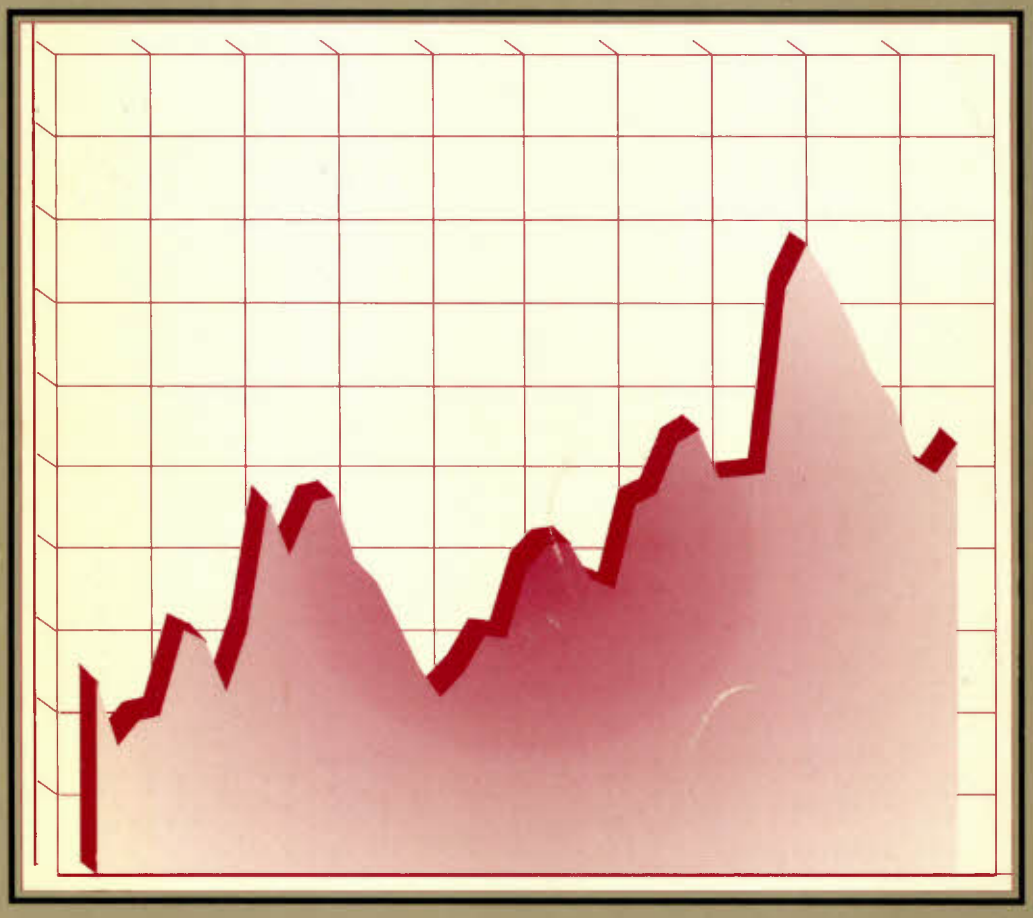
Canadian Unemployment

Lessons from the 80s and Challenges for the 90s



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A compendium edited by Surendra Gera

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Canadian Unemployment

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Canadian Unemployment

Lessons from the 80s and Challenges for the 90s

A compendium edited by Surendra Gera

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Foreword

Unemployment in Canada has shown a steadily rising trend in the three decades since 1960, with the average for each decade surpassing the average for the previous decade. And there are already a number of disturbing signs that unemployment will remain a serious problem for some time to come. In June 1991, 10.5 per cent of the labour force – about 1.5 million Canadians – were unable to find work. The costs of rising unemployment are high. It imposes economic and social burdens on individuals and families, and financial burdens on governments, which face growing demands for income support and social welfare payments.

Because of the recession of 1981-82, the unemployment rate jumped to about 12 per cent of the labour force in the early 1980s, and did not regain its pre-recession level until 1989. This persistence is puzzling, given the impressive employment growth in the 1983-89 period. Why did it take so long for unemployment to return to its pre-recession level? Will the problem of high and persistent unemployment be repeated in the 1990s, following the current (June 1991) economic downturn? Are there lessons to be learned from the 1980s to help Canadians deal with the labour market challenges of the 1990s?

The research reported in this volume was motivated by the observation of two troubling trends – rising and persistent unemployment. Other disturbing dimensions of the Canadian unemployment experience include growing regional, demographic, and industrial disparities, and increasing long-term unemployment. The contributors to this volume take a variety of analytical approaches to explain the distinctive patterns of Canadian unemployment. Their work offers valuable insights into the underlying causes of unemployment, pointing to some disturbing signs that the problem will not be easily solved using the same approaches that have been used in the past. It also outlines some possible solutions.

The research – undertaken by the Unemployment Issues Group at the Economic Council of Canada – has formed part of several recent Council publications – the 25th Annual Review, *Back to Basics* [1988]; the 27th Annual Review, *Transitions for the 90s* [1990]; *Good Jobs, Bad Jobs* [1990]; and *Employment in the Service Economy* [1991]. Given the importance of the subject, and the substantial contribution of this research to knowledge about recent Canadian unemployment experience, it is appropriate that it is collected together here in a single volume.

The papers are organized into three blocks, which address the weakening commitment to full employment in the period after World War II, the cyclical and structural components of unemployment, and the persistence of unemployment in the 1980s, respectively. Chapter 1 provides an overview of the volume. It describes the nature of the unemployment problem in Canada, and discusses some policy implications of the research.

The major conclusion of the evidence presented here is that the causes of unemployment cannot be seen as falling into simple categories. Unemployment that starts out as

cyclical, arising from weakness in demand, can evolve into much more intractable unemployment that can permanently change individuals' prospects for re-employment, as happened in the 1980s. This conclusion points to two policy challenges: 1) can governments conduct aggregate-demand management policies more effectively and avoid severe displacement in the labour market? and 2) can governments more effectively enhance the ability of the Canadian labour market to absorb adverse shocks? These concerns are particularly heightened by the new recession that has developed in Canada since mid-1990.

These papers show clearly that unemployment is not simply a labour market issue. A wide range of economic factors have an impact on unemployment, and the effects of unemployment are not always direct or clearly visible. It is hoped, therefore, that labour market economists and policymakers in other economic fields will find much that is valuable in the material presented here.

The research team for this project was led by Surendra Gera, and was under the direction of Harvey Lazar and Ross Preston.

Judith Maxwell
Chairman

Canadian Unemployment

READER'S NOTE

The reader should note that various conventional symbols similar to those used by Statistics Canada have been used in the tables:

. . figures not available
– – amount too small to be expressed
– nil or zero.

Details may not add up to totals because of rounding.

1 Unemployment in Canada: Issues, Findings, and Implications

Surendra Gera and Kathryn McMullen

For a large and growing number of Canadians, unemployment poses a serious problem. In each decade since the 1940s, the average unemployment rate has ratcheted higher, reaching an average of 9.5 per cent in the 1980s. And the prospects for the 1990s are discouraging. Canada entered the 1990s in a major recession. As of May 1991 when this report was being written, the unemployment rate had climbed to 10.3 per cent: that represented 1.4 million Canadians who were out of work.

The economic and social costs of unemployment are extremely high. Unemployment represents a waste of economic resources and imposes considerable hardships on individuals and their families. There are consequences for the distribution of income and for costs to government, as the requirements for income support and social welfare payments rise.

Unemployment results from a variety of factors which have not always been well understood. It is clear, however, that much more attention needs to be focused on its causes and effective measures for its reduction.

Our analysis, which was conducted in the late 1980s, was motivated by three questions. First, why was the national unemployment rate still close to 8 per cent in 1988-89 after seven years of strong economic growth, especially when there is considerable evidence that major sectors of the economy were operating at full capacity over this period? Second, and even more important, will the problem of high and persistent unemployment repeat itself in the 1990s, following the current economic downturn? Finally, are there any lessons to be learned from past experience that may help to minimize the costs – human and economic – of job loss in the 1990s?

We find that the causes of unemployment do not fall neatly into simple categories. Unemployment that starts out as cyclical and arises from weakness in demand, can evolve into much more intractable forms of unemployment that permanently change individuals' prospects for re-employment, as it did in the 1980s. The fact that Canada has entered the 1990s in a recessionary climate in which demand has been severely curtailed and cyclical unemployment has risen sharply, then, is cause for serious concern.

The chapters in this book address different facets of Canadian unemployment. It is our belief that, together, they will provoke renewed discussion on this very important subject. In this chapter we introduce the papers in the following way. The most notable features of the Canadian unemployment experience in recent decades are described in the first section. The second section lays down a framework for analysing various aspects of this experience and summarizes each paper. The major conclusions are discussed in the third section.

The Canadian Unemployment Experience

What is it about the recent unemployment experience in Canada that should cause concern among governments, business, and labour groups? In this section, we provide the facts about the Canadian unemployment experience in recent decades, focusing especially on the 1980s. We document the rising trend in unemployment and describe the characteristics of the unemployed. In the course of presenting this evidence, we uncover the fact that certain groups in our society bear a disproportionate share of the burden of unemployment; long-term unemployment, in particular, tends to affect some individuals, especially older workers and those who have lost their jobs involuntarily, more than others. It is essential that the extent of the problem be understood before the causes of the growth of unemployment and the possible remedies can be analysed. We try to explain why unemployment has grown in Canada and what should be done to address the problem.

The Canadian labour market is characterized by:

- a rising trend in the rate of unemployment;
- persistence of high unemployment.

But those characteristics, serious enough in themselves, do not tell the whole story. There are additional important dimensions to consider as well:

- A growing proportion of the unemployed face the grim prospects of long-term unemployment.

- Regional disparities in unemployment have become wider.

- The burden of unemployment is distributed unevenly across various demographic groups.

In the following discussion we will treat each of these dimensions in turn.

Observation 1: There is an upward trend in the aggregate unemployment rate.

Canada's unemployment rate, influenced by the vagaries of business cycles and exogenous events such as the oil-price shocks in the 1970s, fluctuated widely during the 1921-90 period (Chart 1-1). The most noticeable trend during this period is the steady climb in the unemployment rate since World War II. In the 1940s, the national unemployment rate averaged 2 per cent. That level rose to 4 per cent in the 1950s and to 5 per cent in the 1960s. The 1970s saw a further increase to 6.7 per cent and, by the 1980s, it averaged fully 9.5 per cent. This increase is remarkable, since some of the most prolonged expansionary periods in Canadian history have taken place in the postwar period.

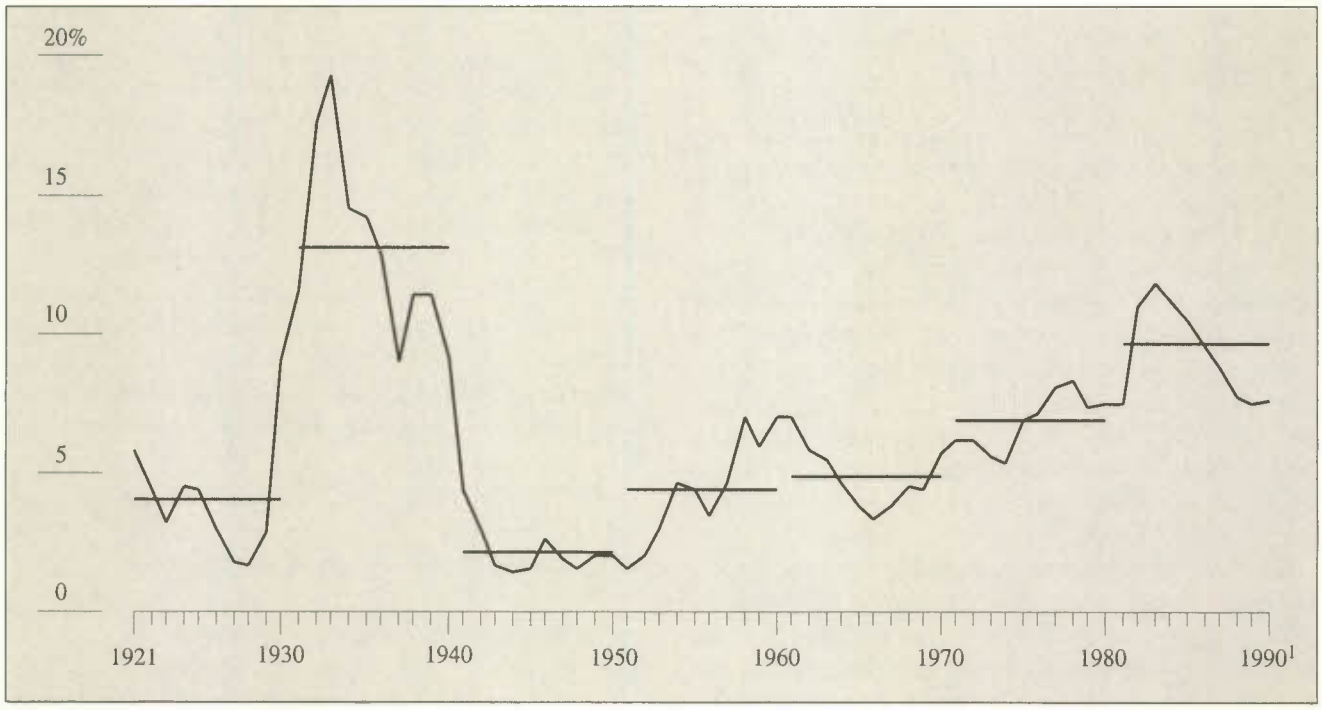
It should be noted that the increase in the unemployment rate over the long term is not a uniquely Canadian problem. Average unemployment rates in several European countries – notably the Federal Republic of Germany, France, the United Kingdom, and Italy – have also increased steadily from 3 per cent in the early 1970s to about 10 per cent in 1989. In the United States, it rose to close to 10 per cent in the recession of 1982, but has since declined to around 5 per cent. Only in Japan and a few smaller European countries (Norway, Sweden, Austria, and Switzerland) has the unemployment rate remained consistently below 5 per cent.

Why has the unemployment rate trended upwards in Canada since the end of World War II? To answer that question, we begin by considering changes in the growth and composition of the labour force, focusing in particular on changes in more recent decades.

The rate of labour force growth in Canada has varied considerably over time. In the 1960s, labour force growth

Chart 1-1

National Unemployment Rate, Canada, 1921-90



1 Average of seasonally adjusted data for January to June.
SOURCE Estimates by the authors, based on data from Statistics Canada.

averaged 2.8 per cent annually. In the 1970s, with the entry of the baby-boom generation and large numbers of women onto the job market, it jumped to a record 3.2 per cent. In the 1980s, however, it decreased to 1.8 per cent. This growth in the size of the Canadian labour force is reflected in the labour-force-to-population ratio which rose from 57.6 per cent in 1966-69 to 66.9 per cent in 1988-89 (Table 1-1).

Throughout this period, Canada's record of job creation has been strong. In 1966-69, the employment-to-population ratio (aged 15 and over) was 55.2 per cent; by 1988-89, it had reached 61.8 per cent. Only during the recession of 1981-82 did this ratio actually decrease. This increase has been due mainly to marked increases in the labour force participation rate of adult women (aged 25-54) from 36.9 per cent in 1966, to 60.1 per cent in 1980, to 74.5 per cent in 1989. In spite of this strong job-creation record, however, the rate of unemployment has shown a stubborn upward trend. While the unemployment rate decreased from its 1982-83 peak of 11.4 per cent, it nevertheless was 7.7 per cent in 1988-89, despite strong economic growth in the years following the 1981-82 recession.

Unemployment rates may increase if the composition of the labour force changes in such a way that the share of groups with characteristically high rates of unemployment rises. Historically, this has included youth and women. Nevertheless, this factor accounts for very little of the increase in unemployment in recent years. Changes in the age-sex composition of the labour force accounted for a 0.6-percentage-point increase in the unemployment rate in the mid- to late 1970s, and has decreased since then to account for only 0.2 percentage points in the late 1980s.[1] This decline reflects two developments: a decrease in the labour force share of youth (aged 15-24) and a decline in the unemployment rate of women, relative to the national average. The labour force share of youth fell from 25.4 per cent in 1970 to 19.8 per cent in 1989, while the gap between the unemployment rate of men and women has narrowed from 2 percentage points in the late 1970s to 0.6 percentage points in 1989.

Observation 2: The aggregate unemployment rate has been slow to decline during recovery and expansionary periods.

Not only has unemployment tended to rise over the last 30 years, it has been persistent – sharp increases in unemployment during economic downturns have not been matched by equally sharp decreases during the growth periods. In all three major business cycles in Canada – those of 1929-42, 1956-66, and 1981-89 – the unemployment rate has been very slow to return to pre-recession levels (Chart 1-2).

During the Great Depression of the 1930s, unemployment increased by 16 percentage points and did not return to pre-depression levels until 1942, a period of about 10 years. During the major recessions of 1957-58 and 1981-82, unemployment rose by about 4 percentage points. In both cases, it returned to its pre-recession level only after seven years of uninterrupted economic growth.

The recessionary shock of 1981-82 was more severe than anything Canadians had experienced since the 1930s. Between 1981 and 1982 real output dropped by 3.2 per cent and total employment by 3.5 per cent. That represented a loss of 383,000 jobs. As a consequence, the proportion of the population aged 15 and over who were working dropped from 60 to 56 per cent, a level not seen since the early 1970s; that was followed by a further decrease of about

Table 1-1

Total and Fixed-Demographic-Weight Unemployment Rates, Participation Rate, and Employment-to-Population Ratio, Canada, Selected Periods, 1966-89

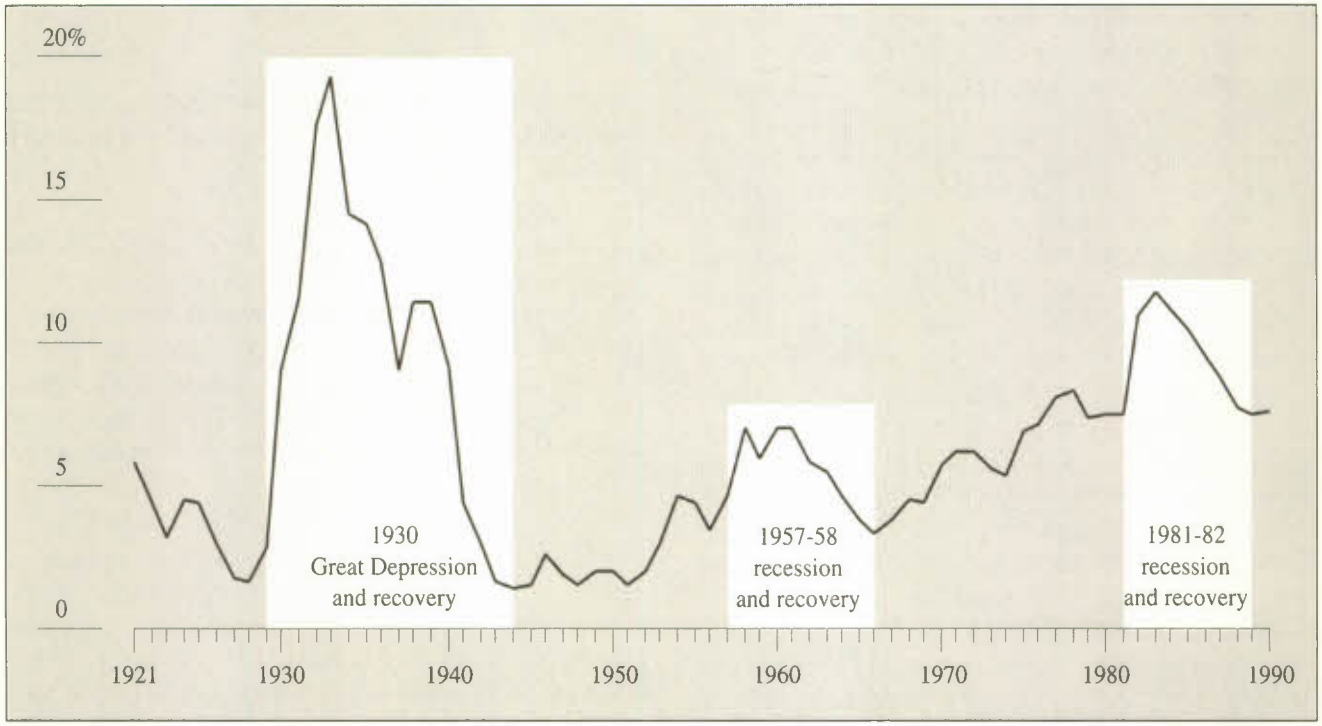
	1966-69	1970-74	1975-79	1980-81	1982-83	1984-87	1988-89
				(Per cent)			
Total unemployment rate	4.3	5.9	7.6	7.5	11.4	10.0	7.7
Fixed-demographic-weight unemployment rate[1]	4.3	5.8	7.0	7.0	11.1	10.0	7.5
Labour-force-to-population ratios	57.6	58.9	62.0	64.4	64.2	65.5	66.9
Employment-to-population ratios	55.2	55.5	57.3	59.6	57.0	59.0	61.8

1 The fixed-demographic-weight unemployment rate for each year is calculated by generating an adjusted unemployment rate using 1966 labour force shares as weights.

SOURCE Estimates by the authors, based on data from Statistics Canada.

Chart 1-2

National Unemployment Rates in the Great Depression of 1930 and the Recessions of 1957-58 and 1981-82, Canada



SOURCE Estimates by the authors, based on data from Statistics Canada.

1 percentage point in 1983. It was not until 1987 that the employment-to-population ratio returned to its pre-recession level.

Between 1982 and 1983 the unemployment rate jumped to more than 11 per cent of the labour force and did not regain its pre-recession level until 1989. This persistence is puzzling, given the impressive growth in employment in the post-1983 period. Why did it take so long for unemployment to return to its pre-recession level? Part of the answer is that the growth in employment during the early part of the recovery and expansionary period simply replaced jobs that had disappeared during the recession. It was not until 1986 that total employment, led by the growth in service-sector employment, exceeded its pre-recession level.

Unemployment has two primary components: incidence, which measures the percentage of the labour force that is unemployed, and duration, which measures the length of unemployment spell.[2] If either or both of these components remains high, then unemployment is said to be persistent. When the change in unemployment since 1980 is disaggregated into the portion due to increased incidence and that due to increased duration, it is clear that as the economy recovered, the *incidence* of unemployment decreased, more or less regaining its pre-recession level (Chart 1-3). However, the *duration* of unemployment remained high, on average, accounting for most of the persistence in the unemployment rate.

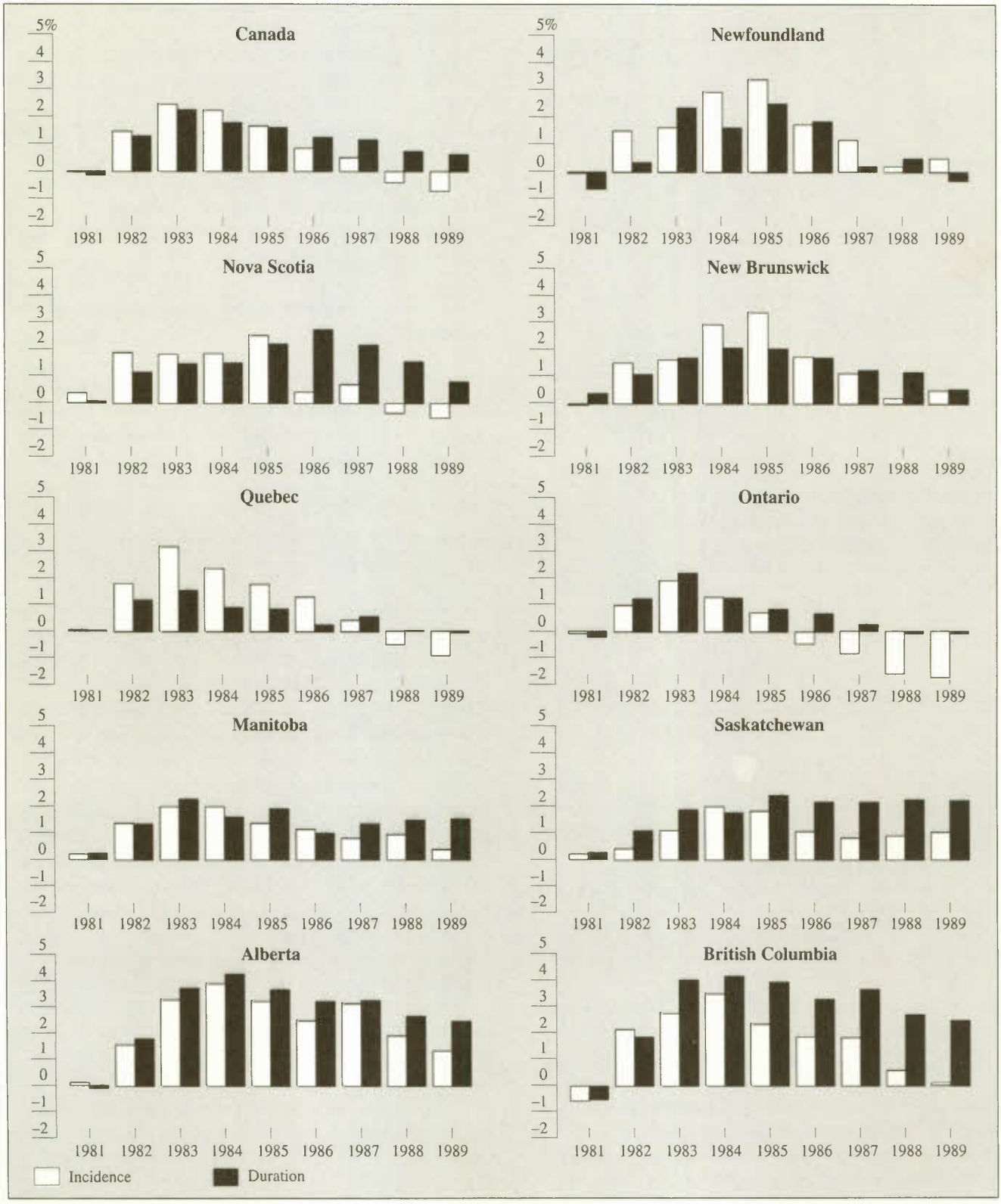
In the 1980s, the increase in the average duration of an unemployment spell affected every age group. In 1980-81, the average duration of unemployment for all age groups, as measured by in-progress unemployment spells from Labour Force Survey data, was 14.9 weeks (Table 1-2). In 1988-89, when the average rate of unemployment was roughly similar, the average duration of unemployment had risen to 18.1 weeks. And in the 1984-87 period, the duration of unemployment averaged 21 weeks.

Observation 3: Long-term unemployment increased in the 1980s.

A striking aspect of the duration of unemployment is the particular case of the long-term unemployed. These individuals face serious hardships, and their unemployment experience merits examination.

Chart 1-3

Incidence and Duration of Unemployment,[1] Canada and the Provinces, 1981-89



1 Change in the unemployment rate from its 1980 level.

SOURCE Estimates by the authors, based on data from Statistics Canada.

Table 1-2

Average Duration of Unemployment[1] by Age, Canada, Selected Periods, 1976-89

	All age groups	Age group		
		15-24	25-44	45 and over
	(Weeks)			
1976-79	14.7	12.8	15.4	18.5
1980-81	14.9	12.7	15.9	19.1
1982-83	19.6	16.9	20.6	23.6
1984-87	21.0	15.3	22.4	28.7
1988-89	18.1	11.7	19.2	25.8

1 Based on in-progress spells.

SOURCE Estimates by the authors, based on data from Statistics Canada.

Table 1-3

Average Unemployment Rate and Incidence of Long-Term Unemployment, Canada, Selected Periods, 1976-89

	Unemployment rate	Incidence of long-term unemployment	
		Six months and over	Twelve months and over
	(Per cent)		
1976-79	7.6	14.9	3.6
1980-81	7.5	15.3	4.0
1982-83	11.4	23.9	7.4
1984-87	10.0	24.7	9.5
1988-89	7.6	20.2	6.9

SOURCE Estimates by the authors, based on Statistics Canada, *The Labour Force*, Cat. 71-001.

In 1980-81, 15.3 per cent of the unemployed were jobless for a continuous period of six months or more; by 1984-87, that figure had risen to 24.7 per cent (Table 1-3). The proportion then declined slightly to 20.2 per cent in 1988-89. The incidence of long-term unemployment – defined as continuous unemployment of 12 months or more – also rose, from 3.6 per cent of total unemployment in 1976-79 to a high of 9.5 per cent in 1984-87. Since then it has declined, reaching 6.9 per cent in 1988-89. Nevertheless, this level is nearly twice as high as that prevailing at the end of the 1970s.

For some groups, long-term unemployment is a serious problem. Workers aged 45 and over experienced the longest spells of unemployment during the 1981-82 recession, and during the subsequent recovery and expansionary periods their rate of long-term unemployment continued to rise. Between 1981 and 1989, the average duration of unemployment experienced by this group increased by about 35 per cent. An increase in long-term unemployment can also be observed among prime-aged workers (aged 25-44), though the increase is less pronounced than that of older workers. And turning to the regions, in Quebec and British Columbia the incidence of long-term unemployment was still well above the national average in 1989.

Observation 4: Regional unemployment disparities have worsened.

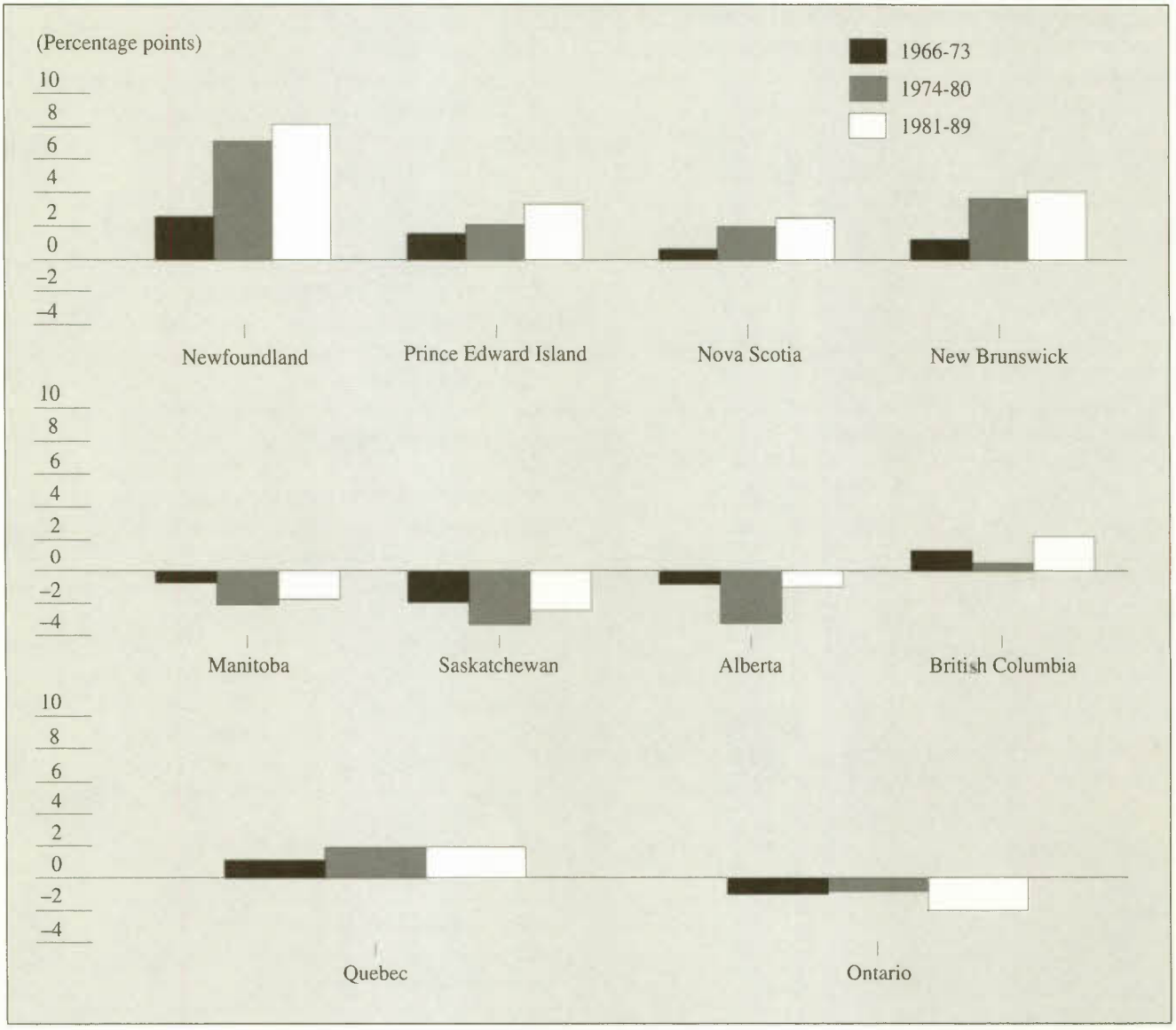
Significant disparities in employment opportunities across regions are an important characteristic of the Canadian economy. Ontario's unemployment rate has always been below the national average, while the Atlantic provinces have consistently experienced above-average unemployment rates. In 1989, Ontario's unemployment rate was 5.1 per cent, while the unemployment rate in the Atlantic region was 12.4 per cent.

