

Special Issue on the Canada–U.S. Unemployment Rate Gap

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Edited by W. Craig Riddell and Andrew Sharpe

Centre for the Study of Living Standards

Archivist's note. The individual articles of this special issue were never digitised on the CSLS website. This document reconstructs the surviving archival record from the two original web pages: the issue description and table of contents (*journals/cuurg.asp*) and the complete full text of the editors' introduction and overview (*journals/cpp0.asp*). No article PDFs exist in the CSLS web archive; the February 9–10, 1996 conference on which the issue was based predates the site's file archive. Printed copies of the full issue remain available from University of Toronto Press.

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From Canada's viewpoint, one of the most important labour market developments in the past 15 years has been the divergence of the Canadian and American unemployment rates after 1981. From 1948 to 1981, the unemployment rate was, on average, the same as that in the United States. In the 1980s, the Canadian unemployment rate averaged more than 2 percentage points higher than the American rate, with the gap rising to 4 percentage points in the 1990s. Because of the many similarities between the two countries, we are naturally interested in knowing why the United States has been able to keep unemployment well below the Canadian level.

In 1995, the newly established Centre for the Study of Living Standards (CSLS) initiated a research project on the Canada-US unemployment rate gap. The project brought together labour economists from both Canada and the United States with the objective of shedding light on this important national issue. The special issue of Canadian Public Policy represents the outcome of the project. It contains revised versions of papers presented at a conference, cosponsored by the Canadian Employment Research Forum, held in Ottawa on February 9-10, 1996.

A key finding is that the unemployment gap of the 1980s and the further widening of the gap in the 1990s appear to have fundamentally different underlying causes. The gap of the 1980s was principally due to a relative change in how Canadians and Americans spend (or at least report) their time when not working, rather than to a relative decline in employment in Canada. The widening of the gap in the 1990s is principally due to Canada's much weaker aggregate economic growth during the 1990s, and the consequent steep relative decline in employment in Canada.

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The Canada–U.S. Unemployment Rate Gap: Introduction and Overview

W. Craig Riddell (University of British Columbia and CIAR) and Andrew Sharpe (Centre for the Study of Living Standards)

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From Canada's viewpoint, one of the most important labour market developments in the past 15 years has been the divergence of the Canadian and American unemployment rates after 1981. From 1948 to 1981, the unemployment rate in Canada was, on average, the same as that in the United States. In the 1980s, the Canadian unemployment rate averaged more than 2 percentage points higher than the American rate, with the gap rising to 4 points in the 1990s. A definitive explanation of this development has eluded researchers.

High levels of unemployment are a great concern to many Canadians. Public opinion polls typically show that reducing unemployment is considered our number one priority. Canada has not been the only country to experience rising levels of unemployment during the past several decades. Indeed, many European countries have experienced larger increases in unemployment than has Canada. Nonetheless, the U.S. experience provides the most relevant benchmark for Canada. Because of the many similarities in the two countries, we are naturally interested in knowing why the United States has been able to keep unemployment well below the Canadian level.

In 1995, the newly established Centre for the Study of Living Standards (CSLS) initiated a research project on the Canada-US unemployment rate gap. The project brought together labour economists from both Canada and the United States with the objective of shedding light on this important national issue. This volume represents the outcome of the project. It contains revised versions of papers presented at a conference, co-sponsored by the Canadian Employment Research Forum, held in Ottawa on February 9-10, 1996.

The objectives of this introductory article are twofold. First, we set the scene for the articles that follow by providing context, a framework for situating explanations of the gap, and an overview of the most frequently evoked explanations. Second, we briefly summarize the key contributions of the papers in this volume, both to our knowledge of the two labour markets and to our understanding of the unemployment gap.

This introduction is divided into three parts. The first section examines the principal trends and developments in the Canadian and American labour markets during the past four decades. The second section reviews the factors that have been advanced to explain the gap. Explanations are categorized into three main types -- measurement issues, demand-side or cyclical explanations, and supply-side or structural explanations. The third section summarizes the key findings of the 16 articles in this volume, and discusses areas for further research and the policy implications of the findings.

I Comparative Labour Market Trends in Canada and the United States

An attempt to explain the emergence of the Canada-U.S. unemployment rate gap should begin with an analysis of labour market trends in the two countries. The unemployment rate cannot be analyzed in isolation of employment and labour force developments since these influence the unemployment rate.

Unless otherwise specified, the data used in this section are from the Labour Force Survey for Canada and the Current Population Survey for the United States. The years used in the analysis are 1956, 1966, 1973, 1981 and 1989, which were business cycle peaks in both countries, and 1996, the most recently available data. Thus the periods 1956-66, 1966-73, 1973-81 and 1981-89 (but not necessarily 1989-96) are reasonably free of cyclical influences.

Basic Labour Market Variables and Trends

Table 1

Basic Labour Market Trends in Canada and the United States, 1956-96

(average annual rate of change)

WAP Part Rate LF Empl Empl/Pop UR

Canada

1956-66 1,9 0,7 2,6 2,6 0,7 0

1966-73 2,5 0,6 3,1 2,8 0,3 2,1

1973-81 2,1 1,1 3,3 2,9 0,9 2,1

1981-89 1,3 0,4 1,7 1,7 0,4 -0,1

1989-96 1,6 -0,6 1 0,6 -0,9 2,2

United States

1956-66 1,4 -0,1 1,3 1,3 -0,1 -0,3

1966-73 2 0,4 2,4 2,2 0,2 1,1

1973-81 1,8 0,6 2,5 2,1 0,3 2,2

1981-89 1,2 0,5 1,7 2 0,9 -2,3

1989-96 1,1 0,1 1,1 1,1 0 0,1

Notes: 1. WAP represents Working Age Population, Part Rate represents Labour Force Participation Rate, LF represents Labour Force, Empl represents Employment, Empl/Pop represents the Employment to Population ratio, and UR represents the Unemployment Rate. All variables except UR are measured as average annual rates of change; the value for UR is the change in the level over the period.

2. Some non-comparabilities and associated discontinuities occur in 1966 due to changes in the underlying surveys.

Sources: Canada: 1956 data from Historical Statistics of Canada , second edition, Statistics Canada, 1984, cat. 11-516; 1966 and 1973 data from Historical Labour Force Statistics , Statistics Canada, February 1993, cat 71-201; post-1975 data from Labour Force Historical Review , Statistics Canada, CD ROM version, February 1997.

United States: Economic Report of the President , February 1997.

Table 2 Participation Rate and Employment/Population Ratio in Canada and the United States

Part Rate Empl/Pop

Can US Can US

1956	53,5	60	51,7	57,5
1966	57,3	59,2	55,4	56,9
1973	59,7	60,8	56,4	57,8
1981	65,3	63,9	60,4	59
1982	64,7	64	57,5	57,8
1983	64,9	64	57,1	57,9
1984	65,3	64,4	57,9	59,5
1985	65,8	64,8	58,9	60,1
1986	66,3	65,2	59,9	60,7
1987	66,7	65,6	60,8	61,5
1988	67,2	65,9	62	62,3
1989	67,5	66,4	62,4	62,9
1990	67,3	66,5	61,9	62,8
1991	66,7	66,2	59,8	61,7
1992	65,9	66,4	58,4	61,5
1993	65,5	66,3	58,2	61,7
1994	65,3	66,6	58,5	62,5
1995	64,8	66,6	58,6	62,9
1996	64,9	66,8	58,6	63,2

Notes: 1. Part Rate and Empl/Pop represent the labour force participation rate and employment/population ratio respectively.

2. Some non-comparabilities and associated discontinuities occur in 1966 due to changes in the underlying surveys.

Sources: see Table 1

Working age population

Over the past four decades, growth in the working age population in Canada (population 15 and over) exceeded that in the United States (defined as 16 and over) because of faster overall population growth (Table 1). Because Canadian and American birth rates are comparable, this faster population growth has primarily been due to greater immigration to Canada. Both Canada and the United States experienced a considerable fall off in the growth of the working age population beginning in the early 1980s as the last

cohorts of the baby boom generation (those born in the first half of the 1960s) had by 1980 reached working age.

In the early 1980s, immigration to Canada fell off considerably, with the result that the differential between Canadian and American population growth declined. Immigration to Canada picked up in the second half of the 1980s and was very strong in the first half of the 1990s (an average of 231 thousand immigrants over the 1990-96 period compared to 138 thousand in the 1985-89 period and only 114 thousand in the 1980-84 period). Consequently, in the 1990s, Canadian working age population growth has exceeded U.S. growth by a larger margin (0.5 points) than was the case from the 1960s to the 1980s.

Labour force participation

In the 1950s, 1960s and 1970s, the labour force participation rate grew at a faster rate in Canada than in the United States, with the result that by 1981 the Canadian participation rate exceeded the American rate (Table 2). In the 1980s, the participation rate in both countries continued to rise, although at a slightly faster rate in the United States. In the 1990s, participation rate growth stagnated in the United States, and fell sharply in Canada.

Labour force

In the 1950s, 1960s and 1970s, labour force growth was significantly higher in Canada than in the United States (Table 1), reflecting the stronger growth in both the working age population and participation. In the 1980s, labour force growth was basically the same in the two countries, given the similar source population and participation rate growth. In the 1990s, despite much stronger working age population growth in Canada than in the United States, the falling Canadian participation rate has produced labour force growth that is essentially the same in the two countries.

Employment

From the mid 1950s until the beginning of the 1980s, employment growth was faster in Canada than in the United States (Table 1). This situation was reversed after 1981, with employment growth in the United States exceeding that in Canada by 0.3 percentage points per year in the 1981-89 period and by 0.5 points in the 1989-96 period.

Employment rate

The employment rate or employment-population ratio is determined by the relative growth rates of the working age population and employment. During the decades of the 1950s, 1960s and 1970s, this rate was lower in Canada than in the United States and converged to the American level over the period (Table 2). By 1981, the Canadian employment-population ratio exceeded the American ratio. In the 1980s and 1990s, the Canadian ratio fell relative to the American ratio. It continued to advance in absolute terms in the 1980s, but fell, precipitously, in the 1990s. The American rate has been stable in the 1990s.

Table 3

Real Output and Productivity Growth in Canada and the United States, 1956-96

(average annual rate of change)

Output Output Per Worker

Canada US Canada US

1956-66 4,7 3,8 2,1 2,5

1966-73 5,1 3,5 2,3 1,3

1973-81 3,8 2,4 0,9 0,3

1981-89 3,2 3,2 1,4 1,2

1989-96 1,2 1,9 0,6 0,8

Sources: Output: Canada - Economic Reference Tables , Department of Finance, August 1996; U.S. - 1956-66 calculated from Table B-2, Economic Report of the President , February 1991; other years from Economic Report of the President , February 1997. Output per worker growth rates calculated residually from output growth and employment growth rates in Table 1 .

Output

From the mid-1950s to the beginning of the 1980s, Canada enjoyed considerably faster real output growth than the United States (Table 3). This situation changed drastically after 1981. In the 1980s, the growth rates of the two economies were roughly comparable, while in the 1989-96 period, the United States outperformed Canada by an average 0.7 percentage points per year.

Output per worker

In the 1966-81 period, and to somewhat lesser extent in the 1981-89 period, Canada enjoyed higher productivity growth than did the U.S. Since 1989, growth in output per worker has been slightly higher (0.2 percentage points per year) in the United States.

Unemployment rate

Although the behavior of unemployment in Canada and the United States was very similar during the 1945-1980 period, some divergence did occur (Table 4). A modest positive Canada-U.S. unemployment rate gap emerged in the decade of the 1960s (0.2 percentage points), after a situation of lower unemployment in Canada in the late 1940s and 1950s. The gap widened slightly to an average 0.5 percentage points in the 1970s -- a decade with years when unemployment was much lower in Canada than in the United States (e.g. 1.6 points in 1975) and years when unemployment was much higher in Canada (e.g. 2.2 points in 1978). Average unemployment rates over cyclically neutral periods were also modestly higher in Canada from the mid-1950s to the beginning of the 1980s.

In the 1980s, the Canada-U.S. unemployment rate gap jumped to an average 2.1 points and then to 3.9 points in the 1990s. Since 1992, the gap has been 4 percentage points or over. In 1996, the gap was 4.3 points, based on a Canadian unemployment rate of 9.7 per cent and an American rate of 5.4 per cent.

