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Labour Market Seasonality in Canada: Trends and Policy Implications

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Labour Market Seasonality in Canada: Trends and Policy Implications

Executive Summary

The objective of this paper is to examine labour market seasonality in Canada over the past three decades in order to shed light on what policies might be best suited to address seasonal economies. The main findings are as follows.

- The seasonality of the Canadian economy has declined since 1976 according to a wide range of output and labour market variables. However, since 1996 unemployment rate seasonality has increased.
- Seasonality – both in employment and the unemployment rate – is much higher for the young than for older workers and much higher for men than for women.
- Canada’s level of employment seasonality was more than three times higher than that in the United States in 2003. However, unemployment rate seasonality was perhaps surprisingly the same in the two countries.
- Relative to OECD countries, Canada has average unemployment rate seasonality, but very high employment seasonality.
- Atlantic Canada has higher levels of employment and unemployment rate seasonality than the other provinces reflecting a greater importance of primary industries and greater propensity of employers to hire part-year workers.
- Seasonal unemployment represents a much more important public policy issue than seasonal employment. The basic problem is an underlying lack of employment opportunities in rural and remote areas where seasonal unemployment is concentrated, not seasonal unemployment itself.
- An economic development strategy that ensures that all persons who want full year work can obtain it must be the most important element in any attempt to reduce seasonal unemployment. But such a strategy might need to be supplemented, at least in the short-to-medium term, by out-migration, particularly in very high unemployment regions, and incentives for firms to transform seasonal work into full-year work, or at least into near full-year work.
- Since unrestricted benefits for seasonal EI repeaters will not reduce seasonal unemployment, a strong case can be made that long-term income support for the seasonally unemployed is not in the long-run in the best interest of the beneficiaries, high unemployment regions, and the country, although reducing such benefits is politically difficult.

Labour Market Seasonality in Canada: Trends and Policy Implications¹

The seasonality of the Canadian economy is of interest to policymakers from a number of perspectives. Seasonally-employed workers can be adversely affected by loss of earnings in seasonal down times and face unique challenges such as maintaining skills during such down times. Concern for the well-being of seasonal workers in Canada has manifested itself in substantial income redistribution towards regions experiencing a high degree of seasonal employment. The programs through which such redistribution implicitly or explicitly takes place – namely the Employment Insurance (EI) system and equalization payments – are of continual policy interest.

Given the consequent importance of seasonal economies in policy formation, it is useful and indeed necessary to quantify seasonality in the Canadian economy and analyze its trends and characteristics. The purpose of this paper is to present and examine the nature of labour market seasonality in Canada over the past three decades in order to shed light on what policies might be best suited to address seasonal economies. The first section of the paper presents and examines levels and trends in seasonality in Canada by gender, age, industry, occupation, class of worker, and province over the past three decades, and also compares labour market seasonality in Canada to that in the United States and in OECD countries. The second section uses insights from the first section to identify the public policy issues posed by seasonality, to outline public policy approaches to deal with seasonal unemployment, and to put forward general policy recommendations and areas for further research.

Trends in Labour Market Seasonality in Canada

This section of the paper uses data from the *Labour Force Survey* conducted by Statistics Canada to quantify seasonal fluctuations in employment and unemployment in Canada and the provinces for the 1976-2003 period, and to compare Canadian trends with those in the United States and OECD countries. First, however, a word must be said on the methodology used to quantify seasonality.

Measuring Seasonality

There are a number of methodologies that can be adopted to measure seasonality, including the raw peak-trough measure, the seasonal amplitude measure, and the mean seasonal variation (MSV) measure.² In this paper, the MSV measure has been chosen because of its comprehensiveness, since it uses data for every month in measuring seasonality in a given year. In basic terms, the MSV for a given variable (e.g. the unemployment rate) for a given year is the average of the differences between the

¹ The authors would like to thank the EPPD/EI Policy Branch of Human Resources and Skills Development Canada for financial support to undertake this research, for useful comments on an earlier draft, and for permission to release this report.

² See Guillemete, L'Italien and Grey (2000) and Statistics Canada (1982) for discussion of methods for measuring seasonality.

seasonally adjusted and unadjusted estimates for that variable across all months in the given year. More specifically, the MSV for a given year is calculated in the following way: first, the absolute value of the percentage difference between a seasonally adjusted series and the corresponding unadjusted series is calculated in each month; and second, the arithmetic mean of these monthly percentage differences is taken.³ MSV is hence expressed in per cent terms. An example is given in Exhibit 1 below.

Exhibit 1: Mean Seasonal Variation Calculation for the Unemployment Rate in 2003 in Canada

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Avg.
Unadj.	8.1	8.0	7.9	8.0	8.0	7.2	7.9	8.2	7.4	6.9	7.1	7.0	7.6
Seas. Adj.	7.5	7.5	7.4	7.6	7.9	7.7	7.7	8.0	7.9	7.6	7.5	7.4	7.6
Diff.	0.6	0.5	0.5	0.4	0.1	-0.5	0.2	0.2	-0.5	-0.7	-0.4	-0.4	0.0
Abs. Diff. as % of S.A.	8.00	6.67	6.76	5.26	1.27	6.49	2.60	2.50	6.33	9.21	5.33	5.41	MSV= 5.49

MSV can be calculated for any variable for which both seasonally adjusted and unadjusted estimates are available.⁴ For Canada these variables include GDP, prices, inventories, earnings, and labour market variables such as employment, unemployment, the labour force and the unemployment rate. This paper focuses on these labour market variables since labour market issues are typically the primary concern of policies towards seasonal economies.

³ In formal terms,

$$MSV = \left(\left(\sum_{m=1}^{12} \left| \frac{U_m - S_m}{S_m} \right| \right) / 12 \right) \times 100$$

for a given year, where U_m is the unadjusted variable, S_m is the seasonally adjusted variable and m refers to the month. U_m and S_m can be any series for which both seasonally adjusted and unadjusted estimates are available. MSV can also be calculated on a quarterly basis.

⁴ It should also be mentioned at this point that the calculation of MSV is very demanding in terms of data requirements. Each MSV estimate requires 12 individual estimates of the unadjusted variable and 12 individual estimates of the seasonally adjusted variable. This means that any data quality concerns for individual estimates are magnified to a substantial degree when calculating MSV. Statistics Canada uses an autoregressive moving average technique (X-11) in calculating seasonally adjusted measures from the *Labour Force Survey*, which may add a further degree of uncertainty to the quality of MSV estimates. Other seasonal adjustment methodologies such as rolling samples in binary-variable regression analysis may yield somewhat different estimates of seasonality trends. Nonetheless, the data used in this paper should be more than sufficient for discerning broad trends in seasonal variations in the variables examined.

Seasonality in Output and Labour Market Variables in Canada, 1976-2003

Table 1 shows MSV estimates for output, employment, the labour force, unemployment and the unemployment rate for Canada for the 1976-2003 period.⁵ All variables experienced declines in seasonality over the period. Output had the largest fall (56.9 per cent), followed by employment (43.0 per cent), the unemployment rate (37.9 per cent), the labour force (35.2 per cent), and unemployment (21.1 per cent). The decreases in seasonality in output, employment, and the labour force were continuous over the 1981-2003 period. In contrast, the declines in seasonality for unemployment and the unemployment rate ended in 1996 and seasonality in these two variables has actually increased since then, with unemployment seasonality up 17.6 per cent.

The fall in seasonality in Canada in recent decades is related to a number of factors, including: the declining importance of highly seasonal primary industries such as fishing and agriculture;⁶ technological advances that make work possible during periods when it was once not possible (e.g. pouring of concrete in winter); and the falling share of youth in the labour force.⁷ The employment pattern of youth is highly seasonal because of the labour force behaviour of students.

Seasonality is much higher for unemployment and the unemployment rate than for employment. For example, the seasonality of employment measured with the mean seasonal variation (MSV) measure⁸ in 2003 was 1.36 per cent, compared to 5.65 per cent for unemployment. This is because the number of unemployed is much smaller than the level of employment. Since the difference between the seasonally adjusted and unadjusted estimates is similar for employment and unemployment (due to the fact that some workers who are seasonally employed at a given point in the year are the same workers who are seasonally unemployed at a different point in the year), this difference is larger as a proportion of unemployment than of employment.

Seasonal fluctuations in employment arise when persons not in the labour force take seasonal jobs or when persons already in the labour force who are unemployed become employed. In the first case unemployment is unchanged, while in the second case unemployment falls. Differences between seasonality in unemployment and employment can shed light on what proportion of seasonal employment is voluntary – that is, the individual does not wish to work in the off-season and is out of the labour force during this period (students are the best example of voluntary seasonal workers) – and involuntary – that is, the individual seeks additional work in the off-season and is in

⁵ The tables and charts are found at the end of the document. They show MSV estimates for a number of gender, age, industry and other combinations for Canada and the provinces, as well as selected OECD countries. An appendix with the monthly unadjusted and seasonally adjusted estimates underlying these MSV estimates is available upon request.

⁶ The share of employment in primary industries in Canada fell from 7.3 per cent in 1976 to 4.0 in 2003.

⁷ The share of the labour force in Canada accounted for by the 15-24 age group fell from 27.6 per cent in 1976 to 16.4 per cent in 2003.

⁸ Since all estimates of seasonality referred to in this paper are based on MSV, the measure will no longer be mentioned in the presentation of the estimates.

the labour force with unemployed status during this period. When persons move directly from “not in the labour force” to employment and then back to “not in the labour force” once the seasonal work ends, it suggests that they regard the seasonal employment as voluntary, and are not interested in full-year work.⁹ Of course, in regions with limited employment opportunities, seasonal workers may want work in the off-season, but do not look for work because they believe none is available. Such discouraged worker behaviour would lead to an overestimate of true voluntary seasonal employment.

The increase in unemployment seasonality in Canada since 1996 suggests that the proportion of seasonal jobs that are held involuntarily has been increasing despite the overall decline in employment seasonality. More work is needed on the factors behind this development.

Employment Seasonality by Age and Gender

Table 2 shows that seasonality in employment by age group is highest for youth. In 2003, employment seasonality was 9.2 per cent for the 15-19 age group and 5.0 per cent for the 20-24 age group. In contrast, seasonal employment for the 25-54 and 55 and over age groups were only 0.7 per cent and 0.6 per cent respectively. The very high employment seasonality among young Canadians is due to the high proportion of students in the 15-24 age group, many of whom work during the summer and attend school for the rest of the year. Consistent with overall trends, employment seasonality has fallen over the 1976-2003 period for the 15-19, 25-54, and 55 and over age groups, but it has risen for the 20-24 age group. This latter development is likely linked to the growing proportion of this age group enrolled in post-secondary education and hence employed seasonally in the summer. Indeed, 39.2 per cent of the population aged 20-24 were students in 2003, up from 18.7 per cent in 1976.

The 25 and over age group, which contains proportionately much fewer students than the 15 and over age group, may be a more appropriate group for analysis of trends in employment seasonality than the 15 and over age group, as the effect of students on employment seasonality for this group is minimal.¹⁰ Since this report uses aggregate data

⁹ The ratio between the MSV for unemployment and employment may provide some indication of the proportion of seasonal employment that is voluntary. If all persons in seasonal jobs make a transition to out of the labour force status once the season ends and are never unemployed, the MSV for unemployment would be zero. Hence the higher the ratio between the MSV for employment and the MSV for unemployment, the higher the proportion of voluntary seasonally employed in total seasonal employment.

¹⁰ Table 2 shows that employment seasonality for the 25 and over age group was much lower (0.7 per cent in 2003) than the 15 and over age group due to the exclusion of the high seasonality 15-24 age group. But the change in employment seasonality of the 25 and over group was very similar to the 15 and over group over the 1976-2003 period (-41.5 per cent versus -43.0 per cent) despite the much smaller decline in seasonality of the 15-24 group. This is explained by the fact that the MSV (and its change over time) for an overall age or gender group is not simply the weighted average of the MSV estimates (or their growth rates) for the component groups. The reason for this is that seasonality trends within a given year can be different for the 15-24 and 25 and over age groups. For example, July is typically a month of seasonally below-average employment for the 25 and over age group, while employment for the 15-24 age group reaches its seasonal peak in the same month. Situations such as this introduce offsetting into MSV estimates and their growth rates for the overall 15 and over age group.

from the *Labour Force Survey*, it is unfortunately not possible to simply remove from the analysis those who are students during school months but enter the labour force during summer months. Such an approach would require detailed longitudinal micro data. To focus on seasonality independent of the summer employment experiences of students, it is therefore necessary to exclude the entire 15-24 age group. However, this should not significantly bias the results, since 60.3 per cent of the population aged 15-24 report themselves as students during school months, while the proportion of the population aged 25 and over who are students is miniscule.

Table 2 also shows that employment seasonality is nearly three times higher for men than women (2.0 per cent versus 0.7 per cent in 2003). This is true across three of four age groups.¹¹ The main explanation for this pattern is likely the higher proportion of men employed in high-seasonality industries, such as construction and primary industries. Indeed, women accounted for only 23 per cent of workers in primary industries and 19.8 per cent of workers in primary occupations in Canada in 2003.

Employment Seasonality by Industry and Occupation

Table 3 shows trends in employment seasonality by industry in Canada over the 1987-2003 period and Chart 1 shows levels by industry for 2003. The incidence of employment seasonality varies greatly by industry. In 2003, it was highest in agriculture (5.8 per cent), followed by construction (5.6 per cent), forestry, fishing, mining, and oil and gas (5.1 per cent), education (4.8 per cent), and information, culture and recreation (4.0 per cent). It was lowest in finance, insurance and real estate (0.6 per cent) and health care and social assistance (0.6 per cent), and professional, scientific and technical services (0.7 per cent). Over the 1987-2003 period employment seasonality fell in almost all industries. The two exceptions were the information, culture and recreation industry and the education services industry, where it increased 31.0 per cent and 18.0 per cent respectively.¹²

Employment seasonality also varies by occupation (Table 4) and class of worker (Table 5). Primary occupations have by far the highest incidence of seasonal

¹¹ Women in the 55 and over age group had higher employment seasonality than men in 2003. Employment seasonality among women in this age group increased 39.0 per cent over the 1976-2003 period, which lies directly in contrast with the fall of 32.3 per cent in employment seasonality for men in the same age group. Indeed, employment seasonality for employment for men aged 55 and over was almost twice as large as that for women of the same age group in 1976, but by 2003 employment seasonality for women in this age group exceeded that for men. The reason for this is not known. It is, however, interesting to note that employment seasonality for the 55 and over age group for both genders combined fell sharply (54.7 per cent) over the 1976-2003 period, more than the changes for either sex. This is explained by the fact that, even though the measure of employment seasonality for this age group was increasing for women, its level was below average at the same time that the proportion of female workers in total employment in this age group was increasing fairly rapidly. The overall employment seasonality for employment among the 55 and over age group hence declined through a compositional effect.

¹² The perhaps surprising increase in employment seasonality in education may be linked to a movement to a 10 month school year from a 12 month year for payroll or administrative purposes for persons employed by educational institutions, resulting in these persons being classified as out of the labour force (or unemployed), but not employed in July and August.

employment, at 11.2 per cent in 2003. This was more than three times the rate for the next highest occupation: art, culture, recreation and sport (3.4 per cent). Employment seasonality was much higher for private sector employees (2.0 per cent in 2003) than for public sector employees (0.8 per cent) and the self-employed (0.6 per cent).¹³

Unemployment Rate Seasonality by Age and Gender

In contrast to the very high seasonality in employment for youth, unemployment rate seasonality varied much less across the four age groups (Table 6). In 2003, unemployment rate seasonality was 8.3 per cent for the 20-24 age group, 7.8 per cent for the 55 and over age group, 6.7 per cent for the 25-54 age group, and 4.6 per cent for the 15-19 age group. The higher proportion of the youth who are students and return to school rather than become unemployed after the completion of a seasonal summer job explains why youth employment seasonality is greater than unemployment rate seasonality, at least for the 15-19 age group. All four age groups experienced declines in unemployment rate seasonality over the 1976-2003 period.

Just as employment seasonality was much higher for men than women, unemployment rate seasonality for men was double that of women in 2003 (9.1 per cent versus 4.9 per cent).¹⁴ In addition to the effect of lower female participation in primary occupations, unemployment rate seasonality for women may be lower because women have tended historically to have a greater propensity to leave the labour force when they lose a job, although this propensity has no doubt diminished in recent years with the greater female labour force attachment. While unemployment rate seasonality for men followed the both sexes pattern and fell 33.7 per cent between 1976 and 2003, the rate for women rose 57.9 per cent.

Employment and Unemployment Rate Seasonality in the United States

Seasonality is by no means unique to the Canadian economy. Table 1 presents seasonality estimates for output, employment, the labour force, unemployment and the unemployment rate for the United States over the 1976-2003 period. Chart 2 compares

¹³ While the both sexes pattern of higher private sector employment seasonality held for men, employment seasonality in 2003 was actually higher for female public sector employees than their private sector counterparts (1.6 per cent versus 1.4 per cent). This reflected a 84.0 per cent increase in employment seasonality for female public sector employees between 1976 and 2003.

¹⁴ As discussed in footnote 9, the MSV for an overall age or gender group is not simply the weighted average of the MSV estimates for the component groups. This explains why the unemployment rate MSV for men in 2003 can be 9.09 per cent, the corresponding MSV for women be 4.85 per cent, and the overall MSV be 5.49 per cent when men and women each account for about 50 per cent of the labour force. The reason for this is that seasonality trends within a given year can be different for men and women. For example, July is typically a month of seasonally low unemployment for men, while unemployment for women can actually increase due to seasonal factors in the same month. Again, this introduces an offsetting effect into MSV estimates for overall groups. Focusing on detailed groups individually can hence overstate seasonality with the MSV measure, since this does not account for the fact that above-average unemployment due to seasonal factors in some groups can be offset by below-average unemployment due to seasonal factors in other groups.

employment seasonality and Chart 3 unemployment rate seasonality in Canada and the United States over the 1976-2003 period.

In 2003, the seasonality of output, unemployment, and the unemployment rate were similar in Canada and the United States, but the seasonality of both employment and the labour force were three to four times higher in Canada than in the United States.

Over the 1976-2003 period the seasonality of employment and the labour force fell much more in the United States than in Canada, but the seasonality of output, unemployment, and the unemployment rate fell more in Canada. It is also interesting to note that consistent with the pattern observed in Canada, the seasonality of unemployment and the unemployment rate either rose or remained unchanged in the United States after 1996, in contrast to the steady downward trend in seasonality in output, employment and the labour force in both countries.

