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Highlights

In this issue

■ Whither the workweek?

- Changes in hours worked normally track employment changes very closely. Recently, however, employment has increased more than hours, resulting in an unprecedented gap. In effect, annual hours worked have decreased by the equivalent of two weeks for every worker.

- A closer examination shows that more than half of the drop in the average workweek was attributable to Labour Force Survey methodology.

- Even after adjustment, hours worked still show a drop—but only one week annually per employee instead of two weeks.

- Two-thirds of the drop in adjusted hours comes from a rise in hours lost for reasons other than statutory holidays. An increase in part-time work explains 20% of the drop.

■ How Canada compares in the G8

- The Group of Eight (G8) comprises some of the most economically powerful countries in the world, accounting for 13% of the world's population, but 46% of the global economy. Average GDP per capita among the G8 was $29,700 in 2004, compared with $5,400 for non-G8 countries.

- Export trade was worth $US 322 billion to Canada in 2004, resulting in a record trade balance of $US 46 billion, and representing 32% of the GDP. Of all the G8 countries, Canada had the greatest increase in export trade over the past decade—252%.

- Overall, Canada had the third highest employment rate (73.3%) among those aged 25 to 64, and Canadian women had the highest rate (68.5%) in the G8.

- In 2002, 43% of Canada's population aged 25 to 64 had a college diploma or university degree— the highest rate in the G8.

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Whither the workweek?

Diane Galarneau, Jean-Pierre Maynard and Jin Lee

When employment increases, a corresponding rise in hours worked can usually be expected. And indeed, from 1976 to 2000, changes in employment were fairly accurately reflected in hours worked. However, since 2000, this relationship has greatly diminished (Chart A). From 2000 to 2004, employment rose 8.1%, compared with only 4.3% for overall hours worked. Such a differential is unprecedented. The robust employment growth was surprising. Lower growth in hours seemed more consistent with reduced economic growth in Canada and the stagnation of employment in the United States. This contrast led some economists to question Canada's exceptional employment record in recent years (RBC 2004).

If employment is growing more rapidly than hours, then average hours per worker are declining. According to the Labour Force Survey (LFS), average weekly hours actually worked declined for three consecutive years—2001, 2002 and 2003—before rising slightly in 2004. The decline from 2000 to 2003 affected all provinces and population groups. According to the LFS, the decrease averaged 1.4 hours per week per worker (Table 1). In annual terms, this represents a drop of some two weeks of work.

Many factors can influence hours worked. Some are structural or cyclical, such as population aging, shifts in industrial structure, the business cycle, natural disasters, legislative changes, or simply personal preference. Others originate from the survey's conceptual framework, which should be re-examined periodically to see that it is still measuring what it is supposed to. This article looks at the contribution of these different factors in the decline in hours worked.

Decomposition of actual hours

The LFS collects information on both usual hours and actual hours of work. The drop in average hours appears in actual hours.

Usual hours of work are generally more stable since they reflect regular work schedules (Chart B). Changes in usual hours reflect fairly permanent changes in weekly work schedules.

On the other hand, hours actually worked can vary from week to week. By definition, actual hours are the sum of usual and overtime hours (paid or otherwise) minus hours of absence for any reason (for example,

Chart A The relationship between employment and annual hours worked has diminished.

January 1987=100
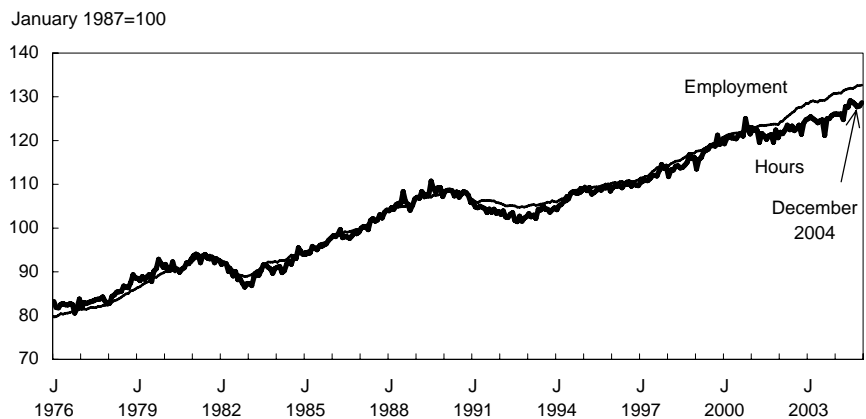
Source: Labour Force Survey, 1976 to 2004

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Table 1 Components of actual hours worked per week by employees[1]

| | 2000 | 2001 | 2002 | 2003 | 2004 | Change, 2000 to 2003 | |
						Total	Contribution
							%
Before adjustment							
Usual hours	35.7	35.7	35.5	35.5	35.5	-0.3	20.6
Overtime	1.7	1.7	1.8	1.7	1.7	0.0	-2.9
Hours lost	3.6	4.3	4.4	4.8	4.6	1.1	82.3
Actual hours[2]	33.8	33.1	33.0	32.4	32.6	-1.4	100.0
After adjustment							
Usual hours	35.7	35.7	35.5	35.5	35.5	-0.3	38.5
Overtime	1.7	1.7	1.8	1.7	1.7	0.0	-5.4
Adjusted lost hours	3.4	3.8	3.8	3.9	3.8	0.5	66.9
Adjusted actual hours	34.0	33.6	33.5	33.2	33.3	-0.7	100.0
LFS average actual hours[2]	33.7	33.0	32.9	32.3	32.5	-1.4	...

Source: Labour Force Survey
1   *Self-employed workers report only absences of one week or more. Absences in this table are for less than a week as well as for a week or more.*
2   *The average actual hours calculated in the identity are slightly different than the LFS average, with a tenth of a percentage point separating the two values. This is not significant at the 5% level and could be attributable to survey error.*

illness, vacation, personal or family responsibilities). (For a definition of these hours, see *Definitions and reference week*). This relationship is expressed in the following identity:

$$\overline{H_a} = \overline{H_u} + \overline{H_o} - \overline{H_l}$$

where

$\overline{H_a}$: Average actual hours

$\overline{H_u}$: Average usual hours

$\overline{H_o}$: Average overtime hours

$\overline{H_l}$: Average hours lost

This identity can be verified for employees only, since total hours lost are reported only for this category of workers.[4] An examination of the average values[5] of these components reveals that the drop in actual hours per employee happened gradually. From a peak in 2000, the rate dropped to a low in 2003 and then rallied somewhat in 2004. The 1.4 hour drop in average weekly hours between 2000 and 2003 is largely attributable to an increase in hours lost (Table 1, before adjustment). In fact, this accounted for more than 82% of the decrease in average hours.

The rest of the decrease came from a decline in usual hours, where the average fell from 35.7 to 35.5 hours per week between 2001 and 2002 and then remained stable for the rest of the observation period. Overtime hours during the period fluctuated between an average of 1.7 and 1.8 hours per week, slightly tempering the decrease in actual hours worked.

Increase in hours lost for statutory holidays suspect

A breakdown serves to identify the source of the increase in hours lost. Absences were grouped according to six types: illness, vacation, statutory holidays, personal or family responsibilities, maternity leave, and other.[6]

Between 2000 and 2003, increases occurred for all types of absence, but particularly for statutory holidays (Table 2, unadjusted data). The average number of weekly hours not worked for this reason quadrupled from 0.2 hours in 2000 to 0.8 hours in 2003. On an annual basis, this amounts to 1.4 days in 2000 compared with 5.5 days in 2003.[7] Part of the rise occurred between 2000 and 2001, and again between 2002 and 2003. Between 2000 and 2003, statutory holidays explained almost 57% of the rise in total hours lost. However, the increase seems suspect, since the number of statutory holidays in each year was identical.

Chart B   Usual hours of work are more stable than actual hours.