Since the mid-1950s, in only seven out of 40 years was the Canadian unemployment rate below the American rate. This occurred in the four-year 1963-66 period and in the three-year 1974-76 period. In both periods, and particularly in the second period, economic growth was stronger in Canada. (1)

In 1981, a cyclical peak year, the unemployment rate was 7.6 per cent in both countries. By 1989, at the peak of the 1981-89 business cycle, it had fallen to 5.3 per cent in the United States, but remained virtually unchanged at 7.5 per cent in Canada. Thus, the Canada-U.S. unemployment rate gap rose 2.2 percentage points between 1981 and 1989. By 1996, the unemployment rate had increased to 9.7 per cent in Canada, compared to only 5.4 per cent in the United States. Consequently, the gap in the 1990s rose an additional

2.1 points from that in 1989, reaching 4.3 points.

Canada experienced severe recessions in 1981-82 and 1990-92, the first times in Canadian economic history that recessions had been deeper than in the United States. These recessions triggered an increase in the unemployment gap in both the early 1980s and early 1990s, and the gap was not eliminated in the subsequent recovery and expansion. From this perspective, there are really two unemployment differentials - the approximately 2 percentage point gap of the 1980s and the additional 2 percentage point gap of the 1990s superimposed on the differential which emerged in the 1980s.

Table 4

The Unemployment Rate in Canada and the United States, 1956-96

(per cent)

Canada United States Canada-U.S. gap

1956 3,4 4,1 -0,7

1966 3,4 3,8 -0,4

1973 5,5 4,9 0,6

1981 7,6 7,6 0

1982 11 9,7 1,3

1983 11,9 9,6 2,3

1984 11,3 7,5 3,8

1985 10,5 7,2 3,3

1986 9,6 7 2,6

1987 8,9 6,2 2,7

1988 7,8 5,5 2,3

1989 7,5 5,3 2,2

1990 8,1 5,5 2,6

1991 10,4 6,7 3,7

1992 11,3 7,4 3,9

1993 11,2 6,8 4,4

1994 10,4 6,1 4,3

1995 9,6 5,6 4

1996 9,7 5,4 4,3

Decade averages

1950-59 4,2 4,5 -0,3

1960-69 5 4,8 0,2

1970-79 6,7 6,2 0,5

1980-89 9,4 7,3 2,1

1990-96 10,1 6,2 3,9

Averages over 'cyclically neutral' periods

1956-65 5,7 5,4 0,3

1966-73 5 4,5 0,5

1974-81 7,3 6,9 0,4

1982-89 9,8 7,3 2,5

Sources: See Table 1 .

Divergent Labour Market Developments Between the 1980s and 1990s

The labour market dynamics behind the emergence of a sustained Canada-U.S. unemployment rate gap in the 1980s and the increase in the gap in the 1990s appear to fundamentally differ. Between the 1981 and 1989 cyclical peaks, the Canadian labour market, on average, performed well. The weak labour market conditions at the early part of the decade associated with the 1981-82 recession were offset by the strong expansion following the recession. The participation rate continued to climb as did the employment-population ratio. Both employment growth and labour force growth were relatively strong (1.7 per cent per year), resulting in no change in the unemployment rate between 1981 and 1989.

During the 1981-89 period, the United States experienced slightly more rapid growth of participation and a modestly greater increase in the employment-population ratio than did Canada. Employment growth was also faster in the United States than in Canada (2.0 versus 1.7 percent per year), and U.S. employment growth exceeded labour force growth (1.7 per cent per year), resulting in a 2.3 percentage point fall in the American unemployment rate between 1981 and 1989. Thus the emergence of a sustained Canada-U.S. unemployment rate in the 1980s reflected the superior performance (at least in terms of employment and unemployment outcomes) of the American economy, not an absolute deterioration of labour market performance in Canada. Furthermore, the inter-country differences in employment performance were modest; between 1981 and 1989, the employment rate increased by 2.0 percentage points in Canada versus 2.9 points in the United States (Table 2).

The situation in the 1990s is markedly different. Between 1989 and 1996, the performance of the Canadian economy deteriorated severely. Both the participation rate and the employment-population ratio dropped significantly and employment growth was very weak (0.6 per cent per year), well below that of labour force growth (1.0 per cent). Consequently, the unemployment rate rose 2.2 points between 1989 and 1996.

The performance of the American economy in the 1990s also deteriorated from that of the 1980s, but the deterioration was not as severe as in Canada. The participation rate and the employment rate were basically unchanged between 1989 and 1996 (in contrast to increases in the 1980s). Employment and labour force growth were down from that experienced in the 1980s and the unemployment rate in 1996 was also unchanged from what it had been in 1989. Thus the increase in the Canada-U.S. unemployment rate gap after 1989 reflects the very poor performance of the Canadian labour market, poor in an absolute

sense and relative to that of the American labour market.

Canada's much weaker labour market in the 1990s largely reflected the weaker economic growth performance. Real GDP advanced at only a 1.2 per cent average annual rate between 1989 and 1996 in Canada, compared to 1.9 per cent in the United States. In contrast, during the 1980s output growth was the same in the two countries (3.2 per cent per year).

The cumulative impact on unemployment of this divergence in growth rates over a seven-year period is substantial. In Canada, in the 1990s, output growth has been composed of two roughly equal components, employment growth and productivity growth. This implies that if output growth had been 0.7 percentage points per year stronger in the 1990s (that is, equal to that experienced in the United States), and if the 50-50 division into employment and productivity growth were maintained, employment growth would have been 0.35 percentage points per year stronger, or 2.5 per cent higher over a seven year period. Assuming no effect of stronger employment growth on the size of the labour force, the unemployment rate would have been approximately 2.5 points lower in 1996 than in 1989. Thus, in an arithmetic sense, the gap between American and Canadian economic growth rates since 1989 accounts for the further widening of the unemployment differential in the 1990s.

The Nature of Unemployment in Canada and the United States

Supplementary measures of labour force under-utilization

To fully understand developments in the Canadian and American labour markets, it is useful to examine trends in the relative size of groups who are excluded from the officially unemployed, but who nevertheless may represent underutilized labour. For example, a simple explanation of the emergence of the unemployment differential in the 1980s (or the further widening of the gap in the 1990s) would be that there was an increased tendency in the U.S. (or a reduced tendency in Canada) for under-utilization of labour to take forms other than those captured by the conventional unemployment rate. Two key groups in this regard are discouraged workers and involuntary part-time workers.

Discouraged workers are defined in similar albeit not identical ways in the U.S. and Canada. They consist of individuals who are not employed in the survey week, did not search for work during the past four weeks, but who are available for work and who state that they want work. In addition, discouraged workers must give as their main reason for not searching "believes no work is available" (in both the LFS and CPS) or "could not find any work", "lacks necessary schooling, training, skills or experience", "employers think too young or too old", "other personal handicaps in finding a job (such as discrimination or criminal record)" (in the CPS). Thus the main difference in the measurement of discouragement in the two countries is that the United States allows a broader set of reasons for not looking for work.

Discouraged workers represented almost identical shares of the labour force in Canada and the United States in both 1983 and 1993, for both men and women, with their relative importance falling between 1983 and 1993 (see Table 5). (2) Thus inclusion of discouraged workers among the unemployed in 1983 or 1993 would not change the absolute size of the Canada-U.S. unemployment rate gap. (3)

Another dimension of under-employment is involuntary part-time work. Two such measures are available. One (denoted by Invol. PT (workers) in Table 5) refers to those who are working part time because they couldn't find full time work. The evidence reported in Table 5 suggests that this type of under-employment may be more prevalent in Canada than in the United States. Unfortunately, differences in the definition of part time employment during this period (30 hours or less per week in Canada versus 35 hours or less per

week in the U.S.) make the inter-country comparison problematic. However, it is clear that there was an increase in this form of under-employment in Canada between 1983 and 1993, versus a decrease in the U.S.

Invol. PT (hours) refers to those laid off part of the week or working reduced hours for "economic" reasons. The data in Table 5 suggest that this form of under-utilization of labour may be more prevalent in the United States; however, the differences in the definition of part time employment again make it difficult to compare the two countries. In this case the intertemporal comparison is also problematic because this 'reduced hours' measure was not available in Canada prior to 1989. The U.S. data, however, does indicate a slight decline in this form of involuntary part time work between 1983 and 1993.

In summary, the extent of under-utilization of labour not captured in the conventional unemployment rate appears to have declined in the United States; all three measures reported in Table 5 fell between 1983 and 1993. In contrast, in Canada the various measures do not all move in the same direction; the number of discouraged workers fell but the amount of involuntary part time employment rose. While inter-country comparisons cannot be made with confidence because of measurement differences, the widening of the unemployment differential in the 1990s appears also to have been accompanied by an increased Canada-U.S. difference in other forms of labour market slack. Thus it would be difficult to argue on the basis of this evidence that the widening of the unemployment gap is due to an increased tendency in the U.S. (or a decreased tendency in Canada) for under-utilization of labour to take forms other than those captured by the conventional unemployment rate.

Another perspective on the under-utilization of labour can be obtained by looking at the relative participation rate movement in the two countries. As noted earlier, in the 1980s the aggregate participation rate rose in both countries. But in the 1990s, while the participation rate continued to rise in the United States, albeit at a much slower rate, it fell in Canada, going from a peak of 67.5 per cent in 1989 to 64.9 per cent in 1996. The decline in participation was greatest for youth and older males. The factors behind this unprecedented decline in labour force participation are unclear, but the magnitude of the decline in Canada relative to the U.S. suggests that the increase in the unemployment rate differential in the 1990s may understate the relative growth of labour market slack in Canada.

Table 5

Supplementary Measures of Labour Market Slack in Canada and the U.S., 1983 and 1993

1983 1993

Can U.S. Can-U.S. Can U.S. Can-U.S.

both sexes

Unemployment rate 12 9,8 2,2 11,3 6,9 4,4

Discouraged workers 1,6 1,5 0,1 0,9 0,9 0

Invol. PT (workers) 3,9 2,9 1 5,5 2,2 3,3

Invol. PT (hours) 0,8* 2,9 -2,1 1 2,8 -1,8

men

Unemployment rate 12,2 10,1 2,1 11,8 7,2 4,6

Discouraged workers 1,2 1,1 0,1 0,8 0,8 0

Invol. PT (workers) 2,1 1,9 0,2 3,3 1,6 1,7

Invol. PT (hours) 0,8* 2,9 -2,1 1,1 2,9 -1,8

women

Unemployment rate 11,7 9,3 2,4 10,7 6,6 4,1

Discouraged workers 2,2 2 0,2 1 1 0

Invol. PT (workers) 6,5 4,1 2,5 8,2 3,1 5,1

Invol. PT (hours) 0,8* 2,8 -2 0,9 2,6 -1,7

Source: OECD Employment Outlook , July 1995

Notes: * denotes 1989 data

The unemployment rate gap by labour force characteristics

Further insight into the factors behind the Canada-U.S. unemployment rate gap can be obtained by disaggregating changes in unemployment to ascertain whether the post-1981 unemployment rate gap is a general phenomenon, or rather is confined to certain groups. This section, based on Sharpe (1996), summarizes unemployment in Canada and the United States by gender, region, occupation, industry, and educational attainment.

In the 1980s, the gap emerged from a fall in the unemployment rate in the United States. In the 1990s, the gap was increased by the rise in the unemployment rate in Canada. It is instructive to see how widespread these general developments are among the various labour force groups.

- Both the male and female unemployment rates fell significantly in the United States in the 1980s equally contributing to the emergence of the gap. While both rates rose in Canada in the 1990s, the male unemployment rate increased more and thus contributed more to the rise in the gap. (4)

- The rise in the Canada-U.S. unemployment rate gap affected all age groups in both the 1980s and 1990s. In the 1980s the emergence of the gap was roughly equally apportioned across all major age groups, while the increase in the 1990s was disproportionately large for youth. (5)

- The large regional changes in unemployment rates in Canada meant that the contributions by region to the gap in the 1980s and 1990s differed markedly. Between 1981 and 1989, the rise in the Canada-U.S. unemployment rate gap had been driven by the rise of unemployment in the Prairies and in British Columbia (Table A1). In contrast, the rise in the gap between 1989 and 1996 was driven by Ontario. However, the variations in relative regional unemployment rates within the 1981-96 period were somewhat offsetting and all five regions experienced major increases in the differential between their unemployment rate and the U.S. rate (5.3 points in the Prairies, 4.6 points in Atlantic Canada, 4.7 points in Ontario, 4.4 points in British Columbia, and 3.6 points in Quebec).

- The unemployment rate for workers in all major industries in the United States fell in the 1980s, while that for workers in the vast majority of industries rose in Canada in the 1990s. The gap has been consistently and significantly higher in the goods sector than in the service sector.

- The fall in unemployment in the 1980s in the United States was experienced by all occupations, as was the rise in unemployment in Canada in the 1990s. Thus the rise in the Canada-U.S. unemployment rate gap was a phenomenon that affected all occupations.
- The decline in unemployment in the United States in the 1980s was experienced across the educational attainment spectrum, as was the rise in unemployment rates in Canada in the 1990s.