A comparison of how much each province's rate of unemployment differed from the national average for the 1966-73, 1974-80, and 1981-89 periods shows that provincial disparities in unemployment rates remain wide and serious (Chart 1-4). Furthermore, absolute disparities in provincial unemployment rates have increased. Between 1966-73 and 1974-80, the unemployment rates of the four Atlantic provinces increased dramatically relative to the Canadian average. Quebec's position also deteriorated. Most notable in the 1980s, however, was the large increase in British Columbia's unemployment rate relative to the national average. In only two regions – Ontario and the Prairie provinces – have unemployment rates remained below the national average.

Striking differences in provincial labour markets are also revealed when the unemployment rate is separated into its incidence and duration components (see Chart 1-3). All provinces experienced an increase in both the incidence and the duration of unemployment in 1982 as a result of the recession of the early 1980s; however, distinct regional patterns emerged in the recovery period. In Ontario and Quebec, the contribution of incidence to the unemployment rate fell almost immediately following the recession, and both the incidence and duration of unemployment declined to below pre-recession levels by 1989. The Atlantic provinces also saw decreases in both their incidences and

Chart 1-4

Difference between Provincial and National Unemployment Rates, Canada, Selected Periods, 1966-89



SOURCE Estimates by the authors, based on data from Statistics Canada.

durations of unemployment in the latter half of the 1980s, but with the exception of the incidence in Nova Scotia, they have remained above their pre-recession levels.

What is most striking is the unemployment experiences of the Western provinces – most notably Alberta and British Columbia – in the 1980s. Compared with the pre-recession years, both the incidence and the duration of unemployment have remained high in the West, and showed little inclination to decrease as the recovery progressed. The duration, in particular, has remained stubbornly high.

Observation 5: The burden of unemployment has been distributed unevenly across different demographic groups.

There has been a noticeable shift in the distribution of unemployment among different groups in the labour force. Table 1-4 presents the unemployment rates for various demographic groups relative to the national average for the years 1966, 1975, 1981, and 1989. The most dramatic increase in relative unemployment has occurred among older workers (aged 55-64), despite a fall in their labour

force participation rate from 54.2 per cent in 1975 to 49.9 per cent in 1989 (Table 1-4).[3] While this group has historically experienced unemployment rates lower than the national average, that advantage eroded in the 1980s, falling from 3.1 to only 1.2 percentage points below the national average between 1981 and 1989.

With respect to gender, most notable is the fact that the relative unemployment rate for adult women (aged 25 and over) rose only slightly, despite huge increases in their labour force participation rate.

Table 1-4

Unemployment Rates of Selected Demographic Groups Relative to the National Average, Canada, 1966, 1975, 1981, and 1989

	1966	1975	1981	1989
		(Per cent)		
National unemployment rate	3.4	6.9	7.5	7.5
		(Percentage points)		
Relative unemployment rate[1]				
Age				
15-19	5.1	8.0	8.7	5.6
20-24	0.8	3.0	3.7	2.6
25-34	–0.6	–0.8	–0.5	0.6
35-44	0.9	–2.5	–2.4	–1.4
45-54	–0.7	–2.4	–2.8	–2.2
55-64	0.1	–2.6	–3.1	–1.2
Age/sex				
Males, 25-34	–1.1	–1.9	–1.5	–0.1
Males, 35-44	–1.3	–3.3	–3.2	–2.0
Males, 45-54	–0.8	–3.1	–3.3	–2.7
Males, 55-64	0.8	–2.9	–3.1	–1.2
Females, 25-34	–	1.1	0.9	1.3
Females, 35-44	–0.9	–1.0	–1.2	–0.6
Females, 45-54	–1.0	–1.2	–2.0	–1.6
Females, 55-64	–2.0	–2.0	–3.2	–1.5
Marital status				
Males, single	3.4	5.3	5.8	4.6
Males, married	–1.1	–2.9	–3.1	–2.5
Males, other	2.4	1.3	1.8	2.5
Females, single	0.6	2.2	2.6	1.0
Females, married	–0.7	1.0	0.1	–0.1
Females, other	–0.6	–0.5	0.8	2.2

1 Difference between demographic group's unemployment rate and the national rate.

SOURCE Estimates by the authors, based on data from Statistics Canada.

It is well known that individuals with fewer years of formal education are more likely to be unemployed. Unemployment among individuals with eight years of schooling or less tends to be substantially higher than the national average; furthermore, those individuals experienced the most dramatic increases in their unemployment rate during the 1975-89 period, in spite of the fact that their labour force participation rate fell by 9.1 percentage points (Table 1-5).

The unemployed can be classified into four groups: job losers, job leavers, re-entrants, and new entrants to the labour force (Table 1-6). Most of the increase in unemployment between 1975 and 1989 was concentrated among job losers. Over this period, job losers accounted for slightly over 50 per cent of total unemployment, while job leavers accounted for just under 20 per cent; no significant increases in unemployment took place among new entrants and workers re-entering the labour force.

This brief overview of the Canadian unemployment experience leads to the following observations. First, the unemployment rate has been climbing steadily upwards in recent decades. Second, those rising levels of unemployment have shown remarkable persistence – unemployment has been slow to decline in periods of economic growth with the result that it has often remained high when one growth period ended and a new downturn began; furthermore, a growing proportion of the unemployed consists of individuals who are having to deal with prolonged periods of unemployment of six months or even one year or more.

Table 1-5

Unemployment Rate Relative to the National Average by Level of Education, Canada, 1975, 1981, and 1989

	1975	1981	1989
		(Per cent)	
National unemployment rate	6.9	7.5	7.5
		(Percentage points)	
Relative unemployment rate[1]			
0-8 years' education	1.3	1.3	3.6
High school degree	1.1	1.1	1.4
Some postsecondary	–0.5	–0.5	–0.2
Postsecondary certificate or diploma	–2.6	–2.5	–2.3
University degree	–3.9	–4.5	–3.8

1 Difference between the unemployment rate for the category and the national rate.

SOURCE Estimates by the authors, based on data from Statistics Canada.

Table 1-6

Distribution of Average Unemployment Rate by Reason for Separation, Canada, Selected Periods, 1975-89

	National unemployment rate	Reason for separation			
		Job losers	Job leavers	Re-entrants	New entrants
		(Percentage points)			
1975-79	7.6	3.6	1.7	1.9	0.5
1980-81	7.5	3.8	1.5	1.9	0.4
1982-83	11.4	6.8	1.6	2.5	0.5
1984-87	10.0	5.6	1.7	2.3	0.5
1988-89	7.6	4.0	1.6	1.9	0.3

SOURCE Estimates by the authors, based on data from Statistics Canada.

Third, regional disparities in unemployment rates widened in the 1980s, with all regions except Ontario experiencing increasing problems either as a result of a growing proportion of unemployed individuals in the labour force or growth in the proportion of the long-term unemployed. Fourth, some groups in our society bear a disproportionate share of the increase in unemployment; these groups include older workers (aged 45 and over), those with relatively little formal education, and individuals who lose their jobs involuntarily.

These observations on the nature of unemployment in Canada led the authors in this volume to seek to explain why unemployment in Canada has behaved in these ways. Before summarizing the papers, in the following section we give a brief overview of the concepts which economists have developed to better understand the nature of unemployment.

Explaining Canadian Unemployment Patterns

What are the causes behind these unemployment patterns? In this section we outline some economic concepts and theories that may improve our understanding of the dimensions of Canadian unemployment, and then summarize the papers in the volume. The focus is on seeking explanations for two major developments: the rise in unemployment and the persistence of unemployment.

Unemployment can arise for cyclical, frictional, or structural reasons. Cyclical unemployment arises during recessionary periods in the business cycle when aggregate demand is too low; this type of unemployment is often referred to as "Keynesian," and is commonly the result of contractionary aggregate economic policies.

Frictional unemployment results from normal job turnover and is a natural outcome of a dynamic labour market. In a changing economy, individuals are continually entering and leaving the unemployment pool and firms are continually creating and destroying jobs. The unemployed leave the pool when their capabilities coincide with the requirements of a vacant job; until this happens, workers and firms keep searching for a match. Since the process of matching rarely happens instantaneously, some unemployment exists at all times.

Of greater concern than transitory frictional mismatches, however, is structural unemployment resulting from more deep-rooted and permanent changes in the economy. These include, for example, changes in technology, social institutions, international competition, and productivity; and commodity and oil-price shocks. Structural unemployment is relatively permanent, and occurs when the skills, work experience, geographic locations, or occupations of skilled workers persistently differ from those required for available jobs.[4]

Economists have long recognized that some unemployment will always exist, even in a healthy economy. W. H. Beveridge, in his 1945 monograph *Full Employment in a Free Society*, argued that unemployment is due in part to frictional, seasonal, and structural factors. He maintained that market-oriented economies should strive for three goals where unemployment is concerned: unemployment should be of short duration; there should, in general, be more jobs than people searching for them; and effective demand should be such that these objectives can be met. Such an economy, he maintained, would naturally be fully employed.

Today, many economists believe that there is a "natural rate of unemployment," and that the goal described by

Beveridge is unrealistic. Economics textbooks have put forward various definitions of the natural rate of unemployment. For example, it is the "rate that prevails in normal times" [Hall and Taylor 1986, 52]; "that part of unemployment which would exist even at full employment" [Dornbusch and Fisher 1984, 495]; and "the lowest level that can be sustained" and "the lowest rate the nation can enjoy without risking an unacceptable acceleration of inflation" [Samuelson and Nordhaus 1985, 218].

The concept of the natural rate of unemployment is illustrated by Friedman's 1968 statement that "there is some level of unemployment consistent with equilibrium in real wage rates" [1968, 8]. If wage and price inflation were fully anticipated by firms and workers, the rate of unemployment would be determined by the underlying structure of the real economy and not by the level of inflation, because real wages would adjust to levels consistent with full employment. The unemployment rate consistent with a situation of fully anticipated wages and prices is termed the natural rate of unemployment, and consists of structural as well as frictional unemployment. Friedman emphasized the role of the actual structural characteristics of labour and commodity markets that might affect the natural rate of unemployment. These include market imperfections that might prevent or impede real wages from adjusting to levels consistent with full employment, such as minimum wages, the degree of unionization, and taxes. Other structural characteristics of the economy that might affect the natural rate are variability in the demand for, and supply of, goods and labour; changes in mobility across occupations and regions; the cost of searching for a job; and demographic shifts.

The theory suggests that there is a tendency for the economy to revert back to the natural rate of unemployment if, for some reason, a deviation occurs. If, for example, the actual rate of unemployment is above the natural rate, the greater risk of redundancy will encourage workers to moderate their wage demands and employment possibilities will increase. If the unemployment rate falls below the natural rate, workers will bargain for higher wages and employment possibilities will decline. In the short run, the gap between the actual unemployment rate and the natural rate is an indicator of the degree of tightness or slackness in the labour market and of the likely inflationary or disinflationary pressures emanating from it. In the medium to long run, the major concern of policymakers is to reduce the natural rate of unemployment.

During the 1980s, the unemployment rates of several OECD countries increased sharply. Undoubtedly, the disinflationary monetary policies pursued during the early 1980s played a key role in causing these increases. Nevertheless, despite renewed growth in aggregate economic activity, unemployment rates in most Western European countries have remained persistently high. In contrast, unemployment has declined to pre-recession levels in the United States and Canada, though in Canada the decrease took place only after a long lag.

Various explanations have been offered to explain the greater persistence of unemployment in Europe than in the United States and Canada. A common one is that the natural rate of unemployment has risen substantially. The difficulty with this argument is that in Europe during this period the direction of changes in the factors that are thought to affect the natural rate should have worked to lower the unemployment rate.[5] This puzzling European experience has led some economists to challenge the basic premise of the natural rate hypothesis and to develop the theories of "hysteresis."[6]

In the context of unemployment, hysteresis means that shocks to the actual rate of unemployment also bring about changes in the natural rate of unemployment. The argument is that temporary shocks may have permanent effects such that, once the shock disappears, unemployment persists in the form acquired during the shock. Repeated shocks in the presence of hysteresis will then cause the natural rate to vary over time. In other words, it is argued that the economy does not fluctuate around a unique equilibrium; instead, it is capable of setting at one of many different equilibriums. Consequently, the identification of the natural rate of unemployment at a given point in time is arbitrary. One important implication of this hypothesis is that expansionary demand policies designed to reduce the actual rate of unemployment should also act to reduce the natural rate of unemployment.[7]

In one debate, "hysteresis" is distinguished from "persistence." According to the hysteresis argument, temporary shocks have permanent effects, that is, unemployment will show no tendency to return to its previous level, and the current unemployment rate simply becomes the natural rate. The persistence argument, on the other hand, is that unemployment remains stubbornly high and may take a long time to return to its previous equilibrium. We do not attempt to settle this debate here, but instead build upon the fundamental message that in the presence of hysteresis, a rise in the actual rate of unemployment during cyclical downturns could either cause the natural rate to rise permanently, or lead to persistent structural unemployment that endures such that the return to the old equilibrium occurs over a long period of time.

Our research sought to identify the mechanisms by which this process occurs. What we find is that a rise in cyclical

unemployment leads to growth in the proportion of long-term unemployment. This in turn leads to a number of problems, including deterioration of human capital, discriminatory hiring practices, and the failure of wages in the economy to decrease as the long-term unemployed become excluded from the job market. The flow of labour from employment-contracting sectors to employment-growth sectors also decreases. The end result is an increase in structural unemployment, which is very slow to decline.

Investigation of Unemployment Issues

Much of the unemployment in the 1980s was structural. Canada now faces additional problems, however. Cyclical unemployment also rose sharply in 1990 as a new recession developed, and it now appears that the painful lessons of the 1980s are being repeated. Another cause for concern is the fact that if cyclical unemployment becomes structural in nature, the result may be new, higher benchmarks for the natural rate of unemployment.

Our research is divided into three blocks. Block I provides an historical perspective on the problem. It examines how the commitment to full employment has changed in the post-World War II period in Canada. Block II investigates the nature of unemployment, particularly its cyclical and structural components. It also examines the distribution of unemployment across regions and demographic groups. Block III addresses the problem of the persistence of unemployment by investigating the dynamics of employment and unemployment and the roles played by sectoral shifts in economic activity, long-term unemployment, and wage rigidities in the labour market.

Block I: Historical Perspectives

In Block I, which consists of one chapter, Campbell reviews the political origins and development of the "full-employment objective" in Canada from historical, conceptual, and comparative perspectives.[8] He traces the evolution of the federal government's view of unemployment from 1945 to the 1980s, showing how an initial, if somewhat restrained, commitment to a goal of full employment weakened as the reduction of inflation came to dominate macroeconomic policymaking in the federal government. In 1945, the general belief was that most unemployment was cyclical, a result of deficient demand. By the 1950s and 1960s, however, the notion of structural unemployment was accepted by governments, and a variety of supply-oriented and institutional changes – albeit tentative and ad hoc in nature – were introduced to combat it.

A marked change in the perception of unemployment occurred in the late 1960s, when it became clear that reductions in the rate of unemployment exacted a cost in terms of rising inflation. When faced with a policy choice, governments in the 1970s and the 1980s chose to introduce measures to reduce inflationary pressures, despite the fact that rising unemployment was the result. The unemployment problem became secondary as the government put in place a set of measures, including deficit reduction, constraints on the size of government, and structural policies, to combat inflation. (More recently, in the early 1990s, we have seen that governments will take such extreme measures as generating recessions themselves in order to reduce inflation, despite mounting unemployment.) In Campbell's view then, a complete turnaround has taken place in Canada in the last 45 years with respect to the "policy resonance" associated with the issue of unemployment.

At the conceptual level, Campbell argues, a number of theoretical and empirical developments weakened the case for full employment. First, the disaggregation of unemployment into cyclical and structural components seriously complicated attitudes and policy responses to unemployment because each component required a different type of policy remedy. Second, the emergence of the notion of a trade-off between inflation and unemployment meant that a commitment to full employment was not costless. And third, a consensus emerged supporting the notion of a natural rate of unemployment. To Campbell, the latter seriously weakened the emotional and political "resonance" of unemployment in policy circles. As a result, Campbell observes, policymakers, when faced with a trade-off between high unemployment (with associated high social security costs) and lower unemployment (requiring more government intervention), generally chose the former.

Campbell contrasts Canada's unemployment experiences and policies with those of a number of industrialized countries including Austria, West Germany, Japan, and particularly, Sweden. He concludes that relative to these countries, Canada failed to institutionalize or renew its employment commitment due to a lack of political will. When faced with a trade-off between unemployment and institutional change, Canada chose to tolerate higher levels of the former in order to limit the latter.

Block II: The Nature of Unemployment

The four papers in Block II identify and measure the different types of unemployment. Burns provides estimates of the natural rate of unemployment in Canada in the

1963-87 period and identifies some factors that caused it to shift. Gera, Rahman, and Arcand observe that both unemployment and job vacancies have increased in recent years and conclude that structural unemployment indeed has grown in Canada in the 1966-88 period. Corak focuses on cyclical unemployment and its impact on the long-term – and rising – trend in unemployment. A second paper by Burns seeks to explain the growing differences in provincial unemployment rates.

In Chapter 3, Andrew Burns measures the effects of policy variables and other structural aspects of the Canadian economy on national and provincial natural rates of unemployment since the early 1960s. He estimates the contribution of factors that influence the degree of flexibility of labour and commodity markets, such as the changes in the demographic composition of the labour force, in the unemployment insurance system and in minimum wage laws, in taxes, in the relative price of energy, and in social attitudes towards work.

He finds that the estimated natural rate of unemployment for Canada rose steadily from an average of 5 per cent in the 1960s to about 7 per cent in the 1970s and the beginning of the 1980s. The 1981-82 period saw a sharp rise in the natural rate to 9.7 per cent and then a slow decrease to reach 7.7 per cent in 1987. During most of the 1965-76 period, the natural rate was above or equal to the actual rate, indicating that, by and large, all of the actual unemployment was structural in nature. In other words, there was no cyclical unemployment during this period; in fact labour markets were tight. In the late 1970s and after 1981 there was a considerable amount of cyclical unemployment, and the actual rate of unemployment was higher than the natural rate.

What factors contributed to this pattern? Burns finds that the major structural factors that contributed to the upward trend in the natural rate in the early to mid-1970s were increased unemployment insurance benefits, minimum wages, and taxes. After 1976, however, the influence of these factors in fact reversed as a result of policy changes. Between 1976 and the mid-1980s, the factor that contributed most to the rise in the natural rate was an increase in mismatch unemployment provoked by changing energy and commodity prices. By the end of 1987, the disruptive impact of the oil-price shock had weakened considerably, which allowed the natural rate to fall.

Burns also finds that estimates of the natural rate vary from province to province. It was highest for the Atlantic provinces and lowest for Ontario. The energy shocks appear to have caused considerable disruptions in labour markets in the Atlantic provinces. There is also evidence of wage spillover among the provinces, as high Ontario wages were emulated in provinces with lower productivity. The result was an increase in unemployment due to high real wages. Quebec and Ontario, which have the most industrialized economies, are also the most cyclically sensitive. While the growth of labour unions and the oil shocks increased the natural rates in these provinces, the strong expansion of the Quebec and Ontario economies after 1983 reduced them, so that in 1987 they were close to their 1973 levels. Manitoba's experience most closely reflects that of Ontario and Quebec. The other western provinces, particularly Saskatchewan and Alberta, experienced significant increases in structural unemployment. High structural unemployment in British Columbia reflected changes that accumulated over the 1970s, rather than depressed commodity prices. Burns concludes that diversification of the economy and improved labour market flexibility will likely improve the labour market prospects in British Columbia.

In Chapter 4, Gera, Rahman, and Arcand focus on two major questions: have structural imbalances in the Canadian labour market indeed increased in the last three decades and particularly in the 1980s? And if so, what factors have contributed to this increase?

The authors note that the rise in unemployment in Canada in recent years has not been accompanied by a commensurate fall in job vacancies. This suggests that structural mismatches in the labour market have been worsening. They analyse a variety of factors that may have impeded the process of matching people and jobs at the national and the regional levels. Particular attention is paid to three possible sources of imbalance: growing regional disparities in economic performance; the rise in the proportion of the long-term unemployed (individuals continuously unemployed for a year or more) suggesting that there is a pool of workers whose characteristics do not appear to be in demand; and unbalanced growth across industrial sectors leading to increased mismatches between labour demand (in expanding sectors) and labour supply (workers released from declining sectors).

The authors find that structural imbalances in Canadian labour markets have become very significant since 1966. While the extent of the mismatches increased in all regional labour markets, the most severe shift was experienced by the Atlantic provinces, and the least by the Prairie provinces. A major new finding of this investigation is that the increase in the proportion of long-term unemployment contributed to the growth of structural imbalances in the 1980s at the national level, and in the Atlantic provinces, British Columbia, and the Prairies. Gera, Rahman, and Arcand point to two factors to explain this result. First, the

job-search intensity of the long-term unemployed tends to be lower than that of other unemployed workers. And second, employers often discriminate against the long-term unemployed when hiring, using duration of unemployment as a screening device.

The main purpose of Chapter 5 by Miles Corak is to offer a descriptive overview of some of the distributional dimensions of Canadian unemployment, and to draw some implications for policy. In particular, Corak looks back to the business cycle of the 1980s from a perspective that stresses the dynamic nature of the labour market, in order to learn some lessons for the 1990s. He notes that most analyses of the costs and benefits of using restrictive aggregate demand policies to reach a particular inflation rate leave unaddressed the matter of how these costs and benefits are distributed among individuals.

At first glance there appears to be a great deal of flux in the labour market, whereby a relatively large fraction of participants experiences some unemployment. Corak finds, for example, that on average about 20 per cent of the labour force experiences unemployment at some point during the year. During 1982, at the height of the last recession, this figure was as high as 28 per cent. Nevertheless, Corak argues, this figure may be deceptive. He maintains that it is important to examine the entire distribution of the time spent unemployed, and not simply a few summary indicators. He finds that, in fact, the bulk of the burden of unemployment is shouldered by a small minority of the labour force. For example, in 1980, just before the last recession, only 3.3 per cent of the labour force were unemployed for more than six months, yet they accounted for 43 per cent of the total time spent unemployed. With the onset of the recession, these figures became 7 and 55 per cent, respectively, and they were not greatly changed by the recovery.

The author reviews the dominant framework for macroeconomic policymaking. He arrives at two conclusions. First, when considering the trade-offs between inflation and unemployment, it should be explicitly recognized that the burden of unemployment is heavily concentrated among a small minority of the labour force. A small fraction of the population will pay the costs of a restrictive policy designed to reduce the inflation rate, while the benefits associated with lower inflation will accrue to society as a whole. This distributional issue should be interpreted as raising the costs associated with such policies. Second, a sharp distinction should not be made between cyclical and structural unemployment. The shifts observed in the distribution of unemployment during the 1980s could be interpreted as representing structural changes, but these shifts coincided with the onset of the recession. Restrictive aggregate demand policies may in and of themselves induce structural changes. In suggesting as much, the author raises questions about the validity of the natural rate of unemployment as a useful guide for policy, and calls for more research into alternative views of the economy.

In Chapter 6, Burns seeks the answers to two key questions: Why do differences in provincial unemployment rates exist, and why have they worsened over time? He suggests that an important explanation lies in differences among regional economic structures. According to this view, unemployment is higher in Newfoundland than in Ontario because Newfoundland's industries tend to be more seasonal and less stable. Therefore an individual working in Newfoundland will have, all other things being equal, a higher probability of being unemployed, and the province as a whole will have a higher unemployment rate.

Burns finds that in the census years 1971, 1981, and 1986, a considerable proportion of the disparities in interprovincial unemployment rates can be explained by differences in provincial industrial structures and in the characteristics of provincial populations. As much as 50 per cent of the difference between Ontario's unemployment rate and those of other provinces can be explained by this factor. The remainder of the disparity, he concludes, can be explained by nonstructural influences such as local market conditions, and by policy factors such as unemployment insurance benefits, minimum wages, and social assistance.

The four papers in Block II, then, come to the following main conclusions. First, structural factors – including shifts in relative energy and traded-commodity prices and problems associated with the industrial composition of provincial economies – account for an important part of the recent rise in unemployment in Canada. Second, one outcome of rising structural problems in the economy is growing labour market imbalances. Both unemployment and job vacancies have risen through time, indicating that the mismatch between the skills of the unemployed and the requirements of jobs have been growing. Third, the distribution of unemployment – and, by implication, of mismatches in the labour market – has shown some distinctive characteristics. Some regions – notably the Atlantic provinces, Alberta, and British Columbia – and some individuals, particularly the long-term unemployed, have been especially affected by rising structural unemployment.

Block III: Persistence in Unemployment

Unemployment is of concern in Canada not only because it has been growing in magnitude and shows distinctive

distributional characteristics, but also because it has shown a great deal of persistence in recent years. As we pointed out earlier, the unemployment rate rose by slightly more than 4 percentage points as a result of the recession of the early 1980s, and then it was only after seven years of sustained economic growth that it fell to its pre-recession level. In Block II, the discussion by Burns and Corak pointed towards the inertial tendencies in the unemployment rate in the 1980s. The four chapters in Block III explore further the observed persistence in Canadian unemployment in the 1980s. In Chapter 7, Corak examines accounting explanations of persistence in unemployment that focus on the inflows into and the outflows from unemployment. In Chapter 8, Rahman and Gera address the question of persistence by asking: How big a problem is long-term unemployment in Canada? What are its causes? In Chapter 9, Gera and Rahman investigate intersectoral labour mobility patterns in the 1980s and consider the significance of this factor in causing persistence in unemployment. And in Chapter 10, Gera and Grenier examine interindustry wage differentials as a possible explanation.

In an accounting sense, unemployment increases whenever the inflow into the unemployment pool exceeds the outflow from it. Moreover, a decline in the outflow, which reflects an increase in the duration of unemployment at the individual level, will translate into persistence of unemployment at the aggregate level. In Chapter 7, Miles Corak first uses monthly Labour Force Survey data to examine explanations of the dynamics of unemployment. Second, he examines the factors determining the outflows from unemployment, focusing especially on why older individuals have lower exit rates.

The author finds that the rise in the aggregate unemployment rate between 1981 and 1983 was the result of both an increased inflow into and a decreased outflow from unemployment. After 1983, the outflow rate was the dominant factor, and the continued high rate of unemployment was mainly the result of an increase in the proportion of older individuals among the unemployed and a decrease in the ability of these individuals to find re-employment. That is, changes in the likelihood of finding a job were more important than changes in the inflow rate in determining movements of the actual unemployment rate.

In Corak's view, the evidence suggests that employers' hiring decisions are biased against older job applicants. Firms prefer to invest in workers who are likely to have long tenure, high productivity, and regular attendance. If employers think that older workers do not fit into this pattern, whether or not this is the case in fact, they could be discriminated against. He comes to two further conclusions. First, the persistence of unemployment during periods of recovery is directly proportional to its rise during recessions; the deeper the recession, the longer unemployment will remain elevated during the recovery. Therefore, macroeconomic policy should avoid large negative impacts on the economy because such shocks increase the number of bankruptcies and preclude the reallocation of labour within firms, the easiest mode of adjustment. Second, the distinction between general and specific skills is important in understanding the reasons for the differential in exit rates for older and younger workers. Young workers are likely to have general skills which are portable across firms and industries, while older individuals are likely to have firm-specific skills. Corak recommends policy initiatives to help older workers develop general skills.

In Chapter 8, Rahman and Gera examine persistence by focusing on long-term unemployment. They identify its extent and causes, before examining its macroeconomic implications. They assess the effectiveness of existing policies aimed at reducing long-term unemployment, and consider which alternative policies might be more effective.

The authors report that the recession of 1981-82 caused a dramatic increase in the incidence of long-term unemployment (which they define as continuous unemployment lasting 12 months or more). About 10 per cent of the unemployed fell into this category in 1985; while that level has been declining since then, in 1989 it was 6.6 per cent – still nearly twice as high as prevailed at the beginning of the decade. They suggest that if the increase in long-term unemployment during that recession and its persistence throughout the subsequent recovery and expansion is any indication, it is likely that: (i) the incidence of long-term unemployment will increase during the current economic downturn; and (ii) when it does, the higher incidence will become the new benchmark.

The probability of leaving unemployment may decline as the duration of unemployment increases for the following reasons. First, there may be adverse psychological effects such as depression, discouragement, and alienation. As well, individuals' work skills often deteriorate through lack of use. Both of these contribute to a progressive deterioration in an unemployed worker's human capital. This is often referred to as "scarring." Second, the intensity with which unemployed individuals search for jobs may fall with an increase in unemployment duration. Third, if employers use duration of unemployment as a screening device in hiring, the long-term unemployed will be pushed to the end of the queue [Budd et al. 1987].

A comparison of the probabilities of exit from unemployment of the short-term unemployed (those who have been

unemployed for less than three months) and the long-term unemployed (those who have been unemployed for between six and twelve months) indicates that for both groups, exit probabilities declined sharply during the 1981-82 recession. However, while for the short-term unemployed the prospects of leaving unemployment rebounded to close to pre-recession levels in 1989, exit probabilities for the long-term unemployed remained well below their pre-recession values. Among the long-term unemployed, exit probabilities were lowest for workers over 45. Rahman and Gera suggest various explanations for the decline in exit rates in the 1980s, including the changing composition of employment and changing skill requirements, resulting in mismatches between labour demand and labour supply; lower search intensity among the long-term unemployed; and hiring decisions which are biased against the long-term unemployed (also noted by Corak in Chapter 7).

Another important finding is that the long-term unemployed, by becoming marginal players in the labour market, did not exert any pressure on wages during the 1980s. This leads the authors to suggest that measures to reduce long-term unemployment will reduce the natural rate of unemployment without causing inflationary pressures.

The authors conclude by noting that the Job Development Program of the Canadian Jobs Strategy has generally performed well in ameliorating the difficulties of the long-term unemployed, but they also suggest that the program should be reoriented to incorporate specific assistance to older workers, who are most prone to long-term unemployment and therefore in most need of help. In addition, improvements could be made to the design of the program. For example, the current eligibility criterion (unemployment for 24 weeks out of 30) could be shortened to about 18 weeks. This earlier identification would decrease the chances of serious skill erosion associated with long-term unemployment [Corak 1990].

In Chapter 9, Gera and Rahman examine the role played in the persistence of unemployment by shifts in the industrial composition of employment. Factors such as rapid technological changes, shifts in product demand, and major changes in inputs (for example, the oil-price shocks of the late 1970s) have disproportionate impacts on different sectors. Firms adjust to those shocks by altering the size of their labour forces over and above the normal continual adjustments. If workers were able to move between firms and industries easily and quickly, adjustment to the sectoral shocks would be accomplished without generating significant unemployment. However, the labour reallocation process can be time-consuming, particularly if the attributes of workers released from the declining sectors do not match the characteristics demanded by expanding sectors. As a result, the duration of unemployment and hence total unemployment, will increase [Lilien 1982].

The authors investigate patterns of labour mobility between industries and the unemployment experiences of individuals over the recent business cycle. They find that the mobility rate (the percentage of employed workers who changed industry of employment) was lower in 1985-86 than it was in 1980-81, just before the recession. This, they conclude, indicates that the labour market adjustment slowed down, and that was reflected in the growing persistence of unemployment in the 1980s.

Gera and Rahman report four major findings. First, the unemployment experience of the majority of job finders (those who found a job in 1986 after being separated from a job in that year) can be viewed as frictional and part of the efficient functioning of the labour market. The vast majority of job finders experienced relatively short periods of joblessness; only about 3 per cent were jobless for 27 weeks or more. Second, industry changers (those who find a new job in another industry) accounted for a higher proportion of the jobless than industry stayers (those who found a new job in the same industry). Third, involuntarily separated and older workers experienced relatively higher durations of joblessness. And fourth, workers' uncertainty about employment prospects in other industries contributed to a decline in sectoral mobility and a rise in the duration of joblessness. The authors conclude that policy emphasis should be placed on instruments that encourage the accumulation of general training and facilitate the movement of workers from declining to expanding sectors.

Another form of rigidity in the labour market is the inability of wages to adjust to a fall in the demand for goods and services and, therefore, to a fall in the demand for labour. In economic downturns, the combination of a large unemployment pool and high, rigid wages will lead to persistent unemployment.

In Chapter 10, Gera and Grenier investigate whether there are differences in the wages of equally skilled workers in different industries and, if so, whether such differences represent wage premiums or rents, as predicted by the efficiency-wage argument. The authors then consider whether these interindustry wage differentials help explain the observed persistence of unemployment in the 1980s.

The authors estimate interindustry wage differentials by industry for various types of workers and different regions in Canada, based on the Labour Market Activity Survey of 1986. They also study the evolution of interindustry wage differentials, using census data for 1971, 1981, and 1986.

