

Diverging trends in unionization

By René Morissette, Grant Schellenberg and Anick Johnson

Since the early 1980s, the proportion of Canadian workers belonging to labour unions has declined considerably. A striking aspect of this trend has been the extent to which it has affected some groups of workers more than others—in particular, men, younger workers, and those in goods-producing industries.

The demographic characteristics distinguishing unionized from non-unionized workers changed significantly over the period. In 1981, differences were particularly evident by sex, whereas in 2004, age was the salient factor.

Using various Statistics Canada surveys, this article examines unionization rates from 1981 to 2004, focusing on the extent to which the trends reflect changes in the distribution of employment by occupation, industry, or other characteristics (see *Data sources and definitions*). In addition, the effect of changes in unionization on earnings and pension coverage is discussed.

Trends by sex and age

The proportion of unionized employees fell from 38% to 31% between 1981 and 2004 (Table 1). A fairly small portion of the decline occurred during the 1980s (2 percentage points) while most took place between 1989 and 1998 (5 points). Since 1998, the rate has remained quite stable.

Despite the overall decline in unionization rates between 1981 and 2004, differences were seen particularly between men and women, younger and older workers, and the commercial and public-service sectors.

René Morissette is with the Business and Labour Market Analysis Division; he can be reached at (613) 951-3608. Grant Schellenberg is with the Social and Aboriginal Statistics Division; he can be reached at (613) 951-9580. Anick Johnson is with the Input-Output Division; she can be reached at (613) 951-7211. All can be reached at perspectives@statcan.ca.

Data sources and definitions

The study used the **Survey of Work History** (1981), the **Labour Market Activity Survey** (1986 and 1989), and the **Labour Force Survey** (1998, 2001 and 2004). Each covered the same population, was based on the Labour Force Survey sample design, and collected information on union status in the employee's main job. The main job was the one with the most hours per week.

The analysis focused on individuals aged 17 to 64 who were employees in the main job they held in May. Because the Survey of Work History did not ask about workers not belonging to a union but covered by a collective agreement, **unionization rate** is defined as the percentage of employees belonging to a union. Individuals not belonging to a union but covered by a collective agreement are classified as non-union.

Trends in unionization rates based on household surveys may tend to overstate the decline in union coverage. Although the Corporations and Labour Unions Returns Act (CALURA) indicates that union coverage varied from 32.5% to 32.3% between 1989 and 1995 (Mainville and Olineck 1999), the 1989 Labour Market Activity Survey and the November 1995 Survey of Work Arrangements show it falling from 35.9% to 33.3%. While household surveys account for all unionized workers, CALURA covers only workers belonging to unions with 100 or more members. Hence, the different trends may partly reflect differences in coverage. Since CALURA data end in 1995, it is difficult to assess the extent to which the decline in union coverage is overstated for the 1981-2004 period. For this reason, most of the analysis in this article focuses on *relative* trends in union coverage.

The rate for men declined by almost 12 percentage points, compared with less than one point for women, resulting in a convergence of the two rates by the end of the period.

Younger workers, particularly those under 35, experienced more pronounced declines than older workers. Again, differences between men and women were evident. Among men, unionization rates fell in all age groups, but the decline was twice as large among those aged 17 to 44 than among those 45 to 64 (15 and 7 percentage points respectively). The largest decline was for men aged 25 to 34, where rates fell by almost half.