Unemployment duration and incidence

The total number of weeks of unemployment experienced in a year is determined by both the average duration of unemployment and the proportion of the labour force that experience a bout of unemployment or the incidence of unemployment. Decomposing total unemployment into incidence and duration components may provide insights into the factors underlying changes in unemployment.

There are a number of ways to calculate the duration of unemployment. The simplest approach, and the one that will be followed here, is to look at the average unemployment duration for those currently unemployed, data which is readily available from the household labour force surveys. These unemployment spells are incomplete (in progress), and the decomposition of total unemployment into duration and incidence components based on this "interrupted spell" measure of duration is only an approximation. The papers by Baker, Corak, and Heisz and Tille in the volume use more sophisticated approaches, namely the average duration of a completed spell of unemployment and the average number of weeks spent in unemployment during the year by individuals experiencing some unemployment. All three approaches give consistent results.

According to LFS and CPS data on uncompleted duration of unemployment, in the 1980s the fall in the unemployment rate in the United States was primarily due to a fall in the incidence of unemployment (from 28.9 per cent of the labour force to 23.0 per cent), although a fall in the duration of unemployment also contributed. The unemployment rate in Canada was essentially unchanged between 1981 and 1989, reflecting offsetting tendencies from a rise in the average duration of unemployment from 15.1 to 17.9 weeks (Table A2) and a fall in the incidence from 26.0 to 21.9 per cent of the labour force.

In the 1990s, the rise in the unemployment rate in Canada was again accounted for by a rise in unemployment duration (from 18 weeks in 1989 to 24 weeks in 1996), with the incidence of unemployment actually lower in 1996 than 1989 (21 per cent versus 22 per cent). Indeed, the average duration of unemployment in 1996 was well above that experienced in the early 1980s (e.g. 22 weeks in 1983) when the unemployment rate was higher. In the United States, the unchanged unemployment rate between 1989 and 1996 was associated with an increase in duration (from 12 to 17 weeks) and a very steep fall in incidence (23 to 17 per cent of the labour force). Thus in both countries unemployment became more concentrated among a smaller subset of the labour force during the 1980s and 1990s. (6) This decline in the incidence of unemployment occurred to a similar extent in both Canada and the United States during the 1980s, but occurred to a much greater extent in the U.S. during the 1990s.

The rise in the average duration of unemployment in both countries in the 1990s meant that the relative importance of long-term unemployment in total unemployment increased significantly. In Canada, the proportion of the unemployed without work for 27 weeks or more increased from 20.1 per cent in 1989 to 27.1 per cent in 1996, while in the United States this proportion increased from 9.9 per cent in 1989 to 17.4 per cent in 1996 (Table A3). Given the roughly comparable rises in the duration of unemployment in the two countries, the increased Canada-U.S. gap in the 1990s principally reflected the much greater fall in the

incidence of unemployment in the United States.

Job turnover

Net changes in employment between two periods of time reflect the outcome of gross job gains (due to opening and expansions) and gross job losses (due to closures and contractions). The aggregation of job gains and losses gives labour turnover. Data from the OECD Jobs Study for the United States and Canada on job losses and gains is presented in Table A4 .

In the 1980s, when the net change in employment was very similar in the two countries, the magnitude of gross job gains and job losses was also very close, although expansions and contractions were more important in Canada and openings and closures in the United States. Between 1989 and 1991, when employment fell in Canada, but continued to expand in the United States, gross job losses were much larger in Canada, but gross job gains were also larger despite the recession. Falling employment in Canada earlier in the 1990s was due to increased job losses, not a falloff in the pace of job gains.

Baldwin, Dunne and Haltiwanger (1994) found little qualitative difference in job creation in manufacturing between Canada and the United States over the 1973-86 period, nor did they find any major structural differences in job turnover patterns between the two countries.

Summary

The main points that emerge from this examination of comparative labour market behavior in Canada and the United States are:

1. The dynamics behind the development of the inter-country unemployment differential in the 1980s and 1990s differ. In the 1980s, the emergence of a sustained 2 percentage point unemployment rate gap occurred during a period in which overall economic growth in the two countries was identical. Both countries experienced rising employment and participation rates during this decade (although employment growth in Canada was modestly lower than in the U.S.). It is difficult, therefore, to argue that the emergence of the unemployment gap can be explained by differences in the macroeconomic performances of the two countries. In contrast, in the 1990s, Canadian macroeconomic performance was much weaker than that of the United States. Accompanying this weaker economic growth, Canada's unemployment rate rose and employment and labour force participation rates declined relative to their U.S. counterparts. The further widening of the unemployment differential during the 1990s appears consistent with a simple explanation in terms of differential macroeconomic performance between the two countries.
2. The widening of the unemployment gap in the 1990s appears also to have been accompanied by an increased Canada - U.S. differential in other forms of under-utilization of labour such as involuntary part time employment.
3. The emergence of the inter-country unemployment differential has been a pervasive phenomenon, affecting both men and women, all regions, all age groups, all industries and occupations, and all educational attainment groups.
4. In both countries, unemployment became more concentrated among a smaller subset of the labour force during the 1980s and 1990s. This decline in the incidence of unemployment occurred to a similar extent in both countries during the 1980s, but occurred to a greater extent in the U.S. during the 1990s. The average duration of unemployment increased in both countries over the 1981-96 period, albeit the increase was somewhat larger in Canada.

5. The behavior of gross job creation and gross job destruction was similar in the two countries during the 1980s. In the 1989-91 period, both job creation and job destruction were higher in Canada than in the United States, but in Canada gross job destruction exceeded gross job creation whereas the opposite was true in the U.S.

II Explanations of the Canada-U.S. Unemployment Rate Gap

This section provides a framework for the papers that follow. Explanations of the gap are divided into three basic types- differences in the measurement of unemployment in Canada and the United States, macroeconomic or aggregate demand explanations and structural factors.

Statistical Measurement Issues

Examining the measurement of labour force activities is a logical way to begin the search for explanations of inter-country differences in unemployment. If such concepts as the labour force, employment and the unemployment are not defined and measured in the same manner in Canada and the United States, then the respective unemployment rates are not comparable. Changes in measurement practices over time can also affect movements in the gap. Canada and the United States employ household surveys (the Labour Force Survey (LFS) and the Current Population Survey (CPS) respectively) to measure labour market activities.

Difference in treatment of "passive" job searchers

Until recently, it was believed that there were no significant differences in the manner in which unemployment is measured in Canada and the United States. Indeed, the standardized unemployment rate estimates produced by the OECD and the U.S. Bureau of Labor Statistics show virtually no difference between the standardized and national rates. Recent research has, however, changed this view.

In a detailed examination of the Labour Force Survey and Current Population Survey questionnaires, Zagorsky (1996) found that persons not employed who responded that their only job search method was looking at job ads in newspapers were classified as in the labour force and unemployed in Canada while they were treated as out of the labour force in the United States. Macredie (1996) produced estimates for the 1976-93 period of the number of unemployed persons in Canada whose only job search method was "looked at ads" in order to obtain information on the magnitude of the contribution of these definitional differences to measured unemployment.

In 1993, 114 thousand unemployed persons looked at job ads only. When these persons are excluded from the labour force, the Canadian unemployment rate falls 0.7 percentage points, reducing the gap with the U.S. rate by 17 per cent. Moreover, for reasons that are unclear, the size of this group has increased significantly over time. In 1981, excluding these so-called "passive" job searchers would have reduced the measured unemployment rate by only 0.4 percentage points. Thus 0.3 percentage points of the increase in Canada-U.S. unemployment rate gap between 1981 and 1993 is due to this definitional difference in the measurement of unemployment. (7)

Redesign of the CPS in 1994

Beginning in January 1994, a revised Current Population Survey was introduced in the United States. This represented the first major redesign in the CPS since 1967. Both the old and revised surveys were run in parallel for 18 months before the formal introduction of the new survey. The unemployment rate as measured by the new survey averaged a half a percentage point higher than estimates from the old CPS. In addition, the use of new population estimates increased the measured unemployment rate another 0.1

percentage point (Council of Economic Advisors, 1994:104). The unemployment rate was higher for all demographic groups, but particularly for women since the old CPS survey may have tended to classify women who were unemployed as outside the labour force. This suggests that in 1994 the U.S. unemployment rate under the old CPS would have been 5.5 per cent instead of the actually measured 6.1 per cent. If so, the Canada-U.S. unemployment gap in 1994 would have been 4.9 points, instead of the actually measured 4.3 points.

Unfortunately, it is impossible to say whether the 0.6 percentage point difference between the old and revised CPS which the 1992-93 parallel surveys found has continued. This makes it difficult to say whether the post-1993 estimates of the Canada-U.S. unemployment rate gap have a downward bias - and, if so, the magnitude of this bias - associated with the introduction of the redesigned CPS.

Aggregate Demand Explanations

As discussed previously, both the 1981-82 and 1990-92 recessions were significantly more severe - as measured for example by the decline in total output relative to trend growth in output -- in Canada than in the United States. This observation raises the question of whether the unemployment differential may have a simple cyclical or 'deficient demand' explanation. The timing of the unemployment gap -- its emergence in the early 1980s and the further widening in the early 1990s - appears to accord with this view. This section examines some evidence relating to this cyclical explanation.

Estimates of the NAIRU

A commonly employed method for distinguishing the effects of the business cycle from those associated with longer term trends and structural factors is to decompose total unemployment into cyclical and frictional/structural unemployment. Cyclical or demand-deficient unemployment is generally defined as the difference between actual unemployment and the non-accelerating-inflation rate of unemployment (NAIRU) while the NAIRU is in turn defined as the sum of frictional and structural unemployment.

Despite the attraction of this approach, it should be noted that the breakdown of unemployment into frictional/structural and cyclical components may not be conceptually valid. (8) Furthermore, even if the conceptual distinction is accepted, estimates of the NAIRU are very sensitive to the methodology and procedures used in their estimation (Setterfield, Gordon and Osberg, 1992; Staiger, Stock and Watson, 1997) and therefore should be interpreted with considerable caution.

There is no consensus on the size of the NAIRU for Canada. According to a recent survey, estimates of the NAIRU in Canada range from a high of 9.5 per cent to a low of 6.5 per cent, with the average estimate being 7.7 per cent (OECD,1996:159). Estimates of the relative importance of demand-deficient unemployment vary accordingly.

For the United States, the conventional wisdom has been that the NAIRU in the mid-1990s was around 6.0 per cent. But the fall in unemployment in the United States (in the second and third quarters of 1997 the US unemployment rate averaged 4.9 per cent) and the absence of an acceleration of inflation, suggests that the NAIRU is below this level. Robert Gordon (1996), for example, estimates a time-varying NAIRU of 5.5 per cent in 1996.

Based on the average NAIRU estimate for Canada of 7.7 per cent from the OECD survey, 2 percentage points of Canada's 9.7 per cent unemployment rate in 1996 can be attributed to cyclical factors. The actual unemployment rate in the United States in 1996 was virtually identical to the estimated NAIRU,

suggesting the absence of demand-deficient unemployment.

In terms of the 4.1 percentage points Canada-U.S. unemployment rate gap in 1996, the average NAIRU estimate suggests 2.0 percentage points or one half can be explained by cyclical factors and 2.1 percentage points by other factors, including structural factors as manifested in the higher Canadian NAIRU. However, this calculation should be treated very cautiously because of the considerable uncertainty surrounding estimates of the NAIRU.

Table 6

Canadian and American Total Economy Output Gaps

(actual-potential GDP)

Original OECD Series OECD Revised Series

Canada U.S. Can-U.S. Canada U.S. Can-U.S.

1981 0,26 -1,91 2,17 0,37 -1,11 1,48

1989 0,14 2,17 -2,03 3,64 2,09 1,55

1994 -9,33 1,03 -10,36 -1,95 0,25 -2,2

1996 na na na -2,65 -0,31 -2,34

Source: original series from OECD Interlink Model for Economic Outlook 53, December 1993; revised series, OECD August 1997

Trends in output gaps

Another method often used to assess the importance of cyclical factors uses the estimated output gap, the difference between actual and (estimated) potential output. This method is closely related to that based on decomposing unemployment, and suffers from the same difficulties - the conceptual issue of whether it is in fact meaningful to distinguish between cyclical and structural movements and the practical issue of obtaining convincing estimates of potential output.