A major finding of the paper is that some industries do, in fact, pay wage premiums to their workers, despite the fact that those workers have the same skills as workers in other, lower-wage industries. Overall, wages ranged from 33 per cent above the Canadian average (in the tobacco industries) to 32 per cent below the average (in health and welfare services and religious organizations). These interindustry wage differentials are relatively stable over time and across regions. Furthermore, high-wage industries tend to pay high wages for all types of occupations; similarly, all workers in low-wage industries are paid low wages.

Another important finding is that while overall employment growth reduces the rate of unemployment, the impact of growth in high-wage jobs is greater.[9] Over the 1976-89 period, employment growth in high-wage industries had twice as much impact on unemployment rates as employment growth in low-wage industries. For example, 10-per-cent employment growth in high-wage industries in a province would reduce that province's unemployment rate by 1.1 percentage points, while 10-per-cent employment growth in low-wage industries would lead to only a 0.6-percentage-point reduction in the provincial unemployment rate. These differences reflect stronger employment spillover effects associated with higher earnings in the high-wage industries.

One reason that unemployment in Canada was so persistent in the 1980s, according to the authors, was that the high-wage sector was slow to recover from the severe recessionary shock; it lost some 400,000 jobs during 1981-83 and did not regain them until 1986. In contrast, the low-wage sector gained some 45,000 new jobs between 1981 and 1983, and during the remainder of the 1980s it gained 800,000 more jobs. Nevertheless, the overall unemployment rate was still slow to decline. The authors conclude that the slow pace of job creation in high-wage industries, then, combined with the greater impact of high-wage employment growth on total unemployment, may help to explain why unemployment in Canada in the 1980s was so persistent.

To summarize Block III, several factors contributed to persistence in Canadian unemployment. Long-term unemployment represents a growing problem for older workers, and employers discriminate against them in their hiring decisions. Furthermore, the long-term unemployed search less intensely for jobs than do other job seekers; long-term unemployment leads to a depreciation of human capital; and employers use duration of unemployment as a screening device when hiring. Also contributing to persistence in unemployment was a decline in the sectoral mobility of workers after the 1981-82 recession when, at the same time, flows into the unemployment pool were increasing. And last, the loss of high-wage jobs has more serious consequences for unemployment than does the loss of low-wage jobs.

What Have We Learned?

The papers in this volume examine a wide range of explanations for recent trends in unemployment. There seems to be general agreement that most of the rise in the unemployment rate has been structural in nature. Where the authors differ is in the reasons that they emphasize.

The explanations for the rise in the trend in the unemployment rate in the 1960s and 1970s seem to be relatively straightforward. During the late 1960s through to the mid-1970s, the rise in the natural rate of unemployment was due mainly to institutional factors such as changes to the unemployment insurance system and minimum wage laws. The primary sources of increases in the natural rate in the mid- to late 1970s were supply shocks such as changing energy and commodity prices.

The story changes dramatically in the 1980s, however. In that decade, the distinction between cyclical and structural unemployment became blurred. The contractionary monetary shock of 1981-82 raised the unemployment rate to 11.8 per cent – a level not seen since the 1930s. The inflow into the unemployment pool was higher than was typical of earlier business-cycle downturns, and the situation was aggravated in some regions by changes in the industrial structure. In addition, Canada experienced a substantial deterioration in its terms of trade and, in particular, in agricultural and energy export prices in the 1980s. This contributed to the deteriorating unemployment performance of the resource-intensive regions. As a result, it took seven years for unemployment to return to its pre-recession equilibrium level. This persistence was manifested in the increased contribution of duration of unemployment to overall unemployment.

The labour market adjustment process during the 1980s was tortuous. During the recession of 1981-82, inflows into the unemployment pool were large. Unemployed older workers and those who lost their jobs involuntarily experienced particular difficulty in finding another job. Interindustry mobility declined considerably, and the probability of experiencing a prolonged unemployment spell increased for all labour force participants. Those who were unemployed for a long period of time suffered a loss of income, often a deterioration of skills, and uncertainty about the future. As a result, many of the individuals who became

unemployed for cyclical reasons now became part of the pool of the structurally unemployed.[10] Although they were available for employment, the mismatch between their skills and those demanded by employers was too great to overcome.

Why did it take so long for unemployment to return to its pre-recession level of 1981? Our findings suggest that both labour demand and labour supply factors played important roles.

Growth in high-wage jobs has a greater impact on reducing the unemployment rate than does growth in low-wage jobs. In the 1980s, the slow pace of job creation in high-wage industries, such as manufacturing, played a role in the persistence of unemployment. Also, some employers, when faced with an excess supply of labour during the 1980s, were either unwilling or unable to reduce wages. Such inflexibility may have slowed the speed of adjustment in the labour market. And finally, some employers may have discriminated against older workers and long-term unemployed individuals in their hiring.

The job-search intensity of the long-term unemployed has been lower than for other groups. And unemployment insurance benefits may have contributed to the increased duration of unemployment in regions where the unemployment situation was already bad.

It seems fair to conclude, then, that the rise in unemployment in the early 1980s was cyclical in origin, triggered as it was by a severe contractionary shock. By the mid- to late 1980s, however, it became structural in nature.

Policy Challenges

The high levels of unemployment accompanied by slow and difficult labour market adjustment in the 1980s highlight two policy concerns in Canada:

1 Can governments conduct aggregate-demand management policies and avoid severe displacement in the labour market?

2 Can governments enhance the ability of the Canadian labour market to absorb adverse shocks?

These concerns become more relevant when we consider the policy challenges that confront the Canadian labour market in the 1990s. The beginning of the 1990s was marked by the onset of an economic downturn. At the time of writing, in May 1991, the unemployment rate was 10.3 per cent and the incidence of long-term unemployment (continuous unemployment of 12 months or more) was 6.2 per cent. These represent historically high figures at this stage of the business cycle. Are we about to see a repeat of the 1980s in the 1990s, only magnified?

The Canadian labour market will face demographic, global, and social challenges in the coming decade. The aging of the population means there will be greater proportions of older workers in the labour force. The industrial structure is continually evolving, with the share of the service sector gradually increasing. Yet, a strong goods sector will continue to be important for the generation of jobs, not only for the well-being of that sector itself, but also for that of the service sector. Our economy is becoming increasingly globalized, and a new international division of labour is emerging and irrevocably altering our domestic labour markets. Partly because of internationalization and partly because of technological change, a greater number of workers, particularly older workers, will be displaced as smokestack industries decline and some high-technology industries expand.

The policy challenge is to learn from the 1980s in order to be able to cope with the emerging realities of the 1990s.

Roles of Monetary and Fiscal Policies

The recession of 1981-82 and the ongoing recession of 1990-91 demonstrate that contractionary monetary policy can, in the short term, reduce inflation. But one lesson of the experience after 1981-82 is that it does so at considerable cost in terms of large numbers of bankruptcies and plant closings, which lead to structural changes in our economy and to exceptional job losses. The notion of temporary trade-offs between inflation and unemployment, then, needs to be reconsidered.

Can the huge social and economic costs that accompany high and persistent unemployment be avoided? Clearly it is necessary to maintain a credible macroeconomic stance against inflation. But is it necessary that monetary policy stand alone in this fight? The Twenty-Seventh Annual Review of the Economic Council of Canada, *Transitions for the 90s* [1990], argues that co-ordinated monetary and fiscal policies could play a larger role in offsetting the requirements of a cyclically driven monetary policy and in stabilizing inflation. Indeed, the 1991 federal budget defined an inflation target – normally the preserve of the Bank of Canada – of 3 per cent (plus or minus 1 per cent) by the

end of 1992. This target is a recognition that market rigidities may not allow the attainment of a zero-inflation rate in the short-run.[11] Some critics would argue that such a target means that controlling inflation, not unemployment, is still the foremost priority.

Towards a Flexible Labour Market

The theme of promoting flexibility in the Canadian labour market has attracted a great deal of attention. Recently, organizations such as the Economic Council of Canada, the Federal Advisory Council on Adjustment, the Canadian Labour Market and Productivity Centre, and the Premier's Council of Ontario have published reports that focus on this issue.

The fight against higher unemployment cannot be won unless labour markets are responsive to market and policy signals. Can labour market institutions as they are today adequately deal with the anticipated changes? In particular, do we need policies which can effectively enhance the flexibility of employers and employees in setting wages? The evidence in this book, while not directly addressing this question, suggests that there is considerable scope for increasing the flexibility of the labour market. For example, profit-sharing has often been advocated as a flexible payment system that would contribute to employment expansion. Workers share in the risk borne by the firms by agreeing to make part of their compensation dependent on the profits of the firm.

Reforming the collective-bargaining system to include a bolder framework for partnership between labour, business, and governments to create a better working environment has also been suggested [Economic Council of Canada 1990]. Providing active training and adjustment programs for the unemployed, rather than paying them to wait for a job, would help workers to adapt to a changing job market. For example, the unemployment insurance system could be turned into an employment insurance program to prevent deskilling of workers by providing them with training, counselling, placement, and even relocation services as soon as they are faced with the prospect of unemployment.

Current federal government initiatives in the labour market devote considerable attention to these issues. For example, the recent Labour Force Development Strategy outlines programs that include increased assistance to the private sector for human-resource planning and training, assistance to displaced older workers (through initiatives such as the Program for Older Worker Adjustment), and more job-related education for young people through the Canadian Jobs Strategy. Also, Bill C-21, which was passed in 1990, introduces three major changes to the Unemployment Insurance (UI) program: 1) it increases the minimum number of weeks of work required to be eligible for UI benefits; 2) it reduces the duration of benefits; and 3) it provides for stiffer penalties for voluntarily quitting a job. While the UI program continues to provide temporary income protection, its focus is being shifted from concern only with passive income support to include training. The changes introduced with Bill C-21 earmark $775 million per year from the UI account for skill-upgrading programs.

On January 14, 1991, the federal government announced the creation of the Canadian Labour Force Development Board. Its mandate is to "ensure that the private sector plays an active role in decisions affecting skills training in Canada." It will "concentrate its energies on identifying skill needs of the labour market and the training of our workers" [Canadian Labour Market and Productivity Centre 1991]. In co-operation with business, labour, and government, the board will monitor and evaluate training programs, develop national training standards, establish training budgets under UI programs, and find the most cost-effective ways to implement training strategies.[12]

Other measures for improving flexibility in the labour market suggested by the papers in this volume are the following:

- Earlier identification of individuals who are likely to become long-term unemployed would help minimize skill erosion.

- Policies to help reintegrate older workers into the work force would be beneficial. Here, the principles of the Ontario government's "Transitions" program merit close attention.

- Promoting sectoral or regional mobility through training and information will help to reduce the mismatch between labour demand and labour supply.

- Several policies to help laid-off workers, who bear a disproportionate burden of the rise in cyclical unemployment, are put forward. Advance notice of layoffs might help significantly in reducing the probability of unemployment upon displacement. Introducing employment-sharing options might contribute significantly to reducing unemployment. Examples of such policies include: reductions in the standard work week; policies to encourage individual employees to take voluntary work-time reductions such as job sharing and early retirement, with proportionate reductions in pay; and enhancing the use of UI benefits for work sharing.

Directions for Future Research

There are two particular areas where further research is needed to broaden our understanding of unemployment issues in the Canadian labour market. These are the hysteresis effect, and the impact of growth in high-wage sectors on unemployment.

Although the hysteresis effect provides a plausible explanation of the broad trends in unemployment in some countries during the 1980s, the theory is still in its infancy and much research remains to be done. In particular, the analytical framework needs to be expanded to develop testable hypotheses at a disaggregated level.

Clearly, more empirical research is necessary to establish the theory's relevance to the Canadian situation. Some questions that should be asked are: does unemployment generated by a temporary shock become a permanent fixture? What are the implications for the effectiveness of demand-management policies if hysteresis effects are present? Does the implementation of expansionary demand-management policies in one period lower the natural rate of unemployment in the next? Was the high level of unemployment in Canada during the 1980s a manifestation of a "hysteresis effect" or of "persistence"? Does it make a policy difference?

A second promising avenue of research concerns the role of the high-wage sector in prolonging unemployment when high-wage jobs are lost, on the one hand, and reducing unemployment when high-wage jobs are created, on the other. In other words, not all jobs are created equal – it would seem that there is a much larger effect on the unemployment rate when high-wage jobs are created than when low-wage jobs are created. Further research is necessary before this kind of argument can yield definitive policy implications, but it suggests that policies that have differential impacts on the high- and low-wage sectors may need to be identified, both from the viewpoints of overall economic growth and unemployment.

Block I: Historical Perspectives

political arm. The CCF itself gained considerable political support, leading in the national polls and becoming the Saskatchewan government in 1944. The war experience legitimized state economic planning, and the success of the CCF pushed the Conservatives and Liberals into reform waters.

A political consensus emerged that democratic governments were responsible for continuing to provide the economic stability and full employment that had been realized during the war. What remained to be decided was precisely *how* the federal government would carry out this new responsibility. Would it move towards a socialized economy? Would substantial parts of the wartime apparatus of regulations and controls be retained? To what extent would capitalism and liberal democracy remain? There were concerns about the implications of economic planning for democracy and capitalism, freedom and efficiency. The government thus appeared to be facing a trade-off between economic planning/full employment on the one hand, and capitalist democracy/unemployment on the other.

However, the advent of the Keynesian approach provided the government with a middle point in the trade-off between planning and the market. While the 1943 Throne Speech had talked of securing "*full* employment after the war" [italics added], a subtle but important shift in the nature of this goal occurred once the war was over. The government's postwar strategy, presented in the White Paper on Employment and Income and the Green Book proposals in 1945, put forward the overriding political objectives of economic stability and high-employment levels.[2] The goal of *full* employment contained in the original draft of the White Paper was changed to a "*high and stable*" level of employment at the insistence of C. D. Howe [italics added].[3]

The White Paper's analysis and policy approach were built on Keynesian reasoning, whereby unemployment was perceived to be the result of insufficient demand for domestic production. The government's task was seen as ensuring that the four components of aggregate demand – consumption, investment, public spending, and exports – were large and stable so as to perpetuate high levels of employment. This focus on demand suggested that no particular array of supply conditions was a prerequisite for high employment, and thereby absolved the government of responsibility for shaping supply-related factors such as the labour market, investment patterns, and technological development. It entailed a low level of government control and the continued primacy of the market economy.

The White Paper included specific prescriptions for the management of each element of aggregate demand. It rejected an employment policy involving high levels of government spending, large public works, takeovers of private industry, and state economic planning, and instead encouraged full and fast decontrol of the wartime economy. It proposed that the government influence private investment indirectly by creating an environment conducive to healthy profit expectations through lower taxes, stable consumer income, and an expansionary monetary policy. Exports were to be encouraged by means of government efforts to expand external markets through liberalized international trade. And a modest array of social security measures in the areas of pensions and health insurance (mostly self-financing) was advanced to help sustain consumption. The anticipated extent of economic redistribution was marginal. All of these measures were to be put into operation in a context of countercyclical budgeting – deficits in recessions, surpluses in boom times – to even out the business cycle.

None of these tactics involved coercive measures, extensive political economic involvement, or major institutional change. Capitalism's legitimacy was revalidated by the Keynesian undermining of the argument that full employment required economic planning, state ownership, and new administrative arrangements. Instead, Keynesianism posed the limited agenda of macroeconomic management of the major components of national income, which required broad policy inducements rather than an array of coercive, microspecific interventions. Matters such as the detailed composition of aggregate demand components, the nature and mix of employment, and the character of productive capacity were to be left to the determination of individual market decisions.

These decisions had significant political consequences. Unemployment was depoliticized, and came to be seen as a technical problem to be addressed by technical means with few political or institutional implications. No extra planning or regulation was called for, and there was therefore no need for planning boards, regulatory bodies, or active popular participation in decision making. The government's limited involvement would be pragmatic, apolitical, and technocratic. Organized labour, despite its political strength at war's end, did not gain any power. Labour, in effect, traded off its call for public ownership and a voice in economic decisions in return for distributional gains in the form of social security and rising employment.

Thus the Canadian "full-employment" commitment was a restrained one in which the government pledged to perpetuate "high" levels of employment. This limited policy commitment has not been extended. Defining full employment has been a slippery and elusive goal; as one analyst put it, "there has never been a categorical, politically

expressed commitment to full employment" [Doern 1985, 34]. Compared with the experiences of other countries, the 1945 Canadian commitment was tilted towards the goals of efficiency and freedom rather than those of equity and stabilization. Canada's postwar policy orientation gave more prominence to private enterprise than did that of the United Kingdom or Australia, and insisted to a greater degree that public initiatives be subservient to private enterprise [Merry and Bruns 1945]. The Canadian employment commitment required no significant changes in either institutions or public behaviour and practice. A high level of employment was established as a policy priority, but so too was the perpetuation of liberal capitalist institutions and processes, as more radical proposals for government intervention were removed from the policy agenda.

Employment Policy, 1945-75

While the period 1945-75 cannot be characterized as an era of unwavering commitment to the employment goal, the fundamental approach to unemployment did not change in a qualitative sense until 1975, when controlling inflation supplanted containing unemployment as the critical policy target. By the standards of the immediate postwar period, the economy experienced few sustained periods of "full" employment between 1945 and 1975. Indeed, the unemployment rate was below 4 per cent in fewer than half the postwar years, and was either relatively high or rising in many of the remaining years (Table 2-1). The vast majority of postwar budgets were passive, having a relatively insignificant impact on economic conditions. The following discussion highlights certain key policy moments when unemployment rose or remained high.

The immediate postwar expansion began to slow down in the late 1940s. Exports decreased in late 1949 and early 1950, private investment slowed, and unemployment rose steadily from 1948 through to the Korean War. These developments were acknowledged in the Throne Speech of 1950, which characterized this unemployment as being due to "seasonal and local factors" and not deserving of a general, macroeconomic response. It rose in the late 1940s as the immediate postwar expansion began to slow down. The government's view at that time was that the rise in unemployment would provide the first real "test" of the social security provisions established under unemployment insurance legislation; later changes would widen the scope of those provisions [Campbell 1987, Ch. 8]. This foreshadowed the ongoing trade-off between unemployment/social security, on the one hand, and full employment/further government intervention, on the other. The government pointed to four reasons for the rise in unemployment, all of which were outside its control: labour growth and immobility, seasonal factors, regional unevenness, and declining export opportunities. It let market forces deal with the perceived "local" or "residual" rise in unemployment, maintaining that any other course of action would require greater intervention, economic planning, and institutional change.[4]

The same story unfolded in 1953-54. The Throne Speech acknowledged the existence of "some unemployment of a regional and seasonal nature," and proposed to help jobless workers by improving unemployment insurance benefits.[5] Ministers (e.g., Howe and Abbott) argued that firms were not sufficiently competitive and that downturns were inevitable: "Not every industry in every part of the economy can expect to be profitable and fully employed at all times." The situation was depicted as one that would correct itself, and government attempts to alleviate the situation were as likely to aggravate as help conditions. A short-term rise in unemployment would, argued Labour Minister Gregg, improve longer-term development and employment prospects. In 1954 the government presented a balanced budget.[6]

As the 1957 budget was being prepared, both unemployment and inflation were rising, and the government was unsure of which economic signal it should respond to. The Department of Finance cautioned against inflationary pressures, and the Department of Trade and Commerce warned of the danger of recession. The government chose to heed the former, and presented a restrictive budget just as the economy was about to enter a recession.[7]

During the 1958-60 period, the government produced tight to moderate fiscal and monetary policies for anti-inflationary reasons, at a time when the economy was sluggish and unemployment was high. Budgetary deficits occurred, in spite of the declared balanced-budget government policy, because of weak economic circumstances.

Policy in the early 1960s was informed by a consensus that unemployment was not only the result of insufficient demand, but was also affected by supply-side and micro-economic variables. These included rapid labour force growth and automation and technological change. The government turned away from Keynesian analysis and policy in favour of long-run, supply-oriented policies, with an eye to increasing productivity and competitiveness in a context of heightened international competition. The view that unemployment was a structural problem that necessitated a more sophisticated and mobile work force and a reshaped economy was the origin of federal manpower policy in Canada. The government also introduced regional and industrial policies and a number of institutional changes at this time. In the trade-off between unemployment and

Table 2-1

Major Economic Indicators, Canada, Selected Years, 1948-86 (real terms)

	Change in GDP	Unemployment	Change in CPI	Change in fixed capital investment	Change in exports
	(Percentage points)	(Per cent)		(Percentage points)	
1948	1.5	2.3	14.5	13.5	0.8
1949	4.5	2.8	3.1	8.0	–5.3
1950	7.8	3.6	2.8	7.6	–0.9
1953	5.0	3.0	0.9	12.2	–1.3
1954	–1.1	4.6	0.6	0.2	–3.6
1958	2.2	7.0	2.7	–1.3	–0.9
1959	3.9	6.0	1.1	0.7	3.8
1960	2.9	7.0	1.2	–3.1	4.5
1961	3.1	7.1	0.9	–0.3	6.8
1962	7.1	5.9	1.2	4.4	4.1
1963	5.2	5.5	1.8	4.5	9.2
1964	6.7	4.7	1.7	13.2	12.6
1968	5.4	4.5	4.1	0.5	12.6
1969	5.4	4.4	4.6	5.4	8.0
1970	2.6	5.7	3.3	0.3	8.7
1973	7.7	5.5	7.6	9.9	10.6
1974	4.4	5.3	10.9	6.6	–2.0
1975	2.6	6.9	10.8	5.8	–6.8
1976	6.2	7.1	7.5	4.6	10.6
1977	3.6	8.1	8.0	2.1	8.9
1978	4.6	8.3	8.9	3.1	13.6
1979	3.9	7.4	9.2	8.5	5.0
1980	1.5	7.5	10.2	10.1	2.7
1981	3.7	7.5	12.5	11.8	4.4
1982	–3.2	11.0	10.8	–11.0	–2.2
1985	4.3	10.5	4.0	8.1	6.0
1986	3.3	9.6	4.2	5.1	4.7

SOURCE Statistics Canada, *Canadian Economic Observer: Historical Statistical Supplement*, Cat. 11-210, 1988.

institutional change, the Diefenbaker government moved towards the latter – albeit in a marginal and tentative way. As it did, it was accused of using coercive measures and of interfering politically in the market.[8]

Canada came closest to having a full-employment policy in 1963, when the Liberals returned to power in a minority position. The Throne Speech declared that "any Canadian . . . who wants a job must be able to find one."[9] This more explicit commitment resulted in increased state intervention in the economy and an elaborate set of government instruments, including sectoral policies such as the Auto Pact; regional policies including the designation of regional development areas; manpower policies – e.g., the Adult Occupational Training Act; and new institutions, such as the Economic Council of Canada, the Science Council of Canada, the Department of Industry, the Atlantic Development Board, and the Treasury Board. The tools used to achieve the employment target, however, did not extend to fiscal policy. The government relied on long-term structural policies to address the perceived structural causes of unemployment, rather than short-term fiscal policies that might have provided some immediate relief.[10] Ironically, then, the budgets of 1963 and 1964 were balanced instead of being expansionary.

In the late 1960s, the advent of stagflation again forced the government to choose between dealing with inflation or unemployment. It chose to deal with inflation, producing a balanced budget in 1968 when unemployment stood at 5 per cent.[11] Finance Minister Benson argued that inflation generated unemployment over the long term, and that in any event the impact of inflation was universal while that of unemployment was concentrated.

In 1969, there was considerable agreement that inflation ought to continue to be the focus of government policy, and even the NDP concurred. The surplus for that year, planned at $250 million, was $1 billion, complementing the counterinflationary effects of record interest rates and a 2-per-cent decline in the money supply.[12] In 1970 inflation declined by 1.3 percentage points, while unemployment rose by 1.3 percentage points. Benson, while admitting that the policy squeeze on inflation was causing unemployment to rise, promised to be "resolute in continuing to restrain the demands that are made on the economy." In the late 1960s, then, the employment goal was sacrificed for the sake of price stability, with the result that unemployment rose from 4.4 to 6.2 per cent.

In the 1972 election, the Liberal party was returned to office with a minority government, conscious of the unpopularity of its unemployment-generating budgets of the late 1960s. Not surprisingly, then, the employment goal regained its primacy in the 1973 and 1974 budgets. But by this time no one was naively Keynesian in orientation: the inflation/unemployment dilemma was acknowledged, and these budgets attempted to reduce unemployment without exacerbating inflationary pressures. A supply-side orientation dominated in Finance Minister Turner's budget strategy of accelerating economic growth and increasing employment and the supply of goods, while decreasing pressures on costs and wages. Tax cuts were the key instrument in this strategy.[13] Despite rising inflation, highly expansionary monetary and fiscal policies prevailed, and economic controls were rejected on grounds of both political freedom and economic efficiency. Inflationary pressures mounted, while unemployment diminished only marginally over the short term.

The Decline of the Employment Objective after 1975

While the employment objective was never formally abandoned, it was clear by 1975 that something had changed. The objective had lost its political and moral resonance, and faith in Keynesian tools had diminished. That year, despite unemployment that was high by postwar standards, the focus was on controlling public spending, with a $1-billion spending cut proposed in a budget that was essentially a last attempt to avoid imposing economic controls.[14] The planned budget deficit was a passive one – the result of a recession-induced drop in revenues and a rise in program spending – rather than discretionary government action. Turner resigned as Minister of Finance in September – in part because of his disinclination to impose controls – and the following month the government presented a major anti-inflation program that included wage and price controls and tighter monetary and fiscal policies. Public spending was to be limited to the rate of GNP growth, and monetarist gradualism promised to slow the rate of growth of the money supply.

In the 1976 budget, Finance Minister Macdonald – faced with continued high unemployment and high but diminished inflation – restated the government's intention to reduce government spending. When introducing changes to labour policy, he cited a 1976 Economic Council report demonstrating that aggregate unemployment statistics were misleading, and that a substantial part of unemployment – 5 to 7 per cent – was "normal." Institutional changes (unemployment insurance, training programs, minimum wages) and demographic pressures (the baby-boom bulge and the increased participation rate of women), it was argued, created structural and frictional dimensions to unemployment that should not be addressed by demand policy. He introduced a series of changes to Unemployment Insurance (UI) to encourage those with jobs to retain them, and those without jobs to seek them.[15] The shift to an anti-inflationary stance saw increases in the consumer price index level off in the 7-to-9-per-cent range in the late 1970s. Nevertheless, while there was considerable output and employment growth, the unemployment rate increased to over 8 per cent.

The Conservative government's 1979 Throne Speech looked to individual initiative to generate growth. The subsequent budget declared an unemployment rate in the 4-to-5-per-cent range to be a thing of the past, and proposed to raise taxes and restrain spending in order to reduce the deficit.[16] But the government was defeated over the budget, and an economic downturn began in the early 1980s. The new Liberal government reintroduced a number of the 1979 tax measures, and again assigned priority to reducing the deficit and limiting government spending. An extremely tight monetary policy was implemented, causing interest rates to rise to a record high of 21.5 per cent in the summer of 1981.[17]

The 1981 budget was moderately restrictive on the eve of an intense recession. Unemployment was not explicitly addressed, although it rose from 7.5 per cent in 1981 to 11 per cent in 1982. The policy centrepieces of the 1982 budget were the anti-inflationary "6-and-5" program and deficit reduction, despite the fact that unemployment stood at 11 per cent and monetary policy continued to be tight.[18]

The Conservative government elected in 1984 adopted an indirect employment strategy of promoting entrepreneurship, economic initiative, and risk-taking to encourage private firms to invest and provide jobs. At the same time, it

emphasized deficit reduction, presenting this as the key to increased growth and reduced inflation and unemployment in its 1985 and subsequent budgets.[19] In addition, in response to structural changes in the labour market, a policy of training and retraining, oriented to the private sector, was to be pursued.

Policy advice to the government followed a similar vein. The Macdonald Commission rejected short-term measures for dealing with unemployment in favour of a medium- to long-term strategy of establishing an appropriate environment for economic progress.[20] The Forget Commission concluded that "unemployment is no longer a short-term cyclical event affecting only a few marginal workers and companies. . . . Increasingly, unemployment arises from major structural changes in the economy involving whole industries, occupations, communities and regions."[21] All of this was a far cry from the political and economic discourse of 1945.

On the basis of this historical survey, the following tentative conclusions can be drawn:

- The employment objective was not pursued as vigorously as even the restrained 1945 commitment might have suggested.

- In the early postwar years, unemployment increases due to factors other than deficient demand were tolerated by governments, and left to market resolution.

- In the late 1950s and 1960s, the concept of structural unemployment led governments to introduce a variety of supply-related and institutional policies.

- In the mid- to late 1960s (and again in the mid-1970s and early 1980s) inflation supplanted unemployment as the predominant policy concern, and governments consciously chose to accept higher unemployment in order to realize lower inflation.

- In minority government situations, unemployment prevailed over inflation as the primary policy concern.

- When governments decided to pursue the employment objective, complementary policies and institutions such as supply-side measures and income controls were seen as necessary.

- A consensus emerged during the 1980s that the nature of unemployment had changed as a result of demographic, social, and policy developments, and that a different set of supply-side policies was therefore required.

- Since the early 1980s, an increased reliance on market forces has dominated policy and employment considerations; reducing the deficit, restraining the role of government, and increasing individual initiative have been the predominant political and economic directions taken, the assumption being that the market model provides the desired results in terms of employment.

Conceptual Development

By the 1980s, governments were willing to tolerate rates of unemployment two to three times higher than were acceptable after the war. Both policy experience and new research suggested that unemployment was more complex than had been anticipated. The character of the 1945 Keynesian commitment, with its narrow conceptualization of unemployment, limited array of strategies, and perception of the employment objective as costless, eventually came home to roost, causing disillusionment and unpreparedness. The rise and fall of Keynesianism illustrated the nature of the policy trade-offs facing governments.

The Disaggregation of Unemployment and the Rediscovery of Voluntary Unemployment

In the late 19th century the view emerged that a large proportion of unemployment was not voluntary, but rather caused by the disruptive swings of the business cycle. Previously, those not working were considered "idle" or voluntarily unemployed. Modern economic theory "depersonalized" the concept of unemployment, lifting some of the responsibility for unemployment from the individual [Garraty 1978, 4-5]. Keynes demonstrated that unemployment was the result of an insufficiency of demand or, equivalently, of national income. As individuals could not control the level of national income, their unemployment was considered to be involuntary, and the state was assigned the role of managing national income to minimize unemployment.

Keynes's analysis was an "aggregate" one, suggesting that all unemployment was essentially the same – related to insufficient demand. This idea was simple, understandable, and easy to implement in policy terms, hence its political attractiveness. It was apparently apolitical and costless, in contrast with supply-side analysis, whose specific and detailed interventions required delicate political choices and institutional changes [Campbell 1987, Ch. 2]. The postwar employment objective was thus driven by the twin concepts of unemployment as involuntary and aggre-

gate in character. Neither concept survived the postwar experience.

Earlier in this chapter the historical survey concluded that early postwar governments were willing to accept unemployment attributable to factors other than deficient aggregate demand – such as weather, regional conditions or changes in international circumstances – and leave that portion of unemployment to be dealt with by market forces. In the Diefenbaker era, unemployment was increasingly seen to be "structural," related to technological change, and therefore not amenable to Keynesian manipulation. Instead, it required longer-term supply and structural policies, which meant tolerating unemployment in the short term. This structural orientation, with unemployment disaggregated into seasonal, frictional, and structural components, predominated in the Economic Council's first four annual reviews and in the Gordon budgets. Unemployment was seen as a supply-side, institutional problem.[22] (Later, in the 1980s, labour supply and demand imbalances and adjustment lags in a rapidly changing economy were to be identified as additional structural sources of unemployment.)[23]

Demographic developments produced a further disaggregation of the unemployment rate. Women's participation in the labour force rose from 35 per cent in 1966 to 56 per cent in 1987, with the result that two-income families became increasingly prevalent; at the same time, female unemployment became higher than average. Simultaneously, as the baby-boom generation worked its way into the labour force, a youth unemployment rate two to three times higher than that of other age groups prevailed.[24] These phenomena informed policy advice and action in the 1980s, the implicit assumption being that a higher level of unemployment could be tolerated among individuals who were not considered "primary earners."[25]

Finally, it was recognized that aggregate unemployment figures masked considerable regional variation. Early postwar governments accepted this as inevitable, but from Diefenbaker on, they gave priority to regional action and pursued it through non-Keynesian, supply-side policies. This policy orientation was based in part on analysis suggesting that unemployment could not be significantly lowered without addressing regional weaknesses.[26]

The disaggregation of unemployment into different component parts over the course of the postwar period complicated policy responses to unemployment. Governments had several options. They could claim that non-demand-based unemployment was outside the domain of political responsibility. Or they could deal with it, either through social security measures or through institutional developments and market interventions.

