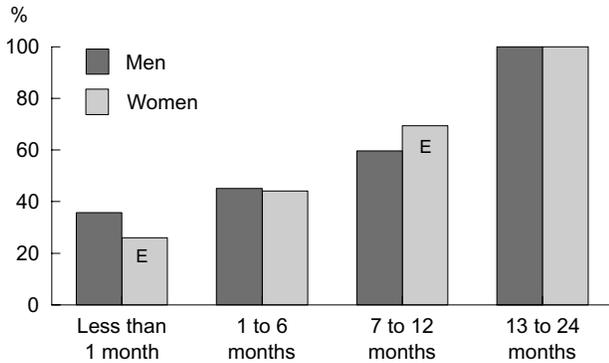
jobs. The date information provided by SLID shows how long workers spent without a job according to their transition. One in 10 workers (11%) who ended a full-time career job began a new full-time job within one month—a very temporary jobless situation (Table 3). In fact, these people may not have been without a job at all, moving directly from one job to the next. Of those not working after one month, 1 in 5 began a new full-time job within 1 to 12 months, while 1 in 17 (6%) began part-time

**Table 3: Marginal probabilities of transitions from a career job**

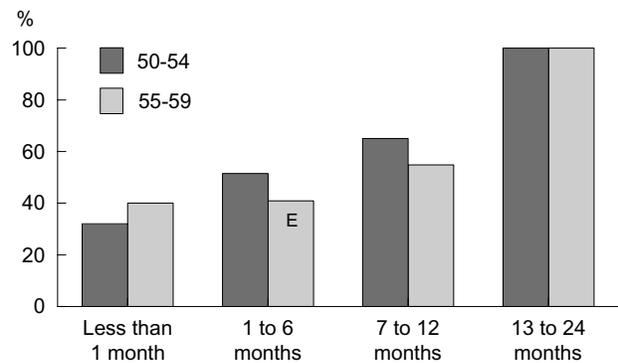
	At start of period	Total	No job	Full-time	Part-time	Don't know*
Months after career job ended	'000	%				
Less than 1 month	656	100	86	11	F	F
1-12 months	565	100	74	19	6	F
Over 12 months	418	100	91	5	F	F
Don't know	380	100	90	0	0	10
No job	343	100	100	0	0	0

Source: Survey of Labour and Income Dynamics, 1993-1997  
 \* Includes various types of non-response.

**Chart E: Men were more likely to return to work sooner ...**



**... and more 55 to 59 year-olds returned very quickly.**



Source: Survey of Labour and Income Dynamics, 1993-1997

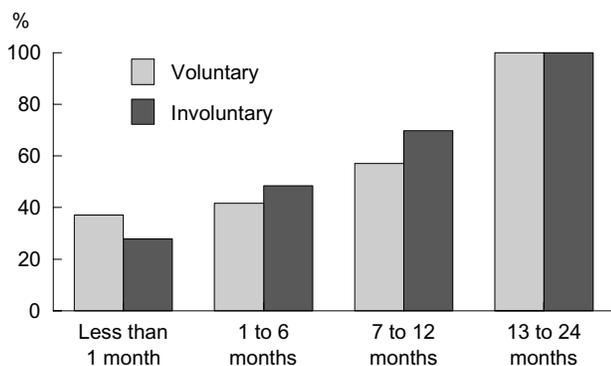
leave their job voluntarily may not be quick to find a new job either, since their original intention may have been to withdraw from the labour market completely. In fact, of those who left their job voluntarily, 37% returned to work within a month, compared with 28% of those who left involuntarily (Chart F). More of those whose job ended involuntarily took longer before starting a new job.