Hours

Usual hours
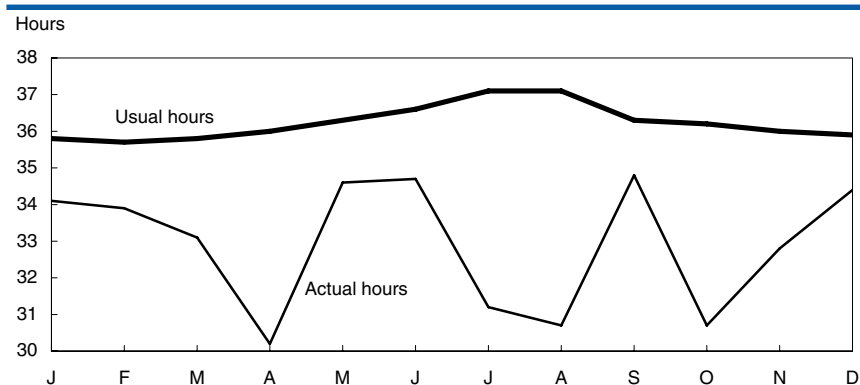
Actual hours

Source: Labour Force Survey, 2003

The decrease in hours: very real, but overestimated

Actual and usual hours of work are counted by the LFS every month, during a reference week that usually includes the 15th of the month.[8] Not all reference weeks are comparable. Among other things, some weeks include statutory holidays while others do not. These holidays have a greater or lesser effect, depending on whether they affect all Canadian workers or only some of them (for example, the Saint-Jean-Baptiste holiday in Quebec). Each year, the LFS captures only a portion of statutory holidays, and from one year to the next it captures different ones.

For example, in 2000, two statutory holidays often captured by the LFS were entirely or partially missed. Easter occurred during the week preceding the reference week and thus was not captured. Remembrance Day, which occurs on November 11 is a fixed holiday.[9] When it falls on a Saturday, as in 2000, it has almost no effect because it will be taken on the Monday following the reference week.[10] Also, the hours lost during the October 2000 reference week, which included Thanksgiving, were underestimated because of a technical problem related to the introduction of the new computer-assisted interview system.[11] In 2003, all these holidays were captured. A comparison between 2000 and 2003 of average actual hours per month shows the effect of the holidays not captured in 2000: hours for April, October and November 2000 appear much

higher than in 2003 (Chart C). But in reality, their high value largely reflects the holidays missed by the survey. Hours in 2000 were thus overestimated because holidays were under-represented. This had a major impact on the reduction of actual hours between 2000 and 2003, since it more than doubled the decline in average actual hours.

However, even after adjusting to neutralize the estimation bias caused by the irregular presence of statutory holidays,[12] a decrease in average hours between 2000 and 2003 remains (Table 1). But it amounts to 0.7 hours on average per week per employee (just under one week annually) instead of 1.4 hours per week (two weeks annually). This decrease occurred gradually—from 34.0 in 2000 to 33.6 in 2001 to 33.5 in 2002 and then to 33.2 in 2003. What explains this decline?

Reasons for the decline

Using the adjusted data, the components of the identity were re-examined for the years 2000 and 2003. This exercise confirmed the importance of various reasons

Chart C   Average actual hours vary from year to year primarily because of holidays in the survey reference week.

Average actual hours per employee

2000

2003

Month

Source: Labour Force Survey

Definitions and reference week

Usual and actual hours
Usual hours are an employee's regular or contractual hours, excluding overtime.[1] The number of hours actually worked consists of the hours a respondent spent working during a reference week (including paid or unpaid overtime). By definition, the concept of hours actually worked excludes hours missed because of vacation, statutory holidays, illness or any other reason.[2]

The LFS reference week
Two types of absence are likely to bias the estimate of hours actually worked: statutory holidays and vacations in certain industries (such as the construction industry in Quebec) or those specific to particular periods of the year (such as the March school break). In Canada, 13 statutory holidays are recognized by federal or provincial administrations (see table below). Employers are required to grant these holidays or pay their employees a premium.

Several regularly fall outside the survey reference weeks: New Year's Day, Victoria Day (or la Journée nationale des patriotes in Quebec, which since November 2002 has replaced la fête de Dollard), Canada Day, Labour Day and Christmas. These holidays affect a sizeable portion of workers, and since they are statutory in most provinces, or at least the most populous ones, their impact is considerable. But since they are not captured by the survey, they are also not reflected in hours not worked. The actual hours of the reference week for the month in which these holidays occur are not affected by reference week biases. But these reference weeks are not representative of their month. In fact, the actual hours for these months will be overestimated.

Thanksgiving and Remembrance Day are usually captured by the LFS (see table next page). When they are, the hours in the reference week are lower. But since the reference week represents the month, the average for the month will be underestimated.

Easter is captured sporadically by the LFS. When it is captured, it does not always have the same effect. This holiday has a larger impact when the reference week includes Good Friday, which is a statutory holiday for most provinces. In Quebec, the employer can decide to grant Good Friday or Easter Monday as a holiday. Easter Monday is a holiday for a large proportion of public-sector employees. Thus, in 2003, 48% of employees reported hours lost because Good Friday fell within the reference week, compared with 27% in 2004, when the reference week included Easter Monday.

Statutory holidays with a fixed date, such as Christmas and New Year's Day, fall on a weekend in some years. In this case, these holidays must be carried over to the following Monday. Remembrance Day, however, is an exception. A large proportion of workers do not have the opportunity to take this holiday the following Monday when it falls on the weekend. This holiday therefore has a more limited impact in some years (David 1989), as was the case in 1989, 1990, 1995, 2000 and 2001.

Other holidays affect only certain localities, provinces or religious groups. Whether they are captured or not will therefore have a more limited impact on hours worked at the national level.

When the annual averages for hours actually worked are compared between years, they may appear to increase or decrease, often reflecting the presence or absence of statutory holidays during the 12 reference weeks.

Other major effects
In 2000, the LFS introduced a new computer-assisted interview system that allows an interviewer to electronically capture respondent information. In addition to facilitating the interviewer's task, it also reduces transcription errors. The system even reminds respondents of any statutory holiday during the reference week. This seems

Federal and provincial statutory holidays

		Federal	N.L.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.
January 1	New Years Day	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
February	Family Day										✓	
March/April	Good Friday	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Easter Monday	✓					✓					
May	Victoria Day (patriotes)	✓					✓	✓	✓	✓	✓	✓
June 24	St-Jean-Baptiste						✓					
July 1	Canada Day	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
August	Civic Holiday		✓				✓		✓		✓		✓
September	Labour Day	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
October	Thanksgiving	✓					✓	✓	✓	✓	✓	✓
November	Remembrance Day	✓		✓	✓				✓	✓	✓	✓
December 25	Christmas Day	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
December 26	Boxing Day	✓						✓				

Definitions and reference week (concluded)

to be effective: since it was introduced, statutory holidays have been reported more systematically.[3] Since 2001, the proportion of workers reporting hours lost for Thanksgiving has consistently been higher than at the end of the 1990s. For example, from 1997 to 2000, 38% to 40% of employees reported this holiday, compared with 47% to 49% now. Much of this increase is likely related to the implementation of the new system, but the hypothesis that it is partly attributable to factors related to the business cycle cannot be entirely ruled out. In a period of strong growth, such as in 1999, some workers may not take the day off because of a heavier workload. In a period of slower growth, such as in 2003, more employees may do so.

Some fixed-date vacation leave also has a major impact. For example, employees in the Quebec construction industry take their vacation each year during the last two full weeks of July. This is picked up sporadically by the LFS. In particular, it was captured in 2003 but not in 2000. This, then, was another factor accounting for the lower hours in 2003. Also, the school spring break is captured systematically in some provinces, sporadically in some, and never in others.

Main holidays[1] captured in the LFS

	Easter	Vacation for construction workers in Quebec	Thanksgiving	Remembrance Day
1987	Friday	✓	✓	✓
1988			✓	✓
1989				Saturday
1990	Monday	✓		Sunday
1991		✓	✓	✓
1992	Friday	✓	✓	✓
1993	Monday		✓	✓
1994			✓	✓
1995	Friday		✓	Saturday
1996		✓	✓	✓
1997		✓	✓	✓
1998	Monday	✓	✓	✓
1999			✓	✓
2000			✓[2]	Saturday
2001	Monday	✓	✓	Sunday
2002		✓	✓	✓
2003	Friday	✓	✓	✓
2004	Monday		✓	✓

1   Other holidays are Family Day in Alberta and school spring break, which is systematically captured in some provinces but never in others.
2   When the new computer-assisted interview system was introduced in 2000, respondents were not reminded that Thanksgiving and Remembrance Day fell in the reference week, causing hours lost for these holidays to be severely under-reported in the LFS.