An analysis of trends in the output gap provides support for the view that differences in cyclical developments in the two countries may account for the further widening of the Canada-U.S. unemployment differential after 1989. According to OECD estimates, the Canadian economy was operating 2.7 per cent below capacity in 1996, a deterioration of 6.3 points from 3.6 per cent above potential in 1989. In contrast, the American economy was operating 0.3 per cent below capacity, down 2.4 points from 2.1 above potential in 1989. The larger increase in the Canadian output gap relative to that of the American economy (3.9 points) over the 1989-96 period was associated with a 2.1 point increase in the unemployment rate gap. (9) The evidence for a cyclical explanation of the gap in the 1980s is mixed and depends on which potential output series is used. (10)

Structural Factors

Structural explanations are a diverse category and are best defined as those that could account for the unemployment differential despite identical measurement procedures and macroeconomic conditions in the two countries. Included are a large number of institutional, behavioral, demographic, and economic factors. This section looks at a number of these factors, including labour force attachment, unemployment

insurance, unionization, structural change, taxes, wages, and demographic characteristics including immigration and the size of the incarcerated population.

Although these various "structural explanations" are discussed separately, it is important to keep in mind that they are inter-related. For example, institutional features such as the degree of unionization or the features of income support programs are likely to influence such dimensions as wage adjustment and the adaptability of the economy to structural change. Thus headings in what follows such as "wage trends" and "structural change" are not necessarily independent of other aspects such as "unionization" and "unemployment insurance".

Labour force attachment of the non-employed

In their analysis of Canada - United States unemployment, Card and Riddell (1993) found that the emergence of the unemployment gap in the 1980s was associated with a change in how Canadians spend their time when not employed relative to Americans. Specifically, relative to the period before the emergence of the unemployment differential, during the 1980s Canadians became more likely than Americans to spend their non-employment time searching for work (and therefore classified as unemployed) rather than not looking for work (and therefore classified as out-of-the-labour force). This change in the degree of "labour force attachment" of non-employed Canadians relative to non-employed Americans (11) accounts for 80 to 90 percent of the 2 percentage point unemployment gap that opened up in the 1980s, with the remaining 10-20 percent being accounted for by other factors such as changes in labour force participation and employment rates. (12)

This finding has two principal implications. First, it explains the emergence of a substantial inter-country unemployment gap during a period in which overall economic growth and employment growth were similar in the two countries. Second, it implies that understanding the cause(s) of the unemployment gap that emerged in the 1980s requires understanding the factors that led to the increase in labour force attachment of the non-employed in Canada relative to the U.S.

As discussed in the previous section, the factors underlying the further widening of the unemployment gap in the 1990s appear to differ from those which led to the initial emergence of the gap in the 1980s. In order to examine the role of the labour force attachment of the non-employed - that is, how the non-employed divide their time between searching for work and not searching - we update some of the analysis in Card and Riddell (1993). The conventional unemployment rate, which is the probability of unemployment conditional on being in the labour force, can be expressed as

$$P(U|LF) = P(U|N) * P(N) / P(LF)$$

where $P(LF)$ is the probability of being in the labour force (the labour force participation rate), $P(N)$ is the probability of non-employment (one minus the employment rate), and $P(U|N)$ is the probability of unemployment conditional on being non-employed (the labour force attachment of the non-employed). Thus the logarithm of the unemployment rate is

$$\ln P(U|LF) = \ln P(N) + \ln P(U|N) - \ln P(LF)$$

This expression allows changes in the unemployment rate to be decomposed into three components: changes in labour force participation, in non-employment, and in the labour force attachment of the non-employed. Table 6 reports decompositions of difference-in-differences in the logarithm of the unemployment rate for the 1980s (1981 to 1989), the 1990s (1989 to 1996) and the entire period 1981-96.

Applying this decomposition to the 1980s shows that 85% of the relative increase in Canada's unemployment rate was associated with the rise in labour force attachment of the non-employed in Canada relative to the U.S. Most of the remainder (14%) was due to the modestly superior employment performance in the U.S. (see Tables 1 and 2). Relative changes in labour force participation were not a contributing factor to the emergence of the unemployment gap during the 1980s.

Another way to express this result is as follows. Suppose that in both countries the source population, employment and labour force participation rate evolved as they in fact did over the 1981-89 period. Suppose further that in the United States the labour force attachment of the non-employed evolved as it in fact did, but that in Canada $P(U|N)$ evolved such that no relative change in $P(U|N)$ between Canada and the U.S. occurred. In these circumstances, the 1989 unemployment rates in the U.S. and Canada would have been 5.3 (the actual rate) and 5.6 percent respectively. The difference between this latter simulated [under the assumption of no relative change in $P(U|N)$] unemployment rate of 5.6 percent and the actual rate in 1989 of 7.5 percent, a difference of 1.9 percentage points, is the amount due to the rise in the labour force attachment of the non-employed in Canada relative to the U.S. This difference of 1.9 percentage points is 85 per cent of the difference-in-differences of Canadian and American unemployment rates between 1981 and 1989, which totals 2.2 percentage points (i.e. the Canadian difference of $[7.5-7.6]$ - the U.S. difference of $[5.3-7.6]$, which equals 2.2).

The story in the 1990s is dramatically different. The relative increase in non-employment in Canada is the most important factor, contributing 44 per cent of the widening of the unemployment differential in the 1990s, and the relative change in participation now contributes 19 per cent. Relative changes in the labour force attachment of the non-employed nonetheless remain a contributing factor, accounting for 37 per cent of the widening of the unemployment gap.

In interpreting these results, it is important to keep in mind that the first difference-in-differences comparison involves two points in time (1981 and 1989) which were cyclical peaks in both countries, while the second is not cyclically neutral in this sense. In 1996 the Canadian economy had not recovered from the recession of the early 1990s to the same degree as that of the U.S. Because the non-employment rate, the labour force participation rate and $P(U|N)$ are each affected by the business cycle, the decomposition for 1989-96 does not necessarily represent the contributions of structural factors.

Over the entire 1981-1996 period, the most important factor contributing to the unemployment differential is the relative increase in $P(U|N)$ in Canada, accounting for 65 per cent of the gap. The relative decline in Canada's employment to population ratio accounts for a further 26 per cent, and relative changes in participation are a minor factor, accounting for only 9 per cent of the gap.

Table 7

Decomposition of the Relative Change in Unemployment

Time period	Relative change in unemployment	Amount contributed by the relative change of		
	$P(N)$	$P(U N)$	$P(LF)$	
1981-1989	34,7	4,8	29,4	0,5
	(100%)	(14%)	(85%)	(1%)
1989-1996	23,9	10,4	8,8	4,5

(100%) (44%) (37%) (19%)

1981-1996 58,6 15,3 38,1 5,1

(100%) (26%) (65%) (9%)

Sources: Participation rates and employment rates as per Table 2 ; unemployment rates as per Table 4 , and calculations by the authors.

Unemployment insurance

Canada's Unemployment Insurance (UI) system (now called Employment Insurance) is frequently signaled out as a factor in the rise of unemployment in Canada relative to the United States (e.g. Moorthy, 1989/90; Keil and Symons, 1990; Card and Riddell, 1993; M. Fortin, 1994, among others). Although the complexity of UI benefit and financing provisions make cross-country comparisons difficult, a variety of measures indicate that the Canadian UI system has been more generous than the American system, and that these inter-country differences widened during the 1970s and 1980s. (13)

Much of the Canadian debate has focused on the impact of the 1971 UI reforms on the unemployment rate. In Canada, UI generosity increased dramatically in 1971 but has since been constant or declining (see, e.g., OECD, 1994; Sargent, 1995). But a sustained Canada-U.S. unemployment rate gap emerged in the 1980s, not the 1970s. Thus the timing of the emergence of the unemployment gap does not seem to fit well with the UI explanation.

Despite this apparent difficulty, a number of reasons why UI may have been a contributing factor have been advanced. One simple observation is that what matters for the explanation of the unemployment gap is the inter-country differential in UI program features. Generosity of both the Canadian and American UI programs increased during the 1970s (OECD, 1994); although the increase was larger in Canada, the inter-country difference in UI generosity did not grow as much as is indicated from inspection of the Canadian changes alone. Furthermore, during the 1980s UI benefit entitlements (after tax) were reduced and eligibility requirements were tightened in the United States, whereas these and other features of the UI program remained approximately constant in Canada. (14) Andolfatto, Gomme and Storer (this volume) examine some of the changes made to the U.S. unemployment insurance program during the 1980s, and present evidence suggesting that these may have been an important factor contributing to the unemployment gap.

It is also possible that the dramatic expansion of the Canadian UI program in the early 1970s did lead to an increase in structural unemployment, but that this did not immediately result in a higher actual unemployment rate because of the very robust economy of the period caused by high raw material and energy prices and expansionary macroeconomic policies (Moorthy, 1989/90; Keil and Symons, 1990). However, with the deterioration of the macroeconomic environment in the early 1980s, the higher structural unemployment rate may no longer have been masked by cyclical factors, so that Canada's higher structural unemployment rate relative to the United States may then have showed up as a higher actual rate. Evidence supporting this "masking" hypothesis is reported in Keil and Pantuosco (this volume).

Another possibility is that there are long lags between major changes in social programs such as UI and the labour market consequences of these programs. Such long lags could have several causes, including both individual and social learning about the program and changes in "social norms" relating to the use of the program. Corak (1993) and Lemieux and MacLeod (1994) report evidence for Canada supporting this

hypothesis. Evidence for other OECD countries is discussed in OECD (1994).

Although the 1971 reforms were arguably the most significant changes to Canada's UI program in the past three decades, another change that has received attention for its potential impact on unemployment is the introduction of regional extended benefits (REB) in 1978. Milbourne, Purvis and Scoones (1991) point out that these benefits make the maximum (or potential) duration of benefits, a dimension of UI generosity, dependent on the actual unemployment rate, with a higher unemployment rate leading to greater generosity. This dependence of UI generosity on the unemployment rate can contribute to unemployment persistence if longer potential benefit durations in turn result in higher unemployment. The attractiveness of this explanation is that it could explain why the Canada - U.S. unemployment gap appears to have emerged around the same time as the 1981-82 recession. To date, however, tests have found little support for this "unemployment persistence" hypothesis. (15)

As was first pointed out by Ashenfelter and Card (1986), one of the most striking differences between Canada and the United States is not in either the coverage or 'generosity' of their respective UI programs but rather in the probability of an unemployed worker receiving UI benefits, as measured by the ratio of the number of UI beneficiaries to the number of unemployed workers. Even before the 1971 reforms the ratio of UI recipients to unemployed was two to three times higher in Canada than in the U.S. During the 1980s, this gap widened; the ratio of UI recipients to unemployed workers rose from about 80 percent to 100 percent in Canada but declined from approximately 35 to 29 percent in the United States (Card and Riddell, 1993, Table 5.12). Thus in the early 1980s an unemployed Canadian was about twice as likely to receive UI as his/her American counterpart; by the end of the decade the unemployed Canadian was more than 3.5 times as likely to receive UI. The decline during the 1980s in the probability of an unemployed worker receiving UI benefits in the United States may be related to some of the administrative changes in the UI program discussed in Andalfatto, Gomme and Storer (this volume).

In a recent paper, Card and Riddell (1997) find that in both countries UI recipients are much more likely to report that they are engaged in job search than are nonemployed individuals who are not UI recipients. These differences between UI recipients and non-recipients in their reported "labour force attachment" when not employed are large enough that changes in the fraction of the nonemployed who are UI recipients can lead to substantial changes in the aggregate unemployment rate. Indeed, calculations reported in Card and Riddell (1997) indicate that the divergent trends in UI reciprocity in Canada and the United States during the 1980s can alone account for about two-thirds of the unemployment gap which opened up in that decade. Thus, whatever factors caused the divergent intercountry trends in UI reciprocity during the 1980s also appear to be responsible for the increased labour force attachment of Canadians and thus the Canada -U.S. unemployment gap.

The reasons for the substantial differences between UI recipients and non-recipients in their propensity to report their nonemployment time as job search remain an interesting subject for further research. A number of explanations for these differences seem possible. One is a pure "measurement" explanation. Because "availability for work"-- which is often interpreted as requiring job search -- is a condition for continued eligibility for UI benefits on both countries, recipients may be more likely to report themselves as engaged in job search when surveyed by statistical agencies. A second, closely related, explanation is that UI recipients are more likely to carry out job search than are otherwise comparable non-recipients because of the "availability for work" requirement. Another possibility is that UI reciprocity is simply an "intervening variable" rather than a causal factor and thus that the relative increase in Canada in UI reciprocity and the proportion of nonemployment time spent on job search are both caused by some

common underlying factor.