**Oldest workers spent more time without a job**

Another way to look at jobless duration is the average length of time spent without a job. For workers who found a new job within 24 months, the average job-

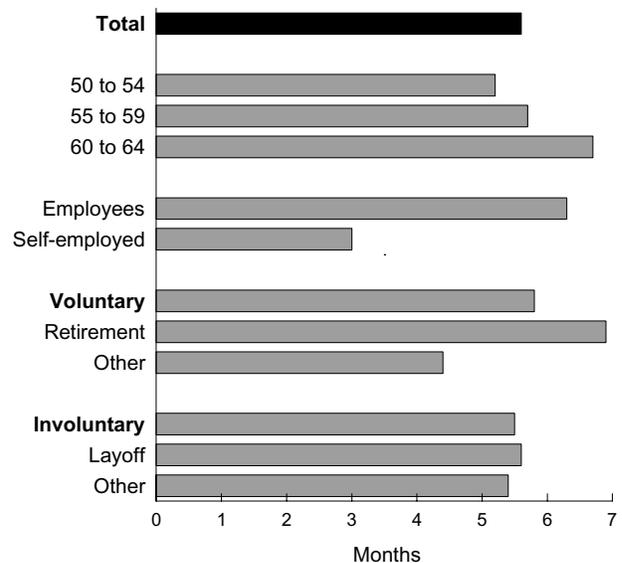
less period was 5.6 months (Chart G). The amount of time increased with age, ranging from 5 months for those 50 to 54 to almost 7 months for those 60 to 64. On average, the self-employed spent less time without a job than their salaried counterparts. The average number of months without a job was twice as high

**Chart F: Many of those who left voluntarily started a new job very quickly.**



Source: Survey of Labour and Income Dynamics, 1993-1997

**Chart G: Older persons spent more time without a job; the self-employed spent less.**



Source: Survey of Labour and Income Dynamics, 1993-1997

## Defining retirement

'Retirement' is a commonly used term that has many meanings (see Quinn, Burkhouser, and Myers, 1990, for an extensive review of the literature). Retirement could be indicated by the receipt of a public or private pension (Herz, 1995; Purcell, 2000). It could also be signalled by a reduction in work hours below a certain level, either an absolute number or a percentage of previously worked hours (Honig and Hanoch, 1985; Reimers and Honig, 1989). In some cases, it could be a self-determined condition, as in a response to a survey question (Gustman and Steinmeier, 1983). As well, it might mean a complete withdrawal from the labour market.

Many studies have found that retirement is not always a well-defined event, but instead a process. Some workers may retire from their job, begin to draw their pension, and yet work part time—either to supplement their pension or to pass the time. Some may retire and start their own business, taking advantage of the flexibility in work arrangements that comes with some businesses. Some may return to the labour market after a period of retirement. And there are also those who continue working, simply moving to a new full-time job. (Although this type of movement is not a retirement *per se*, it is nonetheless a transition and is included in discussions of retirement in many studies.)

for employees as for the self-employed (6.3 months compared with 3 months). For those who stated retirement as the reason their job ended, the average jobless period was 7 months, compared with 4 months for those stating other voluntary reasons. Those who retired and began a new job took on average more time between jobs than those leaving for any other reason.

## Conclusion

As baby boomers approach the traditional retirement age and begin the retirement process, it is important to understand the paths they are taking. The face of the future labour market will depend partly on what older workers do in their final years at work. With their departure could go their knowledge, so it is important to ensure a transfer to the next generation. Many studies have shown that retirement does not necessarily mean an abrupt end to employment—the transition from work to full retirement can be interspersed with periods of employment. If older workers were to keep working, even at a reduced level, younger workers would have the opportunity to acquire their skills and knowledge. To this end, employers may consider implementing flexible work schedules in the form of reduced hours, part-year employment, or job-sharing with their replacements.

Almost half of older workers who ended a full-time career job between 1993 and 1997 began a new job within two years. The majority of these found a new full-time job, and a smaller but significant portion (10%) switched to part-time employment, suggesting that easing into retirement is a real phenomenon. Differences exist between age groups, but a significant number of the youngest group did not work again, and a significant number in the older groups returned to work. More self-employed returned to work, and returned sooner than salaried workers. Those who left their job involuntarily were more likely than those who left voluntarily to start a new full-time job, but a substantial proportion of those who claimed to have retired began to work again, suggesting that retirement and not working are not synonymous.

As more years of longitudinal data become available, they will provide more detail on what is happening in Canada. As the aging workforce changes the nature of the labour market, workplace policies may be modified to allow more flexibility for older people to work.