(other than statutory holidays, which are excluded from the adjusted data) in the decrease in average actual hours.

Increase in hours lost a major factor
Hours lost explained two-thirds of the drop in hours (Table 1, after adjustment) instead of the 82% before adjustment. Usual hours explained the remaining third. On the other hand, overtime, which remained steady at 1.7 hours per week, slowed the decrease in hours.

Since the distribution of employees between full- and part-time has a major impact on hours worked, the identity was done separately for full- and part-time workers (Table 3). The decrease in adjusted average actual hours between 2000 and 2003 was much greater for full-time workers—0.7 hours on average per week after adjustment, compared with a marginal 0.1 for part-time workers.

A decomposition of the drop into the components of the identity for full-time and part-time employees confirms the importance of hours lost in the drop in average actual hours (Table 3, after adjustment), accounting for 85% and 153% respectively.

Employees seeking a better balance between work and personal life
When statutory holidays are excluded, the influence of other reasons for absence between 2000 and 2003[13] can be seen (Table 2, after adjustment). Among full-time employees, maternity leave accounted for the largest share of the increase in hours of absence— nearly one-third. This coincided with changes to Employment Insurance which, as of December 31, 2000, increased maternity, parental or adoption benefits from 30 to 50 weeks. (For further details, see Marshall 2003.) Hours of absence per female employee because of maternity leave rose from 0.6 hours per week[14] in 2000 to 0.9 hours in 2003.

Table 2 Increase in hours lost by reason and full- or part-time status

	2000	2001	2002	2003	2004	Change, 2000 to 2003		
							Contribution	
						Total	Before adjust-ment	After adjust-ment[1]
	Weekly hours						%	
Both sexes								
Hours lost	3.6	4.3	4.4	4.8	4.6	1.1	100.0	...
Adjusted hours lost	3.4	3.8	3.8	3.9	3.8	0.5	...	100.0
Illness	0.9	1.0	1.0	1.0	1.0	0.1	8.9	20.4
Personal or								
family responsibilities	0.2	0.2	0.3	0.2	0.3	0.1	4.7	10.8
Maternity leave	0.3	0.3	0.4	0.4	0.5	0.1	12.8	29.5
Vacation	1.7	2.0	1.9	1.9	1.8	0.1	9.0	20.7
Other	0.3	0.3	0.3	0.4	0.3	0.1	8.1	18.6
Statutory holidays	0.2	0.5	0.5	0.8	0.7	0.6	56.6	...
Full-time employees								
Hours lost	4.1	4.8	4.9	5.4	5.1	1.3	100.0	...
Adjusted hours lost	3.8	4.2	4.3	4.4	4.3	0.6	...	100.0
Illness	1.1	1.1	1.1	1.2	1.1	0.1	8.4	19.2
Personal or								
family responsibilities	0.2	0.2	0.3	0.3	0.3	0.1	4.6	10.5
Maternity leave	0.3	0.3	0.4	0.5	0.5	0.2	13.0	29.9
Vacation	2.0	2.2	2.1	2.1	2.0	0.1	10.2	23.4
Other	0.3	0.3	0.3	0.4	0.4	0.1	7.4	17.0
Statutory holidays	0.2	0.6	0.6	1.0	0.8	0.7	56.4	...
Part-time employees								
Hours lost	1.6	1.9	1.9	2.0	2.1	0.4	100.0	...
Adjusted hours lost	1.6	1.7	1.8	1.8	1.8	0.2	...	100.0
Illness	0.4	0.4	0.5	0.5	0.5	0.1	21.1	39.3
Personal or								
family responsibilities	0.2	0.1	0.2	0.2	0.2	0.0	6.0	11.2
Maternity leave	0.1	0.2	0.2	0.2	0.2	0.0	8.0	14.9
Vacation	0.7	0.8	0.7	0.7	0.7	0.0	1.2	2.2
Other	0.2	0.2	0.3	0.3	0.3	0.1	17.4	32.3
Statutory holidays	0.0	0.1	0.1	0.2	0.2	0.2	46.2	...

Source: Labour Force Survey
1   The adjustment consists essentially of removing statutory holidays.

Again in the case of full-time employees, the second-ranking factor in the increase in hours of absence was vacation leave, which accounted for 23% of the increase. This is probably partly related to an aging workforce, as older workers are generally entitled to more leave; in fact, 70% of the increase in vacation leave was attributable to workers aged 45 and over.

By the same token, with inflation remaining at relatively low levels over the past several years, union demands have focused less on wages than on job protection (Fortin 2003) and on improvements to fringe benefits. Indeed, some employers use both wages and employment conditions to attract the best workers (Akyeampong 2002).[15] The increase in vacation leave is probably also partly attributable to these new union demands, which are oriented more toward a better balance between work and personal life. The increase in leave for personal or family responsibilities—which, while more modest, nevertheless explained just over one-tenth of the overall increase in hours lost—is likely also part of this trend.

The increase in absences for 'other' reasons explained 17% of the increase in hours lost for full-time employees and reflects numerous disruptive events that

Table 3 Components of actual hours worked for full- and part-time employees

| | 2000 | 2001 | 2002 | 2003 | 2004 | Change, 2000 to 2003 | | |
| | | | | | | | Contribution | |
						Total	Before adjust-ment	After adjust-ment
								%
Full-time								
Usual hours	39.7	39.7	39.6	39.5	39.5	-0.2	11.2	23.6
Overtime	1.9	1.9	2.1	2.0	1.9	0.1	-4.3	-9.0
Hours lost	4.1	4.8	4.9	5.4	5.1	1.3	93.1	…
Adjusted hours lost	3.8	4.2	4.3	4.4	4.3	0.6	…	85.4
Actual hours	37.5	36.8	36.8	36.1	36.3	-1.4	100.0	…
Adjusted actual hours	37.7	37.4	37.4	37.1	37.1	-0.7	…	100.0
Part-time								
Usual hours	17.3	17.4	17.4	17.4	17.5	0.1	-22.0	-50.9
Overtime	0.5	0.5	0.5	0.5	0.5	0.0	-0.8	-1.8
Hours lost	1.6	1.9	1.9	2.0	2.1	0.4	122.8	…
Adjusted hours lost	1.6	1.7	1.8	1.8	1.8	0.2	…	152.7
Actual hours	16.2	16.1	16.0	15.9	15.9	-0.3	100.0	…
Adjusted actual hours[1]	16.2	16.2	16.1	16.1	16.1	-0.1	…	100.0

Source: Labour Force Survey
1   Actual hours in this table are calculated using adjusted hours lost and do not correspond with those in Table 4.

occurred in 2003. Ontario was especially hard hit by the power blackout in August as well as the appearance of a number of SARS cases. For its part, British Columbia found itself in the grip of numerous forest fires and several floods, while Canadian businesses were forced to adjust to strong appreciation in the Canadian dollar.

The increase in time lost because of illness was also substantial, explaining 19% of the total increase in hours lost between the two years. Aging did not appear to be the only cause of the rise, at least for men, since only 36% of the increase in time lost because of illness was attributable to male workers aged 45 and over. For women, the figure was 70%.

For part-time employees, the increase in absences because of illness and for other reasons accounted for the lion's share of the increase in hours lost (72%). Not surprisingly, maternity leave, personal or family responsibilities, and vacations explained only 28% of the increase, since part-time employees are not widely covered for these types of leave.[16]

In summary, the increase in hours lost for full-time workers seems largely attributable to the increased presence of older workers, who have more fringe benefits. Also, workers in general appear to be assigning more value to employment conditions that favour a better balance between work and personal life, since the combined increase in maternity leave and leave for personal or family responsibilities accounts for more than 40% of the overall increase in hours lost. A major proportion of part-time employees have already by definition struck this balance, since for most of them, working part time is a matter of choice.[17]

Other factors
A regression model was used to examine factors such as the increased proportion of employees working part time, aging, region of residence (province and urban/rural area), the temporary nature of the job, student status, and occupation and industry in order to test their effects on the decrease in average actual hours worked.