Table 1: Unionization rate by sex, age and sector

	1981	1986	1989	1998	2001	2004	1981-2004
	%						Change
Both sexes	37.6	36.0	35.9	30.7	30.2	30.6	-7.0
Men	42.1	39.9	39.2	31.6	31.0	30.4	-11.7
Women	31.4	31.2	32.1	29.8	29.4	30.8	-0.6
Age							
17 to 24	26.4	17.1	18.4	11.9	13.2	13.6	-12.8
25 to 34	39.8	36.4	34.7	25.0	25.8	26.1	-13.6
35 to 44	42.0	43.3	42.9	35.8	32.8	32.8	-9.2
45 to 54	41.7	43.4	44.6	42.8	41.8	41.2	-0.6
55 to 64	41.9	43.8	41.6	38.4	37.4	38.2	-3.7
Men							
17 to 44	39.9	36.5	35.8	26.7	26.1	25.2	-14.6
17 to 24	29.2	19.3	19.9	12.5	14.0	15.0	-14.2
25 to 34	43.3	38.4	37.1	24.8	25.2	23.9	-19.3
35 to 44	46.1	47.2	45.6	36.3	33.9	32.7	-13.4
45 to 64	48.1	49.5	49.2	44.1	42.2	40.8	-7.3
45 to 54	47.8	49.2	49.9	45.5	44.3	42.0	-5.8
55 to 64	48.6	49.9	48.0	40.6	36.9	38.2	-10.4
Women							
17 to 44	31.2	30.1	30.8	26.3	25.1	26.2	-5.0
17 to 24	23.1	14.9	16.8	11.3	12.3	12.2	-11.0
25 to 34	34.7	34.0	32.0	25.2	26.3	28.5	-6.3
35 to 44	36.3	38.4	39.9	35.3	31.6	32.9	-3.4
45 to 64	31.8	35.2	36.2	39.0	38.9	39.8	8.0
45 to 54	32.9	35.9	38.2	40.1	39.3	40.4	7.5
55 to 64	29.9	33.9	31.7	35.5	37.9	38.2	8.3
Sector							
Public services	61.4	60.8	61.5	60.8	61.2	61.4	0.0
Men	64.0	63.9	64.6	62.9	64.7	62.8	-1.2
Women	59.5	58.8	59.6	59.8	59.8	60.8	1.3
Commercial sector*	29.8	27.0	26.8	20.3	20.1	20.0	-9.9
Men	37.2	34.2	33.6	25.3	25.2	24.5	-12.7
Women	17.2	15.8	17.2	13.4	12.9	13.7	-3.4

Sources: Survey of Work History, 1981; Labour Market Activity Survey, 1986 and 1989; Labour Force Survey, 1998, 2001 and 2004

* All industries except public services.

The relatively modest decline for women also concealed divergent trends for younger and older age groups. Unionization rates declined by 5 percentage points for women aged 17 to 44, while increasing by 8 points for those 45 to 64. As a result, rates for the two age groups diverged, from a difference of less than one percentage point in 1981 to almost 14 points in 2004. The same divergence was evident for younger and older men. For example, the difference in rates between men aged 25 to 34 and those 45 to 54 increased from 5 to 18 percentage points. In this respect, unionization in Canada has become far more polarized by age (Chart).

Trends in different industries

Trends in unionization also varied by industry. In public services—broadly defined as health and social services, education and related services, government, and religious organizations—rates remained fairly constant

between 1981 and 2004: around 64% for men and 60% for women. In contrast, the commercial sector saw a decline of almost 10 percentage points, with a far larger drop for men than for women (13 versus 3 points). The overall decline in unionization was therefore due entirely to trends in the commercial sector.

Unionization has historically been low in some industries such as consumer services; business services; and agriculture, fishing and trapping. Between 1981 and 1998, the decline in rates was quite modest in these industries (Table 2).

In contrast, declines were large in goods-producing and distributing industries, where the union presence has traditionally been higher. For example, between 1981 and 1998, unionization rates in forestry and mining dropped a full 20

Unionization: CALURA versus household surveys

	CALURA*	Household surveys**
	%	
1986	32.6	36.0
1987	31.9	..
1988	32.0	..
1989	32.5	35.9
1990	33.1	..
1991	33.4	..
1992	33.2	..
1993	32.5	..
1994	32.1	..
1995	32.3	33.3

See Mainville and Olineck 1999, Table 3.

* The Corporations and Labour Unions Returns Act covered only bargaining units with 100 or more members.

** Labour Market Activity Survey, 1986 and 1989 (main job held in May); Survey of Work Arrangements, 1995 (main job held in November).

percentage points, construction and manufacturing 13 points, and distributive services almost 10 points. Quite clearly, changes within goods-producing industries have been central to the overall decline in unionization since the early 1980s.