## Deserving further study

This paper gives only a first glimpse at labour market transitions made by older workers. Unfortunately, the sample size of older workers in SLID does not support the desired depth of analysis. It would also be interesting to look at the job search activities of older workers. To do this, transitions between the three categories of labour force status (employed, unemployed, and not in the labour force) could be examined. Ideally, further breakdowns would be made, looking at transitions into self-employed versus paid jobs and examining the flexibility found in self-employment. The provision of benefits such as private health care coverage could be examined to see if workers with benefits are less likely to end their career job. Pension coverage could be looked at as well to determine if workers are supplementing their pensions with additional income. Changes in the number of hours worked could be examined to observe possible shifts to fewer hours of work in the career job. How does marital situation affect workers—do couples make joint decisions regarding labour market transitions? What role does health play—are older workers switching to new jobs because the physical demands of their career job are too great? These are just some of the areas of interest that unfortunately cannot yet be examined.

### ■ Notes

1 Labour information for a period of two years following the job end is required to determine the transition, and since SLID does not ask the labour questions to those aged 70 or older, workers aged 68 and older must be excluded.

2 It would be interesting to look at changes in the hours of work of a career job to examine if workers are decreasing their hours of work within the career job. This may not be possible due to sample size.

3 Due to sample size, breakdown of the new job by class of worker was not possible.

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# Union wage premium

*Tony Fang and Anil Verma*

*Everyone 'knows' that unions raise wages.*

— Freeman and Medoff (1984, 43)

**H**OW MUCH MORE do unionized workers earn than non-unionized workers? Since the 1970s, the wage gap has varied between 10 and 25% in Canada (Renaud 1997) and between 21 and 32% in the U.S. (Freeman and Medoff 1984). However, since that time, wage differentials may have shifted in light of external pressures such as globalization, technological advancement, and demographic changes. Many changes have occurred in workplace practices, such as flexibility, employee involvement, and the adoption of technology. Since unionized and non-unionized workplaces are free to adopt innovations from each other, how they were implemented may also have contributed to shifts in wage differentials.

Some components of wage differences between the two groups of workers may persist because of union policies—for example, union insistence on standard wages with no variable pay component or seniority rules. But other differences may narrow or widen as union and non-union workplaces 'compete' with each other (or with a common foreign competitor) by adopting workplace innovations to enhance quality, productivity, safety, or other outcomes of interest.

This article investigates differences between union and non-union wages using data from the first Workplace and Employee Survey (WES). When compared with historical differences in wages, the results provide a dynamic view of wage differences between the two groups of workers (see *Data source*).

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*Tony Fang is with the Business and Labour Market Analysis Division. He can be reached at (613) 951-4233 or [perspectives@statcan.ca](mailto:perspectives@statcan.ca). Anil Verma is with the Centre for Industrial Relations and the Rotman School of Management at the University of Toronto. He can be reached at (416) 946-3602 or [perspectives@statcan.ca](mailto:perspectives@statcan.ca).*

## Union and non-union wages over time

In a perfectly free market, differences between union and non-union wages may not sustain themselves in the long run. However, in practice they do persist even though their magnitude may vary over time. There are at least two explanations for their persistence:

One way for unions to create a sustainable wage premium would be to organize all (or nearly all) the employers in a given industry. They could then 'take wages out of competition' by forcing all (or most of) the employers to pay the same wage.

Another explanation is the 'shock effect' hypothesis (Slichter 1941; Slichter, Healy and Livernash 1960). The arrival of unions in a workplace spurs management to

### Data source

Household surveys such as the Labour Force Survey (LFS), the Labour Market Activity Survey (LMAS), and the Survey of Labour and Income Dynamics (SLID) have been major sources of data on unionization (Lemieux 1993). However, research based on such data has not been able to control for the effect of firm characteristics—other than industry and firm size—on wage levels because of the lack of suitable data for more comprehensive analysis. The **Workplace and Employee Survey (WES)**, first conducted in 1999, offers the chance to examine the effect of workplace characteristics in addition to industry and firm size effects.

The sample used in this analysis was based on 23,540 employees in 5,733 workplaces in 1999. About 28% of the employees were either union members or covered by collective agreements. However, in workplaces with more than 50 employees, the rate rose to 46%. In larger workplaces (more than 100 employees), the proportion was almost identical (51% unionized, 49% not).