Table 4 Proportion of part-time employees and average actual hours

| | Part-time workers | | | Average hours | | | | | |
| | | | | Full-time | | | Part-time | | |
	Both sexes	Men	Women	Both sexes	Men	Women	Both sexes	Men	Women
	%			Hours					
1987	15.7	7.9	25.6	37.2	38.9	34.5	15.5	14.8	15.7
1988	15.9	8.1	25.7	37.9	39.7	35.1	15.6	15.1	15.8
1989	15.8	8.1	25.3	38.4	40.2	35.5	15.8	15.0	16.2
1990	16.2	8.6	25.5	37.8	39.6	35.1	15.7	14.9	16.0
1991	17.4	9.5	26.7	37.4	39.2	34.7	15.4	14.9	15.6
1992	17.6	9.8	26.8	36.8	38.8	34.0	15.3	14.9	15.5
1993	18.2	10.4	27.4	37.6	39.6	34.5	15.5	15.1	15.7
1994	18.0	10.1	27.4	38.0	40.2	34.8	15.7	15.2	15.9
1995	17.8	10.0	27.0	37.7	39.8	34.6	15.7	15.1	16.0
1996	18.1	10.0	27.5	38.0	40.2	34.9	15.9	15.3	16.1
1997	18.0	9.7	27.6	38.0	40.2	34.7	16.2	15.8	16.4
1998	17.6	9.6	26.9	37.5	39.7	34.4	16.4	16.0	16.5
1999	17.3	9.5	26.3	37.8	40.0	34.6	16.5	15.9	16.7
2000	17.2	9.6	25.9	38.0	40.2	35.0	16.5	16.0	16.8
2001	17.3	9.9	25.8	37.2	39.3	34.2	16.5	16.0	16.7
2002	17.8	10.2	26.3	37.1	39.3	34.1	16.3	16.1	16.4
2003	18.0	10.3	26.5	36.5	38.7	33.5	16.2	16.0	16.4
2004	17.7	10.2	26.0	36.8	39.2	33.6	16.2	16.0	16.3

Source: Labour Force Survey

Between 2000 and 2003, the proportion of employees working part time went from 17.2% to 18.0%. However, the proportion dipped to 17.7% in 2004. The increase in part-time work was greater for men, with their proportion rising from 9.6% to 10.3% in 2003 and 10.2% in 2004. For women, it rose from 25.9% in 2000 to 26.5% in 2003, then declined to 26.0% in 2004 (Table 4).

This increased propensity for part-time work accounted for 20%[18] of the drop in average hours, a sizeable share. Once again, it would be tempting to say that aging is a factor. For women, the increased propensity was more pronounced for the older age groups. For men, however, it was distributed among most age groups. The explanation could therefore be a lack of full-time jobs, since a larger share of young men take part-time work by necessity. It could also be that some of these young men are students, making it impossible to rule out the hypothesis of an increased preference for a better balance between work and personal life.

Variables such as occupation and industry do little to explain the decline in hours. However, what little these variables add would seem to show that a small part of the decline in hours is attributable to some transfer of jobs from occupations and industries with relatively high hours to ones requiring fewer hours.

Did the reference week bias have an effect in the past?

Since the degree of representation of statutory holidays in the reference week has a major impact on the trend in hours between 2000 and 2003, it is legitimate to ask whether such a bias occurred in the past. Hours actually worked were adjusted starting in 1987 (Chart D).

A comparison of adjusted and unadjusted hours shows that similar patterns occurred in the past. One of the most important took place in the early 1990s. In 1989 and 1990, few statutory holidays were captured by the LFS (see the second table in *Definitions and the reference week*).[19] The adjustment of hours actually worked therefore

had little effect during these years. Starting in 1990, the economic slowdown was apparent; hours (adjusted or otherwise) decreased substantially. In 1992, several statutory holidays were captured by the LFS (Good Friday, Thanksgiving and Remembrance Day).[20] The adjustment of actual hours therefore had more of an effect in 1992, significantly raising the number of hours worked. Unadjusted actual hours between 1990 and 1992 indicate a much larger drop than the adjusted hours.

Subsequently, from 1994 to 1999, adjusted and non-adjusted hours increased substantially and at the same pace. Starting in 2000, growth was slower, for both adjusted and non-adjusted hours. (For a description of the methodology used by the United States and the European Union, see *Labour force surveys in other countries*.)

Impact of hours on productivity

The reference week bias in hours actually worked affects not only the reading of labour market indicators but also labour productivity, since the latter reflects production per hour actually worked. Unless LFS hours are adjusted for various captured and non-captured holidays, the productivity measure would indicate spurious changes and would give an erroneous measure of economic efficiency. For this reason, before productivity is calculated, several adjustments are made to hours actually worked (see *Adjustments made by the Canadian Productivity Accounts* and Maynard 2004).

The adjusted hours are usually lower than non-adjusted hours (Table 5). The difference may amount to as much as 12.4 days annually (1989). Adjusted annual hours also fluctuate much less. For example, between 1987 and 2004, they ranged between -1.1% and 0.8% compared with -2.0% to 1.5% for unadjusted hours.

The effect of using unadjusted hours in calculating productivity was also measured. Taking unadjusted hours as the denominator, labour productivity in 2001 would be overestimated by 1.5%. This overestimation would amount to an average of 0.9% per year between 2000 and 2003 and 0.6% between 1989 and 1993. However, over the long term (1987 to 2004), the effect is marginal (0.1%).

Conclusion

Between 2000 and 2003, the LFS estimate of annual average hours of work gradually declined by 70 hours, or the equivalent of two weeks of work. This decline was surprising, since employment continued to be uncommonly strong despite slower economic growth than in the late 1990s. This strength contrasted with the stagnation of employment in the United States. Some analysts therefore questioned the strength of the labour market during these years.

Adjustments made by the Canadian Productivity Accounts

The Canadian productivity accounts adjusts hours aggregated by industry and class of worker, using more steps than in this article.

In the LFS, the annualization of hours consists primarily of summing the hours for the 12 reference weeks. In the productivity accounts, hours are adjusted in four steps. A first adjustment neutralizes the effect of the holidays on reference weeks by adding hours of absence to actual hours. Next, a linear interpolation of the 'standardized' hours of reference weeks is done to produce estimates for all the weeks of the year. Then estimates are produced of the hours of absence related to statutory holidays and some vacations during weeks other than survey reference weeks for all employed persons, for all their jobs. These hours of absence are then subtracted from the 'standardized' actual hours. These adjustments give a better estimate of hours actually lost because of statutory holidays, since they add back the hours that should not have been subtracted and deduct hours actually lost annually for all the statutory holidays in each province.

Hours are also adjusted for vacations, since in some provinces, reference weeks coincide with vacations in particular industries, such as the construction industry in Quebec. A final adjustment is made to account for the day of the week that a calendar year starts.

This yields the hours actually worked for each of the 52 weeks of the year for all employed persons at all their jobs. These adjusted totals are published in *The Canadian Productivity Accounts* of Statistics Canada. Thus, data are available on the hours of self-employed workers and employees by province or territory for a detailed industry level. For more information, see Maynard 2004 and Statistics Canada 2005.

31, 2000, also contributed, reflecting the greater value assigned to a better balance between work and personal life. The increased propensity to work part time, which was more pronounced among men in all age groups, could also be seen as reinforcing this trend.

In addition, 2003 was disrupted by several unfortunate events: the August power blackout in Ontario, concerns about a possible SARS epidemic, and forest fires and floods in British Columbia. Combined with the substantial appreciation of the Canadian dollar, these events led to an increase in work absences for other reasons, which accounted for nearly one-fifth of the total increase in hours lost.

Thus the decrease in adjusted hours did not seem to reflect a lack of economic vitality, but rather the aging of the workforce and the greater value assigned to a better balance between work and personal life.

More than half of the decrease was in fact due to survey methodology. The under-representation of some statutory holidays led to an overestimate of annual average hours worked in 2000 and thus, by comparison, an exaggerated drop in hours in the next three years. Similar patterns have occurred previously, notably between 1989 and 1992.