Table 7 shows employment seasonality estimates for the United States for the same age and gender groups that Table 2 showed for Canada.¹⁵ The most important observation, also illustrated in Chart 3, is that employment seasonality in Canada was more than three times higher than in the United States in 2003 (1.36 per cent versus 0.37 per cent). This pattern held for three of the four age groups (the exception was the 55 and over age group where seasonality in employment was slightly lower in Canada) and for both sexes.

Table 8 shows unemployment rate seasonality estimates for the United States for the same age and gender groups that Table 6 showed for Canada. Again the key point is that seasonality in the unemployment rate is very similar in the two countries (5.34 per cent in the United States in 2003 versus 5.49 per cent in Canada), in contrast to the much lower employment seasonality in the United States. Unemployment rate seasonality for the 20-24, 25-54, and 55 and over age groups was higher in Canada in 2003, but lower for the 15/16-19 age group. Unemployment rate seasonality was also higher for men in Canada than in the United States in 2003, but was identical for women in 2003 (although it had been lower all years previous).

Reasons for the higher employment seasonality in Canada than in the United States may include: the greater importance of primary and other high-seasonality industries in the Canadian economy than the U.S. economy;¹⁶ harsher winter conditions in Canada than in the United States, particularly the southern United States; and a more generous EI system in Canada that may provide Canadians with less of an incentive to find alternatives to seasonal employment and may provide firms with an incentive to create seasonal jobs. It is unclear however why these factors do not also lead to a high

¹⁵ The working age population is defined as 16 and over in the United States, as opposed to 15 and over in Canada. Therefore, the 16 and over and 16-19 age groups have been used in Tables 7 and 8 for the United States, as opposed to the 15 and over and 15-19 age groups used for Canada. U.S. employment data are taken from the *Current Population Survey*. It is not known how similar the seasonal adjustment procedures used by Statistics Canada and the U.S. Bureau of Labor Statistics are.

¹⁶ In 2003, primary industries accounted for 4.0 per cent of total employment in Canada, double the U.S. figure of 2.0 per cent.

incidence on seasonality in the unemployment rate in Canada. Further work is needed on this issue.

Employment and Unemployment Rate Seasonality in OECD Countries

Table 9 provides estimates of seasonality in employment in 14 OECD countries for the 1965-2003 period based on the mean seasonal variation measure and quarterly data. In 2003, Canada had the second highest rate of employment seasonality, surpassed only by Finland among the 14 OECD countries for which data are available (Chart 4). The downward trend in employment seasonality observed in Canada also took place in 9 of the other 13 countries over the 1986-2001 period.

Table 10 provides estimates of seasonality for the unemployment rate for 12 OECD countries for which the necessary data are available. Perhaps surprisingly, in 2003 Canada had lower unemployment rate seasonality than six of the 12 countries (Chart 5). The United States (4.4 per cent), Norway (4.5), Sweden (4.6), Australia (5.5), Austria (9.0), and Finland (10.3) all had higher seasonality in the unemployment rate than Canada (4.0 per cent) according to OECD data. The downward trend in unemployment rate seasonality observed in Canada was experienced over the 1989-2000 period in only four of the other 11 countries.

Employment Seasonality by Province

Table 11 presents estimates of seasonality in employment for all 10 Canadian provinces and the Atlantic Canada aggregate for the 1976-2003 period. Not surprisingly, employment seasonality was higher in the Atlantic provinces than the rest of Canada for the entire 1976-2003 period.¹⁷ In 2003, employment seasonality in Atlantic Canada was three times the national average (3.79 per cent versus 1.36 per cent), although there was significant variation within Atlantic Canada (Chart 6). Prince Edward Island had the highest employment seasonality (6.79 per cent), followed by Newfoundland (5.68 per cent), New Brunswick (3.84 per cent), and Nova Scotia (2.34 per cent).

The higher seasonality in Atlantic Canada should be kept in context. The region is small in terms of population and has a high proportion of the population living in rural and remote areas. But this does not mean that seasonality is not high elsewhere in the country. Indeed, it is likely that parts of Northern Ontario and Eastern Quebec have levels of employment seasonality comparable to if not surpassing that of certain of the Atlantic provinces. It would be useful to examine trends in seasonality at the sub-provincial level.

All provinces experienced a decline in employment seasonality over the 1976-2003 period, but the decline in Atlantic Canada (26.2 per cent) was less than the national

¹⁷ One labour market measurement issue that is not dealt with in this paper is temporary inter-provincial labour market mobility and the implications for measurement of labour market variables by province. An example would be a construction worker working in Newfoundland when work is available in the summer and working in Alberta in the winter. It is unclear whether the *Labour Force Survey* adequately captures such temporary moves.

average (43.0 per cent), and the decline in Prince Edward Island was particularly small (5.4 per cent).

Unemployment Rate Seasonality by Province

Table 12 presents estimates of seasonality in the unemployment rate for all 10 Canadian provinces and the Atlantic Canada aggregate for the 15 and over population for 1976-2003.¹⁸ Chart 7 presents estimates for 2003. Not surprisingly, unemployment rate seasonality was higher in the Atlantic provinces than the rest of Canada for the entire 1976-2003 period. In 2003, unemployment rate seasonality in Atlantic Canada was about double the national average (10.47 per cent versus 5.49 per cent). There was significant variation within Atlantic Canada. Again, Prince Edward Island had the highest unemployment rate seasonality (24.0 per cent), followed by New Brunswick (13.0 per cent), Newfoundland (10.2 per cent), and Nova Scotia (7.9 per cent).

All provinces except Prince Edward Island and New Brunswick experienced declines in unemployment rate seasonality over the 1976-2003 period. The decline in unemployment rate seasonality in Atlantic Canada (9.0 per cent) was considerably less than the national average (37.0 per cent) and less than the decline in employment seasonality in the region (Chart 8), a situation that did not obtain at the national level (Chart 9). Further research is needed to ascertain the reasons for the small decline in unemployment rate seasonality in Atlantic Canada.

In general, the Atlantic Canada, more than any other region, saw unemployment rate seasonality diverge substantially from employment seasonality over the 1976-2003 period (Charts 8 and 9). This appears to have been driven by a higher propensity for seasonal workers to remain in the labour force as unemployed and looking for work in Atlantic Canada than other provinces, perhaps suggesting that seasonal employment in Atlantic Canada is less voluntary than elsewhere. The unemployment rate seasonality in Atlantic Canada in 1976 was only 1.3 times the Canadian rate in 1976, but by 2003 it had become almost twice the Canadian rate.

Seasonal Unemployment in Atlantic Canada

The average number of seasonally unemployed in a given year can be crudely estimated as the difference between unemployment in the month of highest employment and unemployment in all other months divided by 12 months. Estimates of seasonal unemployment by province for the 25 and over population for 2003 are presented in Table 14 and Chart 10.¹⁹ Atlantic Canada, which had 11.1 per cent of Canada's total

¹⁸ Table 13 presents estimates of seasonality in the unemployment rate by province for the 25 and over population. The levels are all slightly lower than the 15 and over estimates, but the rates of change over the 1976-2003 period are comparable.

¹⁹ The focus is on the 25 and over age group because the employment and unemployment peaks of younger workers (mostly students) are much different than for the rest of the labour force. Specifically, the 15-24 labour force tends to exhibit a high degree of seasonality at the peak employment month due to the influx of students in the summer, some of whom become employed but some of whom are unable to find summer

unemployment (and 6.8 per cent of employment), accounted for 20.9 percent of the country's seasonal unemployment. Of the 10.1 per cent unemployment rate in Atlantic Canada in 2003 for the 25 and over population, 1.68 percentage points (16.6 per cent) was attributable to seasonal unemployment. At the national level this figure was only 0.58 percentage points of the national unemployment rate of 6.4 per cent. Thus the contribution of seasonal unemployment to the overall unemployment rate in Atlantic Canada was three times that at the national level.

The importance of seasonal unemployment in the overall unemployment rate varied among the Atlantic provinces, from a high of 4.74 percentage points in Prince Edward Island (45.64 per cent of the unemployment rate) to a low of 1.10 points in Nova Scotia. The figures for Newfoundland and New Brunswick were 2.08 points and 1.50 points respectively.

What Explains the Greater Seasonality in Atlantic Canada?

As has been noted above, labour market seasonality is particularly important in Atlantic Canada where employment seasonality in 2003 was three times the national average and unemployment rate seasonality twice the national average. It is important to understand the causes of this greater seasonality if policies are to be developed to address this issue.

Greater seasonality in Atlantic Canada may reflect a greater concentration of high seasonality industries, or a greater incidence of seasonality within a given industry, that is a greater propensity of firms to hire seasonal workers and workers to prefer part-year work. A study of seasonality in Canada by HRDC officials (Guillemette, L'Italien and Grey, 2000) found through a shift-share decomposition that on average over the 1976-1997 period 93 per cent of the difference in employment seasonality between the Atlantic provinces and Canada as a whole was due to within-industry differences, and only 7 per cent to a greater proportion of high seasonality industries in Atlantic Canada. In other words, it appeared to be differences in the behaviour of economic actors (firms, individuals and governments) rather than industrial structure than was at the root of greater Atlantic Canada seasonality.

However, the shift-share decomposition behind this finding appears to have been based on a relatively high level of industry aggregation. With more detailed industry disaggregation, differences in industrial structure would appear to account for more of the differences in Atlantic Canada-Canada seasonality. This is because within manufacturing there are a number of seasonal sub-industries – such as the seafood processing and the ship building/repair sub-industries – that account for a higher proportion of employment in Atlantic Canada than in other provinces. Despite this caveat, it is still undoubtedly true that industry structure cannot account for all of Atlantic Canada's greater seasonality and that behaviour plays some role.

employment. This method of estimating the number of seasonally unemployed was developed by Guillemette, L'Italien and Grey (2000).

There are a number of ways in which the high seasonality in Atlantic Canada may be policy induced. Policies to increase tourism, policies to protect the fishing industry, and generous EI benefits can all have the effect of increasing seasonality in Atlantic Canada. These and other factors increase seasonality by increasing the attractiveness of part-year work relative to lower paid full-year jobs. This would mean that workers in Atlantic Canada spend part of the year in seasonal employment and the rest of the year unemployed and searching for employment, whereas seasonal employment in the rest of Canada is perhaps more voluntary in the sense that seasonal workers choose to leave the labour force at the end of the season. However, the job search activity in Atlantic Canada may be largely cursorily undertaken in order to qualify for EI benefits only. Also, the lack of full-time jobs in Atlantic Canada may be driven in part by social contracts between workers and firms whereby operations are full-year but include seasonal “shifts” of workers who work long enough to qualify for EI benefits only.

Prince Edward Island: Canada’s Seasonality Capital

Labour market seasonality in Prince Edward Island is so unique, both in terms of levels and developments over time, that it deserves to be highlighted.

- In 2003, Prince Edward Island had the highest level of seasonality in employment of all 10 provinces, at 6.79 per cent, four times the national average (Table 11).
- In contrast to trends in all other provinces, the seasonality of employment in Prince Edward Island fell very little over the 1976-2003 period.
- The seasonality of the unemployment rate is extremely high in Prince Edward Island at 24.0 per cent in 2003 (Table 12), more than four times the national average (5.5 per cent) and even more than double that of the next province, Newfoundland at 10.2 per cent. The seasonally unadjusted unemployment rate in Prince Edward Island in 2003 ranged from a high of 16.7 per cent in April to a low of 6.0 per cent in June.
- Again in contrast to trends in almost all other provinces, the seasonality of the unemployment rate in Prince Edward Island has trended up, increasing 34.9 per cent over the 1976-2003 period.
- In 2003, seasonal unemployment accounted for 48 per cent of total unemployment for the 25 and over population in Prince Edward Island, by far the highest proportion of any province (Table 14). Tiny PEI, with 0.7 per cent of national unemployment, was responsible for 3.6 per cent of Canada’s seasonally unemployed. Of PEI’s actual unemployment rate of 10.4 per cent in 2003, 4.8 percentage points was due to seasonal unemployment, again by far the highest of any province.
- The labour force participation rate in PEI in 2003 at 68.5 per cent was actually above the national average (67.5 per cent) and well above that of the other Atlantic provinces (Newfoundland (59.5 per cent), Nova Scotia (63.2 per cent),

and New Brunswick (63.3 per cent)). This appears to be related to the large number of seasonal jobs, which attract persons into the labour force, boosting the participation rate and the unemployment rate.

A full explanation of the unique seasonality characteristics of Prince Edward Island's labour market is beyond the scope of this paper and merits further study. It is undoubtedly related to the traditional importance of primary industries such as agriculture and fishing in the PEI economy,²⁰ combined with the growing importance of the seasonal tourism industry (linked to the opening of the Confederation Bridge and the construction of numerous golf courses), interacting with the availability of income support programs such as Employment Insurance. If income support were not available in the off-season for seasonal workers, many of the seasonally unemployed would likely have left the province.

Policy Implications of Labour Market Seasonality²¹

Does Labour Market Seasonality Represent a Public Policy Issue?

It is important to identify the public policy implications associated with seasonality. It is inevitable that certain economic activities have a seasonal character related to seasonal rhythms. But this in itself does not mean that there is a public policy issue at play. Individuals and firms may adjust to seasonality and resources may be allocated in an economically efficient or optimal manner. For example, seasonal employment opportunities may be filled by persons desiring only part year work for many reasons (e.g. students, homemakers) so that seasonal variations in employment and the labour force move in tandem, with no effect on unemployment. From this perspective there is no increased underutilization of human resources or loss of potential output due to seasonal employment.

It is sometimes noted that seasonality also leads to the inefficient use of capital stock as the stock is unused during the off-season. While it is certainly true, for example, that agricultural equipment is not used in the winter, this does not mean that resources are being misallocated from a market rationale.²² Such equipment is necessary for production

²⁰ In 2003, primary industries accounted for 9.6 per cent of employment in Prince Edward Island, three times the national average (Table 14).

²¹ On February 23, 2005 Human Resources and Skills Development Canada announced several changes to the Employment Insurance system that appear to be directed at seasonal workers. Specifically, three pilot projects have been launched in high-unemployment regions whereby EI eligibility requirements for some workers are reduced from 910 hours of work to 840 hours of work, the benefit formula is based on the best 14 weeks of earnings over the year preceding EI receipt rather than on the 26 weeks preceding EI receipt, and the amount that can be earned before benefits are reduced is increased from the greater of \$50 per week or 25 per cent of weekly EI benefits to the greater of \$75 per week or 40 per cent of benefits. Two other previously-introduced pilot projects have also been continued, whereby workers in high-unemployment regions are eligible for five additional weeks of EI benefits, and workers in two specific regions are given another year to adjust to the EI regional boundary changes introduced in 2000.

²² Of course, there could be information gaps in the knowledge of market participants or coordination problems whose removal would lead to a more socially efficient allocation of capital in seasonal industries.

and the firm will demand a normal rate of return on all investment so it is likely that the equipment produces a very high return when it is being used to offset the lack of returns in the off-season.

The public policy issue most commonly associated with seasonality is seasonal unemployment. Such unemployment arises when a seasonal decline in employment is not accompanied by a concomitant decline in the labour force, leading to an increase in unemployment. This means that persons accepting the part-year seasonal unemployment would really prefer employment of longer duration be available, suggesting that the seasonal employment would not be their first choice if full-year employment existed. Seasonal unemployment will hence be much more prevalent in areas where there is a thin labour market and limited employment opportunities, such as rural and remote areas.

A case can thus be made that seasonal unemployment per se is not the problem, but rather a manifestation of a much larger problem, namely a lack of full-year employment opportunities. Indeed, the availability of seasonal jobs actually reduces unemployment in the region from the case where the persons are unemployed for the full year instead of only part of the year. Of course, many of these persons may not be officially unemployed for 12 months as they would become discouraged and leave the labour force.

The availability of seasonal jobs relative to the case of no jobs at all may mean that individuals stay in a region with limited full-year employment opportunities instead of moving to regions with ample opportunities. They may regard the low standard of living the seasonal jobs provide as a superior option to the costs and inconvenience of moving to regions where higher income can be earned. The availability of income support in the off-season, either related to or unrelated to participation in seasonal work, can accentuate this tendency for individuals to stay in regions with seasonal jobs. Indeed, individuals, firms and governments may even prefer and encourage seasonal employment as it can maximize the total number of persons employed at least part of the year. Firms and communities may job share.

Empirical support for this interpretation of seasonal unemployment as a pseudo-problem or epiphenomenon comes from examining the situation in Atlantic Canada. As noted earlier, the incidence of seasonal unemployment in this region is double the national average. The rural parts of Atlantic Canada in particular have high unemployment rates and limited employment opportunities. The basic problem in Atlantic Canada is one of a lack of employment opportunities, which leads to high unemployment.

People Versus Place Prosperity

A useful framework within which to orientate the public policy response to labour market seasonality is the people versus place prosperity perspective. This has been a key

For example, new uses could be found for machinery and equipment in the off-season or new enterprises could emerge that lease machinery for the period during which it is needed.

theme of the debate on regional development policy in Canada since the 1960s, with advocates of regional development policies generally advocating a place prosperity perspective and critics taking a people prosperity perspective.²³

The basic issue is whether the focus on economic development should be on people or places. The former approach is motivated by the principle that what matters is the prosperity of people, not places, and is therefore based on the belief that individuals should be prepared to become mobile in order to achieve prosperity. According to this perspective, it is the responsibility of individuals to move to jobs, and the geographical distribution of jobs should be determined by market forces. The latter approach is based on the principle that what matters is the prosperity of places and that individuals are entitled to expect jobs in the regions in which they choose to live and should not be forced to move by economic necessity. Governments according to this perspective have the responsibility to pursue regional development policies to ensure adequate employment opportunities in all regions and must not passively accept the geographical distribution of jobs generated by market forces.

On the surface it may appear that the objectives of place prosperity always align with those of people prosperity. After all, when people are prosperous so are the regions in which they live, and when regions are prosperous it is because those living in the region are prosperous. However, it must be recognized that governments need to expend resources in implementing policies to assist individuals and regions to become prosperous, and that more resources may be required to assist underdeveloped regions in reaching a given level of prosperity than highly developed regions.²⁴

In other words, it is possible that a large amount of resources could be expended in the pursuit of a given level of prosperity for a given region, while a much higher level of prosperity for all individuals could be achieved if the same amount of resources were expended in a different region and individuals migrated to this region. Since any policy approach to economic development requires significant resources to be expended, it must be recognized that there are substantial trade-offs to be considered between the prosperity expected to be achieved in an underdeveloped region through a place prosperity emphasis and the forgone prosperity in other regions that could be achieved if the resources were to be deployed differently.