Until the mid-1970s, the idea that unemployment was primarily involuntary persisted, giving the concept of unemployment continuing moral and ideological resonance that demanded policy attention. From around the middle of the decade on, however, economic analysts convinced government that a substantial part of unemployment was voluntary. For example, unemployment insurance – all but universal by the early 1970s – was seen to have produced voluntary unemployment by making the "pain" of unemployment less intense [Pal 1988, 28, 39, 41, 51, 70-72]. The existence of simultaneously rising unemployment and job vacancies suggested to some that unemployment increasingly reflected a personal choice.[27] And new analysis indicated that a considerable part of total unemployment was related to the extended turnover time of people attempting to improve their situation as they moved from one job to another. Calculations in the Economic Council's 1976 report, *People and Jobs*, produced an unemployment rate figure of 3 per cent by leaving out seekers of part-time jobs, teenagers, old people, and those who had left jobs in order to seek better positions.[28] Unemployment was even viewed as productive to the extent that it improved the possibility of good matches between the supply of and demand for labour. At the same time, social programs and the phenomenon of two-income families undermined the emotional and moral resonance of unemployment by easing the degree of economic hardship associated with it.

The disaggregation of unemployment into various components with differing causes and the rediscovery of voluntary unemployment have complicated the concept of unemployment and made the discourse around it much less certain. The idea of *the* unemployment rate has been challenged in some quarters as analytically suspect and irrational in policy terms.[29] The debate over supply versus demand sources of unemployment has become complex and heated, with over half a dozen explanations of unemployment currently informing analysis and discussions.[30] This lack of agreement has increased the range of potential policy options, resulting in policy experimentation and flip-flopping. At the same time, the sense of policy failure or ineffectiveness has resulted in less reliance on policy measures to reduce unemployment.

The Employment Objective and Trade-Offs

The 1945 Keynesian employment commitment appeared costless to policymakers: it did not require dramatic institutional change or planning, and it offered benefits but no costs to all classes and strata of society. This perception of costlessness persisted for two decades. Even the nonaggregate rises in unemployment confronted by governments

in the 1940s and 1950s were accepted as inevitable, and were mitigated by improved unemployment insurance. The cost of the institutional change required to deal with unemployment in a more fundamental way was considered too high.

This evaluation changed in two stages over the following two decades. First, the Phillips-curve paradigm of a trade-off between high employment and price stability suggested that there was an inflationary bias at or near full employment. This was seen to be a policy "nuisance," but the inflation costs of high employment were seen to be tolerable and acceptable, if not attractive.[31] However, the concept of full or high employment was softened. An optimal level of unemployment could no longer be envisioned as being independent of other factors; unemployment could now be considered only in the context of its relationship to prices. This diffused the employment objective.

Second, the inflation costs that had to be traded off against full employment came to be seen as both politically and economically unacceptable. Politically, the universality of inflation stood in contrast to the limited and specific nature of unemployment. On the economic level, the view emerged (modifying the simple Phillips-curve approach) that without institutional change there was no stable trade-off between price stability and employment. Attempting to increase or stabilize employment at a given inflation rate would only raise the inflation rate associated with the initial level of employment. Governments were told that because there was no trade-off, the long-term prospects for reducing unemployment lay exclusively with a policy of cutting inflation.[32] Unemployment thus became a secondary objective, and its importance in policy was replaced by the now more evocative goals of reducing the deficit, controlling government spending, and restraining inflation.

In light of the view that there was no stable trade-off between full employment and inflation, governments had two policy options: to drop the employment objective and direct their policy energies towards eliminating inflation, or to devise nonconventional policies to achieve the desired employment levels at a less inflationary cost.

In the late 1960s and early 1970s, governments attempted to retain the employment objective in a politically costless way and without institutional change. The Turner budgets reflected an ostensibly costless approach to inflation and unemployment; their strategy involved increasing supply through tax cuts, in order to stimulate employment while restraining costs. In addition, various attempts were made to circumvent the unemployment/inflation trade-off through, for example, voluntary price and wage restraints, the 1969 Prices and Incomes Commission, and the tripartite discussions undertaken in the 1970s.

Ironically, the costs associated with institutional change were eventually accepted in order to diminish inflationary pressures when the government introduced wage and price controls in October 1975. It had become abundantly clear that the unemployment/inflation trade-off had to be evaluated in the context of the trade-off between these objectives and institutional change.

The "Natural" Rate of Unemployment

The meaning of full or acceptable levels of employment has changed since the war. In the early 1960s, a rate of employment of 97 per cent of the labour force was deemed to be full employment, while in the late 1960s and early 1970s a precise target was avoided. In 1974, the Economic Council of Canada set 4.5 per cent as a full-employment goal. In 1979, it presented the notion of a full-employment objective fixed at the level attainable without creating inflationary pressures: the "equilibrium" or "natural" rate, or the "non-accelerating inflation rate of unemployment" (NAIRU).[33] This concept has dominated discussions of unemployment policy ever since. The NAIRU was seen to have risen to between 5.5 and 7.5 per cent in the 1970s for structural and institutional reasons. It is now widely accepted as being in the 6.5-to-8-per-cent range, and only the portion of unemployment above this rate is considered to be Keynesian or cyclical.[34]

The NAIRU was the logical culmination of the conceptual and disaggregating developments discussed earlier in this paper – the idea that unemployment resulted from structural, policy, and demographic factors. The concept of NAIRU has weakened the emotional and political import of unemployment. It is now the view that this segment of unemployment cannot be eliminated without institutional change, and is therefore beyond the ready control of demand-side government efforts. And the difficulty of precisely quantifying the NAIRU makes it relatively easy for governments to identify it as being at or near the present level of unemployment.

The acceptance of a given NAIRU, though, is a political decision, for it can be altered; the 1978 tightening of UI, for instance, was estimated to have decreased the NAIRU by 0.5 to 1.0 percentage points. Institutional changes could conceivably lower the rate further. The critical factor – and one that is inherent in the idea of NAIRU – is the relationship between unemployment and other goals. The Macdonald Commission concluded in 1985 that reducing

the unemployment rate to the 6-to-8-per-cent range would require an incomes policy of some kind; reducing it to below 5 per cent would require a "demonstration of political will by all major groups in society."[35] There is a fundamental relationship between unemployment and political will. Canadians face a basic trade-off between the values associated with the employment objective and institutional change.

Comparative Perspectives

The unemployment experiences of various capitalist countries since World War II have differed considerably. It is apparent in a comparison among Canada, Austria, Japan, and Sweden (Table 2-2) – four countries with widely varying political and economic structures – that Canada has had relatively high unemployment rates, while Austria, Japan, and Sweden have consistently experienced lower rates. What differentiates these countries' unemployment experiences is the institutions and procedures that have been developed to translate citizens' preferences into public policies. These institutions vary in their capacity to realize goals. Indeed, with regard to the employment objective, countries have high, medium, and low capacities. These differences are a matter of political will, a "national politics of employment" that reflects institutional and cultural differences [Thorburn 1986].

The Anglo-American democracies, such as Canada, the United States, and the United Kingdom, placed a high priority on liberal institutions and market forms. Their politically limiting Keynesian approach inhibited the development of the collegial institutions and supply-side and interventionist manpower policies that marked the experience of many European countries and Japan, where the liberal inheritance was weaker and where different institutions and traditions developed. In fact, such institutions and procedures have shown a greater capacity to deal with unemployment. The weak institutional commitment in Canada decreased the ability to deal with unemployment; instead, a comprehensive unemployment insurance system was relied upon to ease the pain of unemployment (the Dutch model).

In Austria, Sweden, Japan, and West Germany the Keynesian approach did not figure large [Thorburn 1986, 26-27]. These countries developed a much greater capacity to address unemployment problems with active, interventionist policies (the Swedish model). The costs of their institutional change were rather less and it was also far easier to articulate the employment objective through institutional change. Social groups articulating the employment objective were given roles in its pursuit, which led to the development of more collegial institutions and a more consensual political economic culture than existed in Canada. In other words, the commitment to full employment was translated into institutional and cultural changes.

Furthermore, these countries have highly centralized and integrated labour and business organizations that facilitate collaboration, whereas in Canada, labour and business are fragmented and poorly organized [Coleman 1988]. In Japan, the financial system is highly concentrated, cartelization is encouraged, and conglomerates are tied to particular banks. German and Swedish business is also highly concentrated, and the Austrian government and state bank together control two thirds of corporate capacity. All of these countries have business associations that speak with one voice and have the capacity to act as consensus-builders.[36] The situation in the labour sector is similar. Labour has parity in Austria's "Social Partnership"; high unionization rates are the basis of centralized labour processes in Sweden; the DGB (*Deutscher Gewerkschaftsbund* – Trades Unions Congress) speaks with authority for German labour; and enterprise unionism in Japan integrates labour fully into the corporate system.[37] Capital and labour in these countries have the capacity to participate in collaborative policymaking, generating trust in the policy process and in the legitimacy of its results.[38]

Each country has developed unique policy institutions and procedures to translate socio-economic demands into effective policies. The Labour Market Board in Sweden, "concerted action" in Germany, and the Social Partnership in Austria institutionalize the employment commitment.[39] Their party systems also facilitate collaboration. The Austrian and Swedish parties have a symbiotic relationship with corporate associations, and the Japanese Liberal Democratic Party consists of formal "factions" that are consulted on policy.[40] Labour and capital collaborate through institutions – such as joint worker/management councils in Japan

Table 2-2

Unemployment Rates, Selected OECD Countries, Selected Years, 1956-87

	Austria	Japan	Sweden	Canada
		(Per cent)		
1956-66	2.4	1.7	1.7	4.9
1967-74	1.5	1.3	2.2	5.2
1975-79	1.9	2.0	1.9	7.5
1980-83	3.0	2.3	2.8	9.4
1984-87	3.6	2.7	2.6	9.98

SOURCE OECD, *Economic Outlook.*

and workers councils and board representatives in Sweden, Germany, and Austria – and through processes, such as centralized wage bargaining in Sweden and Austria.

These institutions and processes together form a dense network of collaborative interaction on all levels of society, with the capacity to articulate objectives such as the employment goal and to build a consensus around them and realize them. The process is often slow and laborious, but more often than not produces legitimate, well-executed, and effective policies. The credibility of the process enhances its effectiveness, as expectations become self-reinforcing.[41] Out of these policy processes have emerged a number of shared, non-negotiable national objectives, such as international competitiveness in Japan, full employment in Sweden, currency stability in Germany, and social peace in Austria.[42]

Ironically, this collaborative, consensual approach fragments, disperses, and limits political power. The Japanese state is small, the Austrian Prime Minister and Cabinet are weak, the Swedish government has little authority in key areas such as wage negotiation, and there is little German public ownership or government involvement in the German economy. These governments all shun comprehensive economic planning and leave much decision making to the collaborative processes themselves.[43] Sweden's vigorous labour movement and Austria's system of Social Partnership have provided concrete, personal links between political processes and policies on the one hand, and social conditions on the other. In Japan, this link is provided by the public bureaucracy and in Germany by the banking system. The ability of these social actors to "deliver" has allowed governments in these countries to be flexible, confident, and creative in devising policy.

These types of institutional arrangements proved useful in responding to economic problems in the 1970s and 1980s. Confident that social objectives such as employment were institutionally entrenched, governments were able to produce a much more favourable unemployment/inflation trade-off. Some were able to pursue expansionary fiscal policies during inflationary periods, thereby limiting unemployment, because wages and prices were being moderated by other processes. And in some countries, the expectation of continuing high employment and steady income growth allowed the implementation of relatively strict monetary policy, thereby ensuring the competitiveness and price stability necessary for consensus on wages and incomes. Austria's fiscal stance, for example, was consistently expansionary throughout the 1970s, yet its inflation record was comparable to Switzerland's. This combination went a considerable distance towards ensuring a low level of unemployment. Wages and prices were regulated by the collaborative institutions and culture, while the hard currency policy imposed domestic price discipline. This convinced labour that moderate wage gains would be realized, rather than being eroded by inflation. Prices and wages were set countercyclically, with wage moderation seen by labour to make sense in terms of employment, exports, and prices. These policies were complemented by various labour market schemes and inducements to public-sector industries.

Not all of these actions were successful. But they created a momentum for action and a process of experimentation that permitted the retention and renewal of the employment objective, despite challenges and constraints.

Sweden is perhaps most closely identified with a political commitment to full employment. Because employment is considered a social right, there is little tolerance of unemployment in any strata of society. The total rejection of the idea of an unemployment/inflation trade-off is striking: while inflation has policy resonance in a trading economy like Sweden, combatting inflation through a rise in unemployment is ruled out. Generalized Keynesian measures have thus been rejected, for they would not totally eliminate unemployment and would cause inflationary pressures. Instead, Sweden adopted an interventionist, post-Keynesian, supply-oriented approach. Its active labour market policy is designed to simultaneously improve the elasticity of supply and reduce the risk of inflationary pressure from a wage-price spiral [Dahlberg 1988, 96].

A tight fiscal stance is maintained, with high indirect taxes, to permit the attainment of full employment at relatively low levels of demand and inflation. Market efficiency is a priority, so government does not intervene in production, market, or wage decisions. Wages are set on the basis of the levels prevailing in the most profitable sectors, to ensure that labour is used effectively; firms bankrupted by high wages are considered to have been inefficient or unproductive. This approach keeps profits low, limiting the risk of an inflationary demand for labour. The extensive labour market policies include mobility and training programs that facilitate labour reallocation, thereby maximizing productivity, minimizing inflation, and permitting the attainment of full employment.

That last ingredient is unique. Sweden's labour market policy, designed to control labour supply and demand, affects 15 per cent of the work force each year. It accounts for 5 to 7 per cent of the total government budget and about 3 per cent of GNP. At any one time, 1 per cent of the labour force is in training, and each year about 2 to 3 per cent is retrained. Labour market programs also include measures to supplement the demand for labour by means such as direct job-creation programs and public sector projects.

It is estimated that in the period 1974-80, these labour market initiatives together reduced the unemployment rate by 3.2 per cent. A striking feature of the Swedish approach is its reliance on active as opposed to passive labour market measures; 90 per cent of its expenditure is allocated to training, mobility, and job creation, and only 10 per cent to income support. The vehicle through which those labour market measures are administered is the tripartite National Labour Market Board.[44]

One might expect a very high Swedish NAIRU in light of the extensive social welfare system, narrow wage differentials, and high taxes. But Sweden maintains an unemployment rate in the range of 2 to 3 per cent, in the context of an 83-per-cent labour participation rate. The guarantee of employment, retraining, or relocation, combined with high living standards, creates acceptance of high taxes and a tight fiscal policy. Sweden has an array of well-developed, committed, and experienced institutions that collaborate to realize the employment goal; their success generates continuing support and ensures that the full-employment objective remains on the agenda regardless of economic circumstances.

While it could be said that the full-employment goal has been effectively institutionalized in Sweden – and indeed, Sweden is often regarded internationally as a model in this respect – recent events suggest that cracks may be appearing in the system, and that maintaining this goal will require firm ongoing commitment and adjustments.[45] Long-term unemployment remains low in Sweden and there are strict rules regarding access to unemployment insurance. But the system of centralized wage bargaining is showing signs of weakening, and both wages and inflation increased significantly in the late 1980s. Two reasons have been suggested for these developments. First, disincentives caused by high taxes and welfare benefits have acted to reduce the supply of labour. Second, economic growth has been strong – so strong, in fact, that the actual unemployment rate has fallen below Sweden's low NAIRU. While it is far too early to announce the end of the Swedish model, it is clear that these new pressures will present a challenge to the Swedish institutional structure.

In contrast, Canada and the other Anglo-American democracies have developed neither the political institutions and procedures, nor a culture consistent with a full-employment commitment. Canada's Keynesian employment commitment of 1945 did not require new institutional capacity. Throughout the postwar period, emphasis was placed, rather, on the development of "techniques" to achieve the employment objective, and there was no call for participatory machinery or collaborative processes [Phidd and Doern 1978, 159-64]. In the immediate postwar period, Canada's position on the employment/institutional-change trade-off was indicated by its tepid employment commitment and by the preservation of traditional political and economic institutions and procedures. By pursuing the employment goal through Keynesian methods, however, Canada failed to build up an institutional or procedural infrastructure with the capacity to deal with problems that came about later, such as structural change and inflation.

Canadian governments did flirt with long-run, supply-side policies from time to time, particularly in the late 1950s and early 1960s. And in the face of inflation and structural unemployment in the 1970s, the effectiveness of the Keynesian approach was questioned. While governments did encounter demands for action, they lacked the collaborative political-economic mechanisms and the support of a consensual political-economic culture to be able to respond to these demands. Attempts to introduce interventionist programs and institutions were viewed as illiberal, coercive, and illegitimate. Consequently, they were either thwarted or implemented in a half-hearted manner. This is evident in the areas of labour market policy and economic planning.

The Diefenbaker government initiated various training programs in the late 1950s to deal with the perceived problem of structural unemployment, or supply/demand mismatches, thereby filling a labour market policy vacuum. The first Economic Council of Canada reports in the early 1960s likewise accorded priority to labour market planning. And the Department of Manpower and Immigration, formed in 1964, devised a number of supply-oriented training programs [Smith 1983, 167, 169; Muszynski 1985, 260ff.]. But by the early 1970s, the value of these programs was questioned, and momentum built to shift training back to the private sector, with the result that from this time onwards, real government spending on training remained at the modest level of 2 or 3 per cent of annual government spending, or 0.25 per cent of GDP [Smith 1983, 177, 181; Muszynski 1985, 264ff.]. Similarly, real spending on direct job creation peaked in 1972-73 and thereafter declined until 1982-83.

In recent years, Canadian governments have viewed job creation and training as primarily private-sector responsibilities. Their limited fiscal commitment to employment programs stands in sharp contrast with high unemployment insurance expenditure, which has risen to over 2 per cent of GDP. The federal government's contribution to UI has varied at between 2 and 4 per cent of total federal spending. Canada has allocated significantly more funds to UI than to training, in contrast with Sweden, where spending on labour market measures is five to six times higher than social security outlays.

Canadian governments also flirted with economic planning in response to structural unemployment and inflation as a potential avenue to higher industrial growth and employment [Wilensky 1985]. As the policy agenda expanded in the late 1960s and 1970s, the federal government created a host of new departments and agencies: Manpower and Immigration; Industry, Trade and Commerce; and the Ministry of State for Economic Development. While the number of institutions proliferated, no one agency emerged to play the requisite coordinating role. Indeed, the 1970s saw considerable tension and conflict develop among the various institutions [French 1980, 27-31; Phidd and Doern 1978, 176]. The idea of an industrial strategy became fashionable in the early 1970s, but despite a number of proposals and studies, no consensus emerged as to how one should be implemented.[46] Two factors constrained these economic planning initiatives: the absence of institutions with the capacity to take appropriate action, and the high priority attached to market values.[47]

The Canadian experience with planning-oriented anti-inflation policies was similarly ineffectual. When confidence in Keynesian solutions to inflation diminished, governments tried to devise alternative strategies to contain inflation without increasing unemployment. New institutions and programs were designed to restrain expectations and build economic consensus, including the Prices and Incomes Commission (1969-72), voluntary controls (1974-75), wage and price controls (1975-78) and the "6-and-5" program (1982-83). Few permanent results were forthcoming: tripartitism was never even launched, voluntary controls were unsuccessful, and no consensus developed as to governments' role in the economy. There was little popular enthusiasm for permanent controls or for Prime Minister Trudeau's mooted 1975 "new order."[48]

Collaborative action in Canada has been insubstantial. Business and labour have different visions of collaboration; while the latter looks to full employment and redistribution, these are not priorities of the former. Business and labour are also organizationally weak, and therefore lack the capacity to make collaboration work effectively. Labour is particularly weak; in comparison with Swedish labour, for example, Canadian labour is fragmented and decentralized, and has only half the union density of Swedish labour – 40 per cent versus 80 per cent of the labour force. Because of the weak political leverage of Canadian labour and of its absence from the decision-making process, market orientations continue to dominate. And while this has included an emphasis on "distribution" or consumption and the expansion of programs like unemployment insurance to ease the burden of unemployment, these are nevertheless passive responses.

The period from the 1970s to the early 1980s, then, was marked by a number of government initiatives aimed at containing inflation while easing the pain of unemployment. The governments' actions were at best tentative and half-hearted, and voluntary controls were unsuccessful as well. The government's anticipation of what would happen after economic controls were lifted generated a vision of a renewed market orientation and a limited role for government [Logan 1977, 181, 197-8]. Subsequent government responses to inflationary and supply-side matters included a monetarist approach to stabilizing economic conditions, a reduction in the role of government, and austerity programs. These measures to facilitate the functioning of the market were taken in the full knowledge that unemployment would rise as a result. The reliance on market forces, however, reflected doubts about the ability of governments to solve economic problems, doubts that developed as a result of a perception that previous attempts to solve such problems were unsuccessful and ineffective.

At the same time, a comparison of the Canadian approach with those of Sweden, Japan, or Austria is, to a considerable extent, a case of comparing apples and oranges. Unlike these other countries, Canada has a federal political system, is culturally and linguistically diverse, has a strong tradition of liberalism and individualism, is large and has tremendous regional variations, and does not have a centralized labour movement or concentrated business organizations. So the obstacles to institutionalizing a full-employment objective in Canada should not be underestimated. But the fact remains that Sweden, Japan, and Austria *did* develop processes and institutions to meet that objective; they did not come ready-made but were shaped and led, over time, by their governments. The requisite leadership, skills, and perseverance did not emerge in Canada in the postwar period; Canada's traditions and social and political features have acted as a constraint on, rather than a resource for, the development of collegial institutions devoted to the realization of full employment. Because the employment objective was never institutionalized in Canada, it has essentially been abandoned.

Observations and Implications

Policy Objectives and Experiences and the Full-Employment Objective

The acceptance in Canada of the notion of non-demand-deficient unemployment and the persistence of inflation together resulted in a loss of faith in policy tools. Many saw inflation as the high cost of adopting the employment objective and condemned the techniques and approaches of

postwar governments. The policy resonance of unemployment was diminished and the full-employment objective delegitimized, reflecting a sense that responding to unemployment was futile. Keynesian and interventionist approaches were discredited. Institutions that were capable of addressing problems or acting as effective advocates for retaining the employment objective were not developed. It is clear then why, given a choice between dealing with unemployment through greater intervention or returning to classical market approaches, governments chose the latter.

The Impact of Inflation on the Concept of Unemployment

Inflation assumed precisely the same policy role in the late 1960s and 1970s that unemployment played in the 1930s, undermining conventional wisdom and confidence in policy tools and leading to policy change. A new set of priorities emerged and the meaning of unemployment was transformed. Since the mid-1970s there has been a growing consensus that inflation itself causes unemployment, either through loss of export competitiveness or declining efficiency and productivity. Reducing unemployment over the long term, then, would require measures such as deficit reduction and inflation containment, and initiatives to increase international competitiveness that might require an acceptance of short- to medium-term increases in unemployment.

Social Security and the Concept of Unemployment

Even as the unemployment rate rose to double-digit levels, there was a striking absence of both a sense of crisis and noncapitalist criticisms and alternatives. This suggested the extent to which social security functioned as an effective social shock absorber, and many concluded that unemployment was not the hardship it had been in the 1930s. At the same time, unemployment was, to a large extent, repersonalized by economic models that stressed the behaviour of the unemployed individual. Instead of being a macroeconomic or structural matter calling for state action, unemployment came to be seen in the 1980s as a microeconomic or personal matter, to be resolved in the market.

The Employment Objective and Trade-Offs

The proliferation of economic policy goals has made policy formulation a matter of juggling priorities. Indeed, there is a policy trade-off associated with achieving the employment objective. The social security approach to unemployment (the Dutch model) views full employment in NAIRU terms and provides income guarantees. The employment approach (the Swedish model) sees employment as a right and therefore guarantees employment as opposed to income. Canada's experience more closely resembles the Dutch model. These competing approaches to unemployment present a trade-off between higher employment levels and greater income guarantees.

Similarly, there is an institutional trade-off that encompasses the unemployment/inflation trade-off. It has become conventional wisdom that there is an inflationary bias at high levels of employment. The policy question is whether this is accepted as a fixed or a negotiable constraint. Canadian governments have introduced certain supply-side policies to ameliorate this trade-off, and have tried introducing controls to limit inflation at high levels of employment. In Sweden, supply-side measures act as a kind of anti-inflation strategy.

The unemployment/inflation trade-off is, at root, a trade-off between unemployment and institutional change. A commitment to the employment objective would require a set of institutional changes – including labour market policies and controls – that have the capacity to limit inflation at high-employment levels and the authority to sustain employment when other means fail. To achieve these institutional changes would require an extension of the government's role in the economy.

It is unclear how stable the trade-off between unemployment and institutional change is. Long-term tolerance for unemployment might create a permanent cohort of social security recipients, generating tension between the employed and the unemployed, and creating demands for movement along the trade-off curve towards greater institutional change. Similarly, one cannot assume that a high NAIRU will be tolerated over the long term.

This study suggests that realizing a full-employment commitment is primarily a matter of political will. This political will may not exist in Canada, particularly given the weakness of organized labour and the recent ideological drift towards neoconservatism. However, policies of high employment have been pursued in both Japan and Sweden, despite the fact that organized labour is weak in Japan and Sweden is committed to the logic of the international market. If the Canadian government were to make a political commitment to full employment, the following is clear:

- It is unlikely that the market by itself will produce full employment at Japanese or Swedish levels.

- Keynesian measures by themselves cannot produce full employment and stable prices.

- Employment measures and procedures will necessarily be somewhat interventionist and market-dominating.

- To ensure their legitimacy and effectiveness, such measures must be collaboratively devised at national and regional levels with business and labour participation.

- To ensure that business and labour have the capacity to participate in the collaborative process, government must help them to develop organizational coherence.

- Passive measures such as unemployment insurance should be de-emphasized in favour of active measures.

- There should be both a legislative and institutional commitment to the employment objective.

The historical experience of Canada and other countries suggests that it is critical that the full-employment commitment be institutionalized. Canada faces a number of obstacles in this regard, including federalism, regionalism, weak business and labour organization, and a liberal political culture. It must be engineered in a politically sustainable way, which may require jurisdictional redefinition.

Canadians must be aware of the nature of the employment policy choices. One option is to consider full employment to be the natural rate of unemployment; this would allow the perpetuation of the political/economic status quo, but would generate periodic bouts of unemployment. Alternatively, Canadians can choose to aspire to a state in which anyone who wishes to have a job can find one, but this would require changes in our political and institutional arrangements and processes.

Block II: The Nature of Unemployment

3 The Natural Rate of Unemployment: Canada and the Provinces

Andrew Burns

The unemployment rate is perhaps the best-known economic statistic. For both the individual worker and the firm, the national or regional unemployment rate is an important indicator of the state of the economy. High unemployment rates imply tough times for both workers and firms. For workers, job security and wage increases are likely to be reduced, while firms are likely to experience reduced demand for their wares and lower profits. For the individual worker or firm, lower unemployment rates are better than higher unemployment rates. For society, however, unemployment rates that are too low carry the risks of accelerating inflation, high interest rates, and disarray in financial markets. Consequently, governments are charged with maintaining the aggregate level of economic activity at a point that generates neither too much, nor too little unemployment.

"High" and "low" unemployment, of course, are relative concepts. What is considered a high rate of unemployment has varied over time and among the provinces. In 1961, a national unemployment rate of 7.6 per cent was regarded as being unacceptably high; in June 1990, however, the unemployment rate, which stood at 7.5 per cent, was considered by many observers to be too low. Wide disparities in provincial unemployment rates is a historic fact that years of regional development programs have failed to redress. If a national unemployment rate of 7.5 per cent is too low, what does that imply about Ontario's unemployment rate of 5.2 per cent, and Newfoundland's of 17.4 per cent? In the context of widely diverging unemployment rates both across time and across regions, what does it mean to say that the unemployment rate is too high or too low?

Economists have developed the concept of the *natural rate of unemployment* in order to give a theoretical grounding to the notion of an unemployment rate which is neither too low nor too high. Milton Friedman defined the natural rate of unemployment as having four essential characteristics [1968, 8]. First, it is an equilibrium concept; it is the rate of unemployment that would be observed if the economy were operating at the sustainable limits of its capacity. Second, it recognizes the role played by structural characteristics of an economy, such as the industry mix, the characteristics of the labour force, the degree of seasonality, and the sensitivity of the economy to outside shocks. Third, it recognizes real-world imperfections: the impact of monopolies, the fact that it takes time to find work, and the role of government policy. Fourth, it acknowledges the fact that the natural rate of unemployment is not "an intertemporal constant, something like the speed of light, independent of everything under the sun" [Phelps 1974], but subject to change over time.

In the case of Canada, which is above all a nation of regions with distinct industrial structures, policy environments, and cultures, there is much to be said for the notion that each province has its own natural rate of unemployment. Each provincial economy reacts in different ways to changes in the external environment. The economies of the western provinces are much more sensitive to fluctuations in international metal prices than are those of the central and eastern regions. Similarly, because of the relative concentration of manufacturing in Ontario and Quebec, these provinces are much more susceptible to fluctuations in the demand for durable manufactured goods.

The definition of the natural rate of unemployment suggests three categories of influence to which it is sensitive: structural, political, and external. In this paper we present a discussion of the factors which have been most important in explaining the fluctuations observed in national and provincial unemployment rates over the past 30 years.[1] In addition, we present estimates of the natural rate of unemployment for Canada and for each of the provinces, and estimates of the impact of structural, political, and terms-of-trade factors.

Estimating the Natural Rate of Unemployment

The natural rate of unemployment for a given economy can be estimated in a number of ways. Two methodologies predominate in the economic literature, each with advantages and disadvantages.

The methodology favoured by central bankers involves estimating a relationship that economists call the Phillips curve, which relates the acceleration of inflation to the rate of unemployment. This school of thought argues that the rate of unemployment that causes the rate of inflation to

neither accelerate nor decelerate is the equilibrium rate of unemployment. Accelerating inflation is taken as an indication of excess demand for labour, and decelerating inflation as an indication of excess supply. When estimated using this methodology, the natural rate of unemployment is called the *nonaccelerating inflation rate of unemployment*, or more commonly, the NAIRU.

The principal disadvantage of NAIRU estimates lies in the implicit assumption that the only exogenous source of accelerating or decelerating inflation is labour market tightness. If non-labour-market sources of inflation are not taken into account, the estimated NAIRU will be greater than the true natural rate. Recent estimates have attempted to account for the inflationary impacts of some non-labour-market sources of inflation, but they tend to treat these sources in an ad hoc and ex post manner.

The second popular method of estimating the natural rate of unemployment focuses upon various indicators of equilibrium in the economy. The unemployment rate is described as being determined by cyclical, structural, and political factors, and by the terms of trade. The natural rate of unemployment is then defined as that unemployment rate observed when all of the cyclical variables are at their "normal" or cycle-free values. Estimates of the natural rate of unemployment based on this methodology are termed *noncyclical rates of unemployment* (NCRU).

The main disadvantage of NCRU estimates is that the "normal" levels for cyclical variables are, to some extent, arbitrary. The capacity utilization rate is commonly used as an indicator of the cycle, but this is problematic because there is no universally or scientifically accepted definition of what constitutes full capacity utilization. This problem can be overcome, however, by providing a series of NCRU estimates contingent on different definitions of full capacity utilization.

The estimates of the natural rate presented in this paper are based upon the NCRU methodology.

Natural and Cyclical Unemployment, 1963-87

The NCRUs reported in this paper were estimated in two stages using regression analysis. In the first stage, a model was developed whereby fluctuations in the national unemployment rate were determined by changes in a range of explanatory variables that included cyclical, structural, and policy factors, and factors relating to the terms of trade. Each of the cyclical variables was then set at its "normal" level – that is, the level that economic theory would lead us to expect at equilibrium – and a new, equilibrium unemployment rate or NCRU was calculated. The national NCRU was then used along with other indicators of provincial aggregate demand, structure, policy, and terms of trade to calculate provincial NCRUs.[2]

Chart 3-1 reports the natural and actual rates of unemployment in Canada over the period 1963-86. The difference between the actual and the natural rates of unemployment is equal to the rate of cyclical unemployment. Cyclical unemployment is caused by fluctuations in the level of aggregate demand around its equilibrium level. When cyclical unemployment is positive, there is deficient aggregate demand; when it is negative, the level of demand is higher than the economy's ability to produce. Both the NCRU and the actual rates of unemployment show a tendency to increase for most of the period.