Once adjusted to eliminate the statutory holiday bias, the decline amounted to an average of one week annually per employee instead of two. Two-thirds of the decrease in adjusted hours came from an increase in hours lost for other than statutory holidays. This increase in hours lost was attributable to the aging of the workforce, since a major portion of the increase was seen among workers aged 45 and over.
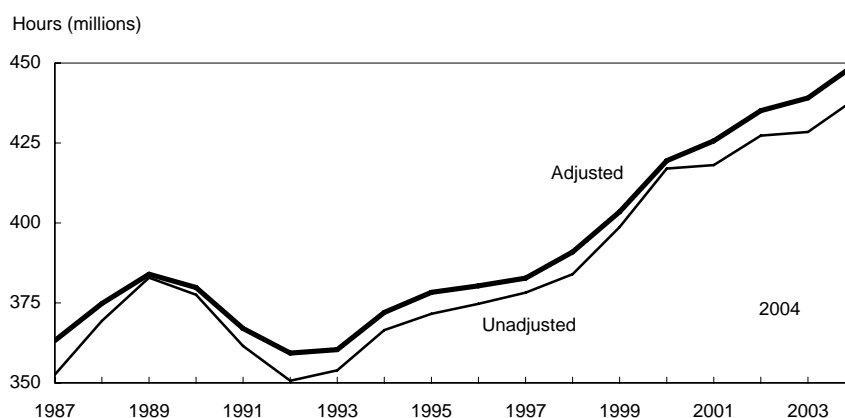
However, aging was not the only factor. Increases in time off for vacation and for personal or family responsibilities, as well as changes to EI that resulted in more weeks of maternity, parental and adoption benefits as of December

Chart D   Removing the statutory holiday bias reduces the fluctuation in annual work hours.

Hours (millions)

Source: Labour Force Survey, 1987 to 2004

Table 5 Average annual hours per employee, before and after adjustment, and effect of adjustment on labour productivity[1]

	Hours		Difference in		Actual hours growth		Effect on labour productivity[3]
	Unad-justed	Adjusted	Annual Hours	Days	Unad-justed	Adjusted	
							%
1987	1,804.4	1,767.9	36.5	4.9	…	…	…
1988	1,830.4	1,771.4	59.0	7.9	1.4	0.2	-1.2
1989	1,856.4	1,763.6	92.8	12.4	1.4	-0.4	-1.9
1990	1,830.4	1,753.3	77.1	10.3	-1.4	-0.6	0.8
1991	1,794.0	1,733.7	60.3	8.0	-2.0	-1.1	0.9
1992	1,768.0	1,735.3	32.7	4.4	-1.4	0.1	1.5
1993	1,788.8	1,738.3	50.5	6.7	1.2	0.2	-1.0
1994	1,814.8	1,745.3	69.5	9.3	1.5	0.4	-1.1
1995	1,799.2	1,746.0	53.2	7.1	-0.9	0.0	0.9
1996	1,814.8	1,759.5	55.3	7.4	0.9	0.8	-0.1
1997	1,814.8	1,754.2	60.6	8.1	0.0	-0.3	-0.3
1998	1,799.2	1,753.7	45.5	6.1	-0.9	0.0	0.8
1999	1,814.8	1,759.2	55.6	7.4	0.9	0.3	-0.6
2000	1,825.2	1,754.3	70.9	9.5	0.6	-0.3	-0.9
2001	1,788.8	1,745.0	43.8	5.8	-2.0	-0.5	1.5
2002	1,778.4	1,732.1	46.3	6.2	-0.6	-0.7	-0.2
2003	1,747.2	1,725.5	21.7	2.9	-1.8	-0.4	1.4
2004	1,762.8	1,742.0	20.8	2.8	0.9	1.0	0.1
1989 to 1993[2]	1,808.0	1,745.0	63.0	8.4	-0.9	-0.4	0.6
2000 to 2003[2]	1,784.2	1,738.9	45.3	6.0	-1.5	-0.6	0.9
1987 to 2004[2]	1,800.8	1,748.5	52.3	7.0	-0.1	-0.1	0.1

Sources: Labour Force Survey; Micro-economic Studies and Analysis Division
1   The adjustments are for various provincial holidays and for the vacation of construction workers in Quebec.
2   Geometric mean of the average annual growth rate of adjusted and unadjusted hours in 2000 and 2003.
3   This column looks at the overestimation or underestimation of labour productivity if actual hours are not adjusted. For example, between 2000 and 2001, productivity growth would have been overestimated by 1.5% if unadjusted hours had been used instead of adjusted ones.

Nonetheless, unless adjusted, the LFS estimate of hours actually worked often introduces a bias that can distort interpretation of labour market conditions. A comprehensive adjustment is produced regularly at Statistics Canada in the Canadian Productivity Accounts program. The Current Population Survey, the American counterpart of Canada's LFS, uses virtually identical procedures, so their estimates also contain a reference-week bias. On the other hand, new labour force surveys by nations in the European Union gather their data weekly from reduced samples, nullifying this bias.

Perspectives

■ Notes

1   This is the definition of usual hours used since January 1997. Prior to that, usual hours included any overtime hours usually worked by the survey respondent during a normal workweek, regardless of whether those hours were remunerated. Usual hours are used to calculate hourly wage rates.

2   Actual hours are used to calculate productivity and the hourly cost of labour.

3   In 2000, the system was new, and messages reminding respondents of the Thanksgiving and Remembrance Day holidays did not function. As a result, the LFS greatly underestimated the hours lost that year because of these holidays.

4   Self-employed workers report only absences of one week or more. Employees additionally report absences for part of a week. In this article, total hours lost cover both types of absence. Therefore, self-employed workers are excluded.

5   It is important to distinguish between average hours per employee and total hours. Total hours continued to grow between 2000 and 2003, since employment increased. However, they grew less rapidly, and hence the decrease in average hours.

6   Other reasons include time lost because of weather, strikes, lockouts, temporary layoffs, job starting or ending during the week, lack of material, or maintenance and repair of work premises.

7   Hours lost are annualized by multiplying weekly hours by 52 and by dividing the result by 7.5 hours per day.

8   From January to October, the LFS reference week includes the 15th day of the month. In December, the reference week is moved ahead to avoid having interviews take place during the weeks prior to Christmas. The same is usually done for November so that at least three weeks will separate the November and December interviews (David 1989).

9   Some holidays occur on a fixed date (Christmas, New Years Day, Remembrance Day) while others are variable (Civic Holiday, Good Friday). Some workers are penalized when fixed-date holidays fall on a weekend.

10 Not all workers are given this holiday, but most provincial and federal employees are. (See second table in *Definitions and reference week*.)

11 For further details, see *Definitions and reference week*.

12 The adjustment consisted of adding hours lost for statutory holidays to actual hours of work. An additional adjustment was made for 2000, when the LFS reference week did not take place during the vacation of construction employees in Quebec, whereas in 2003, those vacation weeks were captured. In this case, the hours lost to vacation are estimated on the basis of usual hours. The average actual hours thus adjusted are slightly overestimated, since hours lost to statutory holidays are considered as having been worked, whereas in realty, this is not the case. However, this adjustment eliminates the bias caused by the reference week, and the numbers of hours may therefore be compared without risk of error.

13 The years 2000 and 2003 represent the peak and trough respectively of average actual hours. The rest of the article examines differences between these two years to explain the decline in hours.

14 Only women can report hours of absence owing to maternity leave. Men can take parental leave, which is captured in leave for personal or family responsibilities.

15 Some laws have reinforced this effect, such as the Quebec legislation that gradually lowered the standard workweek from 44 hours in 1998 to 40 hours in 2002. A similar regulation in Ontario established a ceiling of 48 hours, including overtime.

16 An Oaxaca decomposition model was used to see whether the increase in hours lost was more concentrated in specific industries and occupations or the result of a transfer of employment from some industries and occupations with low levels of hours lost toward industries and occupations with high levels. However, the model showed that the increase was broadly based. The decomposition was done by estimating a linear regression model with the average number of hours of absence per week as the dependent variable and the following independent variables: age group, sex, temporary employee status, student status, province of residence, rural/urban area, occupation and industry.