²³ One economist closely associated with the people prosperity perspective on regional issues is Tom Courchene of Queen's University. See Courchene (1978 and 1980).

²⁴ Neither is it only governments that need to expend resources in response to a given development policy. While the legislation of new regulations on businesses, for example, is a relatively costless way for governments to pursue policy objectives, the businesses themselves are often required to expend their own resources in complying with these regulations. For example, in an effort to maximize the prosperity derived from nickel mining in Newfoundland and Labrador, the provincial government demanded in 1997 that INCO's nickel mining operations at Voisey's Bay be accompanied by a smelting operation within the province's boundaries. While there were no direct government expenditure implications of these demands, INCO likely faced greater costs in building the smelting operation in Newfoundland relative either to building no new smelter and using existing smelters or to building a new smelter in a lower cost location.

The place versus people prosperity perspective should not be seen in black and white terms. No one advocates the complete abandonment of regional development policies promoting place prosperity, just as no one believes that all individuals in any circumstances must move to available jobs. It is a question of emphasis.

Public Policy Approaches to Address Seasonal Unemployment

There are four basic approaches to address the issue of seasonal unemployment, as highlighted and elaborated below.

- Encourage the unemployed to move to regions with better employment opportunities.
- Accept the existence of seasonal unemployment and provide permanent income support for the seasonally unemployed in the off-season.
- Extend the season for part-year jobs to as close to full-year as possible.
- Create either full-year jobs or part-year jobs in the off-season through an economic development strategy.

Since the existence of seasonal unemployment represents a lack of job opportunities, the first approach highlighted above would be to encourage the seasonally unemployed or the unemployed in general to move to regions of greater employment opportunities. Such an approach is motivated by an emphasis on the prosperity of people, not places, and the belief that individuals should be prepared to become mobile in order to achieve prosperity. Such mobility could be promoted through increased incentives for the seasonally unemployed to move, for example by providing travel subsidies, better labour market information on employment opportunities, and training programs for the seasonally unemployed to provide them with skills in demand in other regions; and through decreased incentives for the seasonally unemployed to stay in high unemployment regions, for example by reducing income support programs.

Since the existence of seasonal unemployment means that the income of the seasonally unemployed is likely inadequate, the second approach highlighted above is to develop adequate income support programs for the seasonally unemployed in the off season. Such an approach is motivated by an emphasis on the prosperity of the places where people want to live. Employment insurance has traditionally been used to provide income support to the seasonally unemployed in the off season,²⁵ even though it can be argued that the concept of unemployment insurance was originally designed to provide one time income support for persons who permanently lost their jobs, not repeat support for those who are laid off for seasonal reasons and then rehired.

²⁵ Over the 1997-99 period, 28 per cent of regular EI beneficiaries in Canada were seasonally unemployed (Grady and Kapsalis, 2002:10), even though seasonal unemployment represented only around 10 per cent of the unemployed.

Atlantic Canada has a disproportionate share of both seasonal unemployment and EI beneficiaries. In 2003, this region accounted for 20.9 per cent of the seasonally unemployed in Canada and 19.4 per cent of EI beneficiaries even though it had only 11.1 per cent of the unemployed. This situation reflects the greater effective generosity of the EI program in Atlantic Canada given that program parameters depend on the local unemployment rate and are less restrictive in high unemployment areas.²⁶ In accordance with EI entitlement principles and the high unemployment rates in much of Atlantic Canada, the number of hours of insurable earnings needed to qualify for EI benefits is lower on average in Atlantic Canada than in other provinces and the number of weeks benefits are received is higher.²⁷

The third approach to seasonal unemployment is to extend the period during which seasonal industries operate to make part-year jobs full-year jobs, or at least almost full-year jobs. For example, in the tourism industry attempts have been made to extend the traditional summer season in Atlantic Canada to include the shoulder periods of fall and spring. In the fishing industry, activities are being developed that can be carried out in the traditional off-season, such as boat building and the commercialization of unexploited species. Fishing is much less seasonal in Iceland than in Canada (Grady and Kapsalis, 2002: 19), indicating that there is potential to spread work over the year. Firms, including the self-employed, have an economic incentive to extend the season to spread overhead costs and to retain skilled workers, but the incentive may be dulled by income support during seasonal lulls that ensure that skilled workers do not move away and are available for recall. Governments also have an incentive to reduce seasonality of employment and unemployment and could do so by subsidizing in various ways the extension of the work season or by contributing to the extension by, for example, scheduling construction work in the winter. This approach, like the second, places a higher importance on the prosperity of places experiencing a high degree of seasonal unemployment than on the prosperity of individuals.

The fourth approach is to increase employment opportunities, both in terms of full-year jobs and part-year jobs in the off-season, in regions with high seasonal unemployment (which also are regions with high unemployment) through an effective economic development strategy. What constitutes such a strategy is well beyond the scope of this paper. The focus of this approach is on unemployment, not seasonal unemployment. This strategy has been adopted by the Nordic countries. These countries have a climate similar to Canada and a concentration of primary industries, but do not address the issue of seasonal employment through specific policies and programs (Grady and Kapsalis, 2002). Such an approach, when focused on regions with high seasonal

²⁶ As discussed at http://www.hrsdc.gc.ca/en/gateways/nav/top_nav/program/ei.shtml, the EI program divides Canada into 58 regions. EI qualification and benefit parameters (number of insured hours required to qualify for regular benefits, minimum number of weeks payable for regular benefits, and maximum number of weeks payable for regular benefits) differ across each of these regions and depend on the regional unemployment rates.

²⁷ It should be noted that there were significant cuts to seasonal EI beneficiaries in 1996, but some of the measures taken were later rescinded. See MacDonald (2004) for a discussion of how these policy changes affected rural labour markets in Canada.

unemployment, places a higher importance on the prosperity of regions than the prosperity of people. However, if the prosperity of people were of more concern, economic development programs independent of region could also be implemented, and incentives/disincentives for moving to high-employment regions also implemented/removed.

The Role of Individuals, Firms and Communities in Addressing Seasonal Unemployment

Within each of the four policy approaches discussed above, it is not just governments that have a role to play in lowering seasonal unemployment. Firms could unilaterally decide to operate for a longer portion of the year. Unions could be more aggressive in demanding longer working seasons for their members. Community-based organizations could play a greater role in economic development and job creation from a grassroots level. Individuals could be expected to be more entrepreneurial in developing their own full-year or off-season earning opportunities.

Indeed, a strong case can be made that given the persistence of seasonal unemployment in certain regions despite government efforts to reduce it, the onus for change must lie increasingly with individuals and firms. However, they may currently have inadequate incentives to act when faced with current government policy. Individuals do not seek full-year or off-season employment in other regions because they can earn adequate income from EI benefits without moving.²⁸ Firms job share by creating several short-term jobs instead of one longer-term position in order to maximize the number of persons in the community who will be eligible for EI. They behave in this manner because there is no disincentive to this type of behaviour and because there is no experience rating of firms in the determination of employer EI contributions. The large pool of seasonally unemployed workers may also be advantageous to firms as it puts downward pressure on wages.

Government can facilitate a shift in the onus of responsibility for dealing with seasonal unemployment to the individual and the firm by making it much more difficult if not impossible for repeat seasonal EI beneficiaries to obtain EI benefits, and by instituting an experience rating system for employer EI contributions based on the layoff history of the employer. These EI changes would need to be complemented by the expansion of government labour market information services and mobility grants.

Policy Recommendations

The four policy approaches to seasonal unemployment are by no means mutually exclusive. Indeed, elements of each approach are currently in place. It is a question of

²⁸ Of course, economic factors alone cannot explain all aspects of human behaviour. Individuals may stay in a high unemployment region even with low income if they are forced to abandon their language and culture if they move. For example, persons living in the Acadian peninsula of New Brunswick may have a strong desire despite high unemployment to remain there as they believe they will lose their Acadian identity if they leave.

emphasis and feasibility as it is unrealistic to expect that one approach would be adequate. An economic development strategy that ensures that all persons who want full year work can obtain it is obviously the best approach, but it is much easier put forward than implemented. Nevertheless, such a strategy must be the most important element in any attempt to reduce seasonal unemployment.

But a long-term economic development strategy must be supplemented, at least in the short-to-medium term, by two of the three other approaches outlined above. In very high unemployment regions, out-migration is a necessary evil and should be promoted. Unfortunately, one trade-off associated with this approach is that it is generally the young and dynamic who leave, yet these are the people most needed for the economic development of disadvantaged regions. Where feasible, firms should be encouraged and given incentives, possibly through experience rating, to transform seasonal work into full-year work, or at least into near full-year work. A tradeoff of this approach is that higher costs associated with experience rating may force certain firms to discontinue production.

Income support though EI is currently very important for many persons and communities that have large numbers of seasonally unemployed. Such support is politically popular, making it very difficult for a government, particularly a minority government, to cut benefits. The federal government may also have a limited incentive to cut benefits when the EI account runs a surplus, as is the current situation. But unrestricted benefits for seasonal EI repeaters will not reduce seasonal unemployment, only prolong the status quo. A strong case can be made that long-term income support for the seasonally unemployed is not in the long-run in the best interest of the beneficiaries, high unemployment regions, and the country.

The development of more effective partnerships between the federal government and provincial governments is needed in the fight against seasonal unemployment. Currently the actions of the two levels of government can often be at cross purposes. Since the federal government pays for EI, provincial governments have an incentive to create short-term jobs to allow their residents to qualify for EI. The federal government is then forced to assume responsibility for the income support of these short-term jobholders in the off-season through EI, rather than the provincial governments through welfare programs.

Areas for Further Research

This paper has identified a number of areas where our understanding of seasonality trends is limited and further research merited. These include the following:

- comparison of the mean seasonal variation measures of seasonality presented in this paper with other measures of seasonality (e.g. peak minus trough, seasonal amplitude), and with other seasonally adjusted estimates based on different seasonal adjustment methodologies (e.g. alternative regression techniques);

- calculation of seasonality measures for sub-provincial labour market areas to allow a comparison of seasonality in Northern Ontario and Eastern Quebec to that experienced in Atlantic Canada;
- explanation of why the seasonality of employment is much greater in Canada than in the United States when the unemployment rate seasonality is the same in the two countries;
- explanation of why the seasonality of unemployment has increased in both Canada and the United States since 1996 despite the continued decline of employment seasonality in both countries; and
- explanation of why unemployment rate seasonality has fallen much less in Atlantic Canada than in Canada since 1976.
- additional work on the measurement of voluntary and involuntary part-year or seasonal employment; and
- case studies of experiences in Canada and other countries in the extension of seasonal jobs to full-year or near full-year employment.

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Table 1
Mean Seasonal Variation in Selected Labour Market Variables, Canada and the United States, 1976-2003, per cent

	Canada						United States				
	GDP * (quarterly)	GDP (monthly)	Employ- ment	Labour Force	Unemp- loyment	Unemp- loyment Rate	GDP * (quarterly)	Employ- ment	Labour Force	Unemp- loyment	Unemp- loyment Rate
1976	4.28		2.38	1.92	7.16	8.83	2.18	1.06	0.92	5.84	5.85
1977	3.71		2.38	1.90	7.07	8.50	1.99	1.01	0.89	5.74	5.83
1978	3.52		2.34	1.83	6.96	8.25	2.09	0.99	0.90	5.56	5.46
1979	3.00		2.30	1.82	6.31	7.69	1.70	0.95	0.87	5.21	5.42
1980	3.27		2.30	1.83	6.21	7.58	1.70	0.95	0.84	4.66	4.54
1981	4.07	3.13	2.26	1.84	5.77	7.17	2.07	0.96	0.82	4.45	4.38
1982	3.60	3.17	2.20	1.73	5.80	6.84	1.71	0.99	0.80	4.12	3.86
1983	3.22	3.18	2.21	1.59	5.57	6.53	1.73	0.99	0.74	4.07	4.12
1984	3.34	3.29	2.19	1.65	5.23	6.35	1.65	0.95	0.79	4.18	3.95
1985	3.12	3.26	2.12	1.60	5.26	6.13	2.11	0.93	0.79	4.11	3.95
1986	3.08	2.85	2.07	1.61	5.44	6.45	1.83	0.89	0.75	4.20	3.95
1987	2.51	2.84	2.00	1.55	5.52	6.71	2.06	0.86	0.73	4.46	4.25
1988	2.28	2.52	1.94	1.56	5.57	6.43	2.06	0.83	0.73	4.67	4.51
1989	2.77	2.71	1.93	1.50	5.68	6.90	1.93	0.82	0.72	4.74	4.57
1990	2.52	3.05	1.91	1.51	5.23	5.99	2.01	0.84	0.72	5.10	5.37
1991	2.71	3.04	1.91	1.44	5.13	5.75	1.97	0.83	0.69	5.08	5.15
1992	2.37	2.94	1.93	1.47	5.20	5.86	1.93	0.80	0.66	5.01	4.71
1993	1.92	3.01	1.88	1.46	5.04	5.46	2.10	0.77	0.63	4.91	5.17
1994	2.14	3.04	1.85	1.45	5.00	5.43	2.05	0.73	0.61	5.16	4.90
1995	2.63	2.99	1.80	1.47	5.03	5.32	1.95	0.70	0.61	5.04	5.09
1996	2.88	2.97	1.75	1.45	4.80	5.17	1.91	0.65	0.56	5.30	5.35
1997	2.66	1.61	1.71	1.44	4.97	5.39	1.87	0.59	0.50	5.61	5.51
1998	2.44	1.58	1.61	1.40	5.10	5.21	1.80	0.55	0.48	5.86	6.09
1999	2.25	1.68	1.54	1.36	5.57	5.19	1.75	0.50	0.45	5.74	5.54
2000	1.82	1.67	1.50	1.35	5.72	6.12	1.54	0.46	0.41	5.71	5.45
2001	1.78	1.63	1.43	1.31	5.72	5.77	1.55	0.42	0.39	5.63	5.49
2002	1.89	1.66	1.39	1.25	5.76	5.54	1.63	0.39	0.34	5.49	5.22
2003	1.85	1.61	1.36	1.24	5.65	5.49	1.47	0.37	0.31	5.42	5.34
percentage growth rates											
1976-2003	-56.85		-43.04	-35.23	-21.13	-37.86	-32.89	-64.84	-65.85	-7.10	-8.72
1981-2003	-54.59	-48.43	-39.91	-32.32	-2.14	-23.49	-29.24	-61.21	-61.73	21.84	21.89
1976-1996	-32.73		-26.26	-24.40	-32.94	-41.46	-12.59	-38.87	-39.13	-9.16	-8.50
1996-2003	-35.86	-45.67	-22.75	-14.32	17.62	6.16	-23.23	-42.49	-43.89	2.26	-0.25

* MSV estimates for quarterly GDP are based on current dollar data for both Canada and the United States. MSV estimates for monthly GDP for Canada are based on estimates in fixed-weighted Laspeyres dollars.

Source: Statistics Canada, Labour Force Survey, Industry GDP by month and quarterly expenditure-based GDP data; Bureau of Labor Statistics and Bureau of Economic Analysis.

Note: A methodological change in the seasonal adjustment treatment of crop production between 1996 and 1997 accounts for the break in the monthly GDP MSV series for Canada between these years.

Table 2
Mean Seasonal Variation in Employment, Canada, by Sex and Broad Age Group, 1976-2003, per cent

	Both Sexes						Males					Females				
	15+	15-19	20-24	25+	25-54	55+	15+	15-19	20-24	25-54	55+	15+	15-19	20-24	25-54	55+
1976	2.38	11.13	4.16	1.17	1.15	1.30	2.90	12.63	5.16	1.67	1.54	1.55	9.44	2.94	1.01	0.79
1977	2.38	11.15	4.22	1.17	1.15	1.29	2.92	12.55	5.28	1.67	1.53	1.53	9.56	2.96	0.97	0.77
1978	2.34	11.11	4.16	1.14	1.12	1.25	2.89	12.48	5.25	1.64	1.49	1.49	9.53	2.88	0.90	0.75
1979	2.30	11.00	3.96	1.11	1.09	1.18	2.88	12.48	5.15	1.60	1.44	1.44	9.30	2.59	0.84	0.78
1980	2.30	11.03	4.01	1.11	1.11	1.12	2.91	12.55	5.38	1.63	1.39	1.40	9.31	2.52	0.80	0.83
1981	2.26	11.07	4.05	1.07	1.08	1.03	2.89	12.57	5.53	1.60	1.34	1.36	9.39	2.52	0.76	0.86
1982	2.20	11.25	4.39	1.10	1.12	0.96	2.84	12.78	5.84	1.69	1.32	1.32	9.67	2.98	0.78	0.87
1983	2.21	11.42	4.67	1.11	1.14	0.92	2.89	12.83	6.19	1.76	1.29	1.31	9.98	3.23	0.78	0.91
1984	2.19	11.62	4.84	1.07	1.11	0.88	2.88	12.96	6.25	1.74	1.24	1.28	10.23	3.45	0.78	0.90
1985	2.12	11.60	5.01	1.02	1.05	0.88	2.82	13.01	6.32	1.69	1.20	1.23	10.25	3.56	0.78	0.85
1986	2.07	11.46	5.06	0.98	1.02	0.87	2.78	12.91	6.48	1.67	1.14	1.16	10.10	3.51	0.77	0.85
1987	2.00	11.23	5.04	0.95	0.98	0.86	2.69	12.56	6.35	1.63	1.08	1.13	9.96	3.62	0.76	0.84
1988	1.94	10.76	5.01	0.95	0.99	0.84	2.68	12.20	6.39	1.67	1.02	1.05	9.44	3.48	0.73	0.88
1989	1.93	10.50	4.99	0.99	1.03	0.83	2.68	11.82	6.29	1.74	0.98	1.02	9.30	3.61	0.72	0.95
1990	1.91	10.19	4.93	1.04	1.08	0.82	2.67	11.40	6.25	1.82	0.97	0.99	9.10	3.65	0.72	1.05
1991	1.91	10.23	5.06	1.09	1.13	0.86	2.67	11.34	6.32	1.91	1.03	1.00	9.26	3.98	0.73	1.08
1992	1.93	10.40	5.39	1.11	1.15	0.86	2.69	11.51	6.54	1.94	1.06	1.02	9.42	4.37	0.74	1.05
1993	1.88	10.33	5.51	1.09	1.13	0.87	2.63	11.60	6.61	1.88	1.08	0.98	9.13	4.49	0.74	1.01
1994	1.85	10.29	5.63	1.05	1.09	0.83	2.57	11.69	6.77	1.81	1.02	0.97	8.92	4.57	0.73	0.91
1995	1.80	10.18	5.67	1.00	1.03	0.84	2.50	11.69	6.72	1.72	1.03	0.95	8.75	4.68	0.71	0.87
1996	1.75	10.33	5.78	0.95	0.98	0.85	2.42	11.76	6.54	1.63	1.05	0.96	8.87	5.05	0.69	0.86
1997	1.71	10.47	5.99	0.92	0.93	0.85	2.36	11.89	6.60	1.57	1.09	0.94	8.97	5.40	0.66	0.88
1998	1.61	10.15	5.75	0.83	0.85	0.76	2.21	11.52	6.27	1.43	1.11	0.90	8.75	5.21	0.65	0.77
1999	1.54	9.79	5.41	0.79	0.81	0.76	2.15	11.36	6.11	1.36	1.16	0.82	8.18	4.75	0.65	0.89
2000	1.50	9.52	5.27	0.75	0.79	0.74	2.12	11.12	6.00	1.34	1.15	0.79	7.90	4.57	0.66	1.02
2001	1.43	9.27	5.13	0.71	0.75	0.68	2.05	10.81	5.68	1.28	1.22	0.77	7.70	4.60	0.68	1.10
2002	1.39	9.08	5.05	0.70	0.74	0.64	2.01	10.70	5.57	1.27	1.13	0.74	7.49	4.53	0.68	1.14
2003	1.36	9.15	5.00	0.69	0.73	0.59	1.99	10.81	5.64	1.25	1.04	0.72	7.53	4.37	0.68	1.10
percentage growth rates																
1976-2003	-43.04	-17.76	20.35	-41.54	-36.82	-54.72	-31.37	-14.37	9.39	-25.12	-32.26	-53.66	-20.26	48.71	-32.52	39.00

Source: calculated from Statistics Canada, Labour Force Survey data.