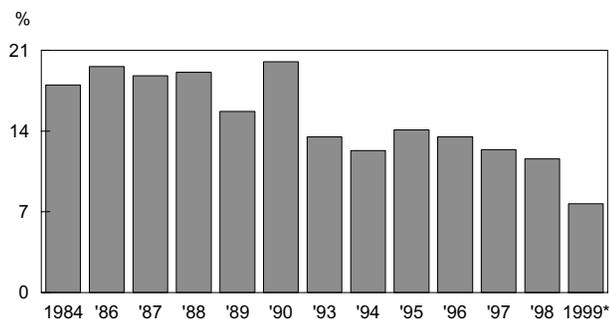
In the 1999 WES, the earnings reported are based on wages (or salary) before taxes as well as any other earnings (tips, commissions, bonuses, overtime pay) and other types of variable pay (profit-sharing, productivity bonuses, piecework) for the previous 12 months. WES allows respondents to report different bases of pay (hourly, daily, weekly, annually). All wages are expressed as an hourly rate.

adopt standard and formal procedures for a whole range of personnel activities such as hiring, promotion, record keeping, communication, and so on. By extension, therefore, unionized firms should be more efficient, given their use of formal systems of modern management. In contrast, non-union firms may engage in more ad hoc practices since no union is forcing management to be more systematic. Indeed, unionization is associated with lower turnover, both voluntary and involuntary (Freeman 1981, Brown and Medoff 1978, and Clark 1980).

Generally, wage differences are measured at a given point in time. They may persist, or they may narrow or widen. Spillovers may occur across the two groups. Some non-union employers may emulate union practices in wages and benefits (Foulkes 1980), while unionized employers may introduce employee involvement and flexible work designs fashioned after innovations in leading non-union firms (Kochan and Osterman 1994). In this dynamic view, differences between the two groups may be viewed as a series of leapfrogging rounds of workplace innovation (Verma 1984, 1985). Each group learns from the other and narrows the gap by adopting leading-edge innovations. Even as one group catches up, another round of innovations is set off.

As to historical context, the union wage differentials for selected years between 1984 and 1998 were estimated from various sources (Chart A). The data and

**Chart A: The adjusted union wage premium has dropped since the mid-1980s.**



Sources: 1984, *Survey of Union Membership*  
 1986-1990, *Labour Market Activity Survey*  
 1993-1996, *Survey of Labour and Income Dynamics*  
 1997-1998, *Labour Force Survey*  
 1999, *Workplace and Employee Survey*

\* The model specification differed from previous years.

model used in the estimation are generally consistent across these years—with some limitations (see *Trends*).<sup>1</sup> The gap between union and non-union wages narrowed somewhat over time, from the high teens in the 1980s to the low teens in the 1990s. The narrowing was particularly evident in the later 1990s when most Canadian workplaces were finishing a dramatic wave of restructuring begun in the mid-1980s. The year 1990 is the only exception to the trend, when the wage gap was at an all-time high of 20%. This is not surprising, given that 1990 was a recession year, and the union effect on wages tends to be larger during recessions. Union wages are less sensitive than non-union wages to business cycles, partially because union workers have long-term wage contracts (Gunderson and Hyatt 2001). In 1990, average union wages increased \$0.85 per hour—far more than the non-union increase of \$0.30 per hour.

### Trends

The historical trends use data drawn from various Statistics Canada surveys that cover most of the 1980s and 1990s: the Survey of Union Membership (1984), the Labour Market Activity Survey (1986-1990), the Survey of Labour and Income Dynamics (1993-1997), the Labour Force Survey (1997, 1998), and the Workplace and Employee Survey (WES) (1999).

Union status is defined as being either a union member or covered by a collective bargaining agreement, consistent with WES. The hourly wage is taken from the main job in December or the end of the reference year, and is based on usual wage or salary (rather than total compensation as in WES) and total hours of work.

When other factors (personal, job and firm characteristics) are accounted for, the trends of adjusted union wage premiums over time start to emerge. The model specifications are uniform across all the surveys except for WES. The factors deemed to affect wages include age (4 categories), education (university degree), job tenure (5 categories), part-time status, region (9 categories), industry (50 categories, excluding fishing and trapping, and public administration to be comparable with WES), and occupation (7 categories). In the 1980s, adjusted union wage premiums were in the high teens (16% to 20%), but they dropped to the lower teens in the 1990s (12% to 14%).