Interestingly, the drop in unionization rates occurred at different times for different areas of the goods-producing industries. In forestry, mining and construction, declines were evident in both the 1980s and 1990s. In contrast, manufacturing showed little change between 1981 and 1989 (down only 2 percentage points), with most of the fall occurring between 1989 and 1998 (down 11 points).

Provincial trends

Although unionization fell in all provinces between 1981 and 2004, the magnitude varied considerably. Declines were smallest in Manitoba and Saskatchewan—less than 3 percentage points overall, and about 6 to 7 points in the commercial sector (Table 3). In 2004, Manitoba and Saskatchewan had unionization rates above the national average.

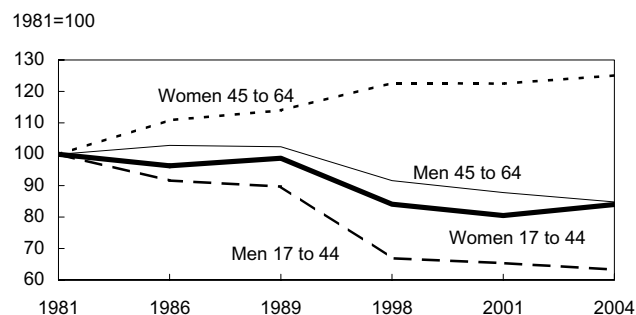
In Newfoundland and Labrador, Prince Edward Island, Nova Scotia, Quebec, Ontario and Alberta, overall rates fell about 6 to 8 points, with declines of about 8 to 11 points in the commercial sector. In 2004, unionization rates in these provinces ranged from 22% in Alberta to 39% in Newfoundland and Labrador.

Rates fell the most in New Brunswick and British Columbia—11 and 10 points respectively. These provinces witnessed particularly large declines in the commercial sector. In New Brunswick, for example, unionization fell by almost half—from 29% to 16%.

A closer look at the commercial sector

The commercial sector experienced large changes in terms of hours of work and job tenure. Unionization was higher among full-time than

Chart: Trends in unionization, by sex and age for selected years



Sources: Survey of Work History, 1981; Labour Market Activity Survey, 1986 and 1989; Labour Force Survey, 1998, 2001 and 2004

Table 2: Unionization rate by industry

	1981	1986	1989	1998	1981-1998
Both sexes			%		Change
Commercial sector	29.8	27.0	26.8	20.3	-9.5
Agriculture, fishing and trapping	6.4	5.3	11.2	4.0	-2.4
Forestry and mining	46.0	34.3	32.5	26.3	-19.7
Construction	39.9	35.3	33.3	27.0	-12.9
Manufacturing	43.9	42.6	42.2	31.3	-12.6
Distributive services	43.0	42.8	40.4	33.1	-9.9
Business services	5.7	8.4	9.1	6.9	1.2
Consumer services	13.7	12.0	13.3	11.0	-2.8
Public services	61.4	60.8	61.5	60.8	-0.6
Men					
Commercial sector	37.2	34.2	33.6	25.3	-11.9
Agriculture, fishing and trapping	7.6	6.7	10.6	4.7	-2.8
Forestry and mining	48.8	38.2	35.9	29.8	-19.0
Construction	44.5	39.4	37.8	30.9	-13.5
Manufacturing	48.3	48.4	46.4	35.5	-12.8
Distributive services	46.6	44.8	42.0	34.2	-12.4
Business services	6.2	9.4	10.6	7.5	1.3
Consumer services	16.6	14.6	15.9	12.2	-4.5
Public services	64.0	63.9	64.6	62.9	-1.1
Women					
Commercial sector	17.2	15.8	17.2	13.4	-3.8
Agriculture, fishing and trapping	F	F	F	F	F
Forestry and mining	F	F	F	F	F
Construction	F	F	F	F	F
Manufacturing	32.5	28.3	31.2	21.0	-11.5
Distributive services	32.0	37.0	36.5	30.6	-1.4
Business services	5.3	7.7	8.2	6.5	1.2
Consumer services	11.3	9.9	11.5	10.0	-1.3
Public services	59.5	58.8	59.6	59.8	0.3

Sources: Survey of Work History, 1981; Labour Market Activity Survey, 1986 and 1989; Labour Force Survey, 1998, 2001 and 2004

Note: Comparable industry categories are only available for the years 1981 to 1998, so analysis is limited to this period.