Table 3
Mean Seasonal Variation in Employment, Canada, by Broad Industry, 1987-2003, per cent

	[a]	[b]	[c]	[d]	[e]	[f]	[g]	[h]	[i]	[j]	[k]	[l]	[m]	[n]	[o]	[p]	[q]
1987	2.00	6.74	5.84	1.90	8.80	2.37	0.99	1.43	0.84	0.84	5.43	4.07	0.79	3.03	3.37	1.43	3.73
1988	1.94	6.73	5.83	1.86	8.39	2.30	0.96	1.39	0.81	0.79	5.23	4.08	0.76	3.03	3.35	1.44	3.62
1989	1.93	6.73	5.83	1.89	8.03	2.29	0.95	1.33	0.80	0.78	4.82	4.05	0.74	3.10	3.36	1.40	3.50
1990	1.91	6.74	5.79	1.88	8.00	2.35	1.04	1.25	0.77	0.73	4.65	4.08	0.69	3.16	3.36	1.41	3.28
1991	1.91	6.72	5.69	1.76	8.86	2.51	1.13	1.22	0.73	0.70	4.51	4.14	0.65	3.23	3.35	1.45	3.11
1992	1.93	6.75	5.65	1.69	9.08	2.59	1.25	1.24	0.76	0.76	4.12	4.22	0.68	3.34	3.41	1.58	2.97
1993	1.88	6.68	5.52	1.49	9.09	2.58	1.29	1.27	0.75	0.76	3.89	4.32	0.67	3.32	3.40	1.54	2.84
1994	1.85	6.61	5.39	1.31	8.79	2.48	1.32	1.25	0.74	0.80	3.69	4.42	0.68	3.37	3.38	1.58	2.80
1995	1.80	6.47	5.26	1.15	8.39	2.31	1.29	1.25	0.71	0.80	3.48	4.47	0.66	3.32	3.40	1.62	2.76
1996	1.75	6.30	5.18	1.08	8.29	2.23	1.24	1.19	0.65	0.80	3.49	4.50	0.65	3.23	3.34	1.60	2.73
1997	1.71	6.18	5.12	1.08	7.90	2.12	1.19	1.14	0.63	0.83	3.64	4.53	0.69	3.21	3.28	1.51	2.78
1998	1.61	6.04	5.12	1.25	7.36	1.91	1.10	0.94	0.58	0.82	3.69	4.60	0.67	3.01	3.27	1.51	2.72
1999	1.54	5.96	5.17	1.42	6.83	1.85	1.10	1.05	0.57	0.80	3.75	4.60	0.66	3.21	3.30	1.38	2.75
2000	1.50	5.98	5.00	0.00	6.36	1.87	1.09	1.13	0.61	0.78	3.67	4.58	0.64	3.38	3.11	1.33	2.56
2001	1.43	5.84	5.00	0.00	6.07	1.78	1.00	1.12	0.55	0.73	3.70	4.73	0.58	3.67	2.92	1.53	2.37
2002	1.39	5.83	5.05	0.00	5.80	1.77	1.01	1.19	0.58	0.74	3.43	4.76	0.59	3.86	2.85	1.52	2.27
2003	1.36	5.80	5.10	0.00	5.60	1.77	1.01	1.22	0.57	0.73	3.23	4.80	0.59	3.97	2.79	1.48	2.10
percentage growth rates																	
1976-2003	-32.05	-14.02	-12.73	na	-36.40	-25.50	2.65	-14.51	-31.68	-13.53	-40.58	17.95	-25.33	31.03	-17.16	3.59	-43.63

[a] all industries; [b] agriculture; [c] forestry, fishing, mining, oil and gas; [d] utilities; [e] construction; [f] manufacturing; [g] retail and wholesale trade; [h] transportation and warehousing; [i] finance, insurance, real estate and leasing; [j] professional, scientific and technical services; [k] business, building and other support services; [l] education services; [m] health care and social assistance; [n] information, culture and recreation; [o] accomodation and food services; [p] other services; [q] public administration.

Source: calculated from Statistics Canada, Labour Force Survey data.

Note: underlying data for utilities [d] will be checked with Statistics Canada.

Table 4
Mean Seasonal Variation in Employment, Canada, by Broad Occupation, 1987-2003, per cent

	[a]	[b]	[c]	[d]	[e]	[f]	[g]	[h]	[i]	[j]	[k]
1987	2.00	0.00	1.26	2.18	1.21	1.53	2.47	1.10	3.79	11.15	3.47
1988	1.94	0.00	1.23	2.11	1.17	1.53	2.40	1.05	3.93	11.09	3.30
1989	1.93	0.00	1.22	2.10	1.09	1.60	2.26	1.05	3.97	11.15	3.11
1990	1.91	0.00	1.21	2.11	0.96	1.68	2.06	1.07	4.24	10.88	3.24
1991	1.91	0.00	1.20	2.09	0.79	1.80	1.96	1.06	4.65	10.79	3.52
1992	1.93	0.00	1.24	2.16	0.66	1.89	2.10	1.12	4.91	10.97	3.54
1993	1.88	0.00	1.23	2.15	0.51	1.96	2.19	1.15	4.95	10.85	3.54
1994	1.85	0.00	1.20	2.10	0.50	1.97	2.34	1.19	4.75	11.03	3.27
1995	1.80	0.00	1.18	2.02	0.50	2.01	2.46	1.18	4.50	11.02	3.02
1996	1.75	0.00	1.11	1.91	0.49	2.08	2.61	1.18	4.38	10.91	2.86
1997	1.71	0.00	1.07	1.84	0.52	2.15	2.81	1.21	4.08	11.04	2.67
1998	1.61	0.00	0.96	1.78	0.46	2.23	2.96	1.20	3.83	10.92	2.44
1999	1.54	0.00	0.93	1.78	0.42	2.26	3.09	1.22	3.58	10.78	2.30
2000	1.50	0.00	0.80	1.66	0.61	2.14	3.26	1.21	3.43	10.96	2.22
2001	1.43	0.00	0.66	1.72	0.53	2.19	3.41	1.22	3.28	10.83	2.28
2002	1.39	0.00	0.58	1.87	0.57	2.21	3.48	1.22	3.18	10.98	2.24
2003	1.36	0.00	0.53	1.94	0.58	2.27	3.43	1.18	3.01	11.15	2.20
percentage growth rates											
1976-2003	-32.05	na	-58.11	-11.09	-52.12	48.29	38.78	7.03	-20.60	-0.03	-36.51

[a] all occupations; [b] management; [c] business, finance and administrative; [d] natural and applied sciences;
[e] health; [f] social science, education, government and religion; [g] art, culture, recreation and sport;
[h] sales and service; [i] trades, transport and equipment operators; [j] primary occupations;
[k] processing, manufacturing and utilities.

Source: calculated from Statistics Canada, Labour Force Survey data.

Note: underlying data for management [b] will be checked with Statistics Canada.

Table 5
Mean Seasonal Variation in Employment, Canada, by Sex and Class of Worker, 1976-2003, per cent

	Both Sexes				Males				Females			
	Total	Public Sector Employees	Private Sector Employees	Self-Employed	Total	Public Sector Employees	Private Sector Employees	Self-Employed	Total	Public Sector Employees	Private Sector Employees	Self-Employed
1976	2.38	1.32	2.89	2.18	2.90	1.71	3.49	2.16	1.55	0.86	1.87	2.46
1977	2.38	1.33	2.91	2.14	2.92	1.75	3.51	2.16	1.53	0.84	1.86	2.30
1978	2.34	1.32	2.86	2.03	2.89	1.79	3.46	2.08	1.49	0.82	1.86	2.09
1979	2.30	1.31	2.79	1.95	2.88	1.92	3.37	2.06	1.44	0.81	1.84	1.85
1980	2.30	1.26	2.83	1.77	2.91	1.93	3.46	1.90	1.40	0.78	1.86	1.67
1981	2.26	1.19	2.81	1.59	2.89	1.96	3.45	1.76	1.36	0.75	1.86	1.42
1982	2.20	1.07	2.86	1.29	2.84	1.80	3.57	1.43	1.32	0.71	1.86	1.18
1983	2.21	1.07	2.95	1.22	2.89	1.83	3.72	1.37	1.31	0.68	1.89	1.08
1984	2.19	1.11	2.90	1.09	2.88	1.91	3.66	1.27	1.28	0.67	1.85	0.95
1985	2.12	1.09	2.84	0.99	2.82	1.89	3.61	1.18	1.23	0.66	1.78	0.81
1986	2.07	1.04	2.76	0.92	2.78	1.87	3.58	1.05	1.16	0.66	1.68	0.86
1987	2.00	0.88	2.68	0.99	2.69	1.77	3.51	0.85	1.13	0.74	1.60	1.49
1988	1.94	0.83	2.60	0.98	2.68	1.79	3.46	0.89	1.05	0.76	1.50	1.40
1989	1.93	0.76	2.58	0.97	2.68	1.76	3.43	0.91	1.02	0.81	1.50	1.30
1990	1.91	0.70	2.57	0.88	2.67	1.77	3.41	0.90	0.99	0.90	1.50	1.13
1991	1.91	0.62	2.65	0.86	2.67	1.66	3.52	0.85	1.00	0.95	1.58	1.06
1992	1.93	0.55	2.75	0.82	2.69	1.56	3.64	0.79	1.02	1.03	1.67	0.95
1993	1.88	0.52	2.74	0.81	2.63	1.47	3.61	0.79	0.98	1.07	1.66	0.88
1994	1.85	0.53	2.68	0.80	2.57	1.38	3.51	0.83	0.97	1.11	1.66	0.82
1995	1.80	0.58	2.61	0.78	2.50	1.23	3.41	0.86	0.95	1.12	1.62	0.71
1996	1.75	0.60	2.55	0.74	2.42	1.07	3.30	0.86	0.96	1.13	1.63	0.65
1997	1.71	0.63	2.53	0.66	2.36	0.87	3.28	0.80	0.94	1.16	1.61	0.55
1998	1.61	0.72	2.40	0.61	2.21	0.71	3.08	0.72	0.90	1.24	1.56	0.53
1999	1.54	0.77	2.31	0.61	2.15	0.60	2.97	0.74	0.82	1.32	1.50	0.56
2000	1.50	0.73	2.24	0.59	2.12	0.60	2.88	0.71	0.79	1.33	1.45	0.60
2001	1.43	0.78	2.12	0.59	2.05	0.68	2.70	0.79	0.77	1.50	1.41	0.52
2002	1.39	0.81	2.06	0.60	2.01	0.71	2.61	0.81	0.74	1.55	1.39	0.47
2003	1.36	0.81	2.03	0.60	1.99	0.72	2.58	0.82	0.72	1.58	1.36	0.45
percentage growth rates												
1976-2003	-43.04	-38.83	-29.97	-72.62	-31.37	-58.03	-25.96	-61.87	-53.66	84.03	-27.20	-81.77

Source: calculated from Statistics Canada, Labour Force Survey data.

Table 6
Mean Seasonal Variation in the Unemployment Rate, Canada, by Sex and Broad Age Group, 1976-2003, per cent

	Both Sexes						Males					Females				
	15+	15-19	20-24	25+	25-54	55+	15+	15-19	20-24	25-54	55+	15+	15-19	20-24	25-54	55+
1976	8.83	7.64	9.56	11.44	10.96	15.48	13.70	12.37	13.52	18.13	19.49	3.07	5.28	4.26	5.25	8.36
1977	8.50	7.48	9.17	11.17	11.09	14.53	13.53	11.80	13.16	17.06	18.36	3.08	5.09	4.31	5.37	5.65
1978	8.25	7.32	8.92	10.66	10.31	13.31	13.38	11.65	13.06	16.77	17.33	2.72	4.95	4.65	5.24	5.35
1979	7.69	7.40	8.57	9.52	9.16	12.30	12.66	11.73	13.11	16.39	16.52	2.82	4.94	4.39	5.28	6.03
1980	7.58	7.34	8.72	9.38	9.01	13.17	12.40	11.32	13.38	15.09	15.97	2.65	5.45	3.73	4.57	6.93
1981	7.17	6.92	8.99	8.80	8.03	12.33	11.81	10.47	13.47	13.59	15.52	2.59	4.89	3.71	4.52	6.15
1982	6.84	6.02	8.41	8.35	8.05	10.33	10.73	8.75	12.55	12.48	13.20	2.21	4.61	3.50	4.02	3.91
1983	6.53	5.29	7.84	7.76	7.23	8.65	10.07	8.16	11.68	11.54	11.44	2.13	4.79	3.42	3.45	2.36
1984	6.35	5.39	7.80	6.95	6.79	8.03	9.90	8.36	12.07	10.94	10.32	2.38	5.50	3.87	3.31	3.37
1985	6.13	5.67	8.06	6.80	6.64	8.07	9.86	8.58	12.42	10.82	10.32	2.28	5.98	4.34	3.76	3.49
1986	6.45	5.59	8.57	7.04	6.78	8.19	10.34	8.37	13.06	11.41	10.84	2.64	7.14	4.50	3.48	3.92
1987	6.71	5.80	8.77	7.48	6.99	8.73	10.65	8.33	13.35	11.54	12.00	2.95	7.41	4.45	3.89	3.97
1988	6.43	5.65	8.68	6.99	7.33	8.42	10.80	8.35	13.84	12.17	11.20	3.27	7.41	4.44	4.10	5.78
1989	6.90	5.91	9.15	7.53	7.23	9.57	10.92	8.01	14.49	12.15	11.35	3.77	7.31	4.47	4.48	8.00
1990	5.99	5.51	8.67	7.23	6.75	8.91	10.26	6.92	13.15	11.77	10.95	3.67	6.92	4.42	4.51	8.36
1991	5.75	5.20	8.34	6.55	6.51	7.31	9.03	6.51	11.28	11.07	9.57	3.52	6.28	4.55	4.51	4.68
1992	5.86	5.17	8.26	6.63	6.70	7.50	9.37	6.55	11.40	10.90	10.27	3.80	6.31	4.23	4.41	3.40
1993	5.46	5.32	8.27	5.94	6.51	6.74	9.10	6.68	11.16	10.46	9.36	3.69	6.12	4.51	4.38	3.31
1994	5.43	4.94	8.21	5.88	6.00	5.96	8.87	6.52	11.10	10.37	8.78	3.76	6.25	4.83	4.55	3.44
1995	5.32	5.08	8.26	6.16	5.90	6.17	8.47	6.13	11.36	10.28	9.88	3.86	6.27	5.28	4.64	3.14
1996	5.17	4.83	8.54	5.65	5.55	6.23	8.56	5.88	11.44	9.61	9.54	4.00	6.89	6.21	4.32	3.99
1997	5.39	5.10	8.41	6.06	5.99	5.80	8.53	5.68	11.66	10.19	9.25	4.20	7.86	6.25	4.73	3.98
1998	5.21	5.22	8.68	6.06	6.43	6.80	8.35	5.72	11.14	9.86	9.73	3.97	7.23	6.75	4.66	5.05
1999	5.19	4.85	8.82	6.56	6.31	7.26	9.14	6.05	13.02	9.91	9.85	4.16	7.07	7.29	5.47	5.85
2000	6.12	5.03	9.28	6.77	6.80	7.09	9.10	6.17	13.42	10.47	10.00	4.21	6.92	7.78	6.04	5.67
2001	5.77	4.94	8.50	6.77	6.78	7.73	8.65	5.87	12.29	10.45	11.35	5.01	6.76	7.55	5.68	6.87
2002	5.54	5.05	7.82	6.66	6.69	7.75	8.89	5.84	12.18	10.33	11.38	5.16	7.08	7.58	5.35	5.22
2003	5.49	4.57	8.27	6.86	6.65	7.78	9.09	5.24	12.47	10.48	11.99	4.85	7.43	7.90	5.45	4.17
percentage growth rates																
1976-2003	-37.86	-40.25	-13.48	-40.03	-39.31	-49.77	-33.66	-57.63	-7.81	-42.18	-38.48	57.91	40.70	85.31	3.84	-50.16

Source: calculated from Statistics Canada, Labour Force Survey data.