However, these union wage premium estimates should be viewed with caution because of differences between surveys in both data and model specifications. For example, the industry code is probably more accurate in WES because it is derived from a business profile rather than employee responses.

## Results

In 1999, the average unionized worker earned \$20.36 per hour while the average non-unionized worker earned \$17.82, an overall union wage premium of 14.3% before differences in individual, job, workplace, industry, and regional characteristics were adjusted for (Table 1).

**Table 1: Individual and job characteristics**

	Employees	Union	Non-union
		'000	
Total	10,778	3,007	7,770
		\$/hr	
Wage	18.53	20.36	17.82
		years	
Job tenure	6.4	8.8	5.5
Experience	16.2	17.3	15.7
		%	
Men	47.9	50.4	47.0
Married	71.8	73.7	71.1
With children	43.1	45.4	42.2
High school graduate	17.5	15.0	18.4
Trade school	12.3	14.8	11.3
College	21.2	21.1	21.2
Undergraduate or higher	19.2	21.2	18.5
Immigrant	17.5	14.3	18.8
Foreign language at home	7.4	6.2	7.8
Part time	15.2	15.7	15.0
Production worker	7.4	12.6	5.4
Manager	15.1	3.3	19.6
Professional	16.2	24.3	13.0
Technical and trades	39.0	43.1	37.4
Clerical and administrative	8.4	3.2	10.4
Marketing and sales	14.0	13.5	14.2

Source: Workplace and Employee Survey, 1999

### Personal and job characteristics

The union ranks had more men (50% versus 47%), more married people (74% versus 71%), and more people with children (45% versus 42%). Unionized workers were somewhat better educated: more had trade school education (15% versus 11%) or undergraduate or higher education (21% versus 18%), and fewer had only high school education (15% versus 18%). Unionized workers also had longer job tenure (9 versus 6 years). Relatively fewer immigrants were in the union ranks. In terms of occupation, union members were more likely to be production, professional or technical workers and less likely to be managers or clerks.

Virtually the same proportion of employees worked part time (15.7% versus 15.0%), had a college education (21.1% versus 21.2%), immigrated during the 1970s or earlier, or had an occupation in marketing.

### Workplace characteristics

The workplace characteristics of unionized employees also differed. They were more likely to be in primary manufacturing, communications and utilities, or education and health-care industries (Table 2). Union members were more likely to be found in larger firms (45% versus 11%) and in not-for-profit organizations (45% versus 11%). In terms of location, Quebec and British Columbia workers were more unionized.

**Table 2: Industry and workplace characteristics**

	Employees	Union	Non-union
		%	
<b>Industry</b>			
Forestry, mining, oil and gas	1.7	1.6	1.8
Labour intensive tertiary manufacturing	4.6	5.5	4.3
Primary product manufacturing	3.7	6.4	2.7
Secondary product manufacturing	3.4	2.5	3.8
Capital intensive tertiary manufacturing	5.4	5.5	5.4
Construction	3.9	3.5	4.1
Transportation, wholesale, and warehousing	10.3	4.9	12.4
Communications and utilities	2.3	4.2	1.5
Retail trade and consumer services	24.1	11.3	29.0
Finance and insurance	4.7	2.1	5.7
Real estate, rental and leasing	1.7	1.2	1.9
Business services	9.3	2.7	11.8
Education and health care	21.7	44.4	12.9
Information and culture	3.3	4.4	2.8
<b>Firm size (employees)</b>			
1 to 19	31.6	7.2	41.1
20 to 49	16.7	8.1	20.0
50 to 499	31.0	39.8	27.6
500 or more	20.7	44.8	11.4
<b>Region</b>			
Ontario	39.9	30.9	43.3
Atlantic	6.6	6.4	6.7
Quebec	23.8	32.4	20.5
Prairie	6.9	7.6	6.5
Alberta	10.3	6.9	11.6
British Columbia	12.6	15.8	11.3
<b>Ownership</b>			
Canadian	83.6	83.7	83.6
Foreign	16.4	16.3	16.4
<b>Status</b>			
For profit	79.2	55.0	88.6
Not for profit	20.8	45.0	11.4

Source: Workplace and Employee Survey, 1999

Ontario and Alberta had significantly more non-unionized employees.