While the UI explanation of the emergence of the Canada-U.S. unemployment rate gap may be germane for the 1970s and 1980s, its relevance to the current gap may be more limited. This is because the relative generosity of the Canadian UI system has fallen considerably in recent years. For example, Voyer (this volume) shows, based on Sargent's (1995) UI generosity index, that UI generosity in Canada has fallen from a peak of 240 in 1972 to 140 in 1994, to 80 under the recent employment insurance reforms. This compares to a value of the index for the average U.S. state of 50 as of 1994 (Sargent, 1995). If in the past UI explained much of the unemployment gap, then the decline in relative UI generosity would suggest that the gap should now be falling. Thus far the experience in the 1990s has not been consistent with this prediction. There are however a number of reasons why less generous UI may not immediately translate into lower unemployment, as discussed above and in Sheikh (this volume).

Unionization

Over the last 25 years, one of the most dramatic developments in Canadian and American labour markets has been the growing gap in the extent of unionization in the two countries (Chaison and Rose, 1990; Kumar, 1993; Riddell, 1993). In 1965, Canadian and U.S. unionization rates were roughly equal, at 30 per cent of the non-agricultural paid workforce. Union density increased somewhat in Canada in the 1970s and in the first half of the 1980s, reaching a peak of 37.2 per cent of the non-agricultural paid workers in 1984, and has subsequently declined modestly, to 33.9 per cent in 1996 (HDRC, 1996). In contrast, the unionization rate in the United States decreased significantly in both the 1970s and 1980s and has fallen further, albeit modestly, in the 1990s (23 per cent in 1980, 16 per cent in 1990 and 14.5 per cent in 1996 (Bureau of Labor Statistics, 1996). The Canada-U.S. unionization gap has thus increased from 4 percentage points in 1970 to around 20 points in the mid-1980s and has since been relatively stable.

Most economic models predict that the wage impacts of unions will reduce employment and increase unemployment (Johnson and Layard, 1986). The limited empirical evidence for Canada and elsewhere generally finds that employment growth is slower in union than in comparable nonunion firms (Blanchflower, Millard and Oswald, 1991; Leonard, 1992; Long, 1993). Based on cross-sectional analysis of U.S. states, there is also some empirical support for the prediction of a positive association between unionization and unemployment (Summers, 1986). For these reasons, one might expect the substantial divergence in the extent of union organization to have contributed to the unemployment differential.

However, a difficulty with this prediction is that the unionization differential began to open up in the mid 1960s and has progressively widened, whereas a persistent unemployment gap does not appear until the early 1980s and this gap does not progressively widen. This absence of correspondence between the timing of the gap in unionization and that in unemployment led Ashenfelter and Card (1986) to reject differences in union density as a possible explanation of the unemployment gap. Subsequent research has generally supported this view. For example, in their analysis of Canadian and American time series data, Keil and Pantuosco (this volume) find that union density has little or no effect on unemployment in the two countries.

If trends in unionization did contribute to the unemployment gap, the impact would probably be greatest in the 1975-85 period, when union density in Canada and the United States diverged most sharply. Since the mid 1980s, the gap in the extent of union organization has been relatively stable.

The predicted effects of unions on employment and unemployment arise principally because of the impacts of unions on the level and speed of adjustment of wages in the economy. Accordingly, in examining the evidence relating to possible union effects, it is useful to look for any corroborating evidence of wage effects of unions and other policies and institutions which may influence wages. This topic is addressed next.

Wage trends

Labour demand is affected by the relative price of labour. The slower employment growth in Canada relative to the United States since 1981, and especially since 1989, could in theory reflect a larger decline (or slower rate of increase) in labour compensation in the United States.

The data suggest such an explanation may have had some validity in the 1980s. (16) The real producer wage, defined as business sector hourly labour compensation deflated by the GDP deflator, rose at a 1.5 average annual rate between 1981 and 1989 in Canada, compared to only 0.8 per cent per year in the United States. In addition, productivity growth (1.3 per cent per year in the United States and 1.5 per cent in Canada) exceeded real wage growth by a much greater amount in the United States. During the 1980s, American employers thus had more incentive to expand employment than did Canadian employers. The real consumer wage, defined as compensation deflated by the Consumer Price Index, also grew at a faster rate in Canada in the 1980s.

A recent study of union wage determination in Canadian and U.S. manufacturing provides further evidence of differential wage behavior in this sector of the two economies (Budd, 1996). Although the behavior of union wages in the Canadian and U.S. manufacturing sectors was similar in the 1965-79 period, during the 1980s wage settlements in the United States were much lower than would have been predicted on the basis of prevailing economic conditions whereas Canadian wage settlements were approximately equal to those that would be predicted on the basis of economic conditions. While concession bargaining was experienced by unions on both sides of the border during the 1980s, the concessions were evidently greater in the United States, a conclusion that has also been reached by others (Chaison and Rose, 1990; Kumar, 1993).

In the 1990s, the growth of real producer wages was similar in the two countries (0.8 per cent per year over the 1989-96 period in Canada and 0.9 per cent in the United States). Productivity growth tracked real wage growth fairly closely in both countries (0.5 per cent in Canada and 0.9 per cent in the United States). These developments suggest that the rise in the Canada-U.S. unemployment rate gap after 1989 was not due to differential trends in real wages in the two countries. However, it is important to keep in mind that the 1990-92 recession was more severe in Canada than in the United States, and that the subsequent recovery has also been slower in Canada. The fact that wage trends have been similar in the two countries during this period suggests that the responsiveness of wages to weak economic conditions may be lower in Canada, and this could contribute to higher unemployment. The possible role of wage adjustment is discussed further below.

Payroll taxes have increased greatly in Canada in recent years, rising from around 5 per cent of labour income in 1981 to over 10 per cent in 1994 (Di Matteo and Shannon, 1995). Some have argued that this trend has reduced employment growth and raised unemployment. But payroll costs are included in labour compensation, and thus are incorporated in the data presented which show real compensation growth in Canada has not exceeded that in the United States. However, it is possible that the rapid growth of payroll taxes has contributed to the evidently lower responsiveness of Canadian compensation to weak economic

conditions.

Trends in the minimum wages are another possible determinant of unemployment. Over the 1980s, the minimum wage fell much more in the United States than in Canada and this may have contributed to the fall in the unemployment rate in the United States and the emergence of the unemployment rate gap. According to the OECD (1997:13), the minimum wage fell from 46 per cent of average earnings in 1981 to 34 per cent in 1989 in the United States, compared to a decline from 41 to 39 per cent in Canada. (17) In the 1990s, there has been a rise in the relative minimum wage in both countries, to 38 per cent of average earnings in the United States and to 42 per cent in Canada by 1995. This suggests that the role of minimum wages in explaining the unemployment rate gap may be less in the 1990s than in the 1980s.

Structural change

Structural (or frictional) unemployment is affected by the extent of the inter-sectoral reallocation of labour following shocks to the economy (Lilien, 1982). An increased pace of structural change thus can raise the NAIRU and has been put forward as a possible cause of the relative increase in Canadian unemployment.

The evidence for this hypothesis is weak. According to calculations made by the OECD (1994), there has not been an acceleration of structural change in either Canada or the United States. The Lilien measure of structural change, defined as the magnitude of labour reallocation among sectors, as well as turbulence measures of structural change were identical in both Canada and the United States in the 1970s and 1980s at the 8 or 9 sector level. Gera, Rahman and Arcand (1991) also found that the index of variation in industrial employment growth has declined since the mid-1960s. This suggests that this aspect of structural change has not contributed to a rise in unemployment in either country. (18)

Personal taxes

According to OECD data, Canada's marginal tax rates in 1991-92 were 16.6 points higher than in the United States (55.5 per cent versus 38.5 per cent). This represented a complete reversal of the situation in 1981 when American marginal rates were 9.2 points higher than Canadian rates (50.4 per cent versus 41.2 per cent).

This change in marginal tax rates is reflected in trends in the share of personal taxes in personal income. In Canada, this share increased from 18.0 per cent in 1981 to 20.5 per cent in 1989, to 24.5 per cent in 1996, while it has been stable at around 13 per cent in the United States.

Some argue that the emergence of the Canada-US unemployment rate gap is related to these tax developments. Higher taxes in Canada are said to have stifled entrepreneurial initiative, leading to lower investment, lower employment growth and higher unemployment. Empirical evidence for this explanation is limited.

Demographic trends

The NAIRU is influenced by the changing composition of the labour force. Increases in the relative importance of demographic groups with high unemployment rates puts upward pressure on the NAIRU while decreases in the relative size of these groups have the opposite effect. The demographic structures of the Canadian and American populations are very similar, with both countries experiencing a baby boom from 1947 to 1965. The entry of this baby boom generation into the labour market in the 1970s tended to raise the NAIRU because youth have well above average unemployment rates. Equally, the decline in the youth (15-24 in Canada, 16-24 in the United States) share of the labour force in both countries in the 1980s

and early 1990s tended to reduce the NAIRU. The reduction may have been slightly more in Canada since Canada experienced a larger decline in its youth share because of relatively larger baby boom cohorts. In any case, similar demographic developments in both countries have meant that the rise in the unemployment rate in Canada relative to the United States since 1981 cannot be accounted for by this factor.

Immigration

In the 1990s, immigration levels to Canada have been well above those in the 1980s, and on a proportional basis, well above those in the United States. Because recent immigrants experience a higher unemployment rate than the native born during the first few years following arrival, some have speculated that these higher inflows of immigrants may have contributed to the rise in unemployment in Canada in the 1990s and to the widening of the unemployment gap in this period, given the relative stability of legal immigration to the United States. However, the impact (if any) of immigration on aggregate unemployment is complex, and at this point the evidence does not back up the aforementioned speculation. Previous research in Australia, Canada and the United States, three countries that have relied extensively on immigration as a source of population growth, generally finds that immigration does not increase unemployment. (19) Indeed, several studies conclude that immigration adds more jobs (though the effect on labour demand) than immigrants take, so that the net effect of immigration is to lower unemployment (see, e.g., Harrison (1984) and Pope and Withers (1993) for Australia and Samuel and Conyers (1987) for Canada). The principal exception to the general finding that unemployment is not positively related to immigration is Marr and Syklos (1994) who find that immigration did not influence unemployment over the 1962 to 1978 period, but did have a small positive effect on unemployment during the 1978 to 1985 period.

Although the existing literature suggests that there is not a positive impact of immigration on unemployment in either country, there are a number of reasons why further investigation of this issue appears warranted. First, as noted above, immigration inflows in Canada during the 1990s have been very high relative to the previous two decades and relative to the U.S. Existing Canadian literature cited above covers only the period up to 1990. Second, the recession of 1990-92 was the first economic downturn in Canadian post war experience in which immigration inflows did not substantially decline. The conditions governing the period on which the existing literature is based were such that immigration inflows were significantly reduced during and following a recession (such as occurred in 1957-9, 1971, 1973-4 and 1981-2).

A third factor is that the composition of Canadian immigration during the 1990s has been much different than during the 1970s and 1980s, with the majority of immigrants during the 1990s being in the family unification and refugee classes and the minority being in the economically assessed class (those chosen for their suitability for the Canadian labour market). For example, the proportion of immigrants who enter in the economically assessed or "independent" class has fallen from 70 per cent in 1973 to 20 per cent in 1992 (Green, 1997). Those entering in the family unification and refugee classes may have greater difficulty adjusting to the new labour market. For example, Green (1997) finds that immigrants who are not assessed on their skills are in less skilled occupations and are less occupationally mobile. Fourth, and perhaps related to the previous point, there is evidence in both Canada and the U.S. that recent cohorts of immigrants are adapting less well to the new labour market than was the case with earlier cohorts (Baker and Benjamin (1994) and Bloom, Grenier and Gunderson (1995) for Canada; Borjas (1995) for the U.S.).

Relative size of the incarcerated population

The relative size of the incarcerated population is about five times greater in the United States than in Canada (1.0 per cent of the labour force versus 0.2 per cent in 1993) and this relative gap has increased over time. (20) Since the incarcerated have above average unemployment rates before incarceration (40 per cent according to one survey), their removal from the labour market reduces the overall unemployment rate. The greater incarcerated population in the United States than in Canada results in a larger effect. Back of the envelope estimates suggest that the high incarceration rate lowered the unemployment rate by 0.4 percentage points in the United States in 1993, up from 0.2 points in 1980. (21) In Canada, the impact is around 0.1 percentage points in both years. These estimates suggest that the higher US incarceration rate accounted for about 0.3 percentage points of the gap in 1993, and for 0.2 points of the increase in the gap between 1980 and 1993.

III Articles in This Volume

The papers in the volume are organized five sections- aggregate and regional perspectives, labour market dynamics, labour market adjustment, labour supply and skills, and policy implications. In addition, a summary of the overall findings of the conference and papers is presented.