17 The proportion of employees working part time by choice was more than 70% in 2000 and in 2003.

18 This estimate of 20% was obtained through a series of ordinary least squares regressions in which the dependent variable was an average of the number of adjusted actual hours for the years 2000 and 2003 combined. In the first regression, a single dependent variable was used, namely a dichotomous variable taking the value 1 in the case of data for 2003 and 0 otherwise. In a second regression, the proportion of part-time employees was added. The coefficient of the dichotomous variable then declined by 20%, meaning that the growing proportion of part-time employees explains 20% of the decrease in hours. The third regression included the variables in the second regression as well as province and the rural/urban nature of the area of residence. A fourth regression included all variables in the third regression as well as occupation and industry, the temporary or non-temporary nature of the job, and student status. The coefficient for Model 5 was -0.54, or 31% less than that of the first model, which shows that adding all the variables in models 3, 4 and 5 managed to add only about 10 percentage points more than Model 2 to explaining the drop in hours.

19 In 1989 and 1990, the only holiday captured was Remembrance Day. Also, this holiday fell on the weekend in both these years. When Remembrance Day falls on the weekend, it often has less impact on hours lost, since eligible employees would carry the holiday over to the following Monday.

20 In 1992, Remembrance Day fell on a weekday. Also, the July reference week took place during the vacation period for Quebec construction workers, reducing actual hours for that month.

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How Canada compares in the G8

Katherine Marshall

F rance initiated the first G6 (Group of Six) meeting in 1975, inviting five countries to discuss current global economic issues. Today, eight countries rotate hosting an annual summit to discuss not only the global economy, but also political and social problems (see *History of the G8*). The G8—Canada, France, Germany, Italy, Japan, the Russian Federation, the United Kingdom and the United States—are some of the most industrialized countries in the world. Given their economic, political and military weight, they can influence global developments and manage global crises. Using labour and economic data from the Organisation for Economic Co-operation and Development (OECD), the World Trade Organization, and other international databases, this article presents selected indicators to describe how Canada compares with the other members of the G8, indicating changes since the early 1990s (see *Data sources and definitions).*

Small group, big economic power

Given Canada's population, it is somewhat of a feat to belong to the G8, where membership is contingent on being a major economic power. In fact, the eight countries account for only 13% of the world's population, but 46% of the global economy (Table 1). In other words, these eight countries are responsible for almost half the value of goods and services produced around the world.

The economic strength of the United States is clearly evident, with a share of world GDP (21.0% in 2004) almost five times greater than its proportion of world population (4.6%). Despite being the smallest G8 country, Canada's share of GDP (1.8%) in 2004 was 3.6 times greater than its share of population, a ratio only slightly below the United Kingdom's. These proportional differences in GDP and population translate into the highest GDP per capita figures for the

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History of the G8

The G8 has its roots in the early 1970s with two precursor groups known as the Brussels Group (1971) and the Library Group (1973). Both included selected developed democratic countries that met to discuss world issues, but meetings were largely confidential. One year after the Library Group was formed (France, Germany, the United Kingdom, and the United States), Japan joined. Subsequently, the group developed into the 'G6' when President Giscard d'Estaing of France invited the 'G5' plus Italy to Rambouillet to discuss global economic problems. Canada joined in 1976 to make the G7, and Russia in 1998 to make the G8.

The G8 does not have a permanent administration. Each of the former G7 countries rotates holding a year-long presidency and hosting a summit. Canada has hosted four summits—in Ottawa and Montebello (1981), Toronto (1988), Halifax (1995) and Kananaskis (2002)—and is scheduled to host again in 2010. Russia will host for the first time in 2006.

At each summit, leaders from the countries meet to discuss major global issues of the day—economic, political or social. For example, the main issues for the 2005 summit will include Africa and climate change. Representatives from all countries try to reach non-binding agreements on how to resolve problems. The G8 has been responsible for instigating the Global Health Fund (targeted at fighting AIDS, tuberculosis and malaria), the Heavily Indebted Poor Countries Initiative (which sets out a process to cancel the national debt for very poor countries), and the New Partnership for Africa's Development.

United States, the United Kingdom and Canada—$39,800, $31,100 and $31,000 respectively in 2004. Standardized per capita GDP gives an indication of relative economic well-being. Even though Russia had by far the lowest GDP per capita in the G8 ($10,000), it was still almost twice as high as the average for all non-G8 countries ($5,400).

Canada had the highest rate of economic expansion between 2000 and 2004

Canada's GDP grew by 1.2% annually between 1990 and 1994, 3.7% between 1995 and 1999, and 3.1% between 2000 and 2004, placing it sixth, second and

Table 1 Population and GDP[1] of the G8, 2004

	Population		GDP		GDP per capita
	millions	%	US $ (billions)	%	US $
World	**6,379.2**	**100.0**	**55,500**	**100.0**	**8,700**
G8	857.8	13.4	25,516	46.0	29,744
United States	293.0	4.6	11,665	21.0	39,807
United Kingdom	60.3	0.9	1,877	3.4	31,142
Canada	32.5	0.5	1,007	1.8	30,971
Japan	127.3	2.0	3,835	6.9	30,115
France	60.4	0.9	1,804	3.3	29,859
Germany	82.4	1.3	2,310	4.2	28,025
Italy	58.1	0.9	1,610	2.9	27,730
Russia	143.8	2.3	1,408	2.5	9,793
Non-G8	5,521.3	86.6	29,984	54.0	5,431

Sources: The World Factbook; OECD Main Economic Indicators
1 A purchasing power parity (PPP) dollar calculation of all goods and services produced in a country.

for a country like Canada, which has a relatively small domestic market. Many countries began to formally harmonize their trade practices with the General Agreement on Tariffs and Trade in 1948, and the creation of the World Trade Organization in 1995. Trade is also becoming increasingly important to many large non-G8 countries such as China (see *Emerging markets*). Canada has participated in a flurry of liberalized trade agreements during the past 15 years, including the 1989 Canada-U.S. Free Trade Agreement, the 1994 North American Free Trade Agreement, and the soon-to-be-adopted 2005 Free Trade Area of the Americas (covering 34 countries). The increase in free trade (the reduction or elimination of trade barriers such as tariffs or quotas), technological advances in communication, lower transportation costs, and innovation have all profoundly changed how and where business is done. Increasingly, the world of doing business has come to mean doing business with the world.

first in the three periods[1] (Chart). Most countries followed this global recession and recovery pattern, with the lowest economic growth between 1990 and 1994 and the greatest between 1995 and 1999. Germany, however, had the highest growth rate in the G7 countries between 1990 and 1994[2] (2.8%) but saw consecutive reduced rates of 1.6% and 1.1% in the next two periods. This was partly due to the disruption following the fall of the Berlin Wall in 1989 and the subsequent blending of wealthier West Germany and former communist East Germany. France, Italy and Japan have all had relatively weak performances since 1990 (GDP growth rates of 2.3% or less). The United States was among the top three countries in terms of GDP growth rate for all three periods.

Export trade accounts for one-third of Canada's GDP

An important factor in economic expansion for many countries is the amount of international trade activity. This is especially important

Chart Canada's average growth in GDP improved markedly after the early 1990s.
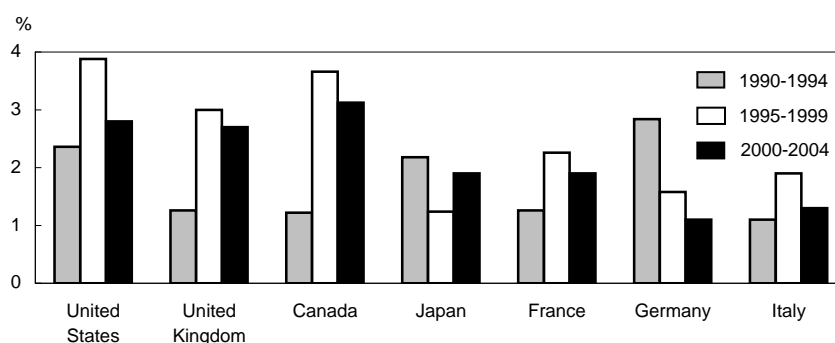
Source: OECD Productivity Database
Russia excluded, data for unified Germany began in 1991.