Table 7
Mean Seasonal Variation in Employment, United States, by Sex and Broad Age Group, 1976-2003, per cent

	Both Sexes						Males					Females				
	16+	16-19	20-24	25+	25-54	55+	16+	16-19	20-24	25-54	55+	16+	16-19	20-24	25-54	55+
1976	1.06	9.76	2.31	0.65	0.67	0.58	1.60	11.57	3.15	0.60	0.72	0.64	7.68	1.64	1.38	0.99
1977	1.01	9.36	2.27	0.65	0.66	0.60	1.53	10.90	3.06	0.58	0.71	0.61	7.58	1.60	1.35	1.09
1978	0.99	8.85	2.21	0.63	0.63	0.63	1.48	10.18	2.95	0.56	0.73	0.58	7.34	1.57	1.31	1.11
1979	0.95	8.72	2.19	0.62	0.61	0.65	1.44	10.05	2.95	0.57	0.74	0.55	7.27	1.55	1.26	1.07
1980	0.95	9.10	2.20	0.60	0.58	0.66	1.46	10.53	2.96	0.58	0.73	0.52	7.52	1.53	1.20	1.00
1981	0.96	9.62	2.21	0.57	0.55	0.67	1.46	11.13	2.98	0.62	0.72	0.52	7.96	1.57	1.10	0.99
1982	0.99	10.63	2.21	0.55	0.52	0.72	1.49	12.42	3.01	0.66	0.74	0.54	8.73	1.57	1.00	1.05
1983	0.99	10.55	2.22	0.54	0.50	0.72	1.46	11.90	3.03	0.67	0.73	0.55	9.09	1.59	0.93	1.07
1984	0.95	10.14	2.19	0.53	0.48	0.75	1.41	11.45	2.99	0.68	0.72	0.54	8.77	1.60	0.87	1.12
1985	0.93	10.18	2.21	0.51	0.47	0.72	1.39	11.37	2.98	0.66	0.68	0.56	8.90	1.65	0.82	1.09
1986	0.89	9.87	2.27	0.49	0.45	0.70	1.32	11.08	3.01	0.63	0.66	0.56	8.61	1.72	0.77	1.10
1987	0.86	9.48	2.30	0.48	0.44	0.71	1.27	10.80	3.04	0.61	0.65	0.54	8.11	1.70	0.72	1.09
1988	0.83	9.10	2.34	0.46	0.43	0.71	1.23	10.26	3.05	0.62	0.64	0.51	7.88	1.69	0.67	1.09
1989	0.82	8.96	2.35	0.45	0.41	0.69	1.22	10.05	3.01	0.64	0.65	0.49	7.79	1.69	0.62	1.07
1990	0.84	8.65	2.26	0.50	0.47	0.71	1.24	9.46	3.01	0.76	0.69	0.46	7.77	1.50	0.48	1.04
1991	0.83	9.68	2.25	0.48	0.46	0.70	1.25	10.65	3.00	0.75	0.71	0.47	8.65	1.52	0.48	1.02
1992	0.80	10.14	2.24	0.47	0.45	0.69	1.21	11.03	2.97	0.72	0.65	0.48	9.18	1.57	0.51	0.96
1993	0.77	9.98	2.22	0.46	0.43	0.68	1.15	10.92	2.89	0.67	0.64	0.46	8.97	1.61	0.56	0.89
1994	0.73	9.35	2.12	0.44	0.42	0.70	1.11	10.33	2.80	0.62	0.70	0.43	8.33	1.50	0.55	0.94
1995	0.70	9.00	2.07	0.44	0.41	0.75	1.07	9.92	2.72	0.57	0.70	0.40	8.02	1.43	0.58	0.99
1996	0.65	8.72	1.95	0.44	0.39	0.80	1.02	9.74	2.62	0.53	0.71	0.37	7.66	1.31	0.58	1.05
1997	0.59	8.29	1.83	0.42	0.36	0.82	0.94	9.24	2.47	0.49	0.69	0.33	7.30	1.21	0.56	1.08
1998	0.55	7.88	1.65	0.40	0.36	0.73	0.90	8.81	2.30	0.49	0.59	0.30	6.93	1.13	0.55	0.99
1999	0.50	7.63	1.55	0.39	0.35	0.73	0.86	8.51	2.12	0.48	0.59	0.27	6.71	1.10	0.55	0.99
2000	0.46	7.44	1.50	0.38	0.34	0.70	0.82	8.30	1.99	0.48	0.56	0.26	6.53	1.13	0.57	0.96
2001	0.42	7.29	1.46	0.38	0.33	0.66	0.79	8.17	1.90	0.47	0.53	0.24	6.39	1.18	0.59	0.93
2002	0.39	7.22	1.45	0.37	0.32	0.64	0.77	8.11	1.84	0.47	0.54	0.25	6.34	1.23	0.59	0.92
2003	0.37	7.19	1.44	0.37	0.31	0.64	0.75	8.09	1.80	0.47	0.55	0.25	6.30	1.27	0.59	0.92
percentage growth rates																
1976-2003	-64.84	-26.36	-37.39	-42.98	-53.64	11.98	-52.98	-30.11	-42.84	-21.55	-23.52	-60.27	-18.03	-22.57	-57.39	-6.96

Source: calculated from Bureau of Labor Statistics, Current Population Survey data.

Table 8

Mean Seasonal Variation in the Unemployment Rate, United States, by Sex and Broad Age Group, 1976-2003, per cent

	Both Sexes						Males					Females				
	16+	16-19	20-24	25+	25-54	55+	16+	16-19	20-24	25-54	55+	16+	16-19	20-24	25-54	55+
1976	5.85	6.79	6.47	6.89	6.82	8.63	8.52	8.15	9.13	12.05	12.11	5.34	6.38	5.69	5.54	5.74
1977	5.83	6.62	6.30	6.24	5.85	8.09	8.15	8.28	9.17	11.51	11.22	5.14	5.89	5.41	5.49	5.86
1978	5.46	6.49	6.04	6.12	5.42	8.03	8.10	8.69	9.19	9.73	10.76	5.22	6.12	5.01	5.43	5.59
1979	5.42	5.85	5.77	5.06	4.60	8.27	7.60	8.51	9.31	10.23	10.99	5.16	6.00	4.42	5.25	5.70
1980	4.54	5.25	5.68	4.97	4.62	7.72	6.79	7.72	8.45	8.73	10.33	4.26	5.29	3.95	4.74	5.17
1981	4.38	4.82	5.14	4.63	4.63	6.97	6.93	7.44	7.89	8.35	10.40	4.00	4.67	4.05	4.50	4.64
1982	3.86	4.72	4.87	4.76	4.37	7.25	6.74	6.90	7.16	8.27	9.58	3.67	4.53	3.61	4.30	4.42
1983	4.12	4.53	4.65	5.02	4.66	6.93	6.27	6.80	7.16	7.98	9.12	3.76	4.32	3.77	3.70	4.52
1984	3.95	4.96	4.74	4.38	4.60	6.72	6.50	7.61	7.69	8.33	9.12	3.96	5.12	4.19	4.24	4.95
1985	3.95	5.22	5.05	4.92	4.68	6.10	6.53	7.10	7.79	8.61	8.48	3.84	5.31	3.99	4.59	4.01
1986	3.95	5.07	5.09	5.07	4.37	5.85	6.63	5.97	7.65	8.17	8.47	4.64	5.05	4.48	5.02	4.40
1987	4.25	5.11	5.15	5.14	4.98	5.66	7.17	5.52	7.55	8.94	8.41	4.65	5.42	4.61	4.96	4.14
1988	4.51	5.40	4.97	5.43	5.35	5.66	6.76	6.08	7.84	8.90	8.55	4.86	6.56	4.48	5.11	4.91
1989	4.57	5.17	5.26	5.57	5.36	4.94	7.50	5.81	8.04	9.64	8.96	4.94	6.12	4.32	4.70	5.20
1990	5.37	5.88	4.82	6.60	5.93	6.32	7.89	7.28	9.42	10.19	8.21	4.83	6.80	6.19	4.54	6.33
1991	5.15	5.63	4.91	6.17	6.38	6.20	7.79	6.71	8.99	10.07	8.18	4.24	5.62	6.20	4.15	6.62
1992	4.71	5.15	4.64	6.02	5.65	5.90	7.60	6.33	8.39	9.62	6.95	4.34	5.54	6.19	4.59	6.70
1993	5.17	5.83	4.55	5.60	5.36	5.58	7.18	6.84	8.28	9.37	6.90	4.56	6.72	6.75	4.25	7.53
1994	4.90	5.85	4.96	5.92	5.42	5.66	7.44	6.80	8.57	9.42	6.56	4.64	6.10	6.49	4.35	6.58
1995	5.09	5.43	5.02	5.77	6.01	5.89	7.38	6.04	8.45	9.62	6.58	5.02	5.58	6.59	4.41	6.75
1996	5.35	5.45	5.17	5.78	5.21	6.08	7.10	6.07	7.71	9.92	6.45	5.03	5.78	6.80	5.24	8.30
1997	5.51	5.51	5.55	5.69	5.04	6.04	7.59	6.10	7.93	10.44	7.63	5.56	5.63	7.23	4.96	8.13
1998	6.09	5.02	5.43	5.82	5.42	7.07	7.46	6.22	7.87	10.16	8.24	5.30	5.81	7.19	5.12	8.04
1999	5.54	5.17	5.48	6.10	5.69	7.20	7.28	6.72	7.26	9.89	8.98	5.59	5.82	7.34	5.16	8.23
2000	5.45	5.31	5.34	6.14	6.29	7.04	7.66	6.74	7.58	9.78	8.90	5.55	5.58	6.78	5.55	7.50
2001	5.49	5.48	5.06	5.49	5.80	6.85	7.33	6.72	6.61	9.78	9.21	5.22	5.45	6.12	4.72	7.19
2002	5.22	5.22	5.02	6.13	5.06	6.12	7.37	6.44	6.43	9.30	8.89	5.17	5.86	5.42	4.55	7.52
2003	5.34	5.28	4.60	6.07	5.36	5.76	6.95	6.18	6.68	9.31	8.47	4.85	5.55	5.50	4.50	8.01
percentage growth rates																
1976-2003	-8.72	-22.32	-28.93	-11.95	-21.45	-33.24	-18.38	-24.14	-26.80	-22.72	-30.09	-9.26	-12.87	-3.27	-18.83	39.72

Source: calculated from Bureau of Labor Statistics, Current Population Survey data.

Table 9
Mean Seasonal Variation in Employment, Selected OECD Countries, 1965-2003, per cent
(based on quarterly rather than monthly data)

	Canada	United States	Australia	Japan	New Zealand	Austria	Finland	Germany	Italy	Norway	Portugal	Spain	Sweden	United Kingdom
1965	2.20	1.03		2.13			2.28	0.50	0.97					
1966	2.14	1.03		2.11			2.29	0.47	0.90					
1967	2.14	0.78	0.18	2.09			2.33	0.42	0.83					
1968	2.13	0.76	0.16	2.04			2.34	0.42	0.78					
1969	2.10	0.77	0.15	1.95		0.56	2.34	0.40	0.74					
1970	2.03	0.77	0.14	1.80		0.54	2.37	0.37	0.74				0.71	0.16
1971	1.99	0.79	0.16	1.63		0.51	2.44	0.35	0.76				0.67	
1972	1.97	0.81	0.18	1.48		0.48	2.46	0.35	0.80	0.26			0.67	0.14
1973	1.97	0.83	0.19	1.39		0.44	2.48	0.35	0.85	0.29		0.07	0.64	0.15
1974	2.00	0.87	0.20	1.39		0.42	2.42	0.40	0.88	0.32		0.08	0.67	0.19
1975	2.06	0.90	0.21	1.39		0.42	2.43	0.40	0.88	0.37		0.10	0.66	0.22
1976	1.88	0.89	0.21	1.39		0.44	2.45	0.42	0.88	0.44		0.12	0.67	0.28
1977	1.88	0.85	0.23	1.38		0.45	2.52	0.40	0.88	0.51		0.17	0.65	0.28
1978	1.86	0.83	0.24	1.36		0.48	2.63	0.43	0.87	0.51		0.22	0.70	0.29
1979	1.83	0.80	0.23	1.34		0.49	2.68	0.40	0.86	0.52		0.24	0.71	0.27
1980	1.84	0.79	0.26	1.30		0.52	2.65	0.45	0.85	0.51		0.27	0.79	0.29
1981	1.81	0.80	0.29	1.26		0.52	2.53	0.53	0.85	0.50		0.31	0.87	0.29
1982	1.74	0.81	0.34	1.22		0.56	2.44	0.58	0.84	0.44		0.35	0.85	0.29
1983	1.78	0.83	0.40	1.18		0.55	2.35	0.62	0.83	0.43		0.38	0.85	0.29
1984	1.77	0.80	0.42	1.16		0.58	2.29	0.65	0.82	0.41	0.89	0.39	0.87	0.28
1985	1.73	0.78	0.43	1.16		0.58	2.26	0.63	0.80	0.38	0.86	0.37	0.93	0.28
1986	1.69	0.75	0.42	1.16	0.49	0.56	2.23	0.55	0.77	0.30	0.83	0.36	0.95	0.27
1987	1.63	0.72	0.43	1.15	0.46	0.52	2.17	0.35	0.72	0.22	0.73	0.36	1.00	0.25
1988	1.56	0.69	0.40	1.13	0.43	0.49	2.15	0.25	0.68	0.29	0.59	0.35	0.94	0.21
1989	1.53	0.69	0.38	1.10	0.42	0.46	2.02	0.25	0.65	0.40	0.47	0.33	0.92	0.18
1990	1.47	0.73	0.39	1.05	0.37	0.45	2.02	0.25	0.63	0.49	0.46	0.30	0.88	0.19
1991	1.46	0.73	0.42	1.01	0.33	0.44	2.02	0.40	0.63	0.57	0.51	0.29	0.92	0.18
1992	1.47	0.71	0.44	0.99	0.33	0.43	2.04	0.41	0.64	0.68	0.50	0.29	0.95	0.38
1993	1.43	0.68	0.44	0.96	0.34	0.42	2.03	0.42	0.64	0.71	0.41	0.29	0.94	0.38
1994	1.41	0.64	0.43	0.93	0.30	0.45	2.06	0.45	0.65	0.71	0.31	0.28	0.94	0.37
1995	1.38	0.62	0.44	0.92	0.29	0.45	2.07	0.49	0.65	0.70	0.24	0.25	0.96	0.35
1996	1.35	0.57	0.45	0.88	0.31	0.45	2.09	0.52	0.64	0.68	0.23	0.24	0.97	0.34
1997	1.34	0.52	0.45	0.83	0.34	0.43	2.09	0.55	0.62	0.66	0.31	0.23	0.98	0.33
1998	1.27	0.48	0.44	0.79	0.40	0.42	2.09	0.57	0.61	0.63	0.31	0.24	1.01	0.35
1999	1.22	0.43	0.41	0.76	0.43	0.41	2.10	0.60	0.58	0.59	0.26	0.26	0.99	0.36
2000	1.19	0.40	0.39	0.74	0.50	0.40	2.04	0.61	0.55	0.56	0.18	0.26	0.97	0.36
2001	1.14	0.38	0.35	0.72	0.51	0.40	2.00	0.62	0.52	0.54	0.15	0.26	0.94	0.35
2002	1.11	0.37	0.33	0.71	0.50	0.41	1.95	0.61	0.48	0.52	0.14	0.26	0.99	
2003	1.08	0.35	0.33	0.70	0.47	0.42	1.90	0.62	0.44	0.51	0.16	0.26	1.00	
percentage growth rates														
1986-2001	-32.44	-48.99	-16.18	-37.92	3.25	-29.26	-10.13	11.93	-32.89	78.14	-82.19	-26.51	-1.13	32.11

Source: calculated with data from the OECD's *Quarterly Labour Force Statistics* database.

Table 10
Mean Seasonal Variation in the Unemployment Rate, Selected OECD Countries, 1965-2003, per cent
(based on quarterly rather than monthly data)

	Canada	United States	Australia	New Zealand	Austria	Finland	Italy	Norway	Portugal	Spain	Sweden	United Kingdom
1965	19.51	7.38					12.11					
1966	12.70	6.76					8.84					
1967	11.30	3.34					7.47					
1968	11.29	5.05					5.98					6.67
1969	11.02	3.66			25.28		5.37					5.63
1970	8.70	3.58			22.93		5.24				8.13	4.26
1971	8.16	4.73			22.65		4.77				7.37	
1972	7.36	4.56			18.65		4.48	6.07			7.41	6.55
1973	8.01	3.64			18.71		4.17	6.46		2.00	5.90	9.92
1974	8.04	4.91			15.13		4.36	8.02		1.04	4.67	9.36
1975	7.74	4.58			15.02		3.38	6.86		1.35	7.73	8.10
1976	7.15	4.95			14.99		3.40	6.99		1.10	6.25	9.92
1977	7.03	4.60			13.66		3.55	9.43		1.51	8.71	10.92
1978	7.04	4.14	5.80		13.74		3.53	10.54		1.93	7.77	11.40
1979	7.34	3.46	6.14		11.83		3.27	10.52		1.82	5.80	12.34
1980	6.78	4.05	6.30		12.28		2.37	8.51		1.63	7.73	12.97
1981	5.72	3.67	5.66		11.47		1.28	11.08		1.69	5.55	8.32
1982	6.30	3.71	5.54		11.84		1.19	7.97		1.63	5.64	6.01
1983	5.89	3.40	5.43		11.25		1.37	7.80		1.20	5.05	3.36
1984	5.86	3.67	5.86		12.37		1.77	7.48	2.95	1.04	6.43	2.42
1985	5.42	3.52	5.85		13.93		1.74	8.91	2.95	1.19	6.13	1.73
1986	5.23	4.01	5.29	2.30	12.75		1.64	7.52	2.96	0.84	7.01	1.27
1987	5.65	4.04	5.09	2.33	13.56		1.50	7.00	3.24	0.87	6.88	1.17
1988	5.54	4.57	5.15	3.48	11.21		1.69	6.87	3.11	0.91	9.90	3.39
1989	5.04	4.34	5.45	2.41	11.37	14.87	1.26	5.51	2.99	1.02	8.45	1.16
1990	5.33	3.68	5.09	2.29	8.38	13.20	1.33	4.80	3.20	1.25	6.71	1.34
1991	5.19	4.11	4.74	2.25	7.98	11.45	1.39	4.95	2.46	0.93	6.91	1.61
1992	4.59	3.76	4.61	2.40	7.02	8.86	1.18	4.62	2.46	1.12	6.08	1.25
1993	5.12	3.27	4.70	2.36	7.76	6.96	1.74	5.12	3.25	0.90	5.61	0.96
1994	4.82	4.12	5.25	2.36	7.00	5.98	1.84	5.09	3.31	0.94	5.04	1.03
1995	4.26	3.68	5.09	3.18	8.00	5.60	1.95	5.27	3.16	0.99	4.56	1.44
1996	4.39	4.62	4.32	2.87	8.84	5.95	1.73	5.73	2.39	0.91	3.66	1.58
1997	3.87	3.55	4.53	2.68	9.96	6.86	1.72	4.52	2.97	1.10	4.56	1.78
1998	3.92	4.45	4.83	3.07	9.83	8.22	1.70	6.42	3.02	0.95	4.70	1.98
1999	4.68	3.59	4.32	2.95	9.86	8.94	1.53	4.45	3.37	0.96	4.47	1.65
2000	3.67	4.42	4.76	2.51	10.24	9.36	1.66	5.81	3.79	1.08	5.01	1.82
2001	3.43		5.19	2.85	10.05	9.67	1.57	4.87	2.50	1.18	4.39	1.49
2002	3.92		6.23	3.38	9.94	10.27	1.66	5.73	3.16	1.32	5.03	
2003	4.01		5.47	2.65	8.97	10.35	2.03	4.48	3.23	1.32	4.57	
percentage growth rates												
1989-2000	-27.17	1.97	-12.64	3.93	-10.01	-37.04	31.68	5.50	26.68	5.50	-40.74	56.84

Source: calculated with data from the OECD's *Quarterly Labour Force Statistics* database.