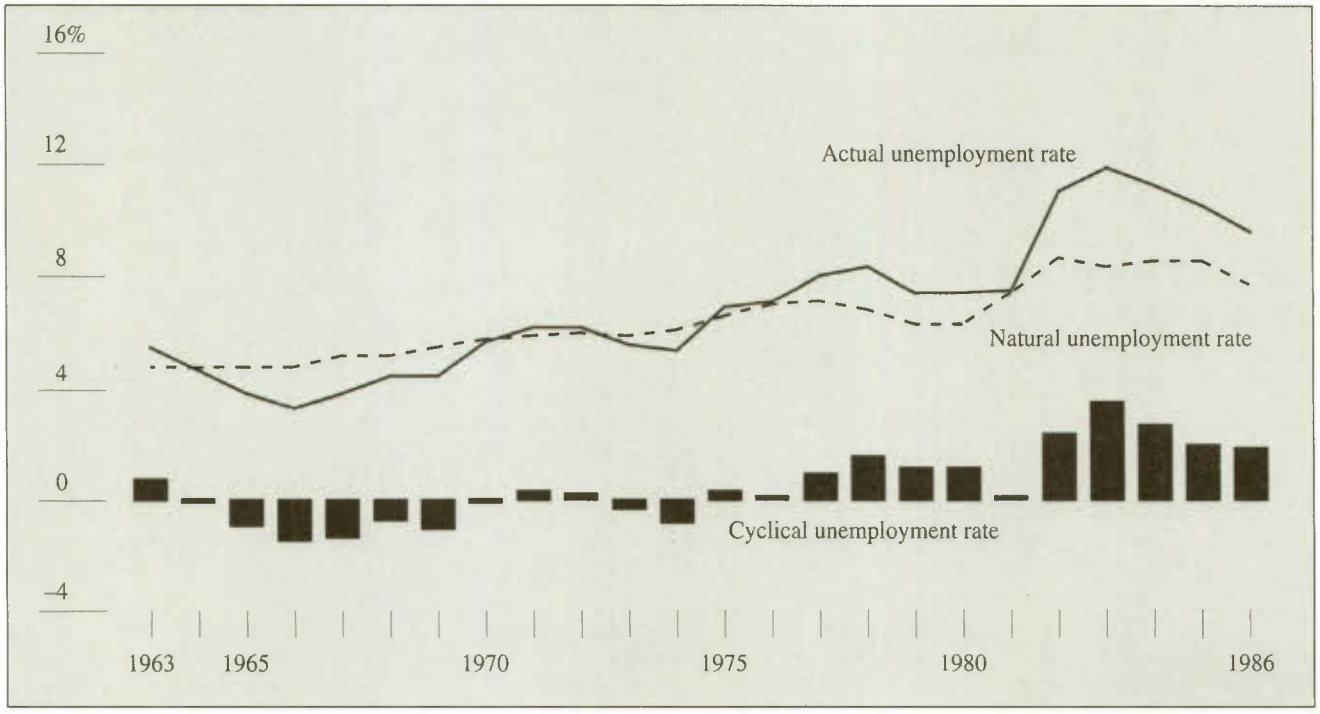
If we compare Canada's natural rate with the actual rate, we find a story that is not inconsistent with common view of the economy's performance vis-à-vis its potential. The period 1962-64 was a time of economic recovery, during which the amount of cyclical unemployment decreased. In the late 1960s, the economy was operating above capacity, fuelled in part by the Vietnam war effort in the United States. Labour markets were very tight, which was reflected in negative rates of cyclical unemployment. By the early 1970s, the U.S. pullout had begun; there was a light recession and the demand for labour eased. The period 1973-77, therefore, is consistent with markets being approximately at or near their full-employment levels. This was also a period of relatively rapidly rising inflation, except when wage and price controls were in effect (1976-78). The implication, given the fact that labour markets were tighter in the 1960s, is that the inflation of the 1970s was *not* of the wage-push kind. The major recession of 1982 was manifested in a sharp rise in the rate of cyclical unemployment (Chart 3-1). And, although there was considerable economic recovery in the 1980s in terms of increased employment and decreased unemployment, both the actual and the natural rates of employment have been declining at a similar rate. The net result is that while the unemployment gap that existed in 1982 was greatly reduced, a certain element of cyclical unemployment remained in 1987.

Provincial Natural Rates

Estimates of the NCRU for each province for the years 1963-86 are shown in Table 3-1. These estimates are of interest insofar as they reflect significant differences in the cyclical sensitivity of provincial labour markets. There is

Chart 3-1

Natural, Actual, and Cyclical Rates of Unemployment, Canada, 1963-86



SOURCE Burns [1990*b*], Chart 13.

no a priori reason to expect the cyclical sensitivity of each province to be the same; on the contrary, since some industries are more cyclically sensitive than others and since the industrial structures of provinces differ, it is to be expected that cyclical sensitivity would also differ across provinces.

Table 3-2 reports the sensitivity of provincial cyclical unemployment to changes in the national cyclical unemployment rate. Values greater than one indicate that a province is more cyclically sensitive than average, and values less than one indicate relative cyclical insensitivity. As expected, the Prairies are to some extent "recession-proof," as are the three Maritime provinces. This reflects the fact that the economies of these regions are based on cyclically stable sectors – stable in the sense that demand for some of their products (e.g., grain, fish) tends not to vary with the level of aggregate demand. The bulk of the rise in the Maritimes' unemployment rate over the last 30 years is attributable to structural, political, or terms-of-trade factors. Although unemployment rose in the region during the 1981-82 recession, that rise was less extreme than in some other provinces. Labour markets in Manitoba, Saskatchewan, and Alberta show relatively little sensitivity to fluctuations in the level of aggregate activity. In contrast, the economies of Quebec and Ontario are the most cyclically sensitive, both in relative and absolute terms. British Columbia shows evidence of considerable sensitivity as well.[3]

Perhaps the most remarkable aspect of these estimates is the behaviour of the NCRU in the different provinces. Practically without exception, high-unemployment provinces have seen their natural rates increase over time. (Appendix A presents the actual and the natural rates of unemployment for each of the 10 provinces.) Similarly, provinces that have seen the greatest deterioration in their unemployment position relative to the national average also experienced substantial increases in their natural rates. These findings lead us to ask what has caused natural rates to increase from province to province, and why the increases have been so much greater in some provinces than in others.

Structural Causes

Structural causes of unemployment are technological, sociological, and other *noncyclical* developments that result in changes in the level of unemployment. Unemployment arising from these factors is *not* amenable to demand-side policies, although a well-considered supply-side policy package might provide some relief.

Table 3-1

Noncyclical Rate of Unemployment, Canada and Provinces, 1963-86

	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Can.
						(Per cent)					
1963	9.23	7.13	6.07	6.57	6.50	3.74	3.34	2.52	2.82	5.15	4.77
1964	8.91	7.06	6.31	6.52	6.16	3.92	3.17	2.46	2.86	4.96	4.72
1965	7.62	6.99	5.91	6.53	6.42	3.77	3.37	2.69	2.99	4.95	4.74
1966	8.32	6.95	5.69	6.51	6.13	3.89	3.54	2.62	3.10	5.55	4.77
1967	9.29	6.92	5.66	6.88	6.62	4.17	3.57	2.66	3.62	6.57	5.18
1968	8.18	6.96	5.59	6.32	6.59	4.15	4.19	2.71	4.06	6.36	5.16
1969	8.13	6.85	5.60	6.38	6.82	4.52	4.52	3.10	4.59	6.44	5.45
1970	9.41	6.87	6.12	6.04	6.97	4.68	5.21	3.31	5.32	7.86	5.82
1971	9.38	7.05	6.37	6.08	7.09	4.90	5.37	3.48	5.42	7.30	5.91
1972	9.91	8.39	7.02	8.49	7.01	4.89	5.20	4.34	5.54	7.31	6.02
1973	9.92	8.41	7.55	7.92	7.03	5.06	4.69	3.64	5.00	6.10	5.88
1974	14.26	8.62	8.14	9.25	7.58	5.10	4.05	2.59	4.14	7.04	6.13
1975	14.40	8.74	8.57	11.10	8.18	5.35	4.50	3.63	3.45	8.91	6.65
1976	15.58	9.09	8.74	11.07	8.71	5.67	5.16	3.81	4.21	8.99	7.04
1977	15.59	9.26	9.38	11.46	8.93	5.74	5.75	4.53	4.22	8.38	7.13
1978	14.39	8.88	9.25	10.23	8.69	5.60	5.18	4.07	4.01	7.33	6.78
1979	12.89	8.74	9.59	10.74	8.28	5.38	4.51	3.85	3.45	5.75	6.30
1980	12.50	9.20	9.36	11.31	8.77	5.26	4.82	3.77	3.17	5.58	6.34
1981	15.64	10.03	10.38	12.09	9.67	5.72	5.86	5.43	4.21	8.68	7.40
1982	16.19	11.08	11.71	13.48	10.50	6.62	7.13	6.42	6.93	11.53	8.70
1983	16.28	11.59	12.14	14.07	9.83	6.05	7.13	6.92	8.57	10.00	8.37
1984	18.36	11.64	12.24	14.15	9.80	6.16	6.75	7.09	8.42	11.07	8.55
1985	18.06	11.76	12.26	13.63	9.78	6.14	7.12	7.52	8.52	11.30	8.57
1986	16.90	11.00	11.42	12.53	8.54	5.64	6.38	6.63	8.11	10.49	7.79

SOURCE Burns [1990*b*], Table 15.

Table 3-2

Cyclical Sensitivity, by Province, Canada[1]

Newfoundland	1.15
Prince Edward Island	0.70
Nova Scotia	0.61
New Brunswick	0.51
Quebec	1.17
Ontario	1.10
Manitoba	0.63
Saskatchewan	0.28
Alberta	0.50
British Columbia	1.12

1 Ratio of change in provincial cyclical unemployment rate to a 1-percent increase in the national cyclical unemployment rate.

SOURCE Burns [1990*b*], Table 3.

The economy is always in a state of flux, and so there is always some unemployment. With the passage of time, individuals' needs and skills change, resulting in a succession of jobs through the lifecycle. Similarly, firms' needs change as technology progresses and markets evolve. There are always some firms that are expanding and others that are contracting. These changes ensure a constant flow of workers from job to job, independently of cyclical conditions; as long as that transition takes time, there will be some minimal level of unemployment.

There are, however, other factors that can cause the noncyclical level of unemployment to change. In this section, we describe some of these structural factors and report their relative quantitative importance in the evolution of the NCRU over the past 30 years.

Demographics — Several commentators have pointed to increases in the participation rate of women and changes in the age/sex composition of the labour force arising from the entry of the baby-boom generation onto the job market as explanations for rising unemployment rates. Female and young workers are thought to have weaker labour force attachment than older male workers, and therefore a greater

likelihood of being unemployed. As the proportion of high-unemployment-rate groups in the labour force increases, so too will the overall average unemployment rate, *independently of any change in economic conditions.*

By using an unemployment-rate index based on constant labour force shares, it is possible to measure the size of the contribution of the age/sex factor to unemployment. In fact, changes in the age/sex composition of the labour force have contributed very little to the rise in the aggregate unemployment rate over the past 30 years, accounting for only a 0.3-percentage-point increase in unemployment between 1963 and 1987. Furthermore, recent demographic developments have actually been operating so as to reduce both the national unemployment rate and the NCRU.

Industrial Structure — Lilien [1982] notes that the amount of frictional unemployment in a given economy depends partly upon the speed with which industries and occupations expand and contract. He argues that an unemployed individual will be able to find work more quickly with a firm in the same industrial sector than in a different sector. That is because an unemployed worker will be better acquainted with the firms and more likely to have the skills and specialized knowledge required for employment in the same sector. If the overall demand for workers remains the same but demand expands in one sector and declines in another, then unemployment is expected to rise simply because workers who must change industries will take longer to find work. The increase in unemployment will be even more severe if workers fail to perceive the fall in labour demand in their own sector as being permanent, because they may then wait a considerable amount of time before looking for work in a new sector.

In estimating our natural rates we tested Lilien's hypothesis. Although we were forced to reject the particular method by which Lilien modelled noncyclical changes in turnover, there was considerable evidence to suggest that there was indeed a substantial increase in the amount of unemployment mismatch in the late 1970s and early 1980s.

In particular, we found that the oil-price shocks of the 1970s played an important role in explaining the rise in Canada's structural unemployment rate. Theoretical work by Hamilton [1983, 1988] indicates that such shocks can have an important impact on both the demand and supply sides of the economy, producing precisely the kind of industrial turnover described by Lilien. Our results, like those of Loungani [1986], tend to confirm the importance of the disruptive effects of the oil-price shocks.

Real Wages, Productivity, and the Oil-Price Shocks — In addition to persistently high rates of unemployment in the 1970s and 1980s, a second problem has been noted by observers, namely, a decline in labour productivity in western economies over the same two decades. Many authors have presented models whereby a real-wage gap – that is, the difference between workers' marginal productivity and the real wage they demand – is an important factor in the long-run rise of unemployment [see, for example, Bean et al. 1986; Bismut 1983]. Central to these arguments is the notion that workers failed to perceive a drop in their productivity and that they therefore demanded real wages in excess of those justified by their productivity performance. As a result, employment fell below its equilibrium position and unemployment remained high.

We modelled the impact of changes in productivity indirectly by analysing the effects on unemployment of the factors that, according to economic theory, determine productivity. These factors include the level of aggregate demand, technological change, and the supply of nonlabour factors of production, namely, materials and capital.

In the period under examination, the most important fluctuations in the determinants of productivity were the rise in the relative price of energy and changes in the rate of capacity utilization. Clearly, it is difficult to distinguish between unemployment caused by a real-wage productivity gap induced by high energy prices, and an increase in frictional unemployment induced by energy prices, such as that posited by Lilien. In our empirical measures, we do not attempt to make the distinction. Estimates of the relative impact of the oil-price shocks are presented in Table 3-3.

Table 3-3

Change in Unemployment Rates Attributable to Real-Wage and Mismatch Unemployment, by Province, Canada, 1963-85 and 1985-86

	1963-85	1985-86
	(Percentage points)	
Newfoundland	3.78	–1.10
Prince Edward Island	3.30	–0.81
Nova Scotia	3.36	–0.94
New Brunswick	3.28	–0.95
Quebec	4.12	–1.27
Ontario	1.43	–0.46
Manitoba	3.34	–1.03
Saskatchewan	3.54	–0.88
Alberta	3.24	–0.93
British Columbia	1.79	–0.52

SOURCE Burns [1990*b*], Table 4.

There is substantial provincial variation in the sensitivity of unemployment to oil-price shocks. Least sensitive were the economies of Ontario and British Columbia. The greatest degree of sensitivity was shown by Quebec, where unemployment rose by 4.12 percentage points between 1963 and 1985 and then fell by 1.27 percentage points between 1985 and 1986 as a result of the oil-price shocks. The responses of the Atlantic and Prairie regions were similar to each other and occupied a middle ground between the two extremes.

In the early 1970s real wages in the Atlantic provinces rose significantly relative to the real wage in Ontario. Presumably these increases were due to heightened awareness of the real-wage effects of inflation and of wage settlements in other parts of the country. If there were no increases in productivity in the Atlantic provinces at the same time, then economic theory would lead us to expect an increase in the rate of unemployment in that region. Between 1963 and the end of 1972 the average industrial wage in Newfoundland was 76 per cent of Ontario's; between 1973 and 1986 that proportion was 87 per cent (Chart 3-2). There is no compelling evidence to suggest that this improvement in Newfoundland's relative wage can be explained by increases in productivity.

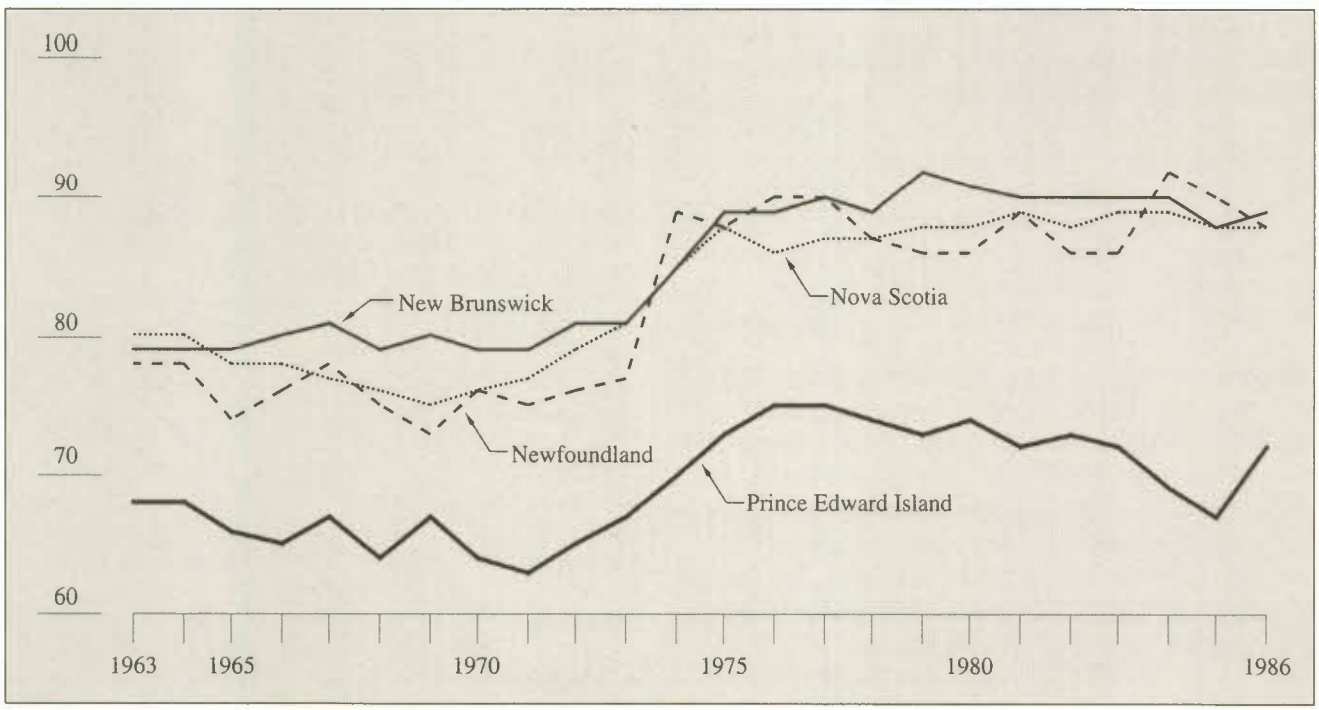
Table 3-4 presents our estimates of the impact of wage spillover in the three Atlantic provinces where the impact on unemployment is large: Newfoundland, Nova Scotia, and New Brunswick.

Union Bargaining Power — A recurring and related theme in the literature is that as an economy becomes more unionized, the bargaining power of labour grows and the resulting high union wages contribute to a high rate of unemployment. The theoretical underpinnings of this argument are far from settled; in fact, one could argue that unions, in an effort to increase their own membership, work to increase employment and reduce unemployment. Our analysis indicates that the impact of unions on the growth of provincial unemployment rates was insignificant except in Ontario and British Columbia, where there is some evidence to suggest that greater unionization may be associated with increases in unemployment [see Burns 1990*a*].

Persistence/Hysteresis Effects — One of the most puzzling aspects of the behaviour of unemployment rates in the past three decades has been their failure or slowness to return to previous levels following a recession or economic slowdown. In Canada, it took a full six years of more than 4-per-cent real annual growth after the recession of

Chart 3-2

Atlantic Provinces' Manufacturing Wage Relative to Ontario's Manufacturing Wage, 1963-86



SOURCE Burns [1990*b*], Chart 1.

Table 3-4

Impact of Wage Spillover on Unemployment, Selected Provinces, Canada, 1973-86

	Change in unemployment
	(Percentage points)
Newfoundland	2.34
Nova Scotia	1.02
New Brunswick	1.08

SOURCE Burns [1990*b*], Table 5.

1981-82 to regain pre-recession unemployment rates. After previous slowdowns, Canada actually failed to regain previous unemployment rates before the next slowdown pushed unemployment rates to even higher levels. In some European countries, the failure of unemployment rates to decline during growth periods has been even more marked.

Hargreaves-Heap [1980] argues that the behaviour of European unemployment rates was consistent with a model whereby the natural rate of unemployment is not fixed, and that rather than being anchored by various structural, political, and institutional factors as suggested by Friedman, the unemployment rate shows no tendency to return to a single equilibrium level. According to this argument, referred to as hysteresis in the literature, the natural (or equilibrium) rate of unemployment in any given period tends to be whatever the unemployment rate was in the previous period.[4]

Economists have developed a number of complementary explanations for hysteresis and/or the persistence of unemployment rates in the face of an otherwise strong economic recovery. The first explanation was popularized by Blanchard and Summers [1986], who present a model of the hysteresis phenomenon in which the wage-bargaining process is characterized by an insider/outsider ethos. They argue that employed workers constitute an insider group behaving as a monopoly and negotiating wage settlements so as to maximize the welfare of the group's members, with no consideration of the welfare of outsiders – that is, workers who are not employed. Insiders demand and receive a wage that does not decrease in the face of decreased demand. The downward inflexibility of wages discourages new hiring by firms, with the result that overall employment does not increase. Outsiders can become members of the insider group only when demand growth causes an increase in the demand for labour, in which case the insider group expands to include the newly hired workers. Conversely, a decrease in the level of demand will reduce the size of the insider group. Since demand varies across industries, hysteresis-based unemployment will follow a "random walk," as will the natural rate of unemployment [Hargreaves-Heap 1980]. The stronger the monopoly power of employed workers, the more likely it is that employment and unemployment will be characterized by hysteresis.

There is a second explanation for hysteresis, which also considers the insider/outsider phenomenon but from the perspective of the firm and its lack of knowledge about the suitability of unemployed workers. Employed workers have known skills and work habits; those who are unsuitable are fired. Because the training period for newly hired workers is costly, firms pay their current employees a premium to ensure their attachment to the firm. In essence, workers exchange higher levels of output and productivity for higher wages, referred to as "efficiency wages," which cause employment levels to be lower than they would be if wage levels fell [Rebitzer 1988; Jones 1987*a*; Gera and Grenier, Chapter 10 of this volume]. Since the duration of a worker's unemployment spell is used by firms as an indicator of employment suitability [Lindbeck and Snower 1986*a*, 1987, 1988; Jones 1987*a*], the longer a worker remains unemployed, the less likely it is that a firm will make an offer of employment. As the chances of receiving a job offer decline, that worker joins the ranks of the long-term unemployed and the equilibrium rate of unemployment rises.

It has also been proposed that hysteresis is a result of the deterioration of human capital. For a variety of reasons, some workers may become unemployable at the "going wage." If they fail to revise their expectation of a fair market wage, a wedge is driven between their expectation and its realization. As the duration of unemployment increases, work skills and habits deteriorate. At the same time, the stigma of a period of prolonged unemployment contributes to a further devaluation of those workers' skills, and potentially to a further increase in the wedge between their expected wage and what the market is willing to pay them. Such wedges reduce the likelihood that an unemployed worker will find a job, and the passage of time only compounds the problem.

Policy Factors

Government policy attempts to respond to a number of often competing demands. The sense that all Canadians should enjoy a similar standard of living and have access to similar services, wherever they live, is deeply rooted and

is reflected in a political tradition that seeks to attenuate the disparities in income that a market economy tends to produce. Unfortunately, low unemployment, stable prices, and interpersonal and interregional equity can conflict as policy goals. In this section, we outline the impact of some government policies on unemployment, without attempting to evaluate the relative benefits of these policies on other policy goals.[5]

Unemployment Insurance — Unemployment insurance reduces the opportunity cost of searching for a job while unemployed and, all other things being equal, can be expected to lead to increased levels of measured unemployment.[6] In Canada, the generosity of the unemployment insurance (UI) system depends upon the level of unemployment. Some authors [see Milbourne et al. 1989] argue that because the system becomes more generous as the unemployment rate rises, it may be responsible for much of the persistence and hysteresis observed in the Canadian economy. Although we attempted to account for the hysteresis-inducing effects of extended UI benefits, we were unable to do so in a satisfactory manner. To the extent that increased benefits do explain persistence, the impact of the UI system reported here will be underestimated.

Table 3-5 shows the estimated impact of unemployment insurance on provincial unemployment rates in Prince Edward Island, New Brunswick, and Saskatchewan – three provinces where that impact was significant – for two periods, 1963-73 and 1974-86. The 1972 reform of the UI program, which simultaneously increased benefits and shortened the working period required to qualify for benefits, had a dramatic impact on unemployment. Since then, the leisurely decline in the contribution of UI to the unemployment rate has been largely the result of reforms to the UI system aimed at restricting access.

Perhaps surprisingly, our estimates indicate that UI had no statistically significant impact on unemployment in Newfoundland. This is more likely a reflection of the particular model formulation employed than a true measure of UI's impact on unemployment.[7]

Minimum-Wage Legislation — Minimum wages are another important factor affecting both the firm's decision to offer employment and a worker's decision to accept any given offer. Because minimum wages act as a price floor, some low-productivity jobs may not be offered and there may be an excess supply of workers at the going wage – that is, involuntary unemployment.[8]

Table 3-6 presents the estimated impact on provincial unemployment rates of minimum-wage legislation. The second column reports the change from 1963 to the year where minimum-wage-induced unemployment reached its peak, and the third shows by how much unemployment rates have declined since that maximum was achieved. Minimum-wage legislation had significant effects on unemployment in Quebec, Ontario, and Manitoba, causing it to increase throughout the 1960s and early 1970s, and contributing to its decline since then. Although the Quebec figure is relatively large, it is in line with previously published estimates.

Tax Wedges — An important theme in the unemployment literature is the effect of price distortions.[9] Increases in payroll taxes paid by employers cause firms' real-wage costs

Table 3-5

Impact of Unemployment Insurance on Unemployment, Selected Provinces, Canada, 1963-73 and 1974-86

	Change in unemployment	
	1963-73	1974-86
	(Percentage points)	
Prince Edward Island	1.56	–0.18
New Brunswick	2.33	–0.38
Saskatchewan	0.80	–0.17

SOURCE Burns [1990*b*], Table 8.

Table 3-6

Increase in Unemployment Rates Induced by Minimum-Wage Legislation, Relative to 1963 Level, Selected Provinces, Canada

	Year of maximum	Maximum increase in unemployment	Decrease in unemployment since year of maximum
		(Percentage points)	
Quebec	1976	1.24	–2.01
Ontario	1975	0.14	–0.61
Manitoba	1972	0.67	–0.85

SOURCE Burns [1990*b*], Table 11.

to rise while increases in taxes paid by workers cause their real wages to decrease. The combined effect is to drive a wedge between the marginal productivity of workers and the wage they receive. Furthermore, increases in marginal tax rates decrease the incentive to work and result in higher unemployment rates. Because both the demand for labour by firms and the supply of labour decrease at the same time, the net impact on the unemployment rate is not certain. By the same token, subsidies for certain industries can interfere with the efficient allocation of resources, resulting in unemployment.

Table 3-7 shows the maximum increase in the unemployment rate attributable to business and personal taxes and the difference between that rate and the unemployment rate in 1986, in Newfoundland, Nova Scotia, Manitoba, and Alberta, where the tax system had significant effects on unemployment. The tendency in all these provinces was for the taxation share of output to rise during the 1960s, peak in the mid-1970s, and fall after that. The effects on unemployment follow a similar pattern.

Government subsidies had significant effects on employment in only two provinces: Nova Scotia and Alberta. Table 3-8 shows the change in unemployment in these provinces attributed to subsidization over the periods 1963-73, 1974-81, and 1982-86. For Nova Scotia the sign on our estimated coefficient is negative, implying that an increase in subsidy was successful in reducing unemployment. For Alberta, however, the sign is positive, implying that increases in subsidization were associated with *increased* levels of unemployment.

Table 3-7

Increase in Unemployment Due to Tax-Based Distortions, Relative to the 1986 Rate, since 1963, Selected Provinces, Canada

	Year of maximum	Maximum increase in unemployment	Decrease in unemployment since year of maximum
		(Percentage points)	
Newfoundland	1976	2.19	–0.53
Nova Scotia	1974	1.33	–0.20
Manitoba	1972	1.35	–0.59
Alberta	1972	2.05	–1.07

SOURCE Burns [1990*b*], Table 9.

Table 3-8

Effect of Subsidization on Unemployment, Nova Scotia and Alberta, Selected Periods, 1963-86

	1963-73	1974-81	1982-86
		(Percentage points)	
Nova Scotia	0.06	–0.53	–0.12
Alberta	0.02	0.52	2.67

SOURCE Burns [1990*b*], Table 10.

Certain factors combine to prevent us from interpreting this result as a condemnation of subsidy policies in Alberta. Much of the subsidization being recorded in this variable came in response to the oil-price shock in an effort to spur exploration and develop domestic sources of oil. The contemporaneous rise in unemployment is likely due to the oil-price shock [see Burns 1990*b*, for more detail on this question].

Terms of Trade

Changes in the terms of trade can affect the level of employment attainable at any given point in time. In a resource-based economy such as Canada's, international price fluctuations can have significant effects on employment in the short run. The expectation of future improvement in prices (leading workers to delay changing industries) and the cost of retooling physical and human capital can lead to structural unemployment. Such effects were felt in Newfoundland (due to fluctuations in the price of minerals), in New Brunswick (due to fluctuations in prices of fish and fish products), in Ontario and Alberta (due to variations in pulp prices), in Manitoba and Saskatchewan (due to grain-price fluctuations), and in British Columbia (due to both mineral and milled-lumber price fluctuations). Table 3-9 summarizes the effects of these resource-price fluctuations in selected provinces by making reference to the largest unemployment rate change induced by price changes. Also shown is the absolute value by which provincial unemployment rates can be expected to vary as a result of fluctuations in the terms of trade in any given year. Overall, the effects were small in Ontario, Manitoba, and Saskatchewan, and large in Newfoundland, New Brunswick, Alberta, and British Columbia.

Table 3-9

Effect of Terms of Trade on Provincial Unemployment Rates, Selected Provinces, Canada, 1963-87

	1963-87 Quarter 3	
	Maximum increase in unemployment	Average
	(Percentage points)	
Newfoundland	2.25	0.54
New Brunswick	2.20	0.98
Ontario	0.35	0.14
Manitoba	0.84	0.23
Saskatchewan	1.49	0.41
Alberta	1.95	0.77
British Columbia		
Pulp	2.00	0.54
Mining	3.18	0.77

SOURCE Burns [1990*b*], Table 12.

Discussion

The impact of the oil-price shocks, traded-commodity price swings, and the other structural variables on the mix of demand is reflected in the acceleration of the shift of Canadian employment from the goods sector to the service sector. In the period prior to and during the 1960s, this transition occurred at a gradual and evolutionary pace, a pace which, by and large, continued into the 1970s. Table 3-10 shows the percentage of the employed labour force involved in goods production in 1975, 1980, and 1987, by region. It also shows the absolute change and percentage change in the goods-sector employment share over these periods. There was clearly an acceleration in the pace of change between 1975 and 1980 and 1980 and 1987. Last, Table 3-10 shows the average natural rate of unemployment for each region for the periods 1975-80 and 1980-87, as well as the percentage change in that rate. In all regions except the Atlantic provinces, the greater the acceleration in the transition from the goods sector to the service sector, the greater the change in a region's natural rate.

Chart 3-3 illustrates the relationship between structural change in the economy and unemployment from a slightly different perspective. In the four western provinces, there is a clear positive correlation between the percentage increase in the NCRU and the percentage decrease in the goods-sector employment share. In New Brunswick, Quebec, and Ontario, though a similar pattern is apparent, the increase in the NCRU associated with a given decrease in employment share is much less. The trend in the Atlantic region, however, is not as well defined. The fact that in central Canada the percentage change in the NCRU is much smaller than the change in the share of employment accounted for by the goods sector is consistent with expectations. The denser labour markets of central Canada offer more alternative sources of employment to the dislocated worker than do the less-diversified western economies. Therefore, the amount of structural unemployment generated by a given shift in the mix of demand will be relatively smaller in the denser economies.