Aggregate and Regional Perspectives

Kevin Lang and Jay Zagorsky

A key issue in the debate on the Canada-US unemployment rate gap is its timing. Did it only emerge in 1982 or do the roots of the gap date back to the 1970s? Lang and Zagorsky use econometric time series tests to examine the high correlation between the Canadian and U.S. unemployment rates and the timing of the emergence of the unemployment gap.

They argue that the correlation between the two aggregate unemployment rates is suspiciously high -- higher, for example, than that between most pairs of regions within each of the two countries, such as California and Texas or Ontario and the Prairies. They also conclude on the basis of statistical tests that the time series behavior of aggregate unemployment in each country is reasonably approximated by a random walk. If so, the high correlation between U.S. and Canadian unemployment could be spurious, in that two random walks will appear to be highly correlated even if unrelated. If the random walk hypothesis is approximately correct, analysing the unemployment rates in levels may be misleading; rather, analysis of changes is preferred. When intercountry differences in year-to-year changes in unemployment are examined, 1982 does not stand out as a particularly unusual year. On this basis, they conclude that there is not a strong case for focusing on events around 1982 in seeking explanations of the unemployment differential.

The Lang and Zagorsky analysis is controversial. Because policy concern is focused on the level of the unemployment rate, it is natural to devote attention to intercountry differences in levels rather than year-to-year changes. Analysing year-to-year changes may seem like a less informative exercise. Furthermore, because it is bounded by zero and 100 per cent, it cannot be the case that the unemployment rate follows a random walk. The issue is whether a random walk is a reasonable approximation to the time series behavior of unemployment. The statistical tests reported by Lang and Zagorsky do not reject the random walk hypothesis, but these tests may have low power (that is, the ability to reject this hypothesis with a relatively short time series of data may be quite limited.)

Manfred Keil and Lou Pantoosco

Based on their analysis of five Canadian and nine U.S. regions, Keil and Pantoosco conclude that the Canada-U.S. unemployment rate gap is a national phenomenon rather than a region-specific phenomenon. They identify the principal origin of the gap as being the 1971 liberalization of the Canadian UI system, but argue that the impact of this development on Canadian unemployment was masked in the 1970s by favourable terms of trade movements and the expansionary effects of lax monetary policy. Keil and Pantoosco also examine a number of other possible explanations of the gap, and conclude that unionization rates, unemployment persistence or hysteresis, taxes, and demographic changes have played little or no role.

Keil and Pantoosco's estimates indicate that the further widening in the gap in the 1990s was mainly caused by the increased real interest rate differential between Canada and the United States during this period.

Labour Market Dynamics

Although unemployment is a "stock concept" - the number of unemployed as a percent of the labour force at a point in time - much can be learned about unemployment from the analysis of labour market dynamics - the flows among labour force states and the durations of spells in each state. Two of the papers in the volume investigate aspects of the incidence and duration of unemployment spells, while a third examines flows among the labour force states of employment, unemployment and out-of-the-labour force. These three papers document a variety of "facts" with which explanations of the unemployment differential must be consistent.

A number of measures of the duration of unemployment exist. The average duration of uncompleted spells, which was discussed earlier in this introduction, is the most readily available but also generally the least informative. The papers by Baker, Corak and Heisz and by Tille use measures of the duration of completed spells of unemployment which are unpublished but can be calculated from LFS and CPS and related microdata.

Michael Baker, Miles Corak and Andrew Heisz

Baker, Corak and Heisz use unpublished Labour Force Survey and Current Population Survey data to calculate the incidence and average duration of completed spells of unemployment for the 1980-93 period.

Canada experienced a relative increase in both incidence and duration of unemployment over this period. In 1980-81, unemployment spells lasted about 2 weeks longer in Canada than in the U.S., whereas in the latter half of the 1980s and in the 1990 these spells lasted 5 to 6 weeks longer in Canada. Even after allowing for the relative rise in unemployment duration associated with the greater severity of the 1981-2 and 1990-92 recessions in Canada, an increase in the duration of unemployment in Canada compared to the United States is evident.

In contrast, during the early 1980s the incidence of unemployment was substantially higher - indeed, about one-third higher - in the U.S. However, unemployment incidence declined steadily in the United States throughout the 1980s and 1990s, but (apart from cyclical fluctuations) was much more stable in Canada. For most groups, unemployment was no more likely an event in Canada during the late 1980s or 1990s than a decade earlier, but it was much less likely in the United States.

Baker, Corak and Heisz also document substantial Canada - U.S. differences in the composition of unemployment, with temporary layoffs and labour force entry being more important in the United States and permanent job loss being a more important source of flows into unemployment in Canada.

Cedric Tille

Cedric Tille also decomposes the rise in unemployment in Canada relative to the United States into incidence and duration components. The contribution of the paper lies in its innovative use of retrospective (as opposed to contemporaneous) data to compute the average duration of unemployment in a year for those experiencing some unemployment. In contrast to estimates of duration based on completed or uncompleted spells of unemployment, this method examines the total weeks of unemployment experienced during the year, whether experienced in several spells or a single spell. As

such, it provides a useful complement to spell-based analyses of incidence and duration.

Tille finds important gender differences in the factors contributing to the unemployment rate gap. For men, higher relative unemployment in Canada is associated principally with a relative rise in duration. However, for women the intercountry unemployment gap is due mainly to a relative increase in the incidence of unemployment.

Stephen Jones and Craig Riddell

Jones and Riddell provide a comparative analysis of aggregate labour market dynamics in Canada and the United States using unpublished data on gross flows. Over the 1976-94 period, they find many similarities in the behavior of gross flows in the two countries, albeit there are some important differences. When the period is broken down into pre- and post-gap periods (1976-81 and 1982-94), they find that the most substantial relative change occurs in the transitions (in both directions) between the non-employment states of unemployment (U) and non-employment (N). The transition probability of moving from U to N falls by about 8 per cent in Canada relative to the U.S., while the probability of moving from N to U rises by 23 per cent relative to the U.S. What is noteworthy is that the emergence of the unemployment gap is not associated with a relative change in the likelihood of moving between employment E and non-employment (U plus N). Indeed, the probability of exiting from E actually declined more in the U.S. than in Canada during the 1980s and 1990s, while the probability of entering E declined by a similar amount in both countries.

In order to assess the quantitative importance of the relative changes in the movements between the non-employment states U and N, Jones and Riddell carry out a simulation in which the paths of the Canadian transition rates from U to N and N to U follow their American counterparts over the 1982-94 period, adjusted for the average differences in the levels of the two rates in the pre-gap 1976-81 period. Under this scenario, almost all of the 1980s unemployment gap disappears and the 1990s gap is reduced by 2 to 3 percentage points. This simulation reinforces the evidence reported in Card and Riddell (1993, 1997) that the principal source of the unemployment differential (especially during the 1980s) is the relative change in how Americans and Canadians spend their time when not employed, rather than relative changes in the likelihood of employment between the two countries.

Labour Market Adjustment

Robert Amano and Tiff Macklem

Higher employer adjustment costs in European countries than in the United States have been argued to be a contributing factor to the greater persistence of unemployment in Europe. Differences in adjustment costs between Canada and the United States are thus a natural candidate for consideration in the search for explanations of differences in the behavior of unemployment in Canada and the U.S.

To tackle this issue, Amano and Macklem estimate dynamic linear-quadratic models of aggregate labour demand for Canada, the United States and Germany. They find adjustment costs to be an important determinant of labour market dynamics in all three countries. But more importantly, they find that relative adjustment costs and the speed of adjustment of labour demand are very similar in Canada and the United States. As a consequence, their estimated models suggest that differences in employment adjustment costs are unlikely to be a major factor contributing to the greater persistence of unemployment in Canada.

Eswar Prasad and Alun Thomas

Another aspect of labour market adjustment is the degree of real wage flexibility. Lower real wage flexibility in Canada relative to the United States is often advanced as a possible explanation for Canada's higher unemployment rate. Prasad and Thomas use vector autoregressive techniques to study the effects of aggregate labour market shocks on employment, unemployment, real wages and labour force participation in Canada and the United States. Their results indicate that shocks to employment growth result in similar unemployment rate responses in the two countries, but lower real wage responses in Canada. Nonetheless, Canada's lower degree of real wage responsiveness is not found to be a significant factor contributing to higher persistence of unemployment in Canada.

David Gray and Gilles Grenier

As discussed previously, the duration of unemployment is greater in Canada than in the United States. A key question is why this is the case. Gray and Grenier use data on displaced workers in the two countries to examine the factors accounting for the longer spells of joblessness experienced by these individuals in Canada. Their principal conclusion is that there is nothing obvious in terms of the observable characteristics of Canadian and American displaced workers, or in the way these individuals respond to their economic environment, that helps very much in accounting for the longer jobless spells experienced by such workers in Canada. Like the negative findings reported by Amano and Macklem and Prasad and Thomas, the contribution of these results lies mainly in suggesting that the explanation for higher Canadian unemployment lies elsewhere.

Labour Supply and Skills

Peter Kuhn and Leslie Robb

Kuhn and Robb examine the role played by the declining demand for unskilled labour in the emergence of the Canada-U.S. unemployment rate gap among prime-age men in the 1980s. In both countries, wage polarization between the more and less skilled was observed among prime-age men; the decrease in wages among the least skilled was larger in the U.S., but nonetheless substantial in Canada. Kuhn and Robb find that the evidence in both countries is consistent with the "labour supply response" hypothesis that individuals respond to the lower returns from working by working less. Weeks worked decline in both countries, and the decline is largest among those groups with the largest declines in real wages.

Kuhn and Robb also address the hypothesis, advanced by the OECD and others, that in countries like Canada with more generous social safety nets (and thus better alternative opportunities to low wage

employment), the decline in demand for unskilled labour has meant that these individuals have been more likely to leave employment than American men, while the latter have been more likely to continue working, albeit at lower wages. According to this "OECD hypothesis" there is a tradeoff between earnings inequality and employment in such circumstances of declining demand and in terms of this tradeoff Canada has adopted a middle position between the extremes of Europe and the United States.

Kuhn and Robb find that both aggregate and within percentile responses of weeks worked to wage declines were larger in Canada than in the U.S. The combination observed in Canada of smaller declines in real wages and larger declines in employment is broadly consistent with the "OECD hypothesis". However, a further finding is that the decline in employment mainly resulted in increased unemployment in Canada, but in the U.S. it entirely took the form of increased labour force withdrawal. (Indeed, in the U.S. average weeks worked declined by 1.0 weeks, but non-participation increased by 1.3 weeks so that unemployment actually fell by 0.3 weeks, whereas in Canada average weeks of employment declined by 2.2 weeks, most of which was associated with increased unemployment (1.7 weeks) and the remainder with reduced participation (0.5 weeks).

These results indicate that the "labour supply response" and "OECD" hypotheses are able to account for the changing patterns of prime-age male employment in the two countries, but these hypotheses do not help explain why the reduced employment mainly took the form of increased unemployment in Canada but took the form of increased non-participation in the U.S. This relative change in how non-employment is "labelled" was discussed previously in the context of the work of Card and Riddell (1993, 1997) and Jones and Riddell (this volume). Kuhn and Robb show that this relative change in how non-employment is reported in the two countries not only occurred during the 1980s for prime age males as a group, but also at each decile of the wage distribution.

Audra J. Bowlus

The labour market behaviour of youth may be more revealing than that of older age groups because youth, many of whom are making the transition from school to work, may bear the brunt of structural and institutional change. Consequently, analysis of the factors behind the gap for youth may contribute to an understanding of the overall differential. Using the U.S. National Longitudinal Survey of Youth and the Canadian Labour Market Activity Survey for 1986-87, Bowlus examines the labour market behaviour of low-skilled males aged 20-24 in Canada and the United States. A key feature of this study is the use of longitudinal data which allows analysis of the labour market transitions of this select group. Although overall job separation rates are the same in the two countries, she finds that young male Canadians are more likely than Americans to be involuntarily separated from their jobs and the separation is more likely to result in a transition to UI-supported non-employment. In contrast, young American men are more likely to make a direct job-to-job transition. She suggests that two interrelated features of the Canadian labour market contribute to this pattern: the greater generosity of UI in Canada and the larger role of seasonal/temporary work in Canada.

David Andolfatto, Paul Gomme and Paul Storer

In searching for causes of the Canada-U.S. unemployment gap, attention has focused on developments that raised the unemployment rate in Canada, such as changes to the Canadian UI system. But developments that lowered the unemployment rate in the United States could be equally at play. Using a dynamic computable general equilibrium model of the labour market, Andolfatto, Gomme and Storer examine the effect on the gap of changes in the U.S. UI system, in particular the introduction of taxation on UI benefits

between 1979 and 1987 and the administrative tightening of state UI during the 1980s. Their analysis suggests that each of these measures contributed a 0.2 percentage point fall in the natural rate, thus accounting for 0.4 percentage points of the gap.