### Raw and adjusted wage differentials

The gross wage differential was adjusted for differences in employee and workplace characteristics (see *Estimation*). The adjustments reduced the union wage differential between comparable workers in comparable workplaces from 14.3% to 7.7% (Table 3). Since the size of establishment differed significantly for the two groups, the adjustment was also done for two sub-samples: workplaces with more than 50 employees and those with more than 100. Although sample sizes were smaller, a better balance was gained between unionized and non-unionized workers: 46.4% in workplaces with more than 50, and 50.7% in workplaces with more than 100. The union wage differential was further reduced to 6.2% and 6.0% respectively in the two sub-samples. Since both unionization and size are closely associated with formalization of workplace policies, a better estimate of the true union effect on wages should result from a sub-sample of larger workplaces.

**Table 3: Union wage differential**

	Employees	Mean wage	Union premium*	T-statistic
	'000	\$/hr	%	
<b>Total</b>	<b>10,778</b>	<b>18.53</b>	<b>7.7</b>	<b>8.3</b>
<b>Workplace size</b>				
51 or more	5,462	21.25	6.2	7.4
101 or more	4,353	22.20	6.0	5.7
<b>Sex</b>				
Men	5,167	20.71	7.6	6.3
Women	5,610	16.52	7.0	5.0

Source: *Workplace and Employee Survey, 1999*  
 \* Statistically significant at 1%.

The union wage differential appeared to be similar for men and women (7.6% versus 7.0%). The union effect tended to be larger for women, but women are less likely to be union members. The two factors work in opposition so that, overall, the union effect on wages is not much different for men than for women.

### Industry and occupation

The gap also varied by industry (Chart B). Construction, retail trade and consumer services, and education and health care groups were near the top of the scale—

### Estimation

In practice, union wages are generally observed to be higher than non-union wages. But the gross wage difference does not provide a true picture of the differences between comparable workers within comparable workplaces—thus the need to adjust the gross wage differential for factors such as organizational size, occupation, industry or region.<sup>2</sup>

To determine the effect of union status on wages, a wage function was estimated:

$$\ln W_{ij} = \alpha + \beta X_{ij} + \gamma Y_j + \delta U_i + \varepsilon$$

Where,  $\ln W_{ij}$  is the natural logarithm of the observed hourly wage of the  $i^{th}$  worker in the  $j^{th}$  workplace;  $\alpha$  is a constant;  $X_{ij}$  is a vector of human capital variables for the  $i^{th}$  worker in the  $j^{th}$  workplace;  $Y_j$  is a set of characteristics of the  $j^{th}$  workplace;  $U_i$  is the union status of the  $i^{th}$  worker; and  $\varepsilon$  is a randomly distributed error term. The co-efficient  $\delta$  gives an estimate of the union/non-union differential in wages, controlling for observed employee and workplace characteristics.

The variables in the analysis include both personal and job characteristics: sex, marital status, presence of children, education (8 categories), job tenure, tenure squared, years of experience, experience squared, part-time, time of immigration (4 categories), foreign languages at home, and occupation groups (5 categories). Some firm characteristics such as industry (13 categories), firm size (3 categories), and region (5 categories) are also included.<sup>3</sup> Because the Workplace and Employee Survey (WES) excludes most of the public sector (all levels of public administration), the control for public versus private sector is not included in the wage equation. Standard errors of various estimates have been adjusted for the complex survey design of WES by using bootstrap weights.