Table 3-10

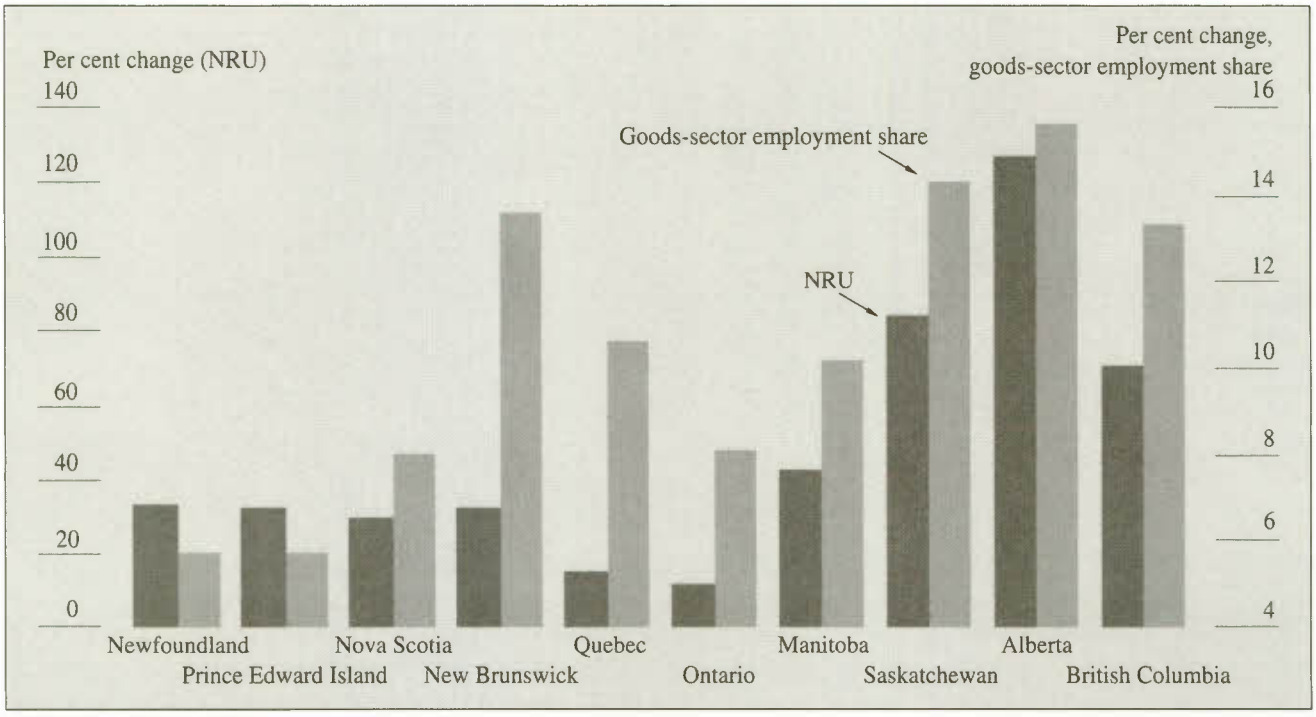
Changes in Regional Industrial Structure and in the Natural Rate of Unemployment, Selected Provinces, Canada, Selected Periods and Years, 1975-87

	Goods-sector employment share			Change				Average natural rate of unemployment		
	1975	1980	1987	1975-80		1980-87		1975-80	1980-87	Change
		(Per cent)		(Percentage points)	(Per cent)	(Percentage points)	(Per cent)		(Per cent)	
British Columbia	29.0	28.0	24.0	–1.0	–3.4	–4.0	–14.3	7.5	10.6	40
Prairie provinces	35.8	34.1	28.4	–1.7	–4.7	–5.7	–16.7	4.2	7.0	66
Ontario	35.5	35.4	31.8	–0.1	–0.3	–3.6	–10.2	5.5	6.1	14
Quebec	34.5	32.0	28.6	–2.5	–7.2	–3.4	–10.6	8.6	9.7	12
Atlantic provinces	32.3	31.4	28.8	–0.9	–2.7	–2.6	–8.3	10.8	13.3	23

SOURCE Burns [1990*b*], Table 13.

Chart 3-3

Change in the Natural Rate of Unemployment and the Goods-Sector Employment Share by Province, Canada, 1978-85



SOURCE Burns [1990*b*], Chart 2.

The contention of this paper that the increase in the NCRU in the provinces reflects an increase in mismatch is given further support by data on long-term unemployment (defined as unemployment spells exceeding 12 months). Long-term unemployment is a clear symptom of structural unemployment and, given the contemporaneous increase in vacancies that occurred over this period, of mismatch.[10] Since 1980, the proportion of the unemployed accounted for by the long-term unemployed has almost doubled, and within that group the share of less mobile older workers has increased dramatically, from 18 to 34 per cent between 1980 and 1987. Both of these developments suggest an increase in mismatch unemployment. The increase in long-term unemployment is consistent with workers having difficulty transferring from industries where employment is declining to those where it is growing. The increase of older workers among the long-term unemployed merely reinforces this notion. Older workers are most likely to have strong family, social, and geographic ties, and industry/firm-specific skills, precisely the factors that increase the subjective cost of a career change and reduce mobility, making these workers especially susceptible to mismatch.

In summary, our estimates are consistent with a story where the bulk of the rise in unemployment has been due to structural factors, most important of which were the effects of the oil-price shocks on the mix of demand. The change in the mix of demand is reflected in an acceleration of the transition from a goods-producing to a service-producing economy, and the structural unemployment generated is reflected in the rise in long-term unemployment.

Summary and Conclusion

We have presented estimates of the noncyclical rate of unemployment for Canada and for each of the 10 provinces. We have seen that the provinces exhibit varying sensitivities to the business cycle, and that the natural rate of unemployment has evolved in different ways. We have provided estimates of the extent to which the changes in provincial natural rates can be attributed to structural, political, and terms-of-trade causes. Table 3-11 shows the amount of the total increase in the NCRU for each province between 1963

Table 3-11

Changes in Provincial Noncyclical Rates of Unemployment, by Cause, Canada, 1963-87

	Structural	Policy	Terms of trade	Total
		(Percentage points)		
Newfoundland	6.33	1.58	–0.30	7.62
Prince Edward Island	2.47	1.38	. .	3.85
Nova Scotia	4.04	1.29	. .	5.33
New Brunswick	5.46	1.95	–1.43	5.98
Quebec	2.62	–0.82	. .	1.80
Ontario	2.56	–0.52	–0.11	2.92
Manitoba	2.00	0.53	0.36	2.90
Saskatchewan	2.66	0.63	0.65	3.94
Alberta	2.29	3.61	–0.64	5.27
British Columbia	5.12	. .	–0.10	5.02

SOURCE Calculations by the author and Burns [1990*b*], Table 14.

and 1987Q2 attributable to each group of factors. The following discussion summarizes our findings as they concern each of the five regions of Canada.

The Atlantic Provinces

The Atlantic provinces' natural rates of unemployment tend to be high relative to actual historical rates, implying that the bulk of the unemployment in these provinces has been structural. The energy-price shocks, presumably working through the demand side, appear to have caused considerable disruption of labour markets in that region. Our estimates suggest that as much as 4 percentage points of unemployment over the sample period can be traced to this factor. Another important factor was the rise in wages in the Atlantic provinces relative to Ontario. Our calculations showed that significant unemployment was generated in Newfoundland, Nova Scotia, and New Brunswick as a result of a wage-spillover effect. Unemployment insurance also had an impact on unemployment according to our estimates.

Since most of the rise in unemployment in the Atlantic provinces has been structural in origin, supply-side policy responses would be most effective in reducing unemployment there. To attempt to decrease these economies' high levels of unemployment with a fiscal and/or monetary stimulus would be inappropriate. Our results strongly suggest that a policy which increases productivity in the Atlantic provinces to a level consistent with that region's high real wages could substantially reduce structural unemployment. Our results do not enable us to identify the precise nature of the unemployment caused by the oil-price shocks; we are, therefore, unable to suggest the appropriate policy response to correct this source of unemployment.

In the most general terms, the ideal policy approach would be to encourage the expansion of industries that require skills similar to those of presently unemployed workers. In the absence of such a program (or industries), retraining programs and possibly even relocation incentives might be desirable. To some extent, existing support systems tend to exacerbate the high unemployment. In many parts of the region, unemployment insurance is used by both firms and workers to subsidize the operation of marginal and submarginal industries, impeding the kind of evolutionary change that is necessary if the market is to respond to high structural unemployment rates. A system of subsidies which supports "sunrise" industries as opposed to "sunset" industries would encourage employment creation and the kind of structural change likely to improve unemployment.

Central Canada

Quebec and Ontario have the most industrialized economies in the country, and as their estimated natural rates indicate, they are the most cyclically sensitive provinces. Their natural rates have been least affected by the various structural factors that have operated to increase unemployment in Canada as a whole. In Ontario, the combined effect of labour monopoly power and the oil-price shocks was 2.97 percentage points, which is similar in magnitude to the energy shocks effects in the other provinces. Both Ontario's and Quebec's natural rates have been trending downwards with the relaxation of energy and minimum-

wage constraints. The percentage of the unemployed who are long-term unemployed in Quebec suggests that the province experienced considerably more structural mismatch than did Ontario. The natural rates in both these provinces in 1987Q1 were close to their 1973 levels and show no indication of rising in the near future.

The Prairies

The Prairie region, like the Atlantic region, has been subject to significant increases in structural unemployment. Although the experience has differed from province to province, we can offer a few general observations. First, the degree of structural unemployment experienced in the Prairies is relatively large, though less than in the Atlantic region. Second, the Prairie provinces have recovered from the high unemployment of the early 1980s to a greater degree than have the Atlantic provinces, although unemployment levels remain significantly higher than they were in the early 1970s.

Manitoba's experience most closely resembles that of Ontario and Quebec. It has seen a significant decrease in structural unemployment since 1982, and in 1986 the natural rate of unemployment began to approach the levels achieved in the early 1970s. The experience in Saskatchewan and Alberta has been less favourable. Saskatchewan's actual unemployment rate has tended to follow the natural rate, and while there is evidence of improvement, the level of structural unemployment remains disturbingly high. Alberta's natural rate of unemployment has followed a somewhat unusual time profile. Our estimates indicate that the natural rate rose in the late 1960s, only to fall around 1974 as oil exploration and production activity increased. The natural rate remained more or less steady at approximately 4 per cent until the mid-1980s, when it rose dramatically to 8.5 per cent, a level from which it has not returned. Due to the difficulties in identifying the impact of subsidies, some of the "policy" induced unemployment – perhaps most – should be considered structural.

British Columbia

British Columbia's natural rate suggests little evidence of cyclical unemployment in much of the 1960s and 1970s, although there appears to be a significant employment gap after 1982. British Columbia's unemployment story is different from that of the other provinces, largely because commodity prices play a more important role there. Structural unemployment in British Columbia rose throughout the 1960s and 1970s. Nevertheless, favourable developments in commodity prices during the 1970s allowed unemployment in British Columbia to remain relatively low, despite deep-rooted structural problems. In 1979, world commodity prices fell and the level of unemployment in British Columbia skyrocketed, as did the natural rate. The new, higher NCRU reflected the various structural factors that had been building up during the 1970s, the effects of which had been hidden by the favourable impact of high world commodity prices. The failure of British Columbia's unemployment rates to recover after 1982, therefore, is more a function of those structural problems than of depressed commodity prices. Diversification of the domestic economy and improved labour market flexibility will likely be key factors in improving labour market prospects in that province.

4 Unemployment and Job Vacancies: Matching People and Jobs

Surendra Gera, Syed Sajjadur Rahman, and Jean-Louis Arcand

One of the critical functions of the labour market is to match workers looking for jobs with available vacancies. The success of this matching process determines the level of unemployment in the economy and the duration of unemployment for jobless workers. The process is a dynamic one: some workers find new jobs, others are laid off, and others are searching for jobs; some workers voluntarily leave the labour force and others become new entrants; some firms expand and advertise for new openings, while others contract and are forced to lay off workers.

This dynamism means that, at any given point in time, the characteristics of workers without jobs and the labour requirements of firms are not perfectly matched; instead, a certain number of unemployed workers and job vacancies will exist simultaneously. Much of this unemployment and many of the vacancies will be short-lived or "frictional" in nature, reflecting only the time needed by workers and firms to acquire the requisite information and make the necessary adjustments. But sometimes large numbers of vacant jobs and unemployed people coexist for long periods of time. These periods of increased mismatches are symptomatic of structural imbalances; that is, situations where the skills, work experience, locations, or occupations of unemployed workers differ from those required for the available jobs. The resulting unemployment is structural unemployment.

An analysis of the relationship between unemployment and the job vacancy rate can help to reveal the state of the labour market. Indeed, one of the most enduring empirical relationships in labour economics is the cyclical link between unemployment and vacancy rates. Evidence suggests that, over the business cycle, the unemployment rate and the vacancy rate are mirror images of one another: while vacancies are high and unemployment is low in tight labour markets, the reverse is true in slack labour markets.

This paper examines structural imbalances in the Canadian labour market by analysing the relationship between unemployment and job vacancies. Two questions form the core themes of the paper. First, have structural imbalances in the Canadian labour market increased in the last three decades and particularly in the 1980s? Second, if they have, what factors contributed to this increase? Special attention is paid to three potential sources of imbalance: the regional nature of the Canadian economy; the rise in the proportion of the long-term unemployed, that is, individuals who have been unemployed continuously for a year or more; and differences in the unemployment growth rate across industrial sectors which, by causing mismatches between labour demand (in expanding sectors) and the available labour supply (consisting, in part, of unemployed labour originating from declining sectors), can lead to a rise in unemployment.

The discussion which follows is divided into four parts. First, because information on job vacancies through time is not available in Canada, we provide an alternative indicator in the form of a help-wanted index. Second, we present evidence on the relationship between unemployment and the help-wanted index for Canada and the regions; that evidence shows that structural imbalances in the labour market have grown in recent years. In the third part we identify the most important sources of structural imbalance. The major new findings of this analysis, described in the fourth section, are that the growth in structural imbalances in Canadian labour markets can be attributed in large part to growth in the proportion of long-term unemployment in the 1980s and to the existence of regional disparities. In the final section, the major conclusions concerning the magnitude and causes of labour market imbalances in Canada in recent decades are discussed.

Job Vacancy Data: Availability and Limitations

The major methodological problem in analysing the unemployment/vacancy (UV) relationship for Canada is the absence of comprehensive and consistent data on job vacancies. There are two direct sources of job vacancy information in Canada. One is Statistics Canada's Job Vacancy Survey (JVS), which collected job vacancy statistics from 1971 to 1978. The other is unpublished notified-job-vacancy data, which is available from Employment and Immigration Canada for the years 1978-88. Unfortunately, these two sets of data are not mutually consistent.

The Job Vacancy Survey was based on data obtained through a sample survey of employers representing approximately 90 per cent of total employment in Canada.[1] The definition of job vacancies used in the survey includes jobs that were immediately available at the time of survey, jobs for which recruiting actions were undertaken by employers, jobs that were vacant for the entire day, and jobs that were available to people outside the firm. Unfilled vacancies were measured six times in each three-month period. The resulting job vacancy rates are expressed as the number of vacancies per 1,000 existing jobs in the sample.[2]

There are a number of shortcomings in the JVS data, the major one being the short length of the available series (1971-78). This has led a number of authors to develop their own estimated-vacancy series by using the Job Vacancy Survey as the basis for an extrapolated series [Denton et al. 1975; Betcherman 1986]. Another problem is the fact that reported vacancies generally represent only a small proportion of total jobs available. However, correction factors for inflating the available vacancy rate have been developed.[3]

In Canada, notified-job-vacancy data is voluntarily supplied by employers and collected by Canada Employment Centres across the country. It has been found, however, that notified job vacancies represent only about 33 per cent of the total job vacancies at any one time in the United Kingdom [Jackman and Roper 1987], and there is little reason to expect that the number would be much different for Canada.

The shortcomings of the direct vacancy measures led us to adopt an alternative measure of the labour demand situation, the "help-wanted index" (HWI). It is derived from column space of job advertisements published in 18 major metropolitan area newspapers. The index is constructed in such a way that it is difficult to quantify the number of vacancies or the number of job losses during a given period. Nevertheless, several researchers have attempted to generate a vacancy index from this information.[4]

The methodology for constructing the index is as follows.[5] First, the column space devoted to job ads in any given month is compared to the average in the same month in the base year to construct the raw indices. Ads which do not appear in a classified section of the newspaper, ads which appear in "career" and "opportunity" sections, "position wanted" ads, and newspaper-carrier ads are excluded from the survey. Second, the raw indices are multiplied by metropolitan area and regional population weights to obtain the appropriate Canadian and regional indices. Third, the calculated HWI is divided by total nonagricultural employment in order to create a job vacancy rate that can be compared with unemployment rates. The result is what is referred to as the normalized help-wanted index (NHWI).

A number of factors directly influence the NHWI. The size of an ad can vary from newspaper to newspaper, the same employer can place a number of ads in different newspapers, and the format of newspapers can change as can the layout of their classified sections. Despite these shortcomings, the NHWI is considered to be a useful indicator of change in the availability of jobs through time.

How reliable is the NHWI in measuring labour demand? One important issue is whether it adequately captures variations in job vacancies throughout the business cycle. In Canada, while the job vacancy rate and the NHWI revealed similar patterns over the 1971-78 period, the NHWI showed a somewhat slower response rate, suggesting that it is less sensitive to cyclical variations. One explanation for this could be that employers may place ads listing several job vacancies at a time and that these "comprehensive" want-ads may mask cyclical variations in the supply of jobs. A test of the strength of the statistical relationship between the NHWI and existing job vacancy data showed, however, that the NHWI was a reasonable substitute measure.[6]

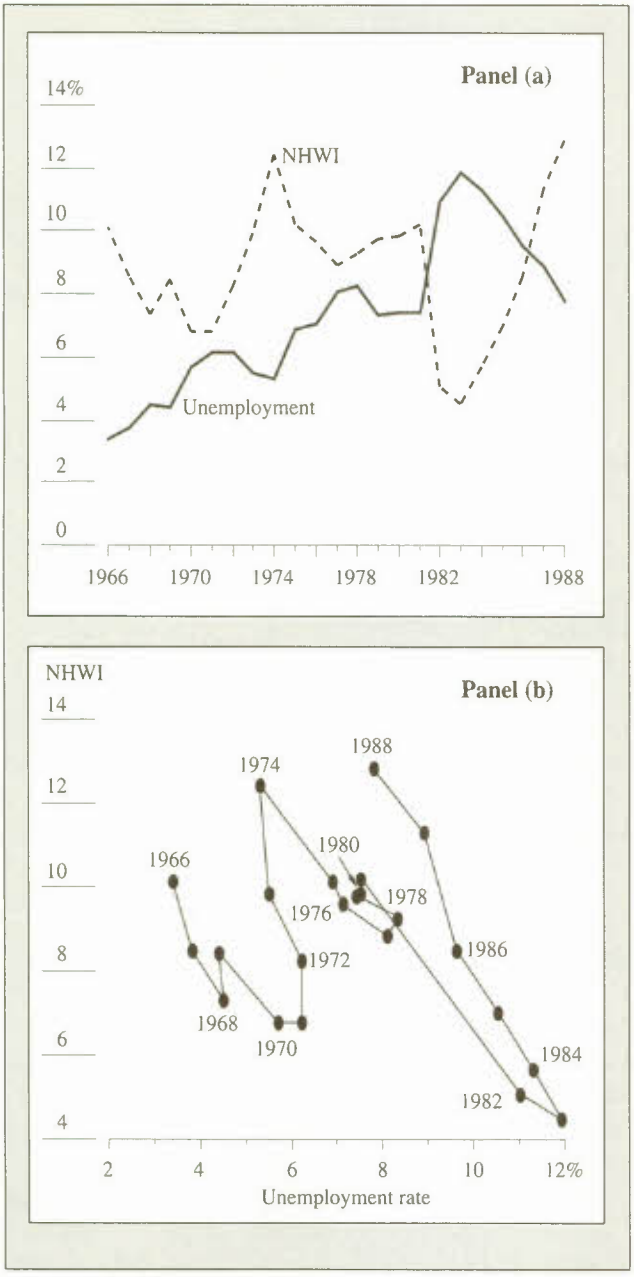
The Unemployment/NHWI Relationship in Canada

Panel (a) of Chart 4-1 shows the actual unemployment rate and the NHWI during the 1966-88 period. As expected, over the course of the business cycle, the unemployment rate and the NHWI were indeed mirror images of one another, with vacancies high and unemployment low in the tight labour market of the early 1970s, and vacancies low and unemployment high in the slack labour market of the early 1980s.

More instructive, however, is the unemployment/NHWI relationship shown in panel (b), where each point refers to a particular year and shows the combination of the calculated vacancy-index and unemployment prevailing at that time. A swing of the unemployment/NHWI relationship to the upper left represents a tightening of the labour market, with more vacancies and lower unemployment; a swing to the lower right indicates that the labour market was slack with fewer job vacancies and higher unemployment rates. The chart also shows, however, an upward shift of the NHWI relative to the aggregate unemployment rate, suggesting that over the course of the last two decades the Canadian labour market has drifted into a zone characterized by both more unemployment and more vacancies.

Chart 4-1

The Unemployment/NHWI[1] Relationship, Canada, 1966-88



1 Normalized help-wanted index.
SOURCE Gera et al. [1991].

In order to measure the extent of this drift, we calculated (i) the increase in the unemployment rate associated with any given NHWI and (ii) the increase in NHWI associated with any given unemployment rate. Our results suggest that between 1966 and 1988 the aggregate unemployment rate associated with any given vacancy rate shifted upwards by 6.5 percentage points. This shift is particularly noticeable after 1974. Similarly, for any given unemployment rate, the NHWI increased by nearly 125 per cent between 1966 and 1988.[7] From either perspective, then, it is apparent that structural imbalances in the Canadian labour market have grown.

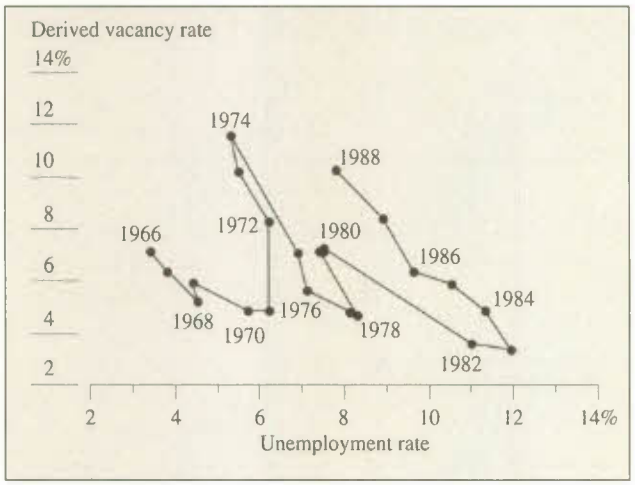
The unemployment/NHWI relationship may be affected by the demographic composition of the labour force. It has been argued that growth in the unemployment rate simply reflects the fact that the labour force share of groups with characteristically high unemployment rates has increased. To test this hypothesis, we calculated a fixed-weight unemployment rate which quantifies the unemployment rate that would have prevailed in a given year had each labour force group maintained its labour force share of 1966.[8] Our results indicate that the fixed-weight unemployment rate associated with any given NHWI also rose 6.5 percentage points between 1966 and 1988 and that the increase in the NHWI relative to the fixed-weight unemployment rate was about 125 per cent. These changes in the unemployment rate and the NHWI are identical to those found when actual unemployment rates were used. It is clear, then, that the changing composition of the labour force did not play a role in causing the observed upward shift in the unemployment/NHWI relationship.

The strength of the relationship between the unemployment rate and the NHWI was tested by using JVS data. First, the relationship between the help-wanted index and the JVS data was calculated for the period 1971-78, when both data sets were available. These calculations were then used to extrapolate the vacancy data to include the years 1966-70 and 1979-88, which is the whole of the time-period covered by the HWI data; this we call the "derived-vacancy rate."

Chart 4-2 shows the plot of the derived-vacancy rate and the unemployment rate for 1966-88. The upward shift in the unemployment/vacancy locus is even more pronounced. Empirical analysis of this shift shows that the actual unemployment rate increased slightly more than 6 percentage points and the fixed-weight unemployment rate increased by close to 6.5 percentage points for any given vacancy rate between 1966 and 1988. By the same token, the derived-vacancy rate increased by about 190 per cent for any given unemployment rate over the 1966-88 period and by close to 196 per cent for any given fixed-weight unemployment rate. Thus, even when derived-vacancy-rate data are used, the estimates indicate a significant outward movement in the vacancy/unemployment relationship since 1966.[9] Furthermore, the results of this exercise are remarkably similar to those obtained when the NHWI is used.

Chart 4-2

The Unemployment/Derived-Vacancy Rate Relationship, Canada, 1966-88



SOURCE Gera et al. [1991].

A Regional Perspective on the Unemployment/NHWI Relationship

The increase in the mismatch between labour demand and supply is evident across all Canadian regions. There was an outward shift in all of the regional curves during the 1966-88 period, though the magnitude of these shifts varied (Chart 4-3).[10] Our analysis shows that the largest shift was experienced by the Atlantic provinces, where the regional unemployment rate associated with any given regional NHWI increased by 11.7 percentage points over the period, suggesting that structural problems in Atlantic labour markets became increasingly serious. British Columbia ranks second, with an increase of 8.7 percentage points in the unemployment rate associated with any given NHWI, followed by Quebec and Ontario at 7.2 percentage points each. The smallest increase is shown by the Prairie provinces at 5.3 percentage points.

Regional differences are also apparent when viewed in terms of the magnitude of change in the NHWI for any given unemployment rate during the 1966-88 period. In this case, the NHWI grew by 165 per cent in Ontario, by 155 per cent in British Columbia, by 152 per cent in the Prairie provinces, by 85 per cent in the Atlantic provinces, and by 64 per cent in Quebec. Analysis of the relationship between unemployment and the NHWI at the regional level, then, shows that structural imbalances have grown in all regions, though to varying extents.

Why Have Structural Imbalances Increased?

Conceptually, structural imbalances in the Canadian labour market can be best understood by analysing the relationship between unemployment and job vacancies. If vacancies were to increase for any given rate of unemployment, then the number of hirings should also increase as the process of job-matching becomes easier; therefore, the greater the number of vacancies, the higher the flows out of unemployment, and the lower the unemployment rate. An increase in the mismatch between unemployment and vacancies, however, will be reflected in reduced hiring, and both the number of vacancies and the rate of unemployment will increase.

The intensity with which firms want to fill vacancies depends on how they view the quality of the unemployed individuals and on institutional factors in the labour market such as employment protection laws, the presence of unions, and minimum-wage legislation. Similarly, the intensity of unemployed individuals' job search will vary according to their past unemployment experiences and the level of unemployment insurance benefits. A fall in search intensity will reduce the rate of outflow from unemployment. Several other factors also can increase labour market mismatches, and hence structural unemployment. In Canada, the most commonly cited are regional and industrial factors. In the discussion that follows, we consider a number of possible sources of labour market mismatch.[11]

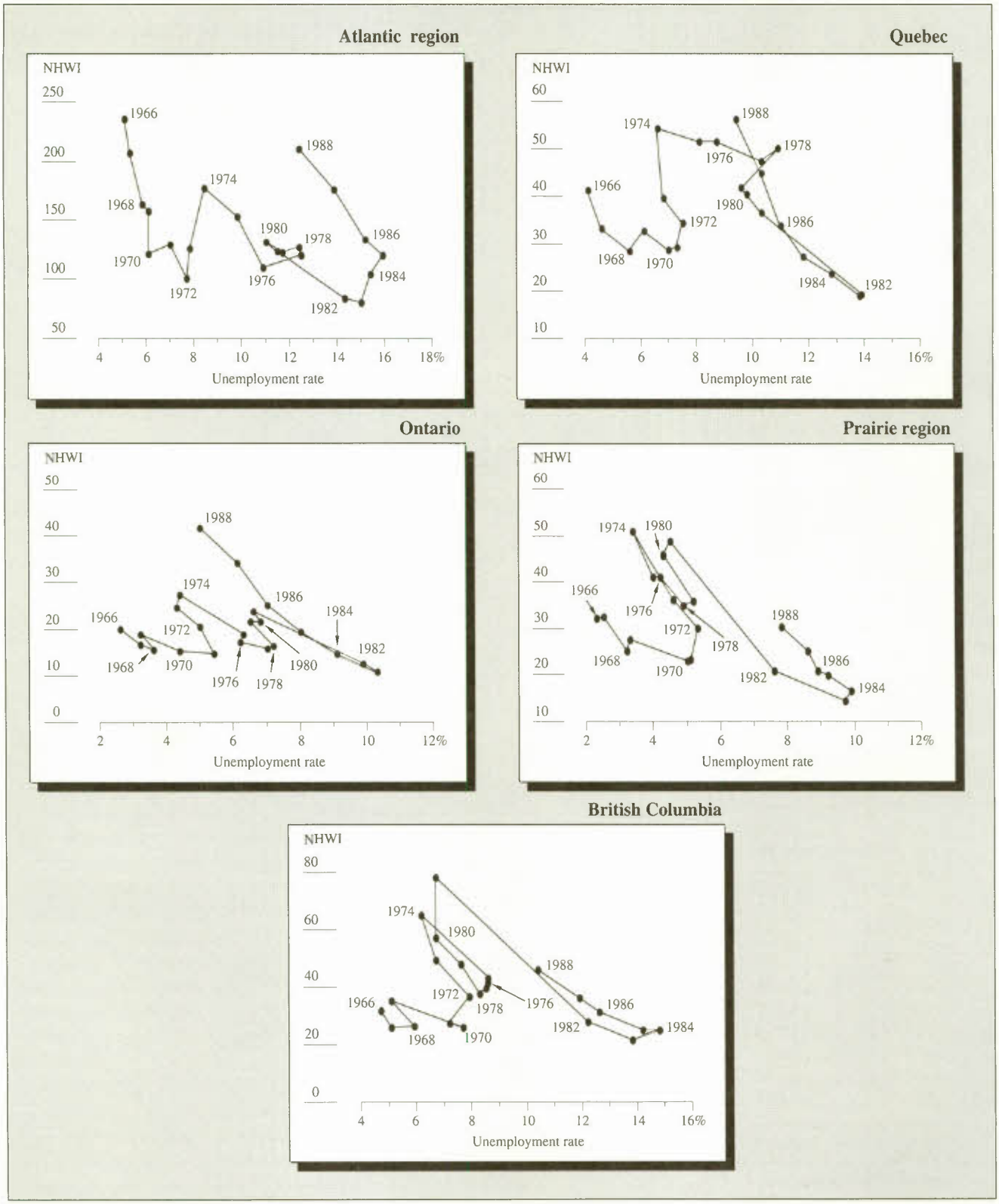
Inflows into Unemployment

An increase in the rate of labour force growth could increase the net inflow into unemployment and thus cause an upward shift in the unemployment/vacancy relationship. While female participation rates have risen steadily in Canada – from 35.4 per cent in 1966 to 57.4 per cent in 1988 – the rate of labour force growth actually slowed in the 1980s, decreasing from an average rate of 2.8 per cent per year in the 1960s and 3.2 per cent per year in the 1970s to 1.8 per cent per year between 1980 and 1988. Therefore, if labour force growth were the only important factor affecting the unemployment/vacancy relationship, an inward shift should have begun in the early 1980s, when in fact an outward shift was observed.

Increases in the rate of job turnover could also raise both vacancies and unemployment. The major components of job turnover are layoffs and quits. There is evidence, for example, that quit rates among young workers and female workers are higher than among mature male workers [see, for example,

Chart 4-3

The Unemployment/NHWI[1] Relationship by Region, Canada, 1966-88



1 Normalized help-wanted index.

SOURCE Gera et al. [1991].

Rahman and Gera 1990*a*]. The total job-separation rate, however, did not change much in the 1978-86 period (Table 4-1). Quit rates, too, were relatively stable throughout this period, increasing in the pre-recession years of 1979-81, decreasing during the recessionary early 1980s, and showing a slight tendency to rise in the recovery years of the mid-1980s. In fact, the share of youth (aged 15-24) in the labour force has begun to decline, decreasing from its 1974 peak of 27.2 per cent to 20.4 per cent in 1988. And while the combined proportion of youth and women in the labour force rose steadily until the early 1980s, that proportion has remained fairly constant since then as the increasing proportion of female workers has been largely offset by the decline in the share of young workers. It is not likely, then, that changes in the composition of the labour force to include groups with higher rates of job separation can explain the outward shift in the unemployment/vacancy relationship.

Outflows from Unemployment

Unemployment inflow and outflow rates for the period 1976-89 are shown in Chart 4-4. As the preceding discussion concluded, inflow rate has shown a decreasing trend since early 1985. At the same time, however, the outflow rate also has been decreasing. Rahman and Gera [1990] found that while both rates increased during the 1981-82 recession, the persistence in unemployment in the 1980s has been due mainly to a decrease in the outflow rate.

Table 4-1

Permanent and Temporary Separation Rates, Canada, 1978-86

	Permanent separation rate[1]			Temporary separation rate[2]	
	Layoffs	Quits	Total	Layoffs	Total
1978	7.4	7.5	21.3	9.0	16.3
1979	6.6	8.7	22.3	8.4	16.0
1980	6.1	8.2	21.2	8.8	16.5
1981	6.7	8.9	22.5	9.8	17.2
1982	8.5	5.6	20.6	12.7	20.9
1983	7.7	5.0	18.7	10.8	17.5
1984	7.9	6.3	21.1	10.9	18.7
1985	7.2	7.3	21.6	10.2	18.0
1986	6.9	7.7	21.3	9.6	17.0

1 Defined as permanent separations from firms as a proportion of person-jobs. One person can work for two or more firms, and thus contribute two or more person-jobs.

2 Defined as temporary separations from firms as a proportion of persons employed.

SOURCE Picot and Baldwin [1990, pp. 4.1-4.28].

Outflows from unemployment are affected by the proportion of job vacancies that employers are willing to fill per period, the search intensity of the unemployed job seekers, and the extent of mismatch between the unemployed and vacancies. These factors in turn are affected by institutional considerations such as the existence of unemployment insurance benefits, minimum-wage laws, and unions. In addition, long-term unemployment can reduce both the proportion of vacancies and the search intensity of the unemployed.