They also use their model to analyze the effects of implementing a Canadian UI system in the United States, concluding that it would increase the U.S. natural rate 2.4 percentage points. They interpret their evidence as supportive of the view that the gap in the 1980s is largely attributable to the 1971 liberalization of the Canadian UI program.

Paul Storer and Marc Van Audenrode

In addition to the rising unemployment rate gap, Canada and the United States have experienced divergent trends in wage inequality, with the extent of inequality rising considerably more in the United States. Storer and van Audenrode try to link these two trends as alternative manifestations of the economic shocks experienced in both countries. The central hypothesis is that adjustment to adverse shocks primarily affects wages in the U.S. but employment in Canada. They use retrospective data from the 1986 Canadian and American Displaced Worker Surveys to examine wages obtained after displacement and length of time taken to find a job. They find meager support for the hypothesis of a tradeoff between wage inequality and unemployment whereby low unemployment in the United States was at the cost of greater wage inequality.

Papers on Implications of the Research Findings

The synthetic papers in this section were presented in the final session of the conference on the implications of the research findings for policy. Two leading academics, Gary Burtless and John Helliwell, and two senior government officials, Jean-Pierre Voyer and Munir Sheikh, give their views on the research presented at the conference and the policy implications.

Conclusions

The principal findings of each of the papers in this volume and how these results relate to the previous literature have been discussed above. In this concluding section we briefly note a number of key points which appear to emerge from these findings.

1. Some of the unemployment gap is due to differences between Canada and the United States in how unemployment is measured, as documented by Macredie (1996) and Zagorsky (1996). Persons whose only job search method is "looked at job ads" are classified as unemployed in Canada, but as not-in-the-labour force in the United States. In 1993, if the U.S. definitions were used, the number of unemployed in Canada would have been reduced by 114 thousand, 0.7 per cent of the labour force. This factor accounted for 17 per cent of the gap and its relative importance has been growing over time.
2. As discussed by Macredie (1996), discovering such measurement differences in two surveys such as the LFS and CPS which are very similar in concept and design requires detailed examination of survey instruments, interviewer instructions, and data capture and imputation methods. Further investigation of other possible differences in measurement appears warranted, though there is of course no guarantee that other such differences would help explain the gap (i.e. would imply higher measured unemployment in Canada). In addition, the introduction of a redesigned CPS in 1994 in the United States and a new LFS in Canada in 1997 mean that this issue of data comparability has not been resolved for the post-1994 period.
3. The unemployment gap of the 1980s and the further widening of the gap in the 1990s appear to have fundamentally different underlying causes. The gap of the 1980s is principally due to a relative change in

how Canadians and Americans spend (or at least report) their time when not working rather than to a relative decline in employment in Canada. The widening of the gap in the 1990s is principally due to the much weaker aggregate economic growth in Canada during the 1990s, and the consequent steep relative decline in employment in Canada. These observations are elaborated in the following two points.

4. The 1980s gap of 2-3 percentage points emerged during a period in which overall economic growth and employment growth was similar in the two countries. The 1981-82 recession was significantly more severe in Canada than in the U.S., which suggests that a simple "cyclical" explanation can account for the steeper rise in unemployment in Canada in the early 1980s. However, the subsequent recovery and expansion in the latter part of the 1980s was also more robust in Canada. It is therefore difficult to attribute the persistent unemployment gap of the 1980s to weaker aggregate economic growth in Canada. Rather, the 1980s gap is attributable to a relative rise in the "labour force attachment of the non-employed", as documented in Card and Riddell (1993, 1997). This relative change took place between the late 1970s and late 1980s.

5. The further widening of the unemployment gap after 1989 appears to be mainly if not entirely due to the much weaker aggregate economic growth in Canada since 1990. As is documented in Fortin (1996), Canada's recession of 1990-92 -- the most severe since the Great Depression - was both substantially more pronounced and of longer duration than the downturn in the United States. Furthermore, the subsequent recovery has also been weaker in Canada. A straightforward "cyclical" story appears to explain the widening of the unemployment gap in the 1990s.

6. The reasons for the relative change in the labour market attachment of the non-employed in Canada and the United States remain poorly understood. Card and Riddell (1997) report that the change correlates well with changes in UI reciprocity in the two countries, though the causal mechanisms remain unclear.

7. The timing of the emergence of the unemployment differential remains a matter of debate. One view, articulated in Fortin, Kiel and Symons (1995) and Kiel and Pantuosco (this volume), is that the seeds of the gap were sown in the early 1970s with the 1971-72 revisions to Canada's UI program. According to this view, a persistent unemployment gap did not emerge during that decade due to offsetting favourable macroeconomic conditions. Related to this perspective is the point made by Lang and Zagorsky (this volume) that if it is appropriate to analyse Canada - U.S. unemployment differences in first differences rather than in levels, the year-to-year change from 1981-82 was not especially prominent.

8. The alternative view is that the sources of the gap are changes that occurred in the 1980s rather than the 1970s, such as the tightening of the U.S. UI program in the early 1980s discussed by Andalfatto, Gomme and Storer (this volume) or the (possibly related) divergent trends in UI reciprocity in the two countries during the 1980s. According to this perspective, the unemployment differential initially emerged because of the deeper recession in Canada in 1981-82, but then persisted because of structural differences between the two countries that emerged later in the decade.

9. Discriminating between or reconciling these competing hypotheses is an important topic for further research.

10. Many authors, including in this volume Bowlus, Keil and Pantuosco, Storer and van Audenrode, and Baker, Corak and Heisz conclude that the more generous Canadian unemployment insurance system produced different labour market behaviour in Canada from that conditioned by a less generous UI system in the United States. Despite this general agreement that UI contributes to the unemployment differential,

there is not consensus on the exact mechanisms or on the timing of the UI effects.

11. Differences in the adaptability or flexibility of the Canadian and American labour markets have often been argued to contribute to inter-country differences in employment and unemployment outcomes. However, Amano and Macklem (this volume) find that relative adjustment costs and the speed of adjustment are very similar in the two countries.

12. Differences in the degree of wage flexibility are likewise often advanced as an explanation of Canada - U.S. differences. The evidence on this issue is mixed. Using aggregate data, Prasad and Thomas (this volume) do find lower real wage flexibility in Canada, as does Budd (1996) with respect to union wage behaviour in the 1980s, but Prasad and Thomas also report that this difference in wage responsiveness is not a significant contributing factor to higher unemployment in Canada. Storer and van Audenrode (this volume), using micro data on displaced workers, find no evidence that shorter unemployment durations among workers displaced in the U.S. can be attributed to greater wage flexibility in that country. However, Kuhn and Robb (this volume), using micro data on prime age males, find both smaller wage declines and larger employment declines among the less skilled in Canada, consistent with the wage flexibility story.

13. A number of Canada - U.S. differences, including unionization, immigration, payroll taxes and income taxation, have not been found to play a role in the unemployment gap in research reported in this volume and elsewhere. Nonetheless, for reasons discussed in this introduction, several of these factors appear to warrant further investigation.

Policy Implications

Differences in the measurement of unemployment between Canada and the United States have no direct policy relevance, but these need to be taken into account in any comparisons of the relative performance of the two economies. Equally, persistent differences in the way non-employed Canadians and Americans report their labour force activities may not have policy implications, depending on whether these differences in the reporting of activities are associated with differences in behaviour. If, in general, non-employed Canadians have the same desire for work as non-employed Americans, but Canadians are more likely to be receiving UI and to report their activities as searching for work (due, for example, to the job search requirements for continued UI benefit receipt), Canadians may not be worse off with a higher measured unemployment rate. In these circumstances, the true amount of excess labour supply is the same in the two countries, but more of the labour supply is categorized as out-of-the-labour force in the U.S. and more is categorized as unemployment in Canada. In contrast, if the differences in how individuals are categorized reflect differences in the desire for work among the non-employed, then the higher Canadian unemployment does have policy implications because it implies greater excess labour supply in Canada.

The conclusion that the widening of the Canada-U.S. unemployment gap in the 1990s is principally due to weaker economic growth in Canada has important policy implications. It implies that the factors that contributed to Canada's anemic growth since 1989 are in effect the policies that explain the rise in the unemployment rate and the increase in the unemployment differential. There is at present a debate about the extent to which the "Great Canadian Slump" -- as Fortin (1996) so aptly calls it - is due to the Bank of Canada's restrictive monetary policy of the early 1990s (adopted to attain the objective of price stability) versus other factors such as restructuring associated with globalization, freer trade and technical change (restructuring that may have taken place to a greater extent in the 1980s in the United States) and high Canadian interest rates due to high levels of government debt relative to GDP and political uncertainty relating to the possibility of Quebec separation. (See Fortin, 1996, who attributes much of the slump to

monetary policy, and Freedman and Macklem, 1997, who attribute it to a mix of factors.) Whatever the causes of Canada's poor growth performance, a consequence has been lower inflation and a key question for policy-makers is whether the benefits of price stability have been worth the costs in terms of lost output and unemployment. This question on the costs and benefits of price stability is not only of historical interest. It may arise in the future if the need to maintain price stability is used as a rationale for policies that stifle growth.

The conclusion that the widening of the gap in the 1990s is mainly due to weaker aggregate demand conditions in Canada also suggests that approximately half of the current differential of 4 to 5 percentage points could be eliminated with a return to and continuation of stronger growth in Canada. In terms of structural factors, the Canadian unemployment insurance program has been substantially altered through a series of reforms during the 1990s, the most significant being those implemented in 1996. These changes have reduced the generosity of the program relative to the past and to the U.S. During the 1990s there has also been a steep decline in UI reciprocity in Canada. The evidence in this volume and elsewhere suggests that these developments should enable Canada to achieve lower unemployment levels. Together with the "cyclical" component discussed above, these structural changes suggest that more than half and perhaps as much as three-quarters of the current gap could be removed by a sustained period of stronger growth in Canada.

In this respect, we wish to note that that public policies such as unemployment insurance should not necessarily be designed to minimize the unemployment rate. Economic security and the distribution of well-being are also important determinants of social well-being. The reduction in risk that social insurance programs may provide increase societal welfare and this increase may more than offset any welfare losses associated with a higher structural unemployment rate induced by social program disincentives. The greater degree of social equity provided by social programs may also be a highly valued characteristic of society. The aggregate welfare of Canadians may be higher in a society with generous social programs and high unemployment linked to the programs than in a society with less generous programs and lower unemployment. This being said, the disincentive effects of social programs on employment should nevertheless be recognized and monitored, and, where it is not too costly in terms of other objectives to do so, minimized.

The emergence and persistence of the Canada - U.S. unemployment differential has lead certain observers to conclude that Canada's labour market is less dynamic than its U.S. counterpart and that Canadian policies and institutions result in a labour market that is more rigid and less able to adjust to change. The findings in this volume suggest that one should be cautious in drawing such a conclusion. Indeed, much of the evidence does not support this position.

The key implication of the above analysis is that a return to and continuation of stronger economic growth will go a long way toward reducing the Canada-U.S. unemployment rate gap, particularly now that relative generosity of the Canadian social safety net has been reduced.

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Table A1

Unemployment by Region in Canada and the Canada-U.S.

Unemployment Rate Gap, 1981-96

(per cent or percentage points)

1981 1989 1996

UR region-US UR region-US UR region-US

Atlantic 11,5 3,9 12,2 6,9 13,9 8,5

Quebec 10,4 2,8 9,3 4 11,8 6,4

Ontario 6,6 -1 5,1 -0,2 9,1 3,7

Prairies 4,5 -3,1 7,4 2,1 7,6 2,2

BC 6,7 -0,9 9,1 3,8 8,9 3,5

Canada 7,5 -0,1 7,5 2,2 9,7 4,3

Note: UR denotes the unemployment rate. The U.S. unemployment rate was 7.6 per cent in 1981, 5.3 per cent in 1989 and 5.4 per cent in 1996.

Sources: Labour Force Historical Review, CD ROM version, Statistics Canada, February 1997.

Table A2

Duration and Incidence of Unemployment in Canada

and the United States, 1976-96

average duration in weeks incidence (% of labour force)

Canada U.S. Canada U.S.

1976 13,9 15,8 26,6 25,3

1981 15,1 13,7 26,0 28,9

1982 17,3 15,6 33,0 32,3

1983 21,9 20,0 28,3 25,0

1984 21,5 18,2 27,3 21,5

1985 21,6 15,6 25,3 24,0

1986 20,3 15,0 24,6 24,2

1987 20,5 14,5 22,5 22,2

1988 18,2 13,5 22,2 21,2

1989 17,8 11,9 21,9 23,0

1990 16,8 12,1 24,9 23,7

1991 19,3 13,8 27,6 25,3

1992 22,6 17,9 25,9 21,5

1993 25,1 18,1 23,2 19,6

1994 25,7 18,8 21,0 16,9

1995 24,3 16,6 20,4 17,5

1996 24,0 16,7 21,0 16,8

Source: United States: Table B-40, Economic Report of the President , February, 1996; Canada: Labour Force Annual Averages , Statistics Canada, various issues.