Table 11
Mean Seasonal Variation in Employment, Canada and the Provinces, 1976-2003, per cent

	Canada	NF	PEI	NS	NB	At. Can.	QC	ON	MAN	SASK	ALB	BC
1976	2.38	7.42	7.18	3.48	5.31	5.13	2.55	1.82	2.28	3.28	2.03	2.03
1977	2.38	7.35	7.32	3.56	5.40	5.20	2.57	1.86	2.28	3.22	1.96	1.96
1978	2.34	7.19	7.25	3.49	5.28	5.09	2.57	1.87	2.23	3.13	1.85	1.82
1979	2.30	6.98	7.16	3.51	5.23	5.05	2.50	1.88	2.19	3.08	1.73	1.76
1980	2.30	7.29	7.20	3.53	5.32	5.16	2.51	1.92	2.14	3.01	1.66	1.63
1981	2.26	7.18	7.25	3.53	5.35	5.15	2.48	1.92	2.09	2.92	1.54	1.55
1982	2.20	6.92	7.20	3.51	5.48	5.11	2.48	1.83	1.96	2.75	1.47	1.60
1983	2.21	7.01	7.21	3.60	5.51	5.18	2.48	1.83	1.90	2.70	1.48	1.65
1984	2.19	6.76	7.15	3.64	5.51	5.11	2.42	1.80	1.88	2.67	1.47	1.74
1985	2.12	6.67	7.14	3.65	5.30	5.04	2.34	1.74	1.83	2.64	1.42	1.73
1986	2.07	6.92	7.17	3.57	5.24	5.04	2.31	1.68	1.81	2.54	1.41	1.68
1987	2.00	6.76	7.21	3.51	5.00	4.89	2.25	1.59	1.73	2.49	1.40	1.63
1988	1.94	6.48	7.21	3.43	4.82	4.76	2.20	1.53	1.73	2.41	1.39	1.55
1989	1.93	6.31	7.28	3.29	4.74	4.62	2.22	1.50	1.72	2.46	1.41	1.50
1990	1.91	6.02	7.63	3.17	4.80	4.50	2.28	1.43	1.63	2.45	1.43	1.51
1991	1.91	5.75	7.78	3.09	4.83	4.42	2.35	1.39	1.59	2.39	1.43	1.56
1992	1.93	5.98	7.78	3.09	4.94	4.50	2.40	1.41	1.59	2.38	1.44	1.57
1993	1.88	5.73	7.83	3.06	4.88	4.42	2.33	1.39	1.56	2.32	1.44	1.53
1994	1.85	5.63	7.83	3.00	4.93	4.42	2.27	1.39	1.56	2.32	1.40	1.47
1995	1.80	5.43	7.76	2.97	4.83	4.34	2.20	1.36	1.49	2.31	1.39	1.40
1996	1.75	5.33	7.69	2.92	4.78	4.27	2.13	1.32	1.47	2.30	1.35	1.39
1997	1.71	5.46	7.74	2.85	4.88	4.30	2.08	1.27	1.45	2.26	1.32	1.33
1998	1.61	5.42	7.52	2.62	4.65	4.09	1.99	1.19	1.39	2.11	1.19	1.26
1999	1.54	5.34	7.26	2.54	4.44	3.98	1.89	1.16	1.30	1.95	1.12	1.20
2000	1.50	5.35	7.06	2.45	4.27	3.88	1.85	1.14	1.23	1.93	1.08	1.20
2001	1.43	5.36	6.92	2.44	3.99	3.82	1.78	1.05	1.19	1.86	1.04	1.17
2002	1.39	5.44	6.83	2.37	3.80	3.75	1.71	1.01	1.17	1.84	1.01	1.13
2003	1.36	5.68	6.79	2.34	3.84	3.79	1.70	0.96	1.13	1.80	0.97	1.08
percentage growth rates												
1976-2003	-43.04	-23.46	-5.42	-32.83	-27.71	-26.17	-33.31	-47.11	-50.41	-45.30	-51.92	-46.87

Source: calculated from Statistics Canada, Labour Force Survey data.

Table 12**Mean Seasonal Variation in the Unemployment Rate, Canada and the Provinces, 1976-2003, per cent**

	Canada	NF	PEI	NS	NB	At. Can.	QC	ON	MAN	SASK	ALB	BC
1976	8.83	11.49	17.76	11.63	11.48	11.51	6.92	8.67	14.71	18.10	13.89	7.10
1977	8.50	11.24	18.08	10.67	11.02	11.07	7.37	8.41	12.86	18.77	11.78	7.60
1978	8.25	10.79	16.96	10.34	10.95	10.68	7.28	8.36	12.08	17.09	11.18	7.30
1979	7.69	9.91	17.82	10.27	9.91	10.21	6.25	7.86	11.99	16.71	11.34	7.29
1980	7.58	10.26	17.63	10.37	9.99	10.39	6.05	7.59	11.73	15.32	10.29	7.56
1981	7.17	9.51	16.15	9.36	9.59	9.62	5.53	7.82	10.18	14.24	8.36	6.82
1982	6.84	9.84	17.35	8.49	10.43	9.67	6.01	7.07	9.26	14.36	8.11	5.60
1983	6.53	9.17	17.63	8.46	10.50	9.51	5.78	6.58	8.14	11.72	8.06	4.94
1984	6.35	8.50	18.26	8.44	10.26	9.23	5.40	6.33	8.67	10.56	7.36	4.51
1985	6.13	8.71	18.92	8.71	9.77	9.22	5.74	6.89	8.53	10.27	6.72	4.57
1986	6.45	8.98	19.77	9.09	9.85	9.58	5.34	6.95	9.01	10.08	6.47	4.86
1987	6.71	9.39	20.57	9.30	9.47	9.72	5.81	7.17	9.00	9.89	5.94	5.06
1988	6.43	9.27	20.66	10.03	9.00	9.79	5.72	8.28	7.85	9.40	6.09	5.19
1989	6.90	9.29	21.77	10.31	8.44	9.62	6.01	8.25	7.57	10.09	5.96	5.79
1990	5.99	8.82	22.00	8.91	7.66	8.85	6.03	5.96	7.74	10.17	6.09	5.63
1991	5.75	8.79	21.50	8.20	8.31	8.72	6.50	4.90	6.82	9.91	6.26	5.37
1992	5.86	8.20	20.53	7.87	8.36	8.57	6.95	4.92	6.79	9.75	6.38	5.76
1993	5.46	7.75	20.01	7.11	8.44	8.00	6.52	4.96	6.66	10.01	6.18	5.87
1994	5.43	7.46	19.89	6.71	9.17	8.07	6.41	5.18	7.00	9.55	5.51	5.57
1995	5.32	7.38	20.43	7.34	9.34	8.25	5.76	5.59	7.11	9.86	5.85	5.65
1996	5.17	7.86	21.11	7.33	10.08	8.35	5.47	5.22	6.67	10.75	6.09	5.40
1997	5.39	7.38	22.80	7.59	10.86	8.94	4.90	5.53	6.45	11.03	6.65	5.61
1998	5.21	8.44	23.07	7.65	11.41	9.46	4.85	5.83	7.27	9.23	5.98	4.16
1999	5.19	7.98	22.62	8.67	12.46	9.81	5.15	6.62	7.53	9.21	6.95	4.96
2000	6.12	8.41	23.17	8.10	11.86	9.75	5.17	6.67	8.69	8.91	5.19	4.84
2001	5.77	9.70	23.04	7.29	12.27	10.10	5.59	5.84	8.33	8.29	6.57	4.33
2002	5.54	10.18	24.07	7.75	13.16	10.51	6.45	5.54	7.90	9.41	6.45	4.03
2003	5.49	10.20	23.95	7.87	12.98	10.47	6.16	5.66	8.05	9.20	6.63	3.91
percentage growth rates												
1976-2003	-37.86	-11.24	34.85	-32.36	13.10	-9.02	-10.98	-34.63	-45.30	-49.18	-52.26	-44.94

Source: calculated from Statistics Canada, Labour Force Survey data.

Table 13**Mean Seasonal Variation in the Unemployment Rate, Canada and the Provinces, Ages 25+, 1976-2003, per cent**

	Canada	NF	PEI	NS	NB	At. Can.	QC	ON	MAN	SASK	ALB	BC
1976	11.44	12.55	21.97	15.30	13.36	13.83	10.73	11.51	20.28	17.94	13.59	8.72
1977	11.17	12.97	21.73	12.76	13.17	13.11	10.84	11.22	15.66	19.56	12.61	9.22
1978	10.66	12.25	21.54	12.48	12.86	12.46	10.17	11.01	14.05	19.46	11.82	9.06
1979	9.52	11.56	22.15	13.17	11.78	12.24	8.47	9.36	15.70	17.75	11.04	7.66
1980	9.38	11.56	21.61	12.17	10.62	11.78	8.23	10.31	15.40	16.02	11.13	8.76
1981	8.80	11.44	20.19	10.91	10.14	10.94	6.94	10.30	13.55	14.14	10.79	8.01
1982	8.35	12.20	20.91	9.83	10.95	11.09	7.83	8.07	10.76	16.86	10.52	6.01
1983	7.76	11.93	19.93	9.44	10.88	10.66	7.08	7.29	9.11	14.63	9.87	5.24
1984	6.95	10.61	20.16	9.93	10.26	10.20	6.27	6.92	9.54	13.34	8.56	4.67
1985	6.80	10.58	19.68	9.46	9.75	9.89	6.17	6.87	9.68	12.49	7.45	4.77
1986	7.04	10.98	20.40	9.80	9.95	10.15	5.72	7.84	9.95	12.34	7.27	5.09
1987	7.48	11.06	21.50	9.94	9.41	10.27	5.91	8.52	9.70	11.28	6.32	5.19
1988	6.99	10.87	21.62	10.85	9.26	10.43	5.91	9.07	8.61	11.36	5.52	5.48
1989	7.53	10.66	22.70	11.10	8.73	10.23	5.90	9.27	8.33	10.97	5.33	5.92
1990	7.23	9.66	23.55	9.28	8.15	9.23	6.17	7.59	9.04	12.02	5.48	6.08
1991	6.55	9.57	22.94	9.47	9.05	9.48	7.19	5.81	8.09	12.35	6.00	6.21
1992	6.63	9.54	21.84	8.64	9.39	9.50	7.73	5.57	7.98	12.37	6.01	6.35
1993	5.94	8.87	21.48	7.66	9.83	8.93	7.30	5.65	7.65	12.05	5.78	6.17
1994	5.88	7.99	21.17	7.99	10.36	9.06	7.04	6.03	7.35	10.48	5.41	5.93
1995	6.16	8.03	21.96	8.70	11.16	9.32	6.35	6.24	7.78	10.61	5.61	5.61
1996	5.65	8.09	23.34	7.84	12.10	9.34	6.50	5.21	7.64	10.57	6.36	5.52
1997	6.06	7.90	24.54	8.23	12.33	9.77	6.09	5.84	8.05	12.18	6.47	5.79
1998	6.06	9.42	25.08	8.38	12.63	10.41	5.45	6.09	9.32	10.54	6.90	5.26
1999	6.56	8.72	24.49	9.02	13.40	10.48	6.07	7.02	9.01	10.08	7.32	5.14
2000	6.77	9.64	24.36	8.76	12.76	10.48	6.00	7.16	10.33	9.65	6.87	5.61
2001	6.77	11.21	24.26	8.97	13.24	10.99	6.80	6.69	11.18	9.60	7.60	5.53
2002	6.66	11.81	25.46	9.83	14.59	11.71	7.46	5.60	10.55	10.97	7.98	4.99
2003	6.86	11.94	25.34	9.64	14.24	11.66	7.32	6.06	10.67	11.46	7.68	4.79
percentage growth rates												
1976-2003	-40.03	-4.79	15.34	-37.00	6.58	-15.71	-31.72	-47.32	-47.38	-36.09	-43.48	-45.03

Source: calculated from Statistics Canada, Labour Force Survey data.

Table 14
Seasonal and Total Unemployment, Canada and the Provinces, Ages 25+, 2003

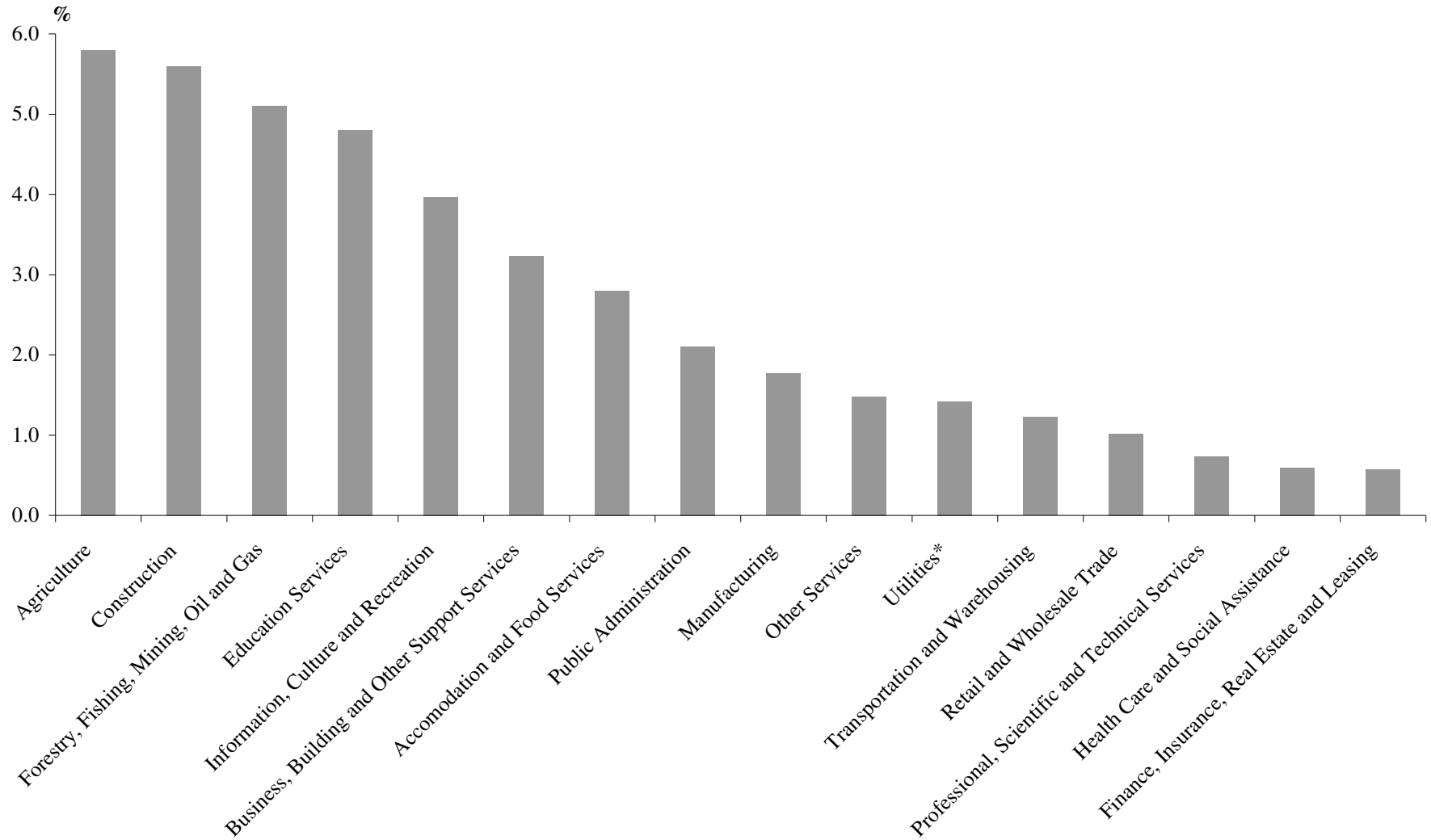
	Canada	NF	PEI	NS	NB	At. Can.	QC	ON	MAN	SASK	ALB	BC
	level (thousands)											
total unemployment	915.8	33.9	6.6	31.3	30.1	101.8	274.2	310.4	19.3	18.8	62.4	128.9
seasonal unemployment	88.2	5.3	3.2	4.7	5.3	18.4	8.0	29.8	4.4	3.3	5.5	13.8
	as a proportion of Canada (per cent)											
total unemployment	100.00	3.70	0.72	3.42	3.28	11.12	29.94	33.89	2.11	2.05	6.81	14.07
seasonal unemployment	100.00	6.02	3.61	5.30	5.95	20.88	9.06	33.76	5.02	3.71	6.23	15.64
	seasonal as a per cent of total unemployment (per cent)											
seasonal/total	9.63	15.65	48.35	14.95	17.47	18.09	2.91	9.59	22.90	17.44	8.80	10.70
	unemployment rates (per cent)											
de-seasonalized rate	5.8	13.3	5.6	6.8	7.8	8.5	7.9	5.0	3.1	3.7	3.9	6.2
actual rate	6.4	15.3	10.4	7.9	9.3	10.1	8.1	5.5	3.9	4.5	4.2	6.9
	portion of unemployment rate due to seasonality											
actual - de-seasonalized (percentage points)	0.58	2.08	4.74	1.10	1.50	1.68	0.22	0.50	0.87	0.75	0.36	0.70
(actual - de-seasonalized)/actual (per cent)	9.07	13.58	45.62	13.94	16.11	16.56	2.68	9.11	22.20	16.80	8.46	10.03
	as a proportion of Canada (per cent)											
Employment Insurance Beneficiaries (all ages)	100.00	6.51	1.45	5.34	6.12	19.42	32.76	25.15	2.49	2.17	6.01	11.60
	as a proportion of total employment (per cent)											
share of employment in primary occupations (all ages)	3.55	6.34	9.59	4.34	4.14	5.02	2.44	2.15	6.40	11.89	6.60	3.70

Source: calculated from Statistics Canada, Labour Force Survey and Employment Insurance administrative data.