Unemployment Insurance Benefits

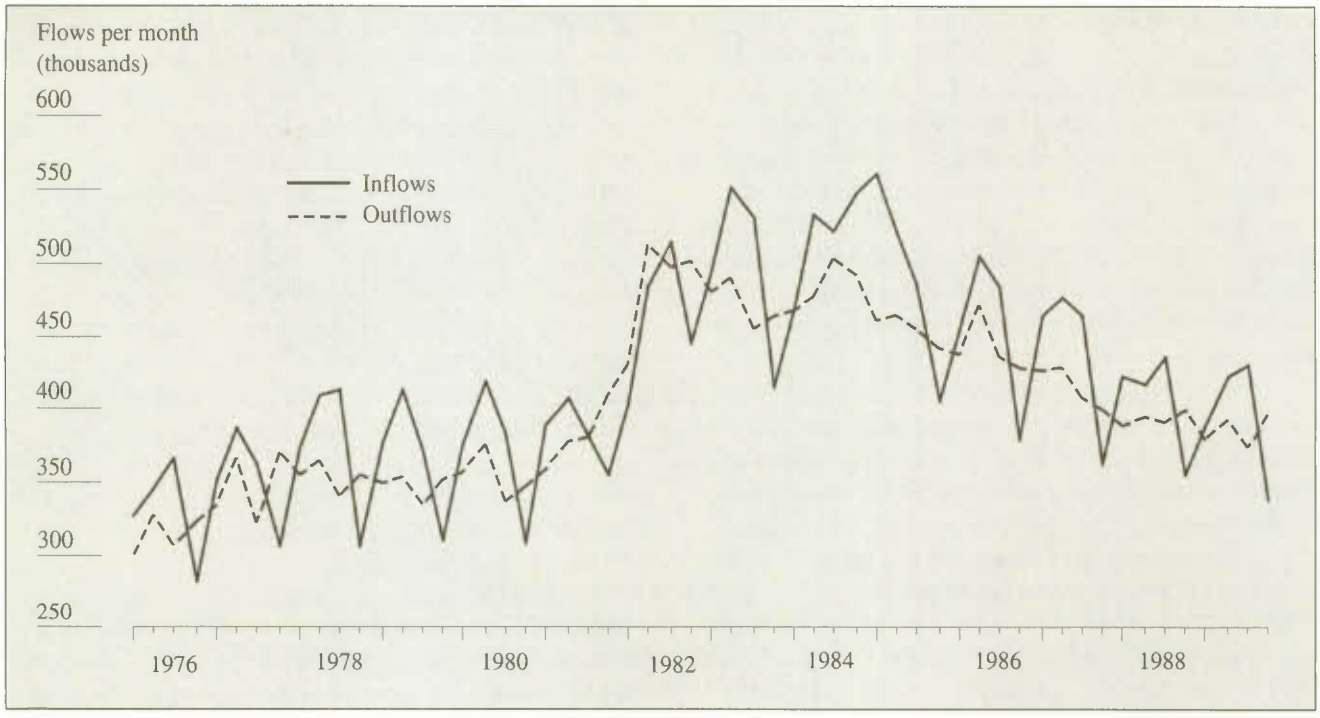
It is well established in the literature that the generosity of unemployment insurance (UI) affects the length of the job search of the unemployed.[12] By lowering the cost of searching, it encourages unemployed workers to extend the duration of their job search and to wait for better job offers. It can also lower the search intensity of the unemployed. Evidence shows that under a generous UI system, employers are less reluctant to lay off workers and workers who are laid off are more likely to wait to be recalled to their old job than to search for a new one. Moreover, individuals with weak labour force attachment are encouraged to enter the job market expecting to work only long enough to qualify for UI benefits.[13]

The Canadian UI system has undergone many changes in the last two decades. The generosity of the system increased substantially as a result of changes to the Unemployment Insurance Act in 1971. The qualification period was lowered from 30 to 8 weeks of work in the previous two years; benefits were increased, particularly in the depressed regions; and the coverage was extended to include most of the unemployed who were not self-employed (for example, workers on maternity leave and seasonal workers). Subsequent revisions in 1976 and 1979, however, reduced the generosity of the system by increasing the qualification period for entitlement, and by decreasing both the duration of benefits and the rate.

We examined the generosity of the UI system by considering three components: the percentage of the labour force covered by UI; the replacement rate, which is the ratio of UI benefits to wages; and the ratio between the maximum number of weeks of benefits allowed and the minimum number of weeks of work required to qualify for benefits. Our results show that, on balance, the system is only slightly more generous today than it was before 1971,

Chart 4-4

Unemployment Inflows and Outflows, Canada, 1976-89



SOURCE Statistics Canada, gross flows data and the Labour Force Survey.

though the intervening period saw first some substantial increases in generosity and then a reduction in generosity. The smallest changes took place with respect to the percentage of the labour force covered by UI, which expanded after 1971 to include workers on maternity leave and seasonal workers. The replacement ratio also changed through time, increasing with the 1971 changes from 50 to 70 per cent of wages, and then decreasing to 60 per cent in 1979. The largest changes took place with respect to the ratio between the maximum number of weeks of benefits allowed and the minimum number of weeks of work required to qualify. During the 1966-71 period, eight weeks of work were required for four weeks of benefits. After the 1971 revisions, eight weeks of work were required for 30 weeks of benefits (or more in some regions). Beginning in 1978, however, the work requirement for 30 weeks of benefits was raised to 10-14 weeks, depending on the regional unemployment rate.

On balance, the evidence suggests that UI became less generous in the 1980s compared with the mid-1970s, which should have led to a reduction in the length of job search and to an increase in the search intensity of the unemployed. If that were the case, the unemployment/vacancy relationship should have shifted inwards, not outwards as it did.

Minimum-Wage Legislation

Minimum-wage laws can cause wages to rise above the level warranted by productivity and so lead to a decline in the proportion of job vacancies that employers are willing to fill per period. Over the 1963-75 period, minimum wages rose relative both to average industrial wages and, as shown by Burns in Chapter 2 of this volume, to productivity. Since 1976, however, minimum wages have fallen relative to average industrial wages, which has contributed to a decrease in the unemployment rate to below what it otherwise would have been. In fact, according to Burns' estimates, the fall in minimum wages was one of the reasons that the natural rate of unemployment dropped 3 percentage points between 1975 and 1987.

Unions

It has been argued that unions can significantly increase the natural rate of unemployment. For example, Daly and MacCharles [1986] and Grubel and Bonnici [1986] suggest that, in Canada, the natural rate has increased because of high real wages generated and protected by powerful unions. They argue that in the 1970s, the unionized sector

was able to realize real-wage gains that were not matched by productivity gains. These wage gains became a relatively permanent feature of Canada's cost structure and may have contributed to an increase in structural unemployment.

Summers [1986] argues that a significant part of the increase in the natural rate of unemployment in the United States in the 1970s can be attributed to the effects of unions. He estimates that in 1985, a 10-per-cent increase in a state's unionization rate caused a 1.2-percentage-point increase in the natural rate of unemployment. Blanchard and Summers [1986] argue that in many European countries recessionary shocks have caused unemployment to persist owing in part to strong unions.

For unions to influence the wage-setting process and hence the natural rate of unemployment, they must have sufficient power. For their influence on wages to increase, it is necessary that their power increase as well. In Canada, the union-coverage ratio – that is, the ratio of union membership to total nonagricultural employment – increased some 4 or 5 percentage points during the 1970s. However, it has remained relatively constant during the 1980s. It therefore seems unlikely that unions contributed to any significant extent to increased unemployment rates in the 1980s [Ashenfelter and Card 1986; Moorthy 1989; Bruce 1990].

Long-Term Unemployment

Prolonged joblessness may exacerbate mismatching by affecting both vacancies and unemployment. Employers may use the duration of unemployment as a screening device when hiring, in the belief that it is an indicator of a potential employee's human capital. Long-term unemployment can, in this sense, be a stigma, a sign of inadequacy. Hence, the greater the number of potential applicants who are long-term unemployed, the longer the vacancies will endure. At the same time, the search intensity of individuals may fall as the duration of unemployment increases and discouragement sets in. In addition, an individual's work skills may deteriorate through lack of use. But even more important may be the adverse psychological effects such as depression, discouragement, and alienation, all of which contribute to a progressive deterioration in the individual's human capital. This is referred to as "scarring." The use of duration of unemployment as a signalling device by employers and the scarring effects on unemployed individuals can lead to a decline in a long-term unemployed individual's probability of leaving unemployment. If this is the case, the presence of significant numbers of long-term unemployed will result in higher unemployment for a given vacancy rate.

In spite of strong economic growth and a high rate of employment creation during the 1980s, the incidence of long-term unemployment has remained unusually high [Rahman and Gera 1990; and Chapter 8 in this volume]. Even in 1989, when the unemployment rate had returned to its 1981 level of 7.5 per cent, the proportion of the labour force that had been continuously unemployed for a year or more was one-and-a-half times greater than it had been in 1981. The incidence of long-term unemployment reached a high of 10.1 per cent in 1985; since then it has been declining, reaching 6.6 per cent in 1989.[14] In Chapter 8 of this volume, Rahman and Gera show that in Canada in the 1980s, the probabilities of the short- and long-term unemployed leaving unemployment have diverged considerably. For both groups, the probability of exit from unemployment declined sharply during the recession of 1981-82. However, while the exit probability of the short-term unemployed has now nearly returned to its pre-recession level, that is not the case for the long-term unemployed.

There is one caveat to the argument that increases in long-term unemployment will lead to an outward shift in the unemployment/vacancy relationship. Prolonged joblessness may lead some unemployed individuals to leave the labour force altogether. If this effect, sometimes referred to as the "retirement" effect, were to dominate, then it is entirely possible that an increase in long-term unemployment, by reducing the number of unemployed individuals for a given vacancy rate, could lead to an inward shift in the unemployment/vacancy relationship. Whether the curve shifts inwards or outwards in response to an increase in long-term unemployment, then, depends on whether the retirement effect or the search-intensity effect dominates.

Using data for the 1976-88 period the extent of the contribution of the rise in long-term unemployment to the total rate of unemployment was measured. The results show that at the national level, long-term unemployment contributed to an increase in total unemployment of about 2.3 percentage points. Since the outward shift in the unemployment rate was estimated to be 6.5 per cent, it is clear that other factors were also at work. Nevertheless, this result is important because it establishes that a rise in the incidence of long-term unemployment does impair the functioning of the labour market.

Long-term unemployment was also found to contribute significantly to the shift in the unemployment/vacancy relationship in the Atlantic and Prairie provinces, and in British Columbia.[15] However, it was not significant in explaining shifts in the unemployment/vacancy relationship in Ontario and Quebec, where the greater improvements in economic performance relative to the rest of Canada during

the recent expansionary phase may have offset the impact of long-term unemployment on the unemployment rate.

The significance of the long-term unemployment variable in explaining national and regional shifts in the unemployment/vacancy relationship is symptomatic of the presence of hysteresis or persistence in unemployment in Canada. Two major arguments – the depreciation of human capital and "insider-outsider" wage bargaining – have been offered as to why unemployment may exhibit hysteresis or persistence. As discussed earlier, the deterioration of human capital associated with long-term unemployment can lead to reduced search intensity and/or a reluctance of employers to hire such individuals. But there is also evidence to support the "insider-outsider" view. According to this argument, hysteresis is characteristic of a wage-bargaining process in which employed workers (insiders) bargain for higher wages while still preserving their jobs. Unionized workers often are seen as "insiders" and nonunionized workers as "outsiders." When the employed (unionized) insiders are insulated from the unemployed (nonunionized) outsiders, wage increases do not slow in the face of high unemployment.[16] This leads to the persistence of high unemployment. Rahman and Gera [1990] find that in Canada over the period 1977-87, the short-term unemployed were found to have significant influence on wage growth, and the long-term unemployed were found to have no influence. In this sense, the long-term unemployed could be considered outsiders in the wage-bargaining process.

Regional and Industrial Dimensions of Mismatches in the Labour Market

There is considerable regional variation in labour market performance in Canada. For example, in 1989, unemployment rates ranged from 5.1 per cent in Ontario to over 12 per cent in the Atlantic region. The unemployment rate in the Prairie region was close to the national average of 7.5 per cent, while in British Columbia and Quebec it was above the national average at 9.1 and 9.3 per cent, respectively.

Regional labour market performance can affect the magnitude of mismatching in the national labour market in two ways. First, there may be an increase in the severity of *intra*regional problems. If labour market rigidities and mismatching worsen *within* all regions, then the national picture will deteriorate as well. Second, an increase in unemployment rate differentials in labour market performance *across* regions – *inter*regional dispersion – will also increase the national level of mismatching.

Total intraregional effects are best understood as the sum of the effects from within each particular region that cause each region's unemployment/vacancy curve to shift. However, a shift in the unemployment/vacancy relationship in, say, Quebec, will have strong effects on the unemployment/vacancy relationship in, say, Ontario, as well as on other regional curves. These are the interregional effects. Factors such as the mobility of labour in response to differential levels of unemployment compensation, employment growth, imperfectly correlated shocks across regions, and differential responses of regional economies to external shocks will lead to strong links among the various regional labour markets. Indeed, given the possibility of strong linkages between the various regional labour markets, it is quite likely that these interregional effects are substantial.

Recall that between 1966 and 1988, the national unemployment rate increased by 6.5 percentage points for any given NHWI. When we separate that increase into its intraregional and interregional components, we find that increases in intraregional differentials in unemployment rates account for 3 percentage points of the total outward shift of 6.5 percentage points. The remaining 3.5 percentage points is attributable to increases in interregional disparities.

Two important sources of increases in interregional unemployment rate differentials as they relate to growth in structural imbalances are increases in regional variation in unemployment rates and in employment growth rates. Indices measuring the extent of total regional variation in these rates for the period 1966-89 are shown in Table 4-2. Consider first the index measuring regional variation in unemployment rates. Since the mid-1970s, this index has shown a tendency to drift upwards. This confirms that increased dispersion in regional unemployment was an important factor in creating structural imbalances in Canadian labour markets.

Table 4-2 also includes an index of regional variation in employment growth rates. An increase in this index reflects rising regional differences in employment opportunities and can cause an outward shift in the unemployment/vacancy relationship. The index shows no really consistent pattern over the period. What is notable, however, is that beginning in 1980 and continuing through the recession and recovery phase of 1981-84, the amount of variation in regional employment growth rates remained high relative to the experience of the 1970s. However, that variation decreased in the 1985-89 period to a level close to the average for the 1970s. This suggests that increasing regional variation in employment growth rates could have contributed to structural imbalances in the early part of the 1980s but not in the second half of the 1980s. Instead, decreasing regional variations in employment growth rates should have moderated structural imbalances in the national labour market after 1985.[17]

Table 4-2

Indices of Variation in Unemployment Rates and Employment Growth Rates across Regions, Canada, 1966-89

	Regional variation indices	
	Unemployment rates	Employment growth rates
1966	0.97	--
1967	0.97	0.98
1968	1.12	1.44
1969	1.34	1.25
1970	1.27	0.86
1971	0.95	0.56
1972	1.26	1.11
1973	1.29	0.81
1974	1.48	0.94
1975	1.70	0.63
1976	1.95	1.22
1977	2.26	1.02
1978	2.26	0.93
1979	2.14	0.63
1980	2.10	1.53
1981	2.29	1.38
1982	2.39	1.55
1983	1.98	0.91
1984	2.34	1.33
1985	2.58	0.73
1986	2.52	0.82
1987	2.54	1.09
1988	2.45	0.77
1989	2.24	0.62

SOURCE Gera et al. [1991].

Mismatches between workers and jobs that occur because employment opportunities are expanding in one sector but contracting in another also affect the relationship between unemployment and vacancies. Lilien [1982] argues that the natural rate of unemployment is closely linked to the process of labour reallocation and responds to differences across industry sectors in employment growth rates. The slower the pace of labour reallocation, the higher the natural rate is likely to be. Furthermore, the natural rate will vary through time according to the amount of labour reallocation that is required.

Table 4-3 is an index of variation in employment growth rates across industries for the period 1966-89.[18] With the exception of 1982, when variation increased sharply as a result of the recession, the index values were higher before than after 1975. Furthermore, the extent of variation in industry employment growth rates has declined during the recovery and expansionary years since 1981. That decrease suggests that mismatches originating in variations in patterns of industrial growth have become smaller in recent years, which should contribute to an inward shift in the unemployment/vacancy relationship.

We also calculated indices of variation in employment growth rates across industries for each region. The indices for four regions – the Atlantic provinces, Quebec, Ontario, and the Prairies – showed no significant upward or downward movement. British Columbia, however, experienced a considerable increase in industrial employment growth variation, with a particularly sharp increase in 1982, but the magnitude of the imbalance has receded since.

Conclusions

Recent efforts to explain the high and persistent rate of unemployment in Canada have concentrated on estimating the natural rate of unemployment [see McCallum 1987;

Table 4-3

Index of Variation in Industrial Employment Growth Rates, Canada, 1966-89

1966	1.57
1967	1.62
1968	1.20
1969	1.15
1970	1.45
1971	0.99
1972	1.53
1973	1.23
1974	1.48
1975	1.62
1976	1.27
1977	1.12
1978	0.92
1979	1.25
1980	1.20
1981	0.91
1982	1.76
1983	1.01
1984	1.00
1985	0.92
1986	1.21
1987	0.99
1988	0.90
1989	1.01

SOURCE Gera and Grenier [1991].

Fortin 1989; and Burns, Chapter 3 in this volume]. Most authors agree that the natural rate has risen in recent years, which implies that there is substantial structural unemployment. Weakness in total demand is also seen to be a cause of the rise in unemployment, though the analysts differ on the extent of its contribution.

This paper examines the impact of structural imbalances that cause mismatch between the level of unemployment and vacancies. Since vacancy data is not available, we used two substitute measures – the normalized help-wanted index and a derived-vacancy rate – to estimate the unemployment/vacancy relationship for Canada as a whole and for the five regions within Canada. We also analysed factors causing shifts in the unemployment/vacancy relationship. Our major conclusions are that:

- Both nationally and regionally, the unemployment normalized help-wanted index (NHWI) has shifted outwards over the period 1966-88, indicating growing structural imbalance.

- One of the major reasons for the shift in the unemployment/vacancy relationship at the national level and in the Atlantic and Prairie regions and British Columbia is an increase in long-term unemployment as a proportion of total unemployment.

- At the national level, both interregional and intraregional effects have played significant roles in the shift of the unemployment/vacancy relationship. However, interregional effects were slightly larger, accounting for 54 per cent of the total shift in the national unemployment/vacancy relationship.

- Dispersion in employment growth rates across industry sectors does not seem to matter in the shifts in the national or the regional unemployment/vacancy relationship.

Structural unemployment increased nationally and regionally in Canada during the 1970s and the 1980s. The magnitude of this imbalance varied by region, however. The Atlantic region experienced the greatest increase, followed by British Columbia, Quebec, Ontario, and the Prairies. The increase in structural imbalances across all regions suggests that if policymakers are to reduce unemployment, macroeconomic policy must be supplemented by a range of specific labour market policies to improve the functioning of labour markets.

An important policy issue is the significant influence exerted by the long-term unemployed. Rahman and Gera argue that the Job Development Program of the Canadian Job Strategy and the Canada Employment Centres together provide a comprehensive set of interlinked services for the long-term unemployed (see Chapter 8 in this volume). But, while these programs have generally performed well, improvements could be made to the Canadian Job Strategy's design. For example, the current eligibility criterion (unemployment for 24 weeks out of the last 30) could be shortened to about 18 weeks. This earlier identification of those at risk of becoming long-term unemployed would help to prevent skill erosion. More importantly, there is a need within these programs to specifically target older workers. It is this group that is most prone to long-term unemployment and in most need of help.[19]

Finally, a well-designed job vacancy survey that collects data for a period of several years would assist policymakers in analysing the growing mismatches between unfilled job vacancies and the attributes of the unemployed. Although it is well recognized that there are difficulties in obtaining credible vacancy data, these obstacles can be overcome by adequate funding and research. The cost of providing such data might not be more than the costs incurred by pursuing misguided policies without the insights that job vacancy data could provide.

5 Canadian Unemployment in Retrospect

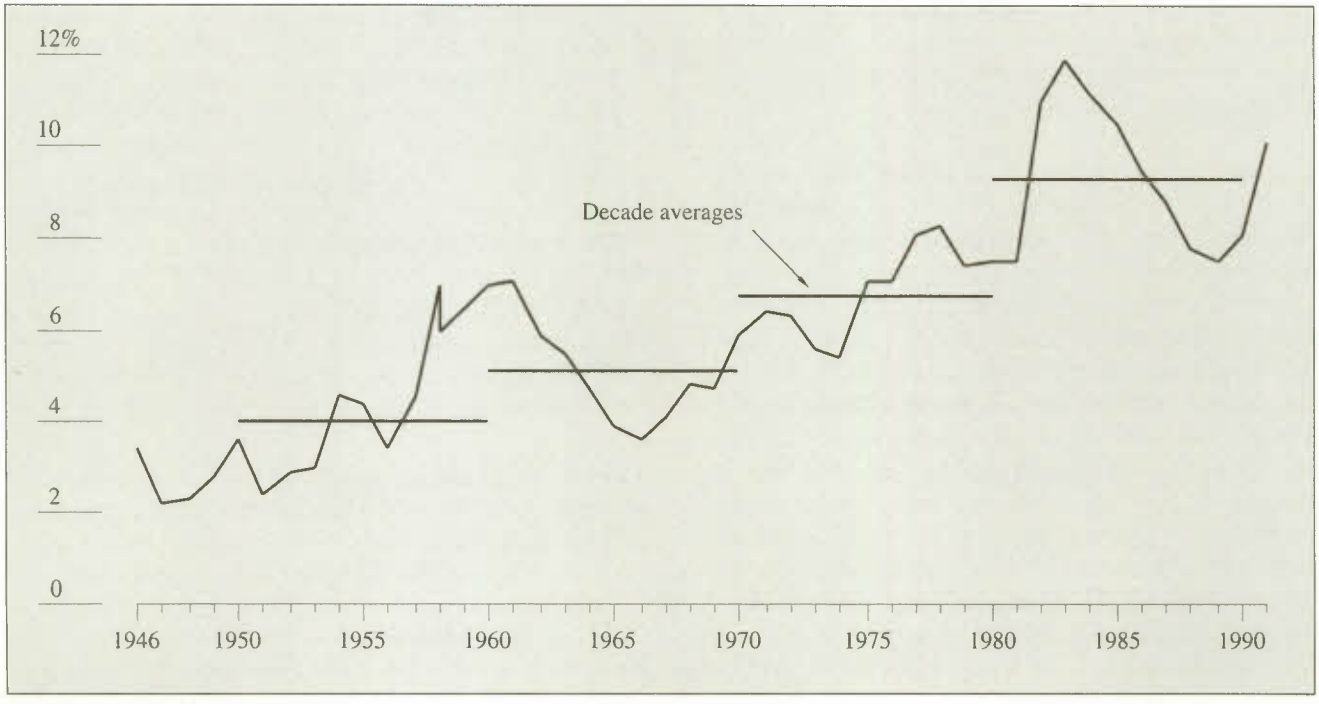
Miles Corak

As long ago as 1965, a prominent U.S. economist said, in an analysis of the high levels of unemployment prevailing during the early 1960s, that any "given amount of unemployment is socially more tolerable if it is, so to speak, passed around from hand to hand and spread fairly evenly among people in the labour force, than it is if a relatively small group bears most of the burden" [Solow 1965, 43]. Recently in Canada there has been much comment on the costs and benefits of conducting monetary policy so as to reach zero inflation, and while most observers recognize that some cost will have to be paid in terms of reduced output and higher unemployment if such a policy is pursued, the issue raised by Solow is not often discussed.[1] A zero-inflation policy would be socially more acceptable if the costs of unemployment were distributed equally across the population – or at least if the individuals benefiting from lower inflation were also the individuals paying the costs in higher unemployment – than if the costs of unemployment were shouldered in an arbitrary manner by a small minority of the labour force.

The purpose of the present paper is to offer a descriptive overview of some of the distributional dimensions of Canadian unemployment, and to outline some of the implications of these for policy. In particular, the business cycle of the 1980s is reviewed in the hope of deriving some lessons for the 1990s. The unemployment rates of the 1980s were high even in comparison with the peaks reached during the cyclical downturn of the late 1950s and early 1960s (Chart 5-1). Even more noticeable in the data of the past decade is the sharpness and extent of the rise in unemployment at the onset of the 1981-82 recession, and the

Chart 5-1

Unemployment Rate, Canada, 1946-91*



*The data cover the first quarter of 1991.

SOURCE Estimates by the author, based on data from Statistics Canada.

sluggishness of its decline over the course of the recovery. During 1981 the aggregate unemployment rate was 7.5 per cent, but with the onset of recession in 1982 it jumped a full 4 percentage points and did not return to its pre-recession level until 1989. It is very likely that this pattern will repeat itself during the 1990s.

These data, however, mask as much as they reveal. Each annual figure is derived from monthly Labour Force Survey estimates of the number of individuals unemployed at a point in time; it is an average of a series of monthly snapshots. Measures of this kind establish an individual's labour force status at a given point in time, but they cannot directly address issues concerning the individual's experience over a span of time, such as the amount of time spent unemployed over a particular period, or how equally the burden of total time spent unemployed is distributed across the labour force.

In contrast, the Annual Work Patterns Survey and the Labour Market Activity Survey deal with unemployment over a span of time. They form the basis of the research summarized in this paper. The Annual Work Patterns Survey was conducted for the years 1977 through 1985, and required its respondents to recall their labour force experience over the course of a year; the Labour Market Activity Survey continued this pattern of questioning for 1986 and 1987. Together these surveys permit an examination of the labour sector through a series of one-year windows that extend from 1987 back to the beginning of 1977. Thus this paper is a retrospective in two ways: it brings together results that span the past decade, and, just as importantly, it does so by using recall data.

The major focus of the study is on the annual unemployment experience of an individual. First we present the three measures of annual unemployment experience that are used in the paper, and highlight their implications for understanding the nature of unemployment. Following this, we outline our major results. Tabulations of how the burden of unemployment is shared as well as how this distribution has changed over the course of the past decade or so are presented. It is found that the total burden of time spent unemployed is very concentrated. In any given year, the small minority of the labour force that spends more than six months unemployed accounts for a disproportionate share of the total time spent unemployed. For example, during 1980 these individuals represented only 3.3 per cent of the labour force, but accounted for 42.5 per cent of total time spent unemployed. The recession of 1981-82 increased both of these figures, but the subsequent recovery did not reverse them. During 1987, the latest year for which the data are available, the 4.2 per cent of the labour force that was unemployed longer than six months accounted for 54 per cent of all time spent unemployed.

The extent to which developments during the business cycle of the 1980s can be used as a guide for the future is subject to debate, but our results imply that a relatively small number of individuals drawn arbitrarily from the labour force will shoulder the bulk of the costs associated with the recession of 1991. These results bring into question the fairness of pursuing restrictive aggregate demand policies; the distributional implications of such policies should be taken into account when their costs are assessed. We briefly outline the prevailing policy paradigm, and note that more attention needs to be paid to refining an alternative policy framework that does not make a sharp distinction between the way in which the economy adjusts to adverse macroeconomic shocks and the final equilibrium position that it reaches. Finally, we present an outline of the main dimensions of this framework in a manner that highlights some directions for research, and considerations for policy.

The Empirical Analysis of Unemployment Dynamics

Much of the postwar period was dominated by the view that the unemployed are a stagnant pool of human resources that is shut out of employment. From the Keynesian perspective, unemployment was the result of deficient aggregate demand, while from the structuralist viewpoint it was the result of technological change rendering certain skills obsolete.[2] By the early 1970s, however, it was explicitly recognized that any given level of unemployment was the result of both the rate at which individuals became unemployed, and how long they stayed unemployed. In other words, it was the result of incidence and of spell duration. High levels of unemployment could be the result of large inflows and short durations, a situation of great flux and dynamism, or they could be due to low inflows but very long durations, a situation of poor adjustment and stagnation. These scenarios are referred to here as the "dynamic" and the "stagnant" interpretations of unemployment.

The 1970s witnessed a great deal of debate among labour economists as to which interpretation was correct. This debate proved difficult to resolve, in part because many analysts sought to summarize the state of the labour sector with a single summary measure of the average duration of a spell of unemployment. Measuring the length of time that individuals spend unemployed is not as straightforward as it might at first appear. The argument put forward in this section is that no single indicator of unemployment can in itself adequately portray the workings of the labour sector,

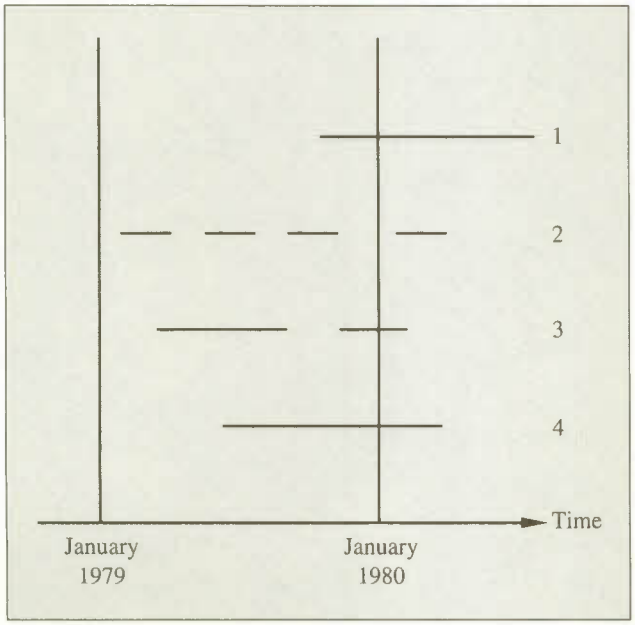
and that analysts should therefore focus on the entire distribution of time spent unemployed.

The most cited measure of the length of an unemployment spell is the "average duration of unemployment" that is derived from the Labour Force Survey. There are, however, some well-known difficulties associated with these data. In fact, on its own this measure is meaningless, as we show in Figure 5-1. In this figure the length of time that four different individuals spend unemployed is represented by a series of horizontal lines. If a survey of the labour force were conducted at a particular point in time, say January 1980, it would capture three of these individuals while they were experiencing a spell of unemployment. If these individuals were asked how long they had been unemployed, their responses would correspond to the length of their spells up to the point in time at which the survey took place, that is, the lengths of the lines labelled 1, 3, and 4 truncated at January 1980. The average of these lengths is what the "average duration of unemployment" represents.

It is evident that this is a biased measure of the average length of these unemployment spells. It would be more correct to call this measure the "average *interrupted* spell duration," because the survey captures the spells while they are in progress, and cannot account for the length of time remaining in the spell. Under steady-state conditions, that is, when the rate of inflow into unemployment is not changing, there is a simple relationship between this measure and the average *completed* spell duration. On average, the survey will capture unemployment spells at their mid-point. Therefore, an approximation of the average completed spell duration can be obtained by doubling the average interrupted spell duration. For example, during the period 1979-81 the unemployment rate was steady at about 7.5 per cent. This may be taken as an indication that the labour sector was in a steady state. The average interrupted spell duration for each of these three years was 3.42, 3.39, and 3.45 months. Hence the average length of an unemployment spell for individuals who were unemployed when the survey was taken is about 6.8 to 6.9 months. This is a very long period of time to be unemployed.

Figure 5-1

Measures of Unemployment-Spell Durations from a Point-in-Time Survey, 1979 and 1980



In addition to this "interruption bias," there is another bias in the Labour Force Survey referred to as a "sampling bias." It stems from the fact that a point-in-time survey will undersample spells of a short duration. The probability of an unemployment spell being captured by the survey is proportional to its length: the longer the spell, the greater the chance that it will be in progress at the time of the survey. Thus shorter spells will be underrepresented. For example, individual 2 in Figure 5-1 is not included in the survey. If this sampling bias is taken into account, the measure of average duration will tend to be reduced. This bias, therefore, works in a direction opposite to the interruption bias. In practice, when both of these biases are taken into account, the sampling bias outweighs the interruption bias, and the average duration of a completed unemployment spell is therefore less than that reported in the Labour Force Survey. For example, it has been estimated that the average spell duration for the period 1978-81 is slightly greater than two months, much less than both of the above measures.[3]

Finally, the Labour Force Survey is a "point-in-time" survey. Information on the length of a particular unemployment spell does not accurately indicate the overall unemployment experience of individuals subject to multiple spells over an extended period. This is true for the individuals labelled 2 and 3 in Figure 5-1. Therefore, it may well be that the total time spent unemployed in a year, regardless of whether it is accumulated in a single bout of unemployment or in a series of shorter spells, is a more accurate indicator of individual welfare.

The Annual Work Patterns Survey and the Labour Market Activity Survey were conducted once a year, during the month of January, and required respondents to recall their labour force behaviour over the course of the previous year. Thus individual behaviour over the span of a whole year is captured, and for this reason the average measure of

unemployment obtained may be referred to as the "average annual unemployment experience" of the individual.[4] In addition to providing a better indicator of welfare, this measure is less subject to the sampling and truncation biases inherent in the Labour Force Survey measure.