Table 3: Unionization rate by province and sector

	1981	1986	1989	1998	2001	2004	1981-2004 Change
Total				%			
Newfoundland and Labrador	45.2	43.5	41.7	39.7	40.6	39.1	-6.1
Prince Edward Island	38.0	29.2	31.6	26.3	28.1	30.1	-8.0
Nova Scotia	33.8	31.9	34.2	28.9	27.2	27.4	-6.4
New Brunswick	39.8	34.3	35.4	26.6	28.8	28.8	-11.0
Quebec	44.2	43.0	40.8	35.7	36.3	37.4	-6.8
Ontario	33.7	32.6	32.8	28.0	26.4	27.3	-6.4
Manitoba	37.9	36.0	37.9	34.9	35.7	35.4	-2.5
Saskatchewan	37.9	34.9	36.8	33.6	35.5	35.2	-2.6
Alberta	28.4	28.5	30.1	23.0	22.9	21.7	-6.7
British Columbia	43.3	40.2	39.1	34.8	33.7	33.1	-10.3
Commercial sector							
Newfoundland and Labrador	37.4	31.5	30.5	24.1	27.1	25.9	-11.4
Prince Edward Island	22.5	14.6	16.7	9.9	11.4	12.8	-9.7
Nova Scotia	23.7	21.7	24.2	16.1	14.9	12.6	-11.1
New Brunswick	29.4	22.5	24.2	13.9	16.9	15.6	-13.7
Quebec	34.7	32.7	32.1	23.8	25.6	26.5	-8.3
Ontario	27.9	25.9	24.9	19.6	18.0	18.0	-9.9
Manitoba	28.8	24.5	26.4	22.4	23.2	22.1	-6.7
Saskatchewan	26.3	21.5	24.4	19.3	21.8	20.8	-5.5
Alberta	19.8	16.0	18.3	13.3	13.2	12.2	-7.6
British Columbia	36.4	32.3	30.7	23.8	22.6	21.9	-14.5

Sources: Survey of Work History, 1981; Labour Market Activity Survey, 1986 and 1989; Labour Force Survey, 1998, 2001 and 2004

among part-time workers throughout the reference period. However, full-timers saw their rates decline the most—13 percentage points for men and 5 points for women (Tables 4 and 5). This was partly due to the large share of full-timers employed in goods-producing industries, where rates fell heavily. A related factor was the large share of part-timers in consumer and business services, where rates were quite stable.

Among women in the commercial sector, unionization rates for full-time and part-time workers had almost converged by 2004, at 14% and 13% respectively. At the same time, the gap between full- and part-time men narrowed considerably.

As for job tenure, large changes were evident among workers who had held their job for one year or less. In particular, men with this short tenure witnessed a drop of 18 points, compared with 11 points for men holding jobs for more than one year. One explanation for this pattern is that young men entering the labour force during the period were less likely to find jobs in manufacturing and more likely to find them in consumer services. As a result, new hires were less and less likely to find employment in unionized workplaces.¹ This trend was not evident among women with short job tenure, presumably because they have long found jobs in the less unionized service industries.

Finally, trends in unionization varied by education, occupation and earnings. Men in blue-collar jobs (construction trades, transportation and equipment operation, and occupations unique to processing, manufacturing, and primary industry) saw the largest declines. This is consistent with the large declines in goods-producing and distributing industries. Furthermore, declines were larger among men who had not completed a university degree than among those who had.

Among both women and men, declines in unionization were greatest among workers earning \$15.00 to \$19.99 per hour.

Possible reasons for change

Since 1981, the characteristics of workers and the labour force have changed in ways that may tend to reduce the union presence, especially for men.