Data sources and definitions

This article uses figures from several organizations that regularly collect and publish standardized international data. However, whereas the Central Intelligence Agency (CIA) and the World Trade Organization (WTO) seek to cover almost all countries in the world, the Organisation for Economic Co-operation and Development (OECD) generally focuses on its 30 member countries—which include all the G8 countries except Russia. The OECD nonetheless attempts to include economic and labour market indicators for several significant non-member countries, such as Russia, but readily admits that the data collection process is less well-established in non-member countries and therefore "time series are generally not very long, and are less reliable" (OECD 2005b, p 225). For Germany, data prior to 1991 are only for West Germany (Federal Republic of Germany). Information and the data used in this article can be obtained from the following Web sites:
OECD: www.oecd.org
WTO: www.wto.org
World Fact Book (CIA): www.odci.gov
U.S. Bureau of Labor Statistics: www.bls.gov

The article presents many well-known labour market and economic indicators. However, many other indicators could have been used—for example, youth unemployment, long-term unemployment, income distribution, the consumer price index, interest rates, or the national debt.

Although all the organizations mentioned above are diligent in attempting to standardize concepts, methods and definitions in order to allow for international comparisons, some differences will exist nonetheless. Therefore, some caution must be taken when interpreting individual year differences between countries, and small differences in particular should be considered as "falling in a margin of uncertainty" (OECD 2005a, p 11). For examples of some of the work done on international comparisons, see Baldwin et al. 2005 and OECD 2005a.

Real **gross domestic product** (GDP) is commonly used to estimate total economic activity, after adjusting for inflation, and is therefore a good measure for determining how well an economy is doing.

Purchasing power parity (PPP) is the rate at which currency of one country must be converted into currency of another country to buy an equivalent basket of goods and services. PPPs eliminate the differences in price levels among countries and therefore fluctuate much less than market exchange rates. The common currency used in this article is the U.S. dollar. The OECD uses regularly updated PPPs developed by the OECD-Eurostat PPP program.

Merchandise trade is the buying (importing) and selling (exporting) of all types of goods, which can range from raw primary products to specialized manufactured products. Trade in services is excluded since it is a relatively small activity and the coverage and comparability across countries are subject to significant distortions (www.wto.org).

The **labour force** is the civilian, non-institutionalized population over a country-specific minimum age (15 in Canada) who at the time of the survey were employed or unemployed.

Employment rate is the percentage of the working-age population that is employed. For example, the rate for the core working-age population would be the number of persons aged 25 to 64 who are employed divided by the total population that age.

Educational attainment is a standardized set of indicators summarizing the highest level of education attained. The OECD codes education levels according to the International Standard Classification of Education, which allows for international comparison. A common sub-classification is:

Below upper secondary: less than a high school diploma.

Upper secondary and postsecondary non-tertiary: graduation from high school or completion of a postsecondary program that generally lasts six months to two years. Program names include trade/vocational certificate and community college certificate.

Tertiary: includes higher level vocational and technical programs that usually last 1.5 to 3 years and result in a college diploma, and university certification programs (diploma, bachelor's degree, first professional degree, etc.).

For more information, see www.oecd.org/edu/eag2004.

The importance of external trade to the economy is shown by the $US 322 billion in goods that Canada exports. This represented almost one-third (32%) of GDP (Table 2). An increase in exports means more economic activity for a country, and all G8 members have witnessed such an increase since 1990. At 252%, Canada had the greatest increase in export trade over the past decade. Total merchandise exports tended to be less important (18% of GDP or less) for the larger countries (Japan, Russia and the United States). After three years of consecutive decreases, Canada's exports increased by just over $US 49 billion in 2004 (data not shown), resulting in a record trade balance of $US 46 billion. Increases in industrial goods and energy products were particularly strong, as was the extent of export trade with the United States, despite the appreciation of the Canadian dollar[3] (Department of Foreign Affairs and International Trade 2005; Cross 2005).

Table 2 Indicators for total merchandise trade among the G8, 2004

	Imports	Exports	Trade balance[1]	Export trade Share of GDP[2]	Export trade Growth since 1990
	Current US $ (billions)			%	
United States	1,526.4	819.0	-707.4	7	208
United Kingdom	462.0	345.6	-116.4	18	187
Canada	275.8	322.0	46.2	32	252
Japan	454.5	565.5	111.0	15	197
France	464.1	451.0	-13.1	25	208
Germany	717.5	914.8	197.3	40	217
Italy	349.0	346.1	-3.0	21	203
Russia	94.8	183.2	88.4	13	..

Source: World Trade Organization
1 Exports minus imports.
2 For comparability with the trade data, GDP is expressed in current US dollars.

Canada has an aging but well-educated labour force

Employment growth is often linked to increases in economic activity and the qualifications of the population. One indicator that is widely used to track the state of the economy is the employment rate—the percentage of the working-age population that is employed. Trends in the rate for those aged 25 to 64 (the core working-age population) among the G8 are remarkable in both consistency and extent. The overall employment rate between 1976 and 2003 rose substantially in Canada (9.1 percentage points) and the United States (6.9 points), while it dropped slightly in two countries: France and Germany (Table 3). These changes result from varying decreases for men and increases for women, reflecting the almost universal increase in women's labour force participation, and a younger average retirement age for men.

While Italy had the largest employment rate difference between the sexes in 2003 (27.8 percentage points), Canada had the smallest (9.7 points)—largely because Canadian women had the highest employment rate (68.5%) of all G8 countries. Between 1976 and 2003, Canada moved from sixth to third in terms of the overall employment rate.

As mentioned, employment growth is also generally associated with increasing educational qualifications—which are more pertinent than ever in today's global and technological economy . And indeed, more and more people in each G8 country have been acquiring higher levels of education (Table 4). In 2002, 43% of Canada's population aged 25 to 64 had a high-level vocational diploma, college diploma or university degree—the highest rate in the G8 (see *Data sources and definitions*). Over one-third of this age group in Japan (36%) and the United States (38%) had also attained a tertiary or high level of education.

The employment rate among those with advanced education was 80% or higher in all G8 countries in both 1991 and 2002 (Table 4). In contrast, employment rates ranged between only 50% and 67% for those with less than high school education in both years. Given the correlation between advanced education and employment, it is not surprising to find that the four countries with the most highly educated populations (Canada, Japan, the United Kingdom and the United States) also had the highest overall employment rates in 2003 (Tables 3 and 4).

Table 3 Employment rates in the G7

Age 25 to 64	1976	2003	Change
Both sexes		%	
United States	64.3	71.2	6.9
United Kingdom	70.3	74.2	3.9
Canada	64.2	73.3	9.1
Japan	69.1	73.9	4.8
France	66.0	63.0	-3.0
Germany[1]	65.6	65.4	-0.2
Italy	52.2	57.1	4.9
Men			
United States	79.3	76.9	-2.4
United Kingdom	86.7	81.0	-5.7
Canada	80.7	78.2	-2.5
Japan	87.8	86.7	-1.1
France	81.8	69.2	-12.6
Germany[1]	83.4	71.4	-12.0
Italy	76.6	71.0	-5.6
Women			
United States	49.8	65.7	15.9
United Kingdom	54.0	67.4	13.4
Canada	47.7	68.5	20.8
Japan	51.0	61.0	10.0
France	50.3	56.9	6.6
Germany[1]	48.6	59.3	10.7
Italy	29.0	43.2	14.2

Source: OECD on-line Labour Statistics Database
1 Only West Germany in 1976.

Table 4 Selected labour market indicators of the G7 for those aged 25 to 64

	United States	United Kingdom	Canada	Japan	France	Germany	Italy
Educational attainment[1]				%			
1991							
Below upper secondary	16	35	30	..	49	18	72
Upper secondary and postsecondary	54	49	42	..	36	60	22
Tertiary	30	16	28	..	15	22	6
2002							
Below upper secondary	13	16	17	16	35	17	54
Upper secondary and postsecondary	49	57	40	47	41	60	36
Tertiary	38	27	43	36	24	23	10
Employment rate by educational attainment							
1991							
Below upper secondary	52	61	55	..	58	51	54
Upper secondary and postsecondary	74	78	75	..	78	74	74
Tertiary	85	86	82	..	85	86	87
2002							
Below upper secondary	57	53	55	67	58	51	50
Upper secondary and postsecondary	74	79	76	74	77	70	72
Tertiary	83	88	82	80	83	84	82
Overall unemployment rate							
1993	6.9	10.0	11.4	2.5	11.1	7.7	10.1
1998	4.5	6.2	8.3	4.1	11.1	9.1	11.7
2003	6.0	5.0	7.6	5.3	9.4	9.6	8.6
Average actual hours worked per week				Hours			
1993	35.1	33.1	33.0	36.6	30.5	29.6	31.2
1998	35.4	33.3	33.7	35.4	29.7	28.6	31.2
2003	34.5	32.2	33.0	34.6	27.5	27.8	30.6

Source: OECD
1 Levels have been classified according to an international coding system.
Note: The selection of years was largely based on what was currently available from the OECD.