Note: Incidence is calculated at annual average unemployment multiplied by the number of weeks in the year (52) divided by average duration of unemployment, with this number expressed as a percentage of the labour force.

Table A3

Long Term Unemployment as a Share of the Unemployed in Canada
and the United States, 1981-96

(persons unemployed 27 weeks or more as a share of the unemployed)

Canada United States

1981 15,6 14,0

1982 19,8 16,6

1983 28,0 23,9

1984 26,1 19,1

1985 25,6 15,4

1986 23,5 14,4

1987 23,6 14,0

1988 20,2 12,1

1989 20,1 9,9

1990 18,5 10,1

1991 23,3 13,0

1992 28,1 20,6

1993 30,7 20,4

1994 30,2 20,3

1995 27,1 17,3

1996 27,1 17,4

Source: United States: Table B-42, Economic Report of the President , February, 1995; Canada: Labour Force Annual Averages , Statistics Canada, various issues.

Table A4

Job Losses and Gains in Canada and the United States

(average annual rate as a share of total employment)

1983-89/84-88 1989-91

Canada U.S. Canada U.S.

gross job gains 14,9 13,2 13,4 12,6

openings 3,2 8,9 3,4 7,4

expansions 11,7 4,3 10 5,1

gross job losses -10,1 -10 -16,5 -11,1

closures -2,8 -7,2 -3,7 -7,6

contractions -7,3 -2,9 -12,8 -3,5

net change 4,8 3,2 -3,1 1,4

net entry 0,3 1,7 -0,3 -0,1

net expansion 4,4 1,4 -2,8 1,6

turnover 25,0 23,2 29,2 23,7

Source: Table 1.8, p. 17, OECD Jobs Study, Part I . FOOTNOTES

1. Real output advanced 27.7 per cent in Canada compared to 22.9 per cent in the United States between 1962 and 1966. Between 1973 and 1976, real output rose 13.7 per cent in Canada compared to only 3.4 per cent in the United States.

2. See Akyeampong (1992) for a discussion of some of the reasons for the decline in the relative importance of discouraged workers during the 1990s.

3. This reinforces the finding of Card and Riddell (1993) that addition of discouraged workers to the unemployed during the 1979-86 period raised the unemployment rate by 8-10 percent in each country but left the cyclical and trend components of each series unaffected.

4. In 1981, the male unemployment rate was slightly lower in Canada than in the United States (-0.3 points), while the female unemployment rate was higher (0.4 points). In 1989, both unemployment rates were significantly higher in Canada -- 2.1 points for the male rate and 2.4 points for the female rate. Thus in 1989 the female unemployment rate was slightly more important in accounting for the unemployment rate gap than the male rate, but between 1981 and 1989 the male unemployment rate contributed slightly more to the increase in the gap, given the larger increase in the male gap (2.4 versus 2.0 points). Overall, these differences are minor and the key point is that the gap is explained by increases in both unemployment rates in the 1980s. In the 1990s, the male unemployment rate increased more in Canada than the female rate (2.6 percentage points versus 1.6). Men thus accounted for a greater proportion of the additional increase in the Canada-U.S. unemployment rate gap than did women. Indeed, the male Canada-U.S. unemployment rate gap in 1996 was 4.5 percentage points, up 2.4 points from 1989. In contrast, the female Canada-U.S. gap was 4.0 points, up 1.6 points from 1989.

5. In 1981, the Canadian youth unemployment rate was nearly 2 percentage points lower than in the United States, the unemployment rate for the prime age group (25-54) was virtually identical, and the rate for the 55 and over group was slightly higher. Between 1981 and 1989, the Canada-U.S. unemployment rate differential for youth rose 2.5 points, that of the prime age group increased 2.2 points and that of the older age group 2.1 points.

Between 1989 and 1996, the Canada-U.S. unemployment rate gap rose 3.8 points for youth, 2.1 points for the prime-aged group, and 1.2 points for the 55 and older group. The absolute size of the gap in 1996 was in the 4.1 to 4.8 percentage points range for all three age groups.

6. The simple decomposition of the unemployment rate into incidence and duration components does not take account of possible multiple spells of unemployment experienced by the same individual during the year. In the presence of multiple spells, it is possible that the pattern observed here (a rise in average duration and decline in measured incidence) could be due to the same number of individuals experiencing fewer but longer spells of unemployment.

7. Unfortunately, because of the introduction of a redesigned CPS in the United States in 1994, post-1993 information on this issue is not available.

8. One reason that the breakdown of unemployment into frictional/structural and cyclical components may not be straightforward and simple is that an increase in deficient demand unemployment due to a demand shock can over time transform itself into increased structural unemployment. There are a number of mechanisms which could lead to changes in the NAIRU following demand shocks. One is the deterioration of the skills, attitudes and habits of the unemployed with time spent unemployed. A second is that lack of training opportunities for the unemployed could lead to asymmetries in wage setting. A third is that aggregate demand contractions lower investment spending, reducing the capital stock, with the economy hitting capacity constraints in the upturn before the unemployed are re-employed. For a discussion of these potential sources of hysteresis or path-dependence and an assessment of their empirical relevance in the Canadian labour market see Jones (1995).

9. Table 6 provides two OECD time series on total economy output gaps estimated on the basis of a production function approach for the 1989-94 period. The original series shows a much greater increase in the relative Canada-US output gap between 1989 and 1994 than the revised series- 8.3 points versus 3.8 points.

10. Looking first at the original series, in 1981 the Canadian economy was basically at potential, with an output gap of 0.3 points. In contrast, the United States economy was operating 1.9 per cent below potential. The identical unemployment rates in the two economies at the time despite the lower level of capacity utilization in the United States is explained by their lower NAIRU. In 1989, the Canadian output gap was virtually identical (0.1 points) to that in 1981. In contrast, the American economy went from a situation of a deflationary gap in 1981 to one of an inflationary gap (2.2 per cent). The emergence of the Canada-U.S. unemployment rate gap between 1981 and 1989 thus coincided with a turnaround in the Canada-U.S. output gap differential from 2.2 points to -2.0 points. A 4.2 point increase in the relative output gaps between the two countries corresponded to a 2.2 percentage point rise in the unemployment rate gap. When the revised output gap series is used, the story changes drastically. According to this series, Canada was operating 3.6 per cent above potential in 1989, so the Canada-U.S. output gap differential was basically unchanged between 1981 and 1989. This implies that macroeconomic developments cannot account for the emergence of the unemployment rate gap in the 1980s.

11. Note that we distinguish here between two measures of labour force attachment: (i) the labour force attachment of the source population, $P(LF)$, the probability of being in the labour force conditional on being in the population of working age, and (ii) the labour force attachment of the non-employed, $P(U|N)$, the probability of being in the labour force conditional on being non-employed. A decomposition shown below makes clear the relationship between these two dimensions of labour force attachment and the unemployment rate.

12. Card and Riddell (1993) compare Canada and the U.S. in 1979 and 1986, while a subsequent study (Card and Riddell, 1997) compares the two countries in 1981 (the last year prior to the emergence of the unemployment gap) and 1989. Both studies use both retrospective and contemporaneous data on labour market activities. Both studies and both types of data conclude that over 80 percent of the unemployment differential can be attributed to the relative increase in the labour force attachment of the non-employed in Canada.

13. See, for example, the comparisons of key features of the two programs over the 1968-88 period in Card and Riddell (1993) or the summary measures of unemployment benefit entitlement for the 1961-91 period reported in OECD (1994). The OECD measures of benefit entitlement take into account income assistance or welfare benefits (including Food Stamps) which may be available to those who exhaust regular UI benefits. Sargent (1995) constructs an index of UI generosity which ranks the Canadian system substantially more generous than that of a typical U.S. state system as of 1994.

14. One qualification to this statement (discussed below) relates to the regional extended benefit provisions introduced to the Canadian UI program in 1978. Although these provisions did not change during the 1980s, the REB provisions made the maximum potential duration of UI benefits a function of the unemployment rate. As a consequence, the sharp increase in unemployment associated with the 1981-2 recession also increased the maximum duration of benefits for many UI recipients. In this respect, the Canadian UI program became more generous during the early 1980s.

15. See Storer (1992), Card and Riddell (1993), and Corak and Jones (1995).

16. The real wage explanation of the gap was put forward in the mid-1980s by Daly and McCharles (1986) and Grubel and Bonnici (1986), but was rejected by Ashenfelter and Card (1986) and Fortin (1989).

17. The measure for Canada is the weighted average of provincial minimum hourly wage divided by average hourly earnings in all industries. The measure for the United States is the federal minimum hourly wage divided by average hourly earnings of production and non-supervisory workers on private non-agricultural payrolls. The source is the OECD minimum wage database.

18. Stanford (1995) reached different conclusion from those of the OECD Jobs Study. He found that the volatility of sectoral employment at the two digit level was greater in Canada than in the United States over the 1983-94 period, and in the 1983-88 and 1988-94 sub-periods. He also found that the volatility of sectoral employment changes increased in Canada between the 1983-88 and 1988-94 periods, while it decreased in the United States. To the degree that a higher unemployment rate is associated with greater incidence of structural change, Stanford's data provide support for the view that greater structural change in Canada relative to the United States has contributed to the Canada-U.S. unemployment rate gap.

19. See Harrison (1984), Chapman, Pope and Withers (1985), Withers and Pope (1985) and Pope and Withers (1993) for Australia; Samuel and Conyers (1987) and Marr and Syklos (1994) for Canada; and Card (1990) and Altonji and Card (1991) for the United States.

20. Freeman (1994) found that in 1993 the number of men incarcerated in the United States was 1.9 per cent the number in the male labour force and 8.8 per cent of the black male labour force. This number are up dramatically from the early 1980s. In Canada, the prison population is much smaller. For example, in 1991-92, the average population (including both males and females with the former accounting for the lion's share) of federal and provincial prisons was around 30,000 (Statistics Canada, 1993), equivalent to 0.2 per cent of the total labour force and 0.4 per cent of the male labour force (assuming all inmates are male). The relative size of the prison population has increased much less in Canada than in the United States in recent years.

21. It is obviously difficult to estimate the impact of incarceration on the aggregate unemployment rate. If the average unemployment rate of the incarcerated population before incarceration were the same as that of the overall population, then the impact of incarceration on unemployment would by definition be nil. But the unemployment rate of the incarcerated population before incarceration is well above average, both due to its racial composition (a disproportionate number of the incarcerated in the United States are black and blacks have well above average unemployment rates) and educational attainment (a disproportionate number of the incarcerated have limited schooling and the unemployment rate for those with limited schooling is also well above average).

A recent American survey of the labour force status of inmates prior to incarceration found an unemployment rate of 40 per cent. Under this assumption, male unemployment in 1993 would have been 529 thousand greater ($0.76 \text{ per cent} (0.4 \times 1.9 \text{ per cent of } 69,632 \text{ thousand male labour force})$), raising the overall male unemployment rate 0.7 points from 7.1 to 7.8 per cent, and raising the overall unemployment rate 0.4 points from 6.8 per cent to 7.2 per cent.

The U.S. prison population increased from around 250 thousand in 1970 to 500 thousand in 1980 to 1323 thousand in 1993 (Freeman, 1994: Figure 1). Under the 40 per cent unemployment rate assumption, adding the 1980 prison population to unemployment and the labour force would have increased the overall unemployment rate only 0.2 points from 7.1 per cent to 7.3 per cent. Thus, without this increased incarceration between 1980 and 1993, under this assumption, the unemployment rate would have been 0.2 points higher in 1993 relative to 1980.

Since Canadian incarceration rates are only one fifth American rates, the impact of incarceration of the Canadian unemployment rate is negligible (less than 0.1 percentage point). This means that in 1993 higher incarceration rate in the United States account for about 0.3-0.4 percentage points or about 10 per cent of the gap. The American unemployment rate is much more affected than the Canadian rate by the transfer of many high-unemployment, low-skill men from the labour market to prison. This phenomenon puts downward pressure of the American unemployment rate. The increased incarceration rate in the United States between 1980 and 1993, compared to a relatively stable rate in Canada, contributed about 0.2 points to the increase in the Canada-U.S. unemployment gap. (In 1980, even though the unemployment rate were similar, the higher incarceration rates in the United States lowered the unemployment rate by about 0.2 points).