Results from a decomposition analysis show that for men, almost half of the 11 percentage-point decrease in unionization between 1981 and 1998 was attributable to compositional changes in employment—particularly their increased concentration in industries and occupations with typically low unionization rates (Table 6).² For example, in the commercial sector, the proportion of male workers with a university degree increased, as did the proportions in managerial and professional occupations and in service industries. In general, unionization among these male workers is low.³ Among young men (25 to 34), such compositional changes explained about 45% of the decline in unionization. Among those aged 45 to 64, these changes explained virtually all of it.

Table 4: Unionization rate among men in the commercial sector

	1981	1986	1989	1998	2001	2004	1981-2004
				%			Change
Age							
17 to 44	37.2	34.2	33.6	25.3	25.2	24.5	-12.7
17 to 24	35.0	31.0	30.7	21.4	21.2	20.1	-14.9
25 to 34	27.6	17.4	18.7	11.3	12.8	13.6	-14.0
35 to 44	37.8	33.8	32.6	19.4	19.7	18.2	-19.6
45 to 64	39.7	39.2	38.4	29.7	28.1	26.4	-13.3
45 to 54	43.8	44.4	43.1	36.6	35.4	34.2	-9.5
55 to 64	43.3	42.7	42.5	37.5	37.1	35.2	-8.1
55 to 64	44.4	46.9	44.1	34.4	31.1	32.2	-12.3
Hours of work							
Full-time	38.5	35.6	34.7	26.5	26.1	25.4	-13.1
Part-time	16.6	13.6	19.4	12.0	15.7	15.5	-1.1
Job tenure							
One year or less	31.4	21.9	21.7	11.9	13.2	13.0	-18.4
More than one year	38.9	37.2	36.9	29.8	29.3	28.2	-10.7
University graduate							
Yes	14.9	13.7	14.6	8.7	9.8	10.6	-4.3
No	39.4	36.6	36.2	28.0	27.9	27.1	-12.2
Hourly wage (2001 dollars)							
Less than \$10.00	17.6	7.6	11.3	7.7	10.0	10.4	-7.1
\$10.00 to \$14.99	28.9	23.1	23.8	17.6	18.2	18.5	-10.4
\$15.00 to \$19.99	46.8	46.4	42.1	32.9	30.3	31.4	-15.4
\$20.00 to \$24.99	52.1	59.5	51.3	43.3	39.7	40.0	-12.1
\$25.00 and over	39.9	36.8	38.8	27.9	28.5	28.3	-11.6
Occupation*							
Professionals and managers	8.1	7.8	9.3	5.8	..	..	-2.4
Natural and social sciences	20.0	17.7	17.4	13.6	..	..	-6.4
Clerical	41.0	42.2	37.0	31.2	..	..	-9.8
Sales	12.6	12.7	10.6	8.8	..	..	-3.9
Services	21.3	20.0	21.1	15.7	..	..	-5.6
Primary and processing	49.0	46.3	44.5	35.6	..	..	-13.4
Construction	52.4	52.3	49.8	42.2	..	..	-10.1
Other	49.9	43.8	43.4	34.0	..	..	-15.9

Sources: Survey of Work History, 1981; Labour Market Activity Survey, 1986 and 1989; Labour Force Survey, 1998, 2001 and 2004

* Change for this category is 1981-1998.

Among young women, changes in the composition of employment accounted for about two-thirds of the 10-point drop in unionization. Changes in industry were most important, explaining about one-third of it. Among those aged 45 to 64, compositional changes accounted for just over half of the increase in unionization. Once again, changes by industry were by far the most important, particularly the increasing share of older women in public services.⁴

Nevertheless, about one-half of the overall decline in unionization for men remains unexplained. The same is true for between 35% and 55% of the decline among

younger men and women, and for slightly less than half of the increase among older women.

Some of the unexplained components may be due to changes in other characteristics of employment that could not be taken into account. For example, information on unionization by firm size was not available. However, the proportion of employees working in firms with less than 100 employees increased from 36% to 41% between 1983 and 2001. Because unionization is less prevalent in small firms, the increased number of workers would have exerted downward pressure on unionization rates.