Unemployment rates in the G8 ranged between 3% and 12% from 1993 to 2003, with Canada near the middle of the pack (7.6% in 2003). However, average work hours trended down in all countries except Canada, which had an average of 33 hours per week in both 1993 and 2003. Since 1993, Japan has witnessed an average workweek reduction of 2 hours, from 36.6 to 34.6, but still had the longest workweek of the G8 in 2003. France, on the other hand, had the shortest, dropping three hours to 27.5. Reasons for a drop in average work hours include legislative change (France[4]), an aging labour force, and an increase in part-time work (see Galarneau 2005).

Finally, Canada's aging labour force has been the focus of a great deal of discussion, but in reality we are simply catching up to the older age distribution of workers in the other G8 countries. Only one-third of the Canadian workforce was aged 40 or over in 1983, compared with one-half in 2003 when the proportion in the other G8 countries ranged from 46% to 57% (Table 5). After 1983, Canada and the United States saw substantial increases (15 and 13 percentage points respectively) in the proportion of the workforce 40 and older, mostly because of the aging of the generation born after the Second World War. An aging labour force is not a concern in itself, having more to do with the impact of this demographic bulge as it moves out of the labour market, including possible skill shortages.[5]

Manufacturing output and cost both relatively low in Canada

Cross-country labour output and cost indicators are usually developed using the manufacturing sector because data are readily available and because the industry often includes the bulk of a country's merchandise trade (Sharpe 1990). Data are converted into a common currency (U.S. dollars), and indexed to gauge the rate of change. Labour productivity is expressed as output per hour—that is, total GDP in manufacturing divided by total hours worked in the industry.[6] Productivity rates (1992=100) have increased in all G8 countries over the past decade (Table 6). The United States showed the largest increase between 1992 and 2003 (80%) and Italy the smallest (10%). Canada had a below-average growth in labour productivity (35%).

On the other hand, the hourly compensation for employees also increased in all countries, with the U.S. showing the greatest gain (60%) and Italy the least (1%). Canada had the second lowest hourly compensation gain (13%).

Conversely, except for the United Kingdom and Italy, the unit labour cost, which is wages and benefits per unit of manufactured product, fell in all countries between 1992 and 2003, particularly Canada and France where the drop was almost 20%. Since labour is often the biggest factor in production cost, lower unit labour costs can improve a country's position. Although it seems contradictory to have hourly compensation rates go up at the same time as unit labour costs go down, this is possible when labour productivity increases. Specifically, when more goods can be produced in fewer hours, as was the case between 1993 and 2003, both wages and profits can increase.

Emerging markets

China, India and Brazil are three of the most populated countries in the world, and their economies and international trade activity have been growing almost exponentially. China alone has had an annual average growth of 9.3% in real GDP since 1993, with GDP totalling $US 1,600 billion in 2004. However, GDP per capita in these three countries is still relatively low at $US 1,230, $US 610 and $US 3,030 respectively for China, India and Brazil. Although Canada's total trade activity with these three ($US 28.1 billion) represented only 4.7% of its trade activity worldwide in 2004, the figure is expected to grow, especially for China (Roy 2005).

Economic indicators of emerging markets,[1] 2004

	China	India	Brazil
Population (millions)	1,299	1,065	184
GDP ($ billions)	1,601	655	558
GDP per capita ($)	1,232	615	3,033
Annual average GDP growth rate, 1993 to 2003 (%)	9.3	6.1	2.6
Total merchandise trade with Canada ($ billions)	23.6	1.8	2.7
Canadian exports ($ billions)	5.1	0.8[2]	1.1
Canadian imports ($ billions)	18.5	1.0[2]	1.6

Sources: Department of Foreign Affairs and International Trade; Statistics Canada
1 Currency figures are in U.S. dollars.
2 2003 data.

Table 5 Proportion of labour force aged 40 or over in the G7

	1983	2003
	%	
United States	38	51
United Kingdom	42	49
Canada	34	49
Japan	52	57
France	41	50
Germany	45	53
Italy	42	46

Source: OECD

Conclusion

Labour and economic data for the G8 demonstrate that this group includes some of the most economically powerful countries in the world. Their economic expansion has been continuous over the past 15 years, and the extent of their economic power is reflected in the 2004 average GDP per capita figure of $US 29,700, compared with $5,400 for non-G8 countries.

Canada has made significant gains in average annual economic expansion, moving from one of the lowest rates in the early 1990s to the highest during the most recent period (2000 to 2004). International trade has played a key role in this process.

Table 6 Selected manufacturing output and cost indicators for the G7

1992=100		United States	United Kingdom	Canada	Japan	France	Germany	Italy
					US $			
Output per hour	1993	102.7	103.8	105.8	101.7	101.0	101.8	101.2
	1998	130.2	108.4	117.7	121.2	127.9	122.0	110.8
	2003	180.4	134.9	134.5	154.3	158.0	135.1	110.9
Hourly compensation	1993	102.0	88.9	95.6[1]	117.2	96.3[1]	100.4	82.8
	1998	118.7	115.4	91.9[1]	111.7	101.1[1]	113.3	86.7
	2003	159.6	148.4	112.7[1]	135.3	127.0[1]	132.8	100.8
Unit labour costs	1993	99.3	85.6	90.4	115.3	95.3	98.7	81.8
	1998	91.2	106.5	78.1	92.2	79.1	92.9	78.2
	2003	88.5	110.0	83.8	87.7	80.4	98.3	90.9

Source: U.S. Bureau of Labor Statistics
1 Compensation adjusted for employment taxes and government subsidies to estimate the actual labour cost to employers.

Canada also fared well in terms of employment rate growth among the working-age population as well as in the educational attainment of this age group. By 2003, Canada had the third highest employment rate (73.3%) for those aged 25 to 64, up from 64.2% and sixth place in 1976. Also, Canadian women had the highest rate (68.5%) in the G8. Canada and the United States experienced a considerable baby boom after the Second World War and are currently facing a rapidly aging workforce, a situation that could affect labour replacement rates.

Although Canada has managed to control rising labour costs over the past decade and add to its competitive edge, its labour productivity gains have been substantially below those of France, Japan and the United States. However, all in all, the global economic picture indicates that Canada is keeping up with, and in many cases surpassing, its G8 partners.

Perspectives

■ **Notes**

1   Canada's annual average GDP growth rates were relatively stronger between 2000 and 2002 than in 2003 and 2004.

2   Although the Berlin Wall was dismantled in 1989, West and East Germany were not officially reunited until late 1990, so most series show combined German data starting in 1991.

3   The strength of a country's currency can be an important factor in improving or reducing cost competitiveness. For example, if the Canadian dollar appreciates in relation to the currency of other countries, our manufactured exports become more expensive to buy, and companies are often forced to cut the export price in order to remain competitive. However, some hidden advantages of a rising dollar can counter the changing price of exports and improve competitiveness. For example, depending on the industry, many manufactured goods require imported material, which will cost less because of a stronger dollar. Also, Canadian companies with U.S. debt, or those who import machinery or equipment to produce their goods, would also benefit from currency appreciation.

4   In 1998 and 2000, the French government passed legislation that reduced the workweek to a maximum of 35 hours.

5   The changing characteristics of older workers in Canada, as well as structural changes to the labour market are some of the reasons for expecting many current workers to continue working past 65, the traditional age of retirement (Duchesne 2004).

6   Labour is the main ingredient or cost involved in producing goods, and the easiest to measure. However, capital (such as equipment), energy and materials are also factors in production. Multifactor productivity is an output calculation that captures the impact of changes in all the factors.

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