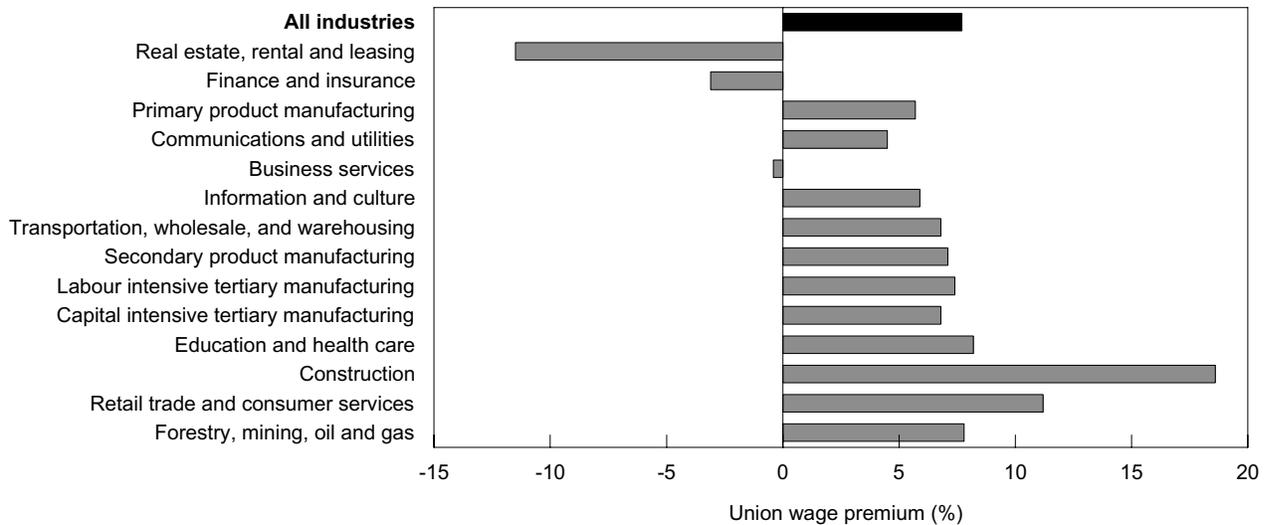
19%, 11% and 8% respectively. At the low end were business services, finance and insurance, and communication and utilities, all of which had no discernible wage gap. In labour-intensive tertiary manufacturing, the gap (7%) was close to the mean. Real estate, rental, and leasing was the only industry in which non-union wages were higher (11%).

Occupations such as construction (15%); chefs, protective, childcare and home support workers (14%); and teachers and arts (13%) had large differentials (Chart C). The management and professional group (-1%) had the smallest differential, followed by financial, administrative and clerical group (2%), one of the largest occupational groupings in the WES sample.

### Regional variation

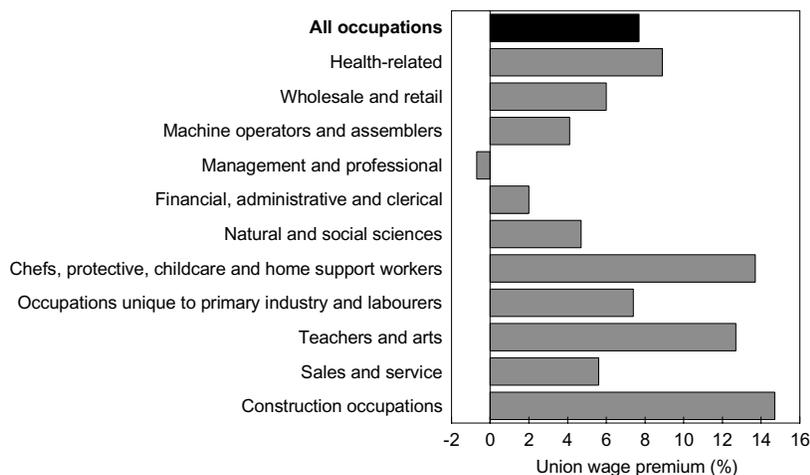
British Columbia had one of the higher wage differentials at 14% (Chart D). Three other regions showed a wage gap in favour of unionized workers: the Atlantic

**Chart B: The greatest adjusted union wage premium was in construction.**



Source: Workplace and Employee Survey, 1999

**Chart C: Construction trades also had the greatest adjusted wage premium.**



Source: Workplace and Employee Survey, 1999

**Explaining the union wage premium**

Previous research has shown that the union wage premium can be partially explained by differences in personal, job and workplace characteristics. The proportion ‘explained’ tends to be higher if the non-unionized group or the total economy is used as the base line (see *Decomposition*). About 75% of the pay differential can be attributed to differences in various wage determinants. Even so, a significant portion (25%) still cannot be explained. In fact, returns to additional amounts to various productivity-related personal characteristics—such as education, experience, skill, and marital status—are generally lower in the union group than in the non-union group (Benjamin, Gunderson and Riddell 1998). However, because unionized workers start off on average with higher wages—indicated by the larger intercept of the

provinces (12%), Manitoba and Saskatchewan (9%), and Alberta (8%). Quebec, the most unionized region in Canada, showed a modest gap of 5%; Ontario, a relatively less unionized province, had a union wage premium of 6%, somewhat below the national average.