Note: seasonal unemployment calculated according to the method of Guillmette, L'Italien and Grey (2000). De-seasonalized unemployment is calculated as unemployment in the province-specific peak employment month, and is held constant in all other months. Seasonal unemployment is then calculated as the difference between actual and de-seasonalized unemployment. The de-seasonalized unemployment rate is de-seasonalized unemployment divided by the de-seasonalized labour force. The de-seasonalized labour force is equal to actual employment plus de-seasonalized unemployment.

The focus is on the 25+ age group because the employment and unemployment peaks of younger workers (mostly students) are much different than for the rest of the labour force. Specifically, the 15-24 labour force tends to exhibit a high degree of seasonality at the peak employment month due to the influx of students in the summer, some of whom become employed but some of whom are unable to find summer employment.

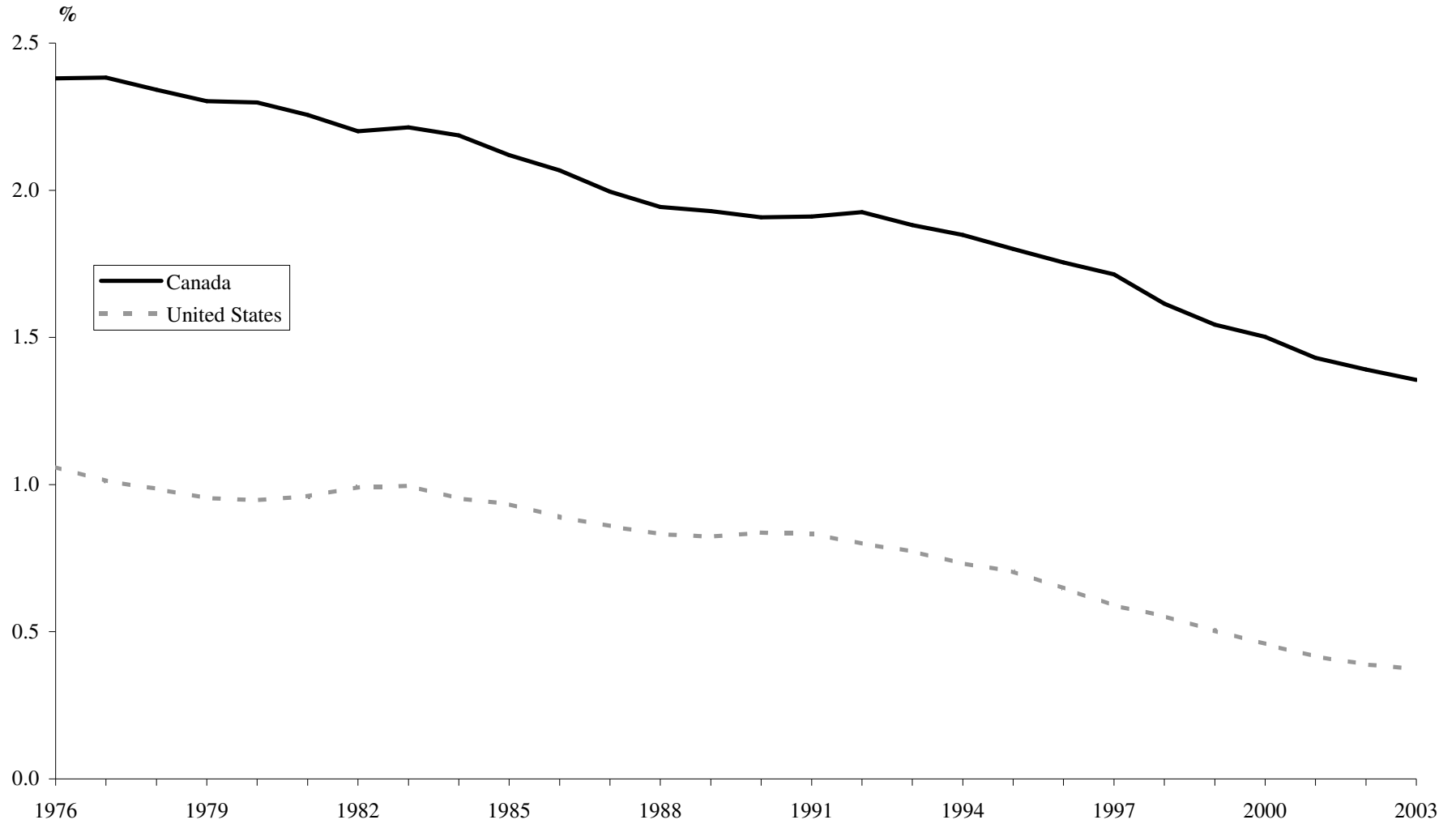
Chart 1: Employment Seasonality in Canadian Industries, 2003 (mean seasonal variation, per cent)



Source: Table 3.

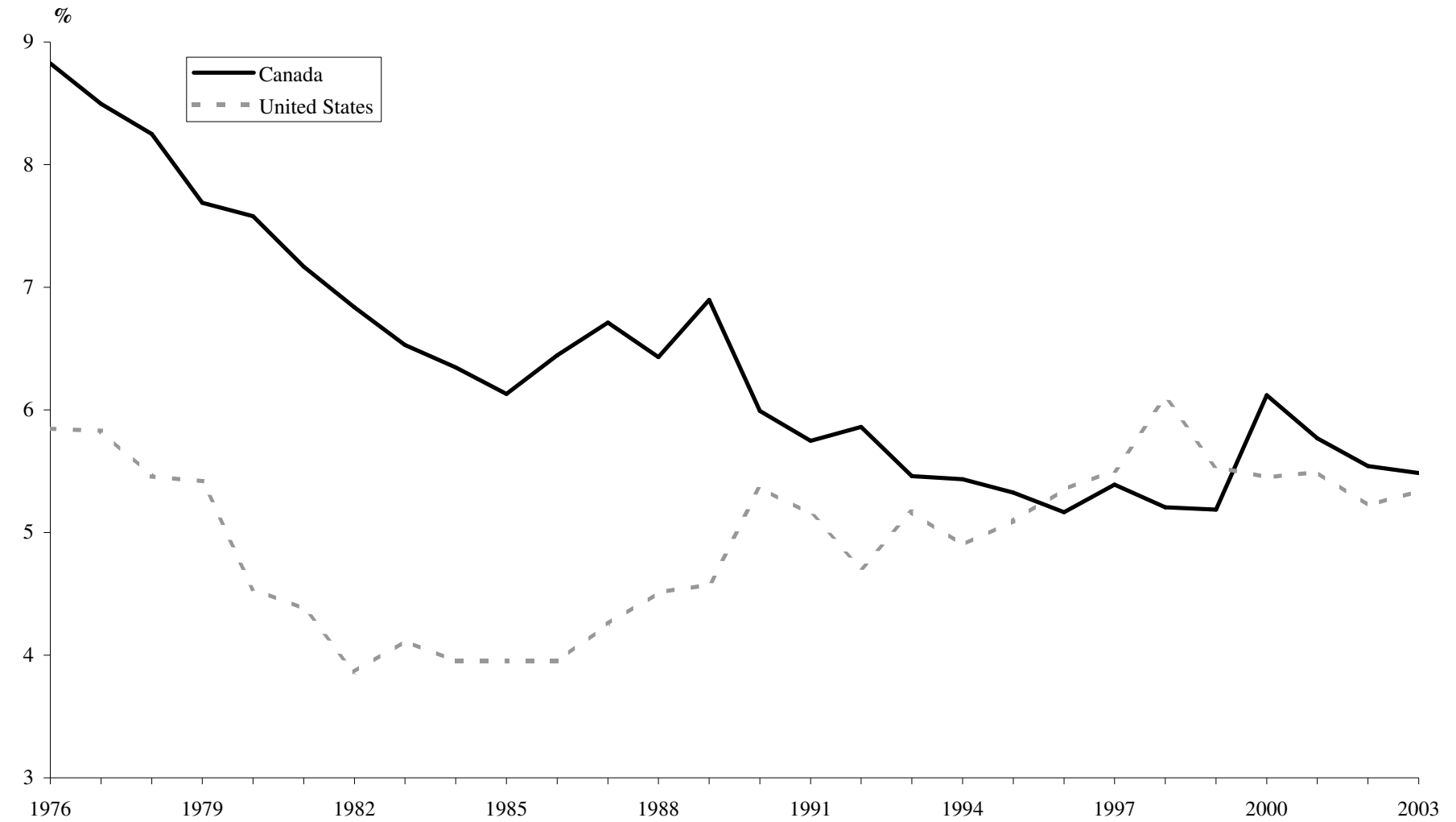
* Data for Utilities are for 1999.

Chart 2: Employment Seasonality in Canada and the United States, 1976-2003 (mean seasonal variation, per cent)



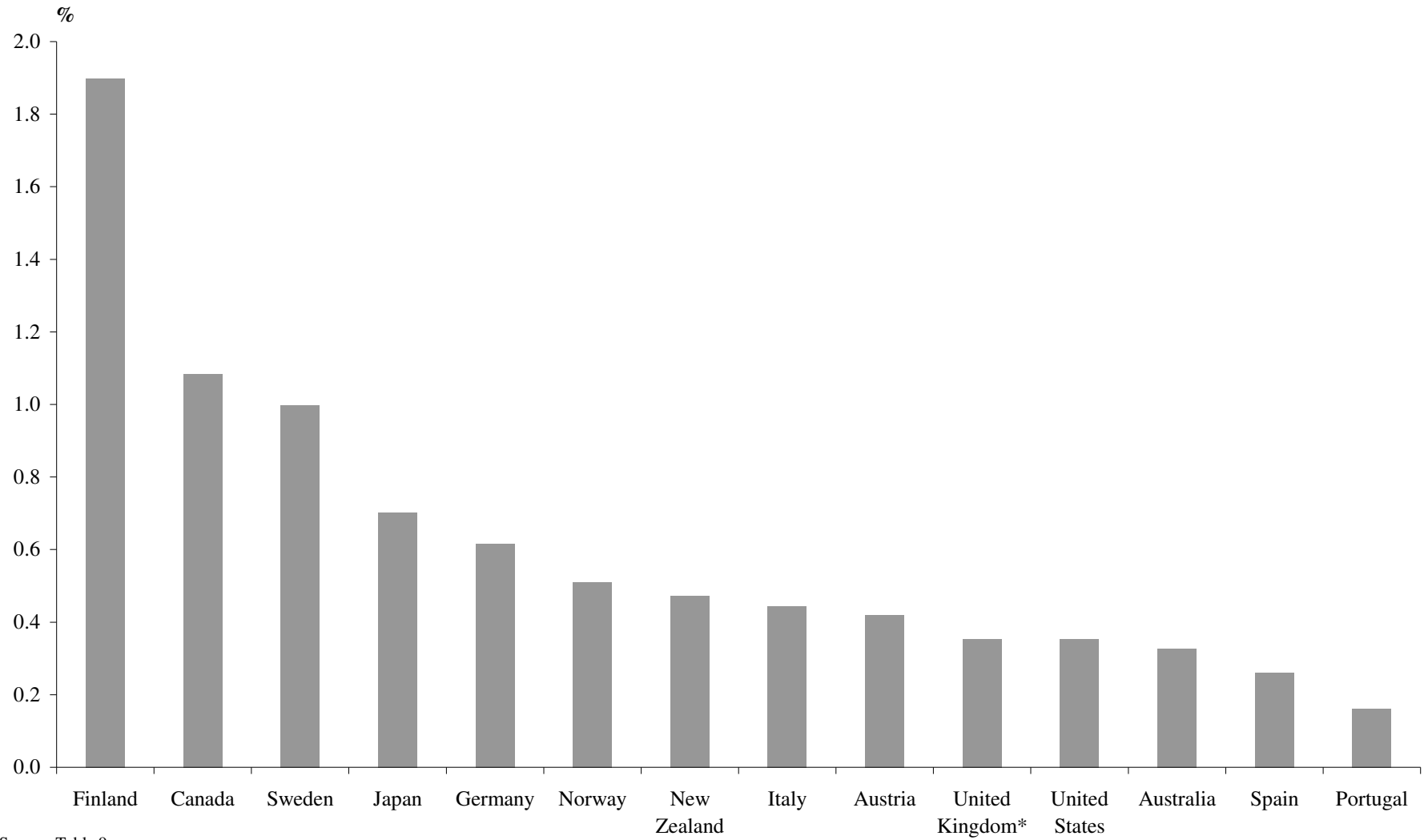
Source: Table 1.

Chart 3: Unemployment Rate Seasonality in Canada and the United States, 1976-2003 (mean seasonal variation, per cent)



Source: Table 1.

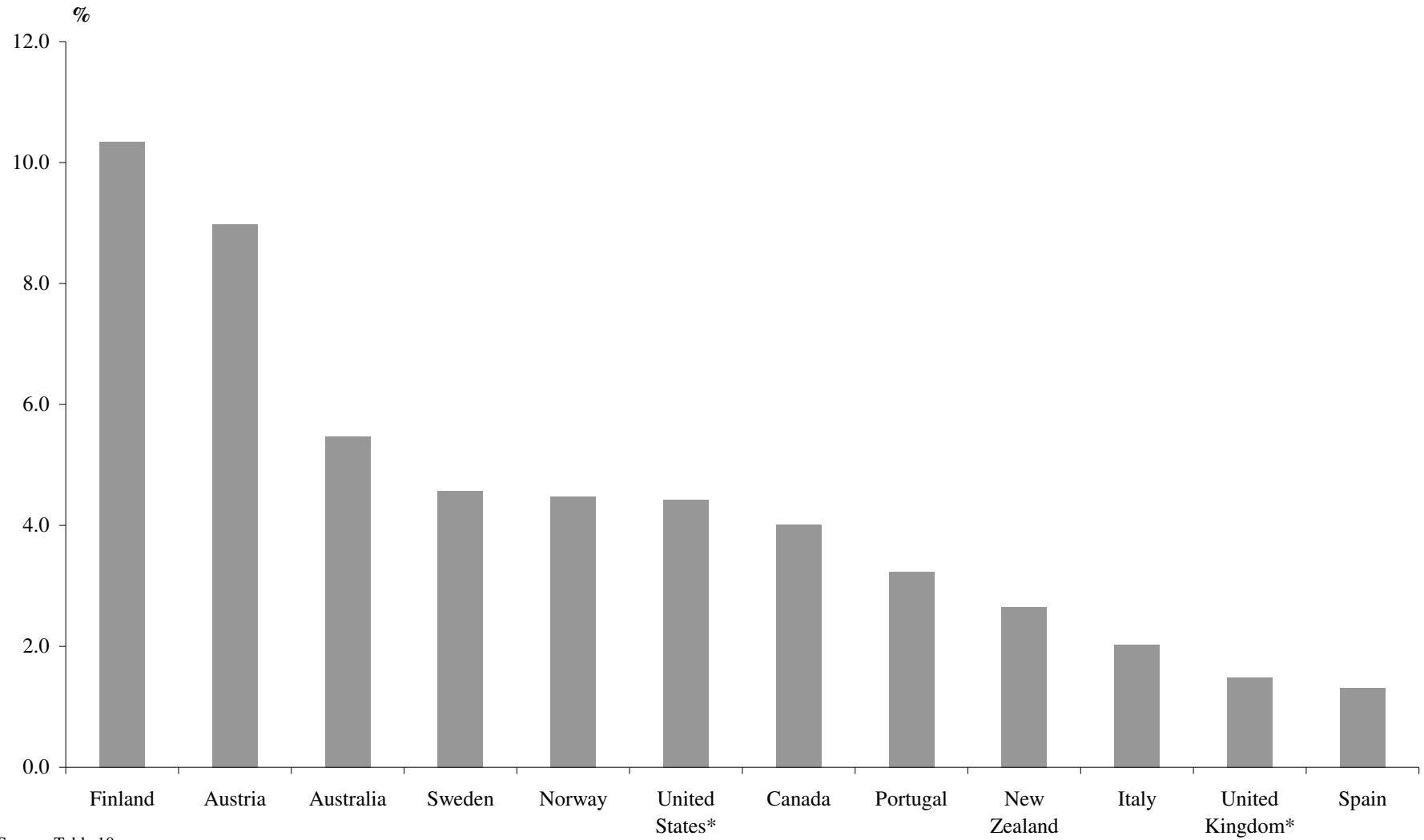
Chart 4: Employment Seasonality in OECD Countries, 2003 (mean seasonal variation, per cent)



Source: Table 9.

* Data for the United Kingdom are for 2001.