Table 5: Unionization rate among women in the commercial sector

	1981	1986	1989	1998	2001	2004	1981-2004
			%				Change
Age	17.2	15.8	17.2	13.4	12.9	13.7	-3.4
17 to 44	16.8	15.2	17.1	12.5	11.6	11.9	-4.9
17 to 24	14.8	9.4	10.9	8.4	9.2	8.0	-6.8
25 to 34	16.6	18.6	18.7	11.5	10.6	11.8	-4.7
35 to 44	20.3	17.4	21.6	16.6	14.3	15.3	-5.0
45 to 64	18.3	18.0	17.5	16.3	16.8	18.2	-0.1
45 to 54	18.0	18.3	17.2	16.3	16.4	18.8	0.8
55 to 64	18.8	17.2	18.2	16.2	18.3	16.7	-2.2
Hours of work							
Full-time	19.3	17.1	19.0	14.1	13.0	14.1	-5.1
Part-time	9.5	11.7	11.8	11.4	12.7	12.5	3.0
Job tenure							
One year or less	11.4	9.3	11.8	6.6	6.4	7.5	-3.9
More than one year	18.9	17.6	18.9	16.1	15.5	15.8	-3.1
University graduate							
Yes	9.3	14.0	13.4	9.0	9.7	9.9	0.5
No	17.5	15.9	17.6	14.0	13.5	14.4	-3.1
Hourly wage (2001 dollars)							
Less than \$10.00	9.7	6.1	9.2	7.2	8.2	7.7	-2.0
\$10.00 to \$14.99	19.1	17.9	17.5	15.0	12.7	14.8	-4.3
\$15.00 to \$19.99	28.5	29.4	29.1	20.3	19.5	21.5	-7.0
\$20.00 to \$24.99	27.8	37.8	37.3	26.0	19.9	22.0	-5.8
\$25.00 and over	12.9	18.3	15.8	11.3	12.8	15.6	2.8
Occupation*							
Professionals and managers	5.0	5.5	5.9	5.7	..	..	0.6
Natural and social sciences	13.9	12.4	16.9	10.7	..	..	-3.1
Clerical	16.4	16.6	18.2	16.4	..	..	0.0
Sales	5.9	8.6	8.1	6.8	..	..	0.8
Services	11.2	12.5	13.1	10.1	..	..	-1.1
Primary and processing	38.3	33.1	40.4	26.7	..	..	-11.6
Construction	32.8	23.7	29.5	22.7	..	..	-10.1
Other							

Sources: Survey of Work History, 1981; Labour Market Activity Survey, 1986 and 1989; Labour Force Survey, 1998, 2001 and 2004

* Change for this category is 1981-1998

In addition to compositional changes in the workforce, analysts have offered other possible explanations for declining union participation. A reduction in employee need for union representation is one possibility, as the demand for a voice is met through means such as joint labour-management committees or employee involvement initiatives. Increased management opposition to unionization is another possibility. Assessment of these explanations is beyond the scope of this article.

Implications for earnings and pension coverage

Three broad trends in unionization have emerged since the early 1980s. First, unionization rates for men and women have converged. In the overall labour force, the difference declined from 11 percentage points in 1981 to less than one point in 2004, and in the commercial sector, from 20 to 11 points (Table 1).

Table 6: Sources of changes in unionization, 1981-1998

	Men			Women		
	17 to 64	25 to 34	45 to 64	17 to 64	25 to 34	45 to 64
	%					
a) Change in unionization	-10.5	-18.5	-4.0	-1.6	-9.5	7.2
Portion explained by compositional changes						
Industry	-2.5	-5.7	-0.6	0.3	-3.4	2.7
Occupation	-1.5	-1.4	-1.8	-1.0	-1.5	0.7
Part-time status	-0.3	-0.2	-0.2	-0.4	-0.1	0.3
Region	-0.1	-0.2	0.0	0.1	-0.1	0.5
Tenure (% of new employees)	-0.3	-0.5	0.0	0.0	-0.3	0.6
Education	-0.3	-0.3	-1.5	-0.3	-0.7	-0.6
b) Total explained*	-5.0	-8.4	-4.2	-1.4	-6.2	4.0
	[-4.7]	[-7.3]	[-2.9]	[-0.9]	[-4.1]	[4.9]
c) Total unexplained (a – b)	-5.5	-10.1	0.2	-0.2	-3.3	3.2