**Chart D: British Columbia had the highest adjusted union wage differential.**



Source: Workplace and Employee Survey, 1999

union wage equation, the lower returns reflect the structural difference between the two groups in compensation policies.

### Conclusion

These findings provide a glimpse into the nature of union–non-union wage differentials toward the end of the 1990s. An average wage gap of 7.7% (6.0% in workplaces with more than 100 employees) is somewhat smaller than reported previously in the literature. This, along with evidence from other Statistics Canada surveys between 1981 and 1998 suggests a narrowing of the wage gap over time. This narrowing could be partially attributed to the diminishing ability of unions to seek monopoly rents, due to factors such as technological advancement, greater competition from overseas, and deregulation. Another explanation could be a strategic reorientation of unions to objectives other than wages, such as employment and job security or less costly forms of employee voice (Gunderson and Hyatt 2001). In addition, results based on the 1999 WES show that some traditionally observed union wage premiums appear to hold across nearly all industries, occupations and regions.

### Decomposition

The wage structure of the union sector, non-union sector, and both sectors combined can be estimated by the following equation:

$$\ln W_i = \alpha + \beta X_i + \mu$$

Where,  $\ln W_i$  is the natural logarithm of the observed hourly wage of the  $i^{\text{th}}$  worker;  $\alpha$  is a constant;  $X_i$  is a vector of personal, job and workplace characteristics associated with the  $i^{\text{th}}$  worker; and  $\mu$  is the error term.

Following the property of ordinary least squares regression (Drolet 2002), the union wage differentials can be decomposed into three components: the explained portion, or the union/non-union wage differentials due to the differences between the union and non-union sectors in terms of personal, job and workplace characteristics ( $\bar{X}$ ) evaluated at the competitive wage structure  $\beta^*$ . The choice of  $\beta^*$  (the coefficient from non-union sector  $\beta_n$ , from union sector  $\beta_u$ , from a weighted structure (weighted by the percentage of union and non-union workers), or from the pooled regression  $\beta'$ ) affects the decomposition outcomes. The unexplained portion reflects the differences in the returns to various characteristics ( $X_i$ ), which consist of the union advantage (second term) and non-union disadvantage (third term).

$$\overline{\ln W_u} - \overline{\ln W_n} = (\bar{X}_u - \bar{X}_n)\beta^* + \bar{X}_u(\beta_u - \beta_n) + \bar{X}_n(\beta^* - \beta_n)$$

		Log hourly wage difference=0.190	
		$\beta^*$	
		Explained	Unexplained
Non-union	$\beta_n$	0.124 65.4%	0.066 34.6%
Union	$\beta_u$	0.087 45.9%	0.103 54.1%
Weighted	$\beta_u P_u + \beta_n P_n$	0.114 59.9%	0.076 40.1%
Pooled	$\beta'$	0.142 75.0%	0.034 25.0%

Source: Workplace and Employee Survey, 1999

### Perspectives

#### Notes

1 For instance, union density was overestimated in the Survey of Union Membership of 1984. Nevertheless, the estimates obtained here could be viewed as an approximation of trends in the union wage premium over the selected years.

2 Researchers studying union/non-union wage differentials have pointed out that the possibility of reverse causality exists in the union-wages relationship. Rather than driving up wages, unions may find it easier to organize workplaces with particular characteristics—for example, large firms, or ones that use a lot of technology or are concentrated in certain geographic areas. In this case, it would be necessary to control for the simultaneous effects of unions on wages and wages on unions before the ‘true’ effect of unions on wages could be extracted. In this study, a two-stage model in which both wages and union status would be simultaneously determined has not been estimated. Since several researchers have found OLS estimates to be just as good as 2SLS models, OLS estimates are reported for the sake of simplicity.

3 The analysis also incorporates other firm characteristics and management practices deemed to affect wage levels, such as non-profit status, foreign ownership, organizational flexibility, incentive pay, classroom and on-the-job training, use of teams, and use of technology.

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