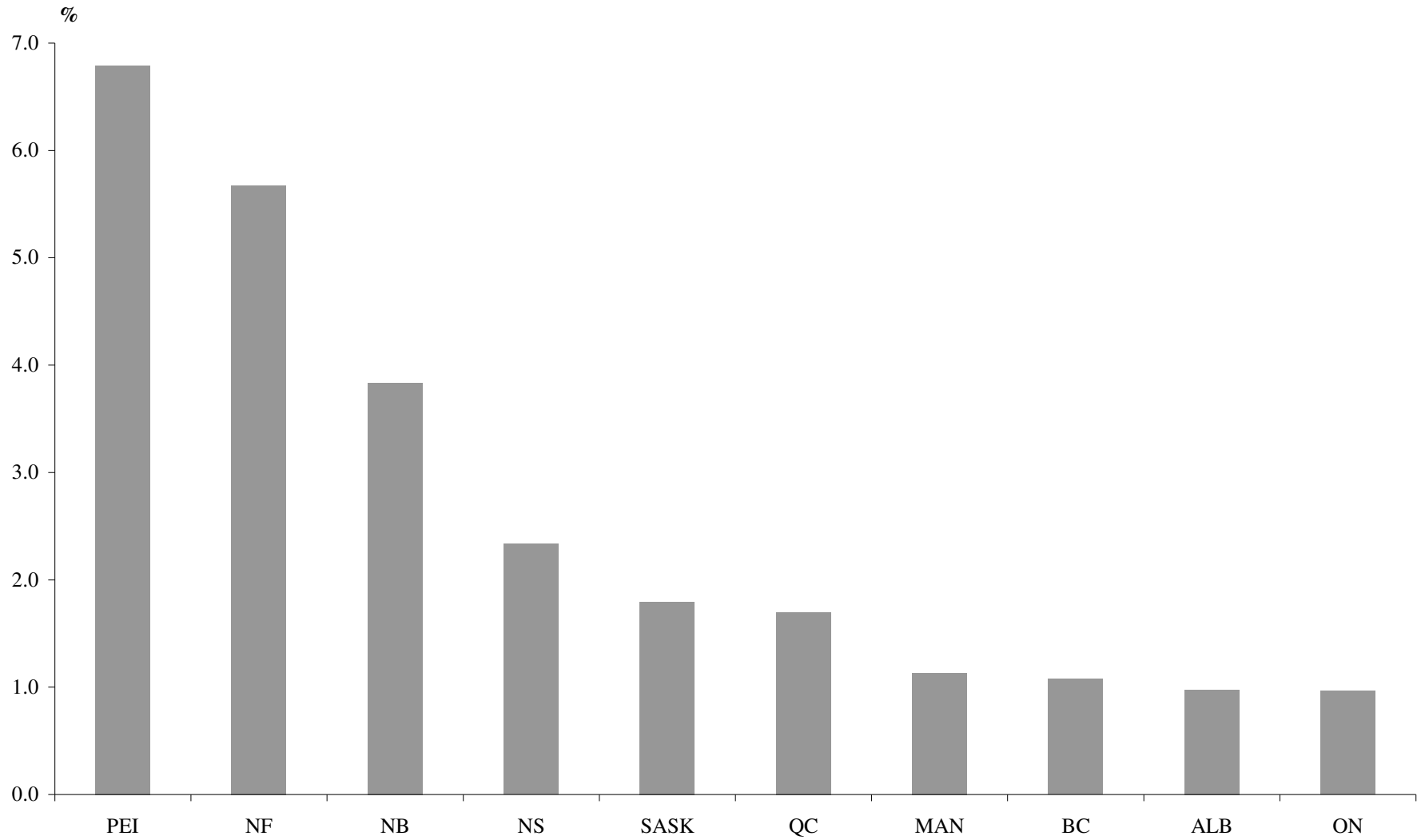
Chart 5: Unemployment Rate Seasonality in OECD Countries, 2003 (mean seasonal variation, per cent)



Source: Table 10.

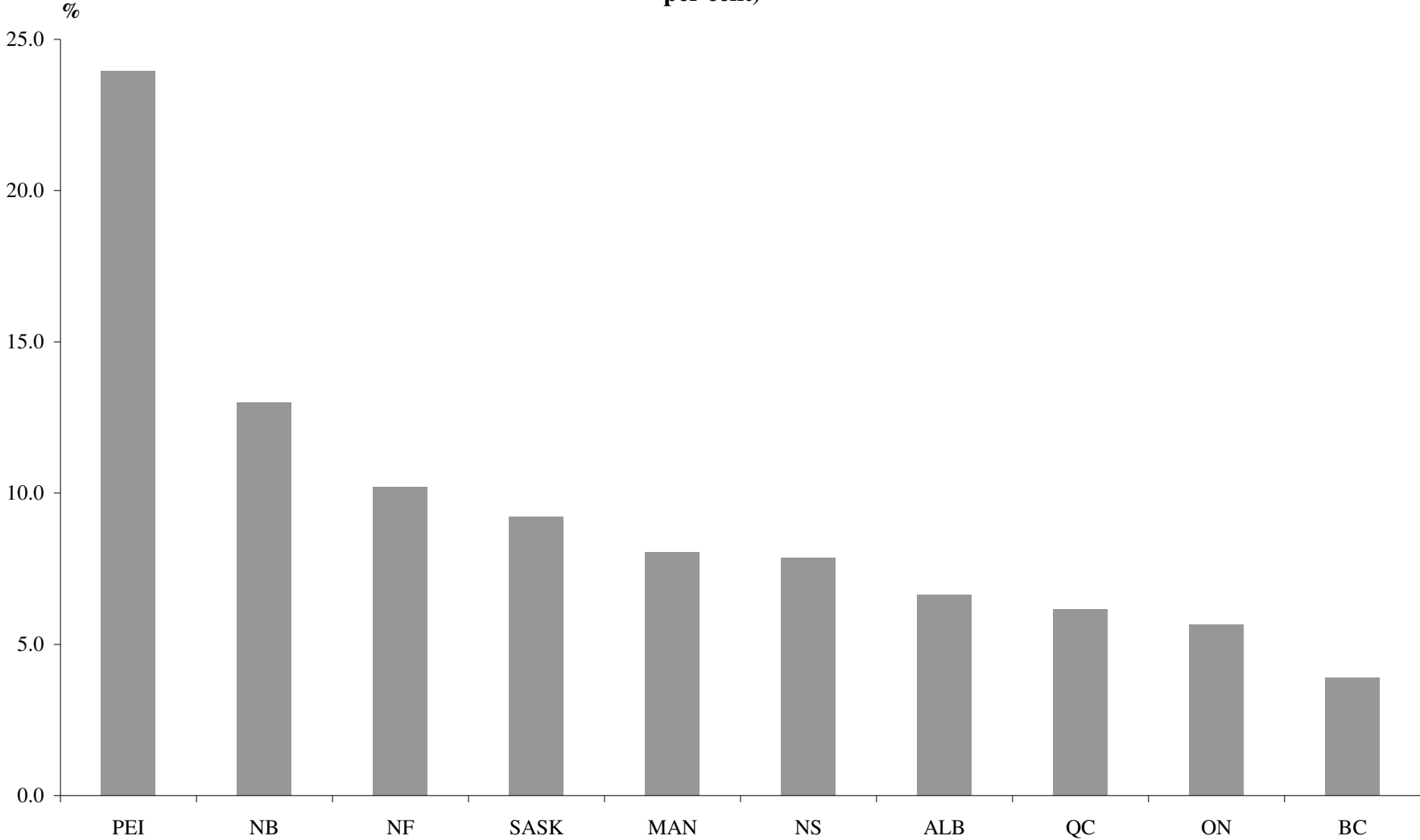
* Data for the United States are for 2000 and data for the United Kingdom are for 2001.

Chart 6: Employment Seasonality in the Canadian Provinces, 2003 (mean seasonal variation, per cent)



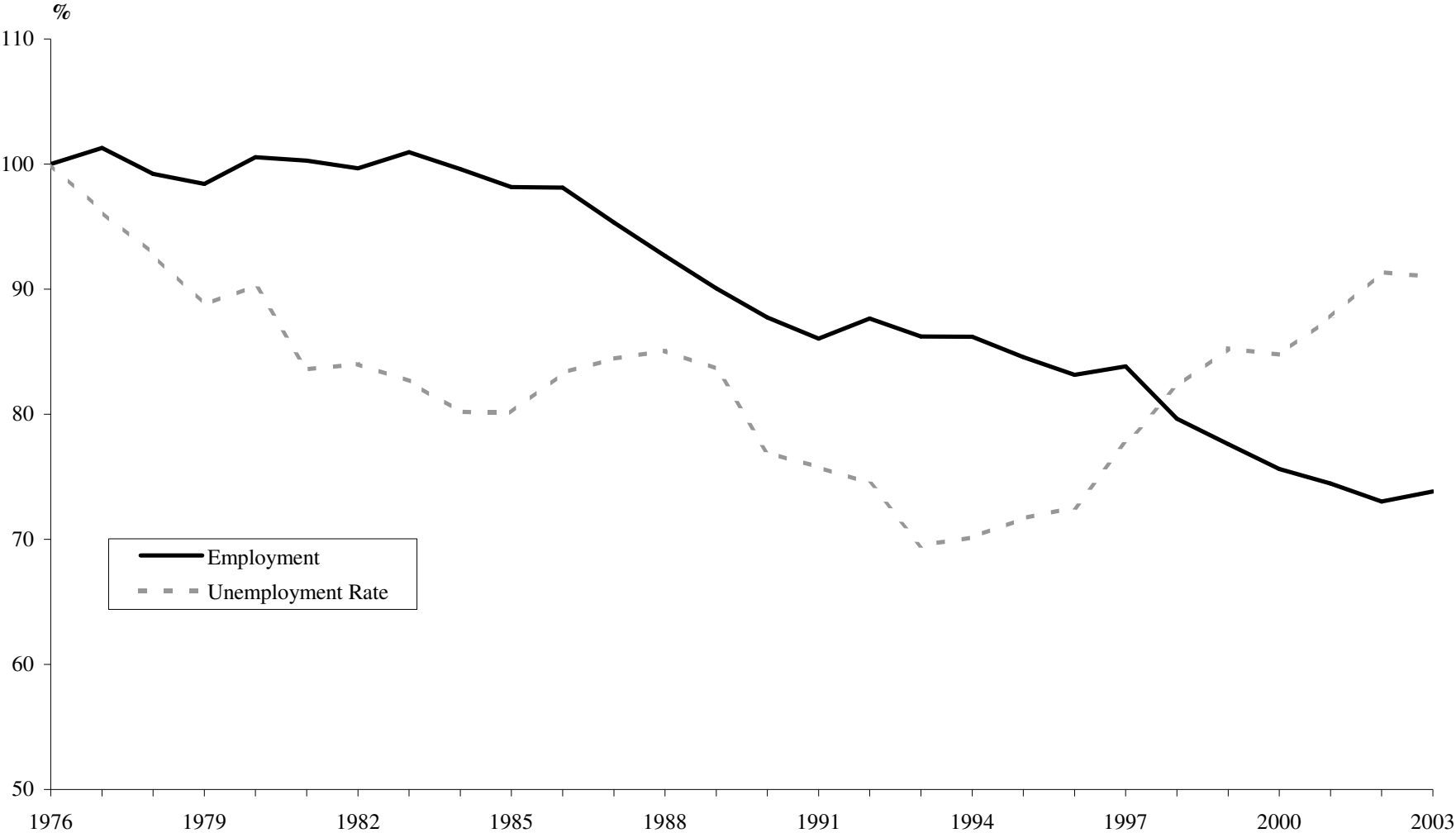
Source: Table 11.

Chart 7: Unemployment Rate Seasonality in the Canadian Provinces, 2003 (mean seasonal variation, per cent)



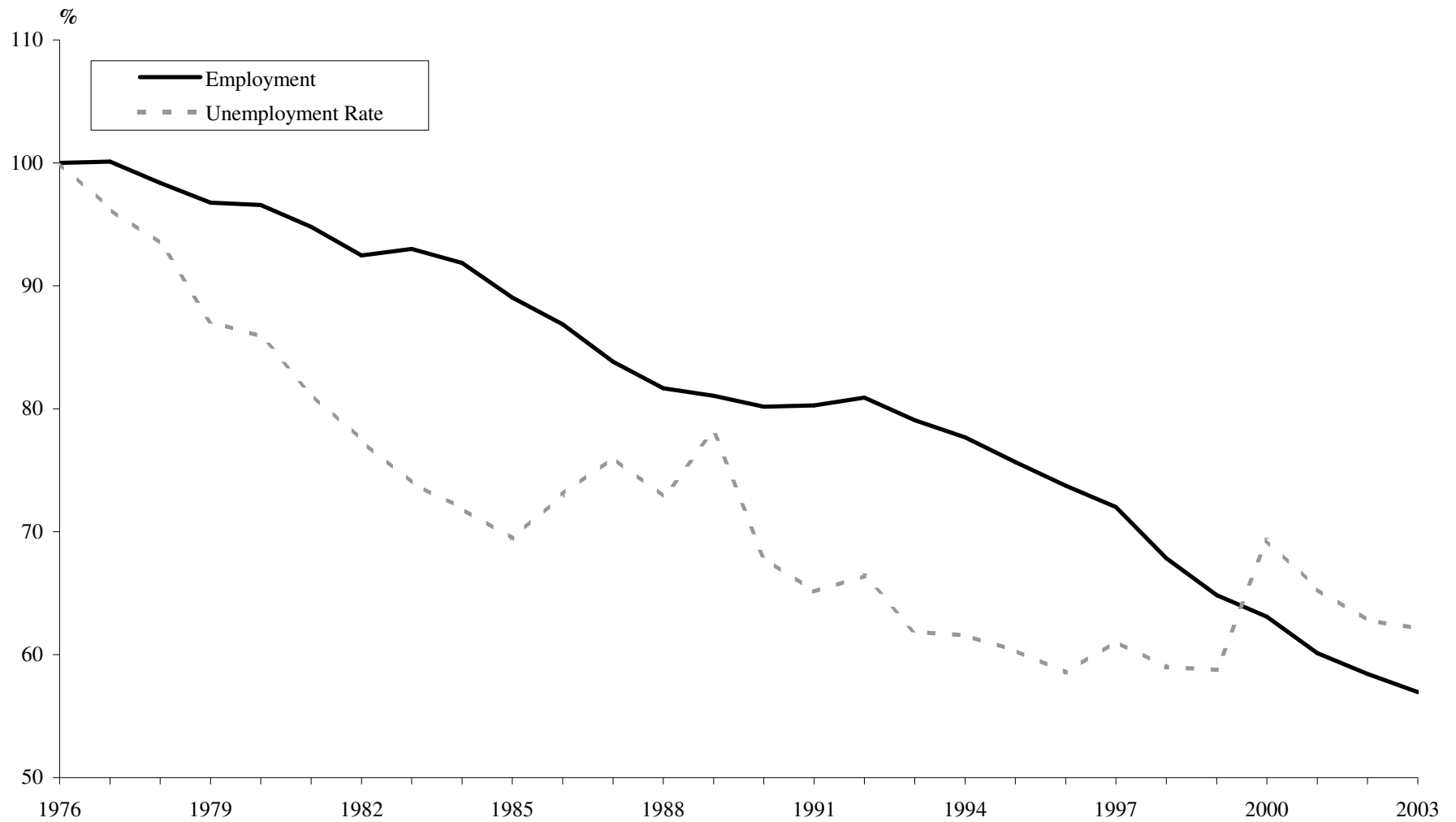
Source: Table 12.

Chart 8: Trends in Employment and Unemployment Rate Seasonality in Atlantic Canada, 1976-2003
(indexes of mean seasonal variation, 1976=100)



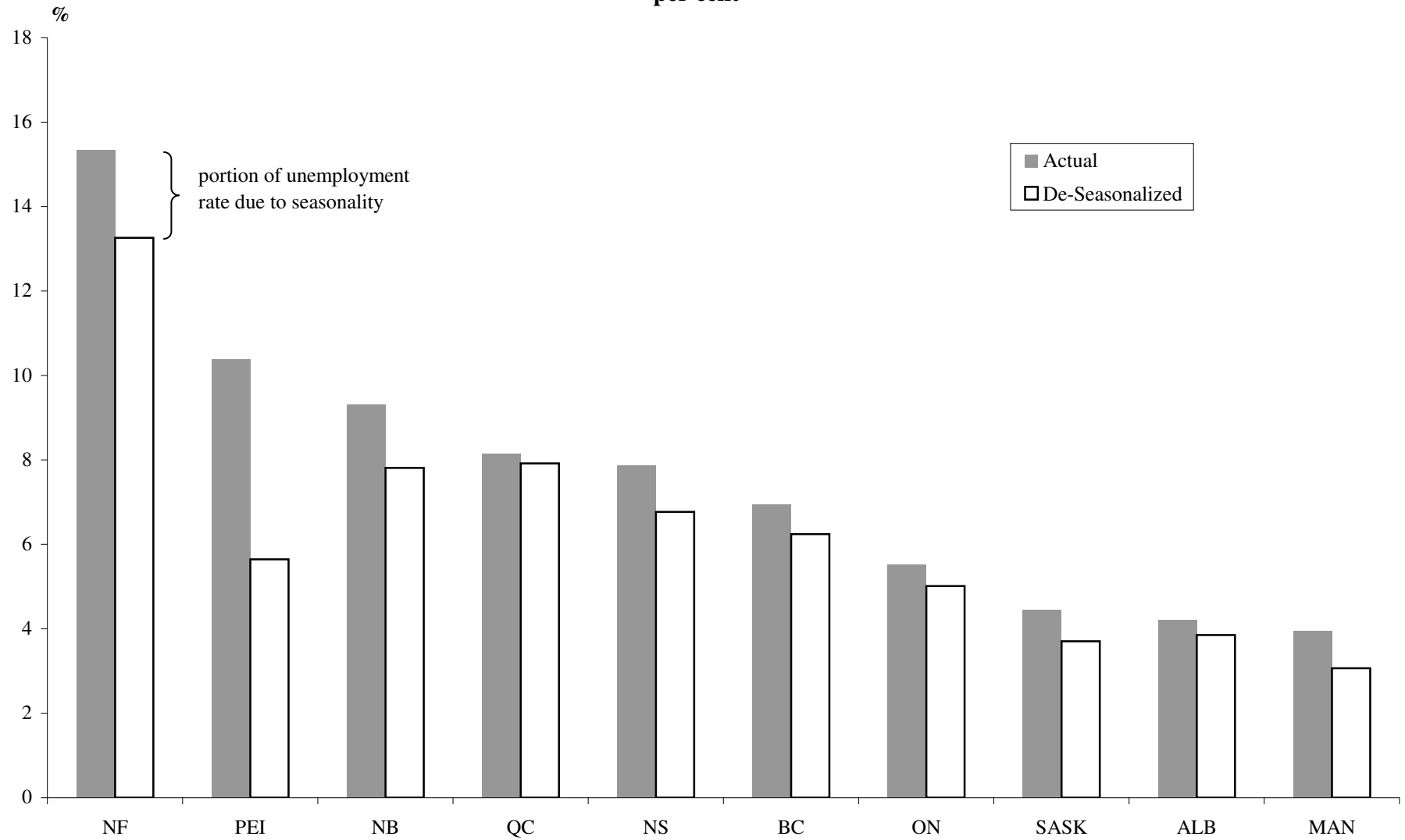
Source: Calculated from Tables 11 and 12.

Chart 9: Trends in Employment and Unemployment Rate Seasonality in Canada, 1976-2003 (indexes of mean seasonal variation, 1976=100)



Source: Calculated from Tables 11 and 12.

Chart 10: Actual and De-Seasonalized Unemployment Rates in the Canadian Provinces, Ages 25+, 2003, per cent



Source: Table 14.