Sources: Authors' calculations from the Survey of Work History, 1981 and the Labour Force Survey, 1998

* The sum of individual components may not add to the total explained due to rounding. The numbers refer to the portion of the change in unionization explained by changes in the composition of employment under the assumption that workers had the same propensity to be unionized in 1998 as they had in 1981. The numbers in brackets refer to the total change in unionization rate explained by changes in the composition of employment under the assumption that workers had the 1998 propensity in both 1981 and 1998.

Second, unionization rates for younger and older workers have diverged. Overall, the difference between men aged 17 to 44 and those 45 to 64 increased from 8 to 16 points. For women in these age groups, the difference increased from 1 to 14 points.

And third, unionization rates for commercial-sector and public-service workers have diverged since 1981. The difference increased from 27 to 38 percentage points for men, and from 42 to 47 points for women.

These trends have important implications for earnings and pension coverage. First, the convergence in unionization between men and women may have tended to nar-

row the wage gap between them. Conversely, the diverging trends observed between younger and older workers may have helped widen wage differences between these two, a pattern that many previous studies have documented.

Furthermore, the drop in unionization rates among men aged 25 to 34 between 1981 and 1998 explains a portion of their decline in wages—10% on average over the period. Multivariate analyses reveal that about one-fifth of the decline is due to reduced union coverage.⁵

Declining unionization also has implications for pension coverage. Between 1986 and 1997, pension coverage among men aged 25 to 34 declined by 8 percentage points,

with almost 60% attributable to declining unionization.⁶ Declining unionization was also an important factor underlying the slight drop in pension coverage for similar-aged women during the period.

Perspectives

Notes

1 The decline in unionization among commercial-sector workers with short job tenure may also reflect an increase in the share of such employment taken up by temporary jobs, such as seasonal, term or casual. However, this is impossible to assess since information on temporary or permanent job status is not available for the reference period.

2 The decomposition is limited to the 1981-1998 period because comparable industry and occupation codes do not exist after 1998. For both 1981 and 1998, the union indicator was regressed on the following set of explanatory variables: industry (48-50 categories), occupation (8 categories), part-time status, province, an indicator of one year's seniority or less, and education (2 categories). Oaxaca decompositions were then applied to these regressions. Separate models were estimated for each of the six age-sex combinations shown in Table 6.

3 These calculations assume that the propensity to be unionized in 1998 was the same as in 1981. An alternative would be to examine the effect of changes in the composition of employment assuming that workers have the propensity to be unionized that they had in 1998. Using this alternative, the changes explain almost 5 of the 11 percentage-point decline in the unionization rate of male employees aged 17 to 64.

4 The share of employed women aged 45 to 64 in public services increased from 36.4% to 46.0% between 1981 and 1998.

5 For both years, log hourly wages of men aged 25 to 34 were regressed on the explanatory variables education (2 categories), part-time status, seniority, seniority squared, union status, industry (50 categories), occupation (8 categories), and province. Oaxaca decompositions were then applied to the regressions. A similar conclusion was obtained using two other regressions: The first pooled data for the years 1981, 1986-1990, and 1997-1998 and included a vector of year effects as well as the explanatory variables, excluding union status. The second added union status. Adding union status helps account for about one-fifth of the observed 10% decline in young men's wages between 1981 and 1998.

6 For more information, see Morissette and Drolet (2001).

■ References

Mainville, Diane and Carey Olineck. 1999. "Unionization in Canada: A retrospective." *Perspectives on Labour and Income*. Supplement (Statistics Canada, Catalogue no. 75-001-SPE).

Morissette, René and Marie Drolet. 2001. "Pension coverage and retirement savings of young and prime-aged workers in Canada." *Canadian Journal of Economics* 34, no. 1 (February): 100-119.