Some summary measures from these surveys for the period 1977-87, along with measures of unemployment from the Labour Force Survey, are presented in Table 5-1. What picture of unemployment emerges from these data? Consider, first, line 2*a*, the incidence of unemployment. This is the number of individuals who were unemployed at any point during the year divided by the number of individuals who were in the labour force at any point during the year. On its own, this figure would support the "dynamic" view of unemployment. Even when the unemployment rate is at its lowest, more than 21 per cent of the labour force experiences some unemployment at some point during the year. Thus, in 1980, for example, the average monthly unemployment rate was 7.5 per cent, but fully one fifth of the labour force had experienced some unemployment. This indicates that the labour sector is characterized by a great deal of flux. Further, the incidence moves in the same direction as the unemployment rate. The 1981-82 recession resulted in a large increase in the incidence of unemployment. During 1982 almost 28 per cent of the labour force experienced some unemployment. As recovery took hold and the unemployment rate fell, the incidence also fell, so that by 1986 it had returned to pre-recession levels.

Three different average annual unemployment experience measures are also provided in the table. They differ markedly, and these differences indicate that it would be a mistake to accept the dynamic view of unemployment. They are: 1) line 2*b*, the "average annual unemployment experience of the labour force" (AAE-LF); 2) line 2*c*, the "average annual unemployment experience of the unemployed" (AAE-C);[5] and 3) line 2*d*, the "average annual unemployment experience of the unemployed at a point in time" (AAE-U). AAE-LF is defined as the total time spent unemployed by all individuals during the year divided by the total number of individuals that were in the labour force at some point during the year. AAE-C is the total time spent unemployed divided by the total number of individuals that were unemployed at some point during the year. AAE-U is a weighted average of those unemployed at some time during the year. In effect, it is the retrospective version of the length-biased measure that was obtained by doubling the Labour Force Survey average duration.[6] It might be interpreted as the average annual unemployment experience of

Table 5-1

Summary Measures of Unemployment, Canada, 1977-87

	1977	1978	1979	1980	1981*	1982	1983	1984	1985	1986	1987
						(Per cent)					
1. Labour Force Survey measures[1]											
a Unemployment rate	8.1	8.3	7.4	7.5	7.5	11.0	11.9	11.3	10.5	9.3	8.8
						(Months)					
b Average interrupted spell duration	3.35	3.58	3.42	3.39	3.45	4.00	5.03	5.00	5.00	4.69	4.73
						(Per cent)					
2. Retrospective measures[2]											
a Incidence[3]	21.0	22.2	21.8	21.6	..	27.9	27.4	26.7	24.3	20.6	18.2
						(Months)					
b AAE-LF[4]	0.87	0.78	0.71	0.72	..	1.20	1.25	1.16	1.04	0.91	0.74
c AAE-C[5]	4.15	3.51	3.25	3.35	..	4.29	4.56	4.35	4.17	4.40	4.08
d AAE-U[6]	6.27	5.99	5.71	5.88	..	6.83	7.13	7.05	6.84	7.17	6.87

*Data for panel 2 is not available for 1981 because the Annual Work Patterns Survey was not conducted that year.

1 Includes all individuals 15 years and older.

2 Includes those 17 to 69 years of age who were in the labour force at some time during the year.

3 Proportion of labour force unemployed at some time during the year.

4 Average annual unemployment experience of the labour force.

5 Average annual unemployment experience of the unemployed.

6 Average annual unemployment experience of the unemployed at a point in time.

SOURCE Corak [1990].

those individuals unemployed at any particular time during the year. That is the average annual experience that we would obtain if we conducted a point-in-time survey.

AAE-LF is always very much less than the other measures, and AAE-U is always the longest. The averages over the period 1977-87 are: AAE-LF, 0.94 months; AAE-C, 4 months; and AAE-U, 6.6 months. All of the statistics increase significantly between 1980 and 1982, and they all peak in 1983, the 67-per-cent increase in AAE-LF being most notable. This latter measure, however, also shows the most rapid decline over the recovery: between 1983 and 1985 it fell by almost 17 per cent, while AAE-C fell by 8.6 per cent and AAE-U by only 4.1 per cent.

The differences between these three measures are an indication of the degree of concentration of the total time spent unemployed; using these figures without knowledge of the distribution of unemployment could be misleading if used for policy purposes. For example, if the total time spent unemployed in a given year were distributed equally among the entire labour force, that is, if all the individuals who were in the labour force at some time in the year each spent exactly the same amount of time unemployed, then all three statistics would be the same: they would all have the value of AAE-LF. In this example, the incidence of unemployment would be 100 per cent. The actual observed differences between AAE-LF and AAE-C is a reflection of the fact that only a minority of the labour force experiences any unemployment during the year. In fact, the ratio AAE-LF/AAE-C is simply the incidence figure in line 2*a*. Similarly, the differences between AAE-C and AAE-U are due to the unequal distribution of total time spent unemployed among those that do actually experience unemployment. Which of the three figures most accurately reflects the workings of the labour sector? Which figure should be used for the purposes of policy?

Adopting AAE-LF would uphold the "dynamic" view of the labour sector, while the others, particularly AAE-U, suggest that the "stagnant" interpretation is appropriate. The differences between these figures imply a paradox. Most people experience very short periods of unemployment, but most of the people who are unemployed at any time are in the midst of a very long bout of unemployment.

This is not really a paradox at all. It is simply an indication of the fact that while in one sense a "dynamic" view of the labour force is correct, it is also irrelevant. There are many people who experience no unemployment, or only very short bouts. Even though they are large in number, the shortness of their unemployment experience implies that they do not account for a great deal of the total time spent unemployed. At any point in time, the average unemployed individual will experience a lengthy period of unemployment. This is what the length-biased estimates reveal, and it is a reflection of the fact that the total time spent unemployed is heavily concentrated among a relatively small minority of the labour force. This supports the "stagnant" view of the labour force, and suggests that the policy focus should not be on a single summary measure of unemployment duration, but on the entire distribution.

The Distribution of Unemployment

Table 5-2 depicts the AAE-LF according to the proportion each duration category contributes to the overall average. It is evident that interesting developments with regard to the distribution of unemployment are masked when one focuses solely on the overall figure. Table 5-3 offers the same breakdown for AAE-U (see Appendix B, Tables B-1 and B-2, for the corresponding figures in months).

For example, over the period 1978-80, individuals who were unemployed for three months or less contributed on average about 28 per cent to the overall AAE-LF, while those who were unemployed for more than six months contributed almost 43 per cent. In 1982-85, the average annual unemployment experience of the labour force was higher, but the bulk of the increase was due to the long-term unemployed.[7] The average contribution of those unemployed three months or less actually fell to 19 per cent, while that of the long-term unemployed increased to slightly more than 54 per cent. The overall movement in AAE-LF is due almost exclusively to a shift in the distribution of unemployment towards individuals who were unemployed for the longest period of time. Exactly the same pattern holds for the average annual unemployment experience of the unemployed.

Chart 5-2 depicts the distribution of total time spent unemployed that is accounted for by each duration category. The shares of each category, particularly that of the longest, were relatively stable during the period 1977-80: those individuals unemployed for three months or less accounted for about 27 per cent of the total time spent unemployed, while those unemployed for seven to 12 months accounted for about 43 per cent. The major change in the data occurs over 1980-82. During the period 1982-87, the shortest duration category accounted on average for 18.4 per cent of total time spent unemployed, while the longest duration category accounted for slightly more than 56 per cent on average.

Table 5-2

Proportion Each Duration Category Contributes to the Average Annual Unemployment Experience of the Labour Force (AAE-LF), Canada, 1977-87*

	Duration category (months)						
	0-1	2-3	4-6	7-9	10-12	Total	AAE-LF
			(Per cent)				(Months)
1977	4.8	18.4	29.9	25.3	21.8	100.0	0.87
1978	6.7	20.5	29.5	23.1	21.8	100.0	0.78
1979	8.0	21.1	30.9	21.1	19.7	100.0	0.71
1980	7.6	20.8	29.2	20.8	20.8	100.0	0.72
1982	4.1	15.0	26.7	24.2	30.0	100.0	1.20
1983	3.5	13.1	23.8	24.6	31.5	100.0	1.30
1984	4.1	13.3	25.0	22.5	31.7	100.0	1.20
1985	5.1	16.0	26.0	25.0	32.0	100.0	1.00
1986	2.9	13.2	24.2	25.3	34.1	100.0	0.91
1987	2.8	16.2	27.0	20.3	33.8	100.0	0.74

*Data for 1981 are not available.
SOURCE Corak [1990].

Table 5-3

Proportion Each Duration Category Contributes to the Average Annual Unemployment Experience of the Unemployed (AAE-U), Canada, 1977-87*

	Duration category (months)						
	0-1	2-3	4-6	7-9	10-12	Total	AAE-U
			(Per cent)				(Months)
1977	4.8	18.3	30.4	24.6	21.9	100.0	4.15
1978	6.8	19.9	29.6	22.5	21.4	100.0	3.51
1979	8.0	20.9	30.8	20.9	19.4	100.0	3.25
1980	7.5	20.3	29.6	21.2	21.2	100.0	3.35
1982	4.1	14.6	26.0	23.9	29.2	100.0	4.39
1983	3.7	13.4	24.8	25.9	32.5	100.0	4.56
1984	4.3	14.0	25.8	23.5	32.4	100.0	4.35
1985	4.6	15.6	25.4	23.9	30.7	100.0	4.17
1986	2.9	12.7	23.6	25.7	34.5	100.0	4.40
1987	2.9	16.7	26.5	20.3	33.8	100.0	4.08

*Data for 1981 are not available.
SOURCE Corak [1990].

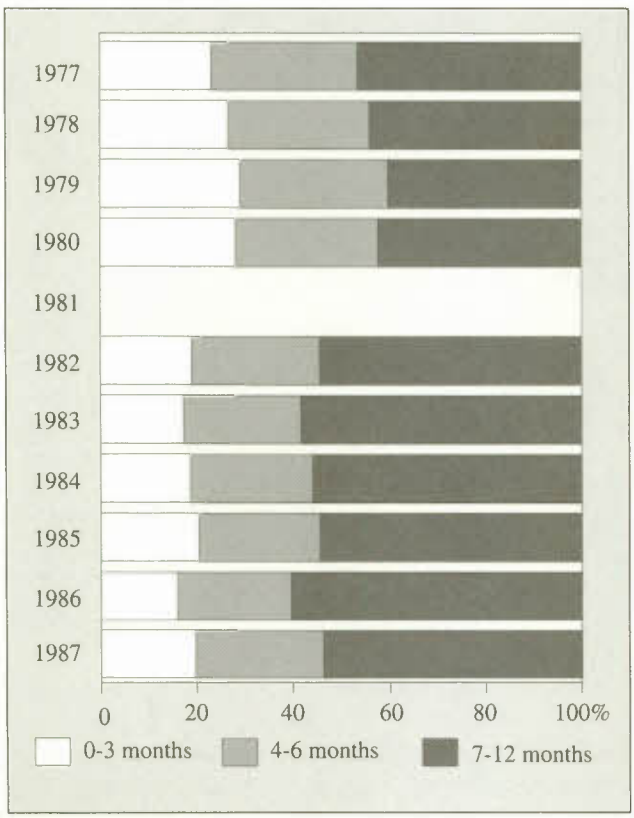
The data used in constructing Chart 5-2 are taken from panel 3 of Table 5-4. This table presents the distribution of the labour force, of the numbers unemployed, and of the total time spent unemployed by duration category. It illustrates the extent of concentration of unemployment and the changes in this concentration over time. Unemployment is highly concentrated in each year of the sample period. In 1979, when the unemployment rate was at its lowest during the period under study, only 3.1 per cent of the labour force was unemployed for longer than six months during

the year, and while this group accounted for only 14.6 per cent of the total number of individuals unemployed, they also accounted for 40.3 per cent of the total time spent unemployed that year. Likewise, in 1983 – the year that the unemployment rate peaked – 7.8 per cent of the labour force was long-term unemployed. They accounted for 28.5 per cent of the number unemployed, and 58.3 per cent of the total time spent unemployed. There is even more concentration among the 10-to-12-month duration category (Chart 5-3). The effect of the 1981-82 recession is marked: more individuals became long-term unemployed and they accounted for more of the total time spent unemployed.

These results suggest that there was a shift in the distribution of time spent unemployed that coincided with the 1981-82 recession. During the recovery, the gradual fall in the aggregate unemployment rate was accompanied by a change in the distribution of unemployment such that there were more long-term unemployed and they accounted for more of the burden of the total time spent unemployed.

Chart 5-2

Distribution of Total Time Unemployed by Duration Category, Canada, 1977-87*



*Data are not available for 1981.
SOURCE Corak [1990].

We created tabulations of this kind for a variety of disaggregations including gender, age, marital status, and region.[8] For all of these dimensions, the within-group changes in the distribution of time spent unemployed are more important than the between-group changes. For example, the distribution of the total time spent unemployed between the genders was relatively constant throughout 1978-80: males accounted for about 56 per cent of all time spent unemployed. This share increased to slightly more than 60 per cent in 1982, but it began to fall immediately afterwards. By 1985 it had returned to the pre-recession pattern. While changes between the genders were not long-lasting, there were significant changes in the distribution within each gender grouping. The unemployment experience is concentrated for both groups. In 1979, 3.1 per cent of the male labour force experienced more than six months of unemployment and accounted for almost 42 per cent of all the time spent unemployed by males in that year. The equivalent figures for females are 3.2 and 38.6 per cent. Both groups witnessed a shift in the distribution of unemployment towards long-term unemployment. These figures peaked in 1983, when 8.7 per cent of the male labour force were long-term unemployed and accounted for 61.1 per cent of total time spent unemployed, and 6.5 per cent of the female labour force fell into the same category and accounted for 54 per cent of total time spent unemployed.

The only dimension along which both between-group and within-group changes are important is that of region. Table 5-5 presents the distribution of unemployment among the regions. The 1978-80 period was marked by stability in the distribution of total time unemployed among the provinces. Over this period there was a slight increase in the share of unemployment accounted for by Quebec, and a slight decline in that accounted for by British Columbia. The burden of the recession was felt disproportionately in the western region, particularly in Alberta and British Columbia. During 1982-83 these provinces' shares of total time spent unemployed increased by 50 per cent over their 1980 levels. This pattern has continued over the course of the recovery. With the progress of the recovery, the shares of Ontario and Quebec became much lower than they were in 1980, but the shares of Alberta and British Columbia were much higher. This pattern is exactly mirrored in the data on the distribution of the long-term unemployed.

A within-region summary of the distribution of unemployment is presented in Corak [1990]. From this perspective also there is still considerable concentration in the time spent unemployed, and the shift towards greater concentration after 1982 is still evident. The greatest proportions appear to be in the Atlantic provinces and Quebec, and British Columbia's has also been large since the recession.

Table 5-4

Distribution of the Labour Force, of the Number of Unemployed, and of the Total Time Spent Unemployed by Duration of Unemployment, Canada, 1977-87*

	1977	1978	1979	1980	1982	1983	1984	1985	1986	1987
	(Per cent)				(Per cent)					
Months of unemployment										
1. Proportion of labour force										
None	79.0	77.8	78.2	78.4	72.1	72.6	73.3	75.0	79.4	81.8
≤ 1	4.2	6.6	7.3	7.1	6.2	5.7	6.3	6.0	4.3	3.6
2-3	6.8	6.9	6.7	6.6	7.9	7.3	7.2	7.3	5.6	6.0
4-6	5.5	4.9	4.7	4.6	6.7	6.5	6.3	5.6	4.7	4.3
7-9	2.8	2.3	1.9	1.9	3.8	4.2	3.5	3.2	3.1	2.0
10-12	1.7	1.5	1.2	1.4	3.2	3.6	3.3	2.9	2.8	2.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2. Proportion of number of unemployed										
≤ 1	20.0	29.8	33.3	32.6	22.3	20.9	23.6	24.2	21.0	19.8
2-3	32.2	31.0	30.6	30.6	28.4	26.8	27.1	29.1	27.2	33.1
4-6	26.3	22.2	21.5	21.3	24.1	23.9	23.7	22.4	23.0	23.6
7-9	13.2	10.3	8.9	9.2	13.7	15.2	13.1	12.9	15.1	11.2
10-12	8.2	6.7	5.7	6.4	11.5	13.3	12.5	11.4	13.6	12.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
3. Proportion of total time spent unemployed										
≤ 1	4.9	6.7	8.0	7.6	4.1	3.7	4.3	4.6	3.0	2.9
2-3	18.3	19.9	20.9	20.4	14.9	13.3	14.1	15.6	12.8	16.8
4-6	30.3	29.5	30.8	29.6	26.5	24.7	25.8	25.3	23.8	26.3
7-9	24.6	22.6	20.9	21.2	24.6	25.8	23.5	23.9	25.8	20.3
10-12	21.9	21.3	19.4	21.3	29.9	32.5	32.4	30.1	34.7	33.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

*Data for 1981 are not available.
SOURCE Corak [1990].

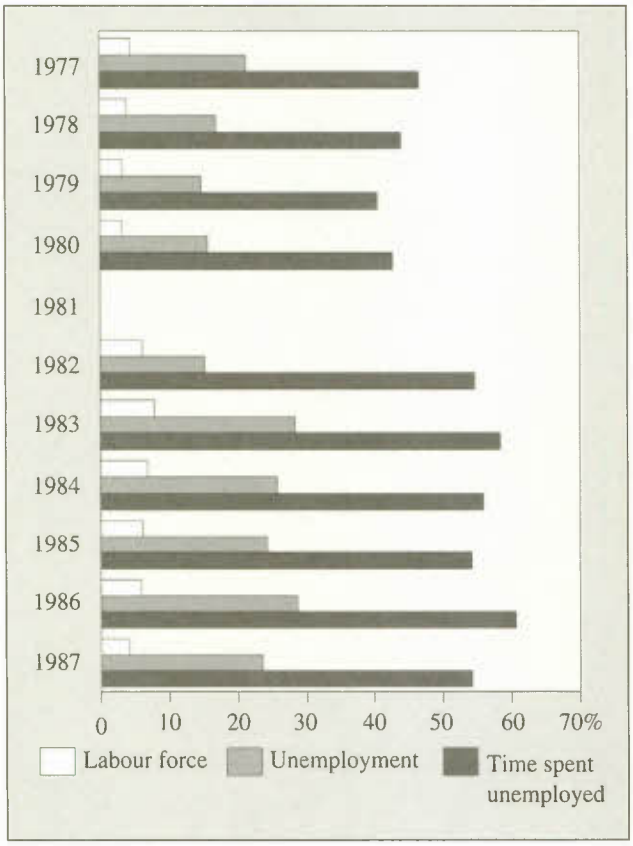
There are significant changes towards greater concentration in all regions, the most notable in the West – particularly in Alberta and British Columbia.

All of these results describe considerable concentration in the distribution of total time spent unemployed, and a shift in this distribution towards the longest duration categories as the aggregate unemployment rate increases and persists at a higher level. To understand developments in this distribution and in the aggregate unemployment rate, it is important to understand long-term unemployment. These results, however, are also one-way classifications, and as such do not control for all of an individual's characteristics.

We estimated a multivariate descriptive regression in an attempt to isolate the characteristics that imply a tendency to become long-term unemployed [Corak 1990]. We found that for the average unemployed Canadian who was not a student at any point during the year, the probability of long-term unemployment increased from 0.121 to 0.228 between 1980 and 1983, or by more than 88 per cent. This probability fell very slowly during the recovery. Further, this pattern occurred regardless of demographic, educational, or

Chart 5-3

Long-Term Unemployment as a Proportion of the Labour Force, of Total Number Unemployed, and of Total Time Spent Unemployed, Canada, 1977-87*



*Data are not available for 1981.
SOURCE Corak [1990].

regional characteristics. While there were some differences in the magnitude of these changes, no particular groups were immune, nor were particular groups the main targets. The rise of long-term unemployment between 1980 and 1982 and its persistence as late as 1987 is a wide-spread problem. No one group can be identified as the source of long-term unemployment.

Implications for Policy

What are the implications of these results? First, they support the view of the unemployed as a stock of individuals shut out of employment: the "stagnant" view of the labour sector is more accurate than the "dynamic" view. However, this is only a partial step towards interpreting the nature of unemployment and drawing implications for policy.

The "dynamic" view is sometimes understood to imply a benign interpretation of the nature of unemployment. The possibility that unemployment spells are rather short, and that the unemployment rate is due mostly to high inflows into unemployment, suggests that individuals are able to respond relatively quickly to the changes in opportunities around them. Jobs are destroyed, but they are also created. Any unemployment is "frictional," or "voluntary," since individuals require some minimal amount of time to adjust, or simply choose to spend some time away from work for personal reasons. This interpretation was held in a certain amount of favour during the 1970s, and is often given to the relatively high unemployment rates that are observed for the young and for females. Viewed in this manner, the "dynamic" view offers a rather limited scope for government policy. The government might facilitate the provision of information and the matching process between employers and employees, but aside from this, the market is capable of adjusting to shocks of various sorts on its own. Indeed, to the extent that government policies such as the provision of unemployment insurance payments alter the market outcome, they should be restricted or removed altogether.

It is of considerable importance to the conduct of policy that this view has been overturned. Clark and Summers [1979], using tabulations of the kind offered here, were the first researchers to point out that the distribution of time spent unemployed is heavily skewed, and that the unemployed might therefore be legitimately viewed as a stock of individuals who wait for very long periods of time before finding employment. According to Clark and Summers, this is because of deficient aggregate demand, and governments should respond by introducing more expansionary fiscal and monetary policies. However, there is nothing in their data that would actually permit one to establish the causes of unemployment.

The immediate retort to Clark and Summers was that the observed distribution of unemployment could be the result of a small minority of the labour force being subject to a longer-term mismatch between their skills or characteristics and the requirements of the available jobs. In other words, the observed distribution was due to "structural" reasons, not to deficient aggregate demand.[9]

Our results confirm Clark and Summers' findings that the "dynamic" view of unemployment is not entirely accurate. Nonetheless, ours are richer results because they span an entire business cycle. The distribution of the burden of unemployment has been shown to be cyclically sensitive. This suggests that some important component of the distribution of total time spent unemployed is due to changes in

Table 5-5

Distribution of Total Time Unemployed and of Long-Term Unemployment by Region, Canada, 1977-87*

	1977	1978	1979	1980	1982	1983	1984	1985	1986	1987
	(Per cent)				(Per cent)					
1. Distribution of total time unemployed										
Atlantic provinces	13.5	12.7	12.4	12.6	10.4	10.3	11.3	12.5	14.1	14.5
Quebec	35.6	36.1	36.5	38.1	32.9	32.9	31.1	33.1	29.9	32.5
Ontario	30.9	30.1	31.3	30.6	30.5	29.3	27.5	25.1	25.3	23.9
Manitoba, Saskatchewan	4.9	5.0	4.6	4.7	5.1	5.6	5.5	5.7	6.3	6.4
Alberta	4.6	4.7	4.3	5.0	7.4	8.5	9.1	8.6	9.4	9.6
British Columbia	10.5	11.4	10.8	9.0	13.6	13.3	15.6	15.0	15.0	13.1
Canada	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2. Distribution of long-term unemployed										
Atlantic provinces	16.4	14.9	14.9	14.7	10.9	10.6	12.3	14.1	15.7	16.8
Quebec	39.3	41.8	43.2	45.9	36.2	34.8	32.6	35.3	31.2	34.7
Ontario	28.8	26.6	29.0	26.8	29.4	27.9	25.3	21.3	22.5	19.4
Manitoba, Saskatchewan	3.7	3.8	3.3	3.3	4.1	5.1	4.7	4.8	5.7	5.8
Alberta	2.3	3.2	1.5	1.7	6.0	8.0	8.6	7.9	9.2	9.7
British Columbia	9.5	9.7	7.9	7.6	13.4	13.6	16.6	16.7	15.8	13.7
Canada	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

*Data for 1981 are not available.
SOURCE Corak [1990].

aggregate demand, a finding with implications for the fairness of restrictive aggregate demand policies. A small number of individuals who appear to be drawn arbitrarily from the labour force have paid the bulk of the costs associated with the restrictive monetary policies used to combat the inflation of the late 1970s and early 1980s. This fact should be considered in assessing the costs and benefits of fighting inflation with a restrictive monetary policy. Distributional issues form an important component in the evaluation of other government policies, such as fiscal policy, and they are in fact often cited as one of the costs of unexpected inflation. They are not, however, explicitly recognized as an adverse consequence of tight monetary policy.

Why is it that while the distribution of unemployment changed during the 1981-82 recession, it did not revert back to its pre-recession pattern, in spite of a sustained economic recovery? One possible explanation is that there have been structural changes in the economy, and this new distribution reflects these changes. This is a hypothesis that cannot be refuted with the data used here, but the fact that the changes coincide with the recession and that specific characteristics associated with long-term unemployment cannot be identified mitigates against such a view. This leads to another hypothesis, namely, that deficient demand unemployment and structural unemployment should not be treated as conceptually distinct phenomena. A severe restriction in aggregate demand leads to deficient demand unemployment, but it also induces changes that are indicative of structural unemployment.

In fact, it appears that every time the Canadian economy experiences a period of elevated unemployment, a debate develops over its nature. This is probably the economist's version of the "nature versus nurture" debate. Is the observed unemployment structural, that is, is it a result of the inherent characteristics of the individuals that are unemployed – they may lack the appropriate skills, they may live in the wrong region, they may not be sufficiently imbued with a work ethic – or is it due to deficient aggregate demand, that is, the overall climate in which the unemployed find themselves through no fault of their own? This debate fuelled much discussion during the late 1950s and early 1960s, and it resumed during the 1970s and 1980s. Policymaking during the 1990s will probably be little served if we continue to rehash it.

The dominant framework within which current macroeconomic and labour sector policies are conducted may be summarized by its most important policy implication, namely, the claim that while there may be a short-term trade-off between unemployment and inflation, there is no long-term trade-off. While the government may, through the manipulation of fiscal and monetary policy, reduce unemployment, this reduction will only be temporary and it may lead to a permanently higher rate of inflation. The central concept in this view of the economy is the so-called "natural rate of unemployment." This concept embodies all types of unemployment that are not due to deficient aggregate demand; in particular, it reflects the amount of structural unemployment in the economy. Analytically, it is defined as the rate of unemployment that is consistent with constant, or at least nonaccelerating, prices.

If the monetary authorities attempt to keep the unemployment rate below the natural rate, the argument goes, a wage-price spiral will develop and the inflation rate will accelerate. A higher rate of growth in the stock of money would reduce interest rates and increase aggregate demand. This would lead to a greater demand for labour as firms attempt to increase production. Bottlenecks would eventually be reached, and wages and prices would have to be increased in some sectors in order to meet the increased demand. Some workers would eventually find that past wage increases do not compensate them for prevailing inflation, and begin to demand yet higher wages. Within a general climate of excess demand the bargaining power of labour would be greater, but any wage increases would eventually be marked up into higher prices, and the process, fuelled by further increases in the growth of the money supply, would repeat itself. The unemployment rate would be lower, but a spiral of ever-increasing inflation would also result. If the monetary authorities stopped increasing the rate of growth of the money stock, higher prices would eventually erode the real money supply, increase interest rates, lower aggregate spending, and cause the unemployment rate to return to the natural rate. The final outcome now that higher inflationary expectations are built into the system would, however, be a permanently higher rate of inflation. According to this argument, there is no long-term trade-off between higher inflation and lower unemployment. The attempt to reduce the unemployment rate would only cause a higher inflation rate. Monetary policy, the argument continues, cannot influence unemployment and output in the long run, so it should be geared to controlling the inflation rate, the variable that it can influence.[10]

The debate over the nature of unemployment and the appropriate conduct of macroeconomic policy takes the form of a debate over the magnitude of the natural rate of unemployment, and the extent of the short-term costs of lowering inflation by a given amount. A policy of zero inflation might be thought of as one that moves the economy from a situation of high inflation to one of price stability, without entailing any long-term change in the unemployment rate. To argue in favour of such a policy, one would have to establish that the natural rate of unemployment does in fact prevail in the economy, and that the benefits of permanently lowering the inflation rate would outweigh the short-term adjustment costs associated with higher unemployment. Distributional issues do not specifically arise in this framework, nor is there anything in the underlying theory that would permit an economist to determine how long the adjustment process will take.

The hypothesis that a tight aggregate demand policy will itself induce structural unemployment translates into a hypothesis that the natural rate will not stay in a fixed position. If the monetary authorities reduce the rate of money growth to be consistent with zero inflation, and if the resulting recession is severe and long-lasting, the increase in unemployment may cause structural changes that increase the natural rate itself. While the target of zero inflation is achieved, the cost is a permanent increase in the unemployment rate. In this view, the catch-word for policies designed to reduce inflation is not "short-term pain for long-term gain," but "long-term pain for long-term gain." It is less evident that the benefits of such a policy would outweigh the costs if this view of the economy were correct.[11]

This perspective also cannot be refuted by the results reported here. In fact, it is also supported by the observation that the natural rate is a difficult thing to estimate with any reasonable degree of precision. The wide variety of estimates that have been produced by Canadian economists over the course of the past 10 years suggests that it is less of a "razor's edge" and more akin to a wide band.[12]

What are the mechanisms by which this endogenous change in the natural rate takes place? Several hypotheses have been put forward in the theoretical literature. One possibility, suggested by Tobin [1980] and Lipsey [1980] at the outset of the 1981-82 recession and formalized in a model by Drazen [1985], is that the skills, attitudes, and habits of unemployed individuals deteriorate with time spent unemployed. The longer the time the individual spends unemployed, the less desirable he or she becomes to prospective employers. In fact, skills need not actually deteriorate for this to imply an increase in structural unemployment. Employers only have to believe that this is so and to base their hiring decisions, in part, on the length of time that an individual has been unemployed. Long-term unemployment will then be used as a signal of some sort of inadequacy,

and these individuals will continually be placed at the bottom of the hiring queue [Blanchard 1990]. Both nature and nurture are the cause of the deterioration of skills and attitudes, and structural unemployment will be higher as a result.

The notion of skills depreciating with time unemployed may be particularly relevant when one considers skills that are specific to a workplace and are obtained by on-the-job training. Being shut out of the workplace robs individuals of important training, and not having the training contributes to their being shut out of the workplace. If specific skills and attachment to a particular employer are important, another problem associated with the way in which wages are set may also arise. When employers and employees have made important investments in specific skills, a long-term relationship develops that implies that wages are not set solely in response to market forces. A severe contraction in aggregate demand may lead to permanent layoffs. The unemployed, especially the long-term unemployed, may cease to be ready substitutes for the individuals that are employed. The negotiation of wages will not be greatly influenced by the existence of a great many unemployed individuals. Wages may ratchet upwards in spite of the contraction in aggregate demand, and the unemployed may be disenfranchised in spite of the possibility that they are willing to work at a lower wage. Structural unemployment may appear to be higher as a result.[13]

There is a third hypothesis, based on the possibility that the capacity of the economy responds to cyclical changes. A severe contraction in aggregate demand will lower investment spending. If this lasts for a significant length of time, the capital stock of the economy may deteriorate. An upswing in spending may bump up against capacity constraints before all of the unemployed are re-employed. In this scenario, the difficulty lies on the demand side of the market rather than on the supply side, but the result is observationally equivalent to an increase in structural unemployment. This hypothesis has been examined with European data by Modigliani et al. [1987], and with Canadian data by Davenport [1983]. It may be particularly pertinent to the regional dimensions of Canadian unemployment. Imagine a situation where capital is more mobile than labour, and where a firm's costs are lower the nearer it is to other firms conducting similar business. These savings may result because the conglomeration of many related firms leads to the development of a skilled pool of labour or reliable suppliers in the vicinity, or spillovers in information and technology.[14] If there is a severe contraction in aggregate demand that does not affect all regions to the same degree, the upswing in demand will be accompanied by the rise of new firms that will prefer to make their investments in regions where the industry is healthiest. Capital will migrate and eventually concentrate in a selected number of regions. Capacity in these regions will grow at the expense of the smaller areas. Since labour will be less quick to follow suit, structural unemployment will appear to be greater. Indeed, this argument could just as easily be made for international flows of capital, and suggests that a severe recession will cause a permanent "de-industrialization" of the Canadian economy.

These hypotheses may be worthy of further research. They all imply that deficient demand unemployment and structural unemployment should not be considered hard and fast categories, and therefore that the so-called "natural rate" of unemployment is too nebulous a concept on which to conduct policy. The costs of pursuing a restrictive aggregate demand policy should, if there is any truth to them, be greater than previously assumed. These hypotheses are all possible explanations for the shift in the distribution of unemployment onto the long-term unemployed that has been witnessed during the 1980s.

Conclusion

Retrospective data of the sort employed in this paper open vistas onto the functioning of the labour sector that are not visible using stock measures of unemployment. We used the Annual Work Patterns Survey and the Labour Market Activity Survey to trace the nature of and changes in the distribution of the burden of unemployment. After examining various measures of the average duration of unemployment, we then considered the entire distribution of unemployment, and found that there is considerable concentration of the total annual time unemployed among the small minority of the labour force that spend the longest time unemployed. Further, the sharp increases in unemployment that occurred in 1981-82 and the persistence of high unemployment over the course of the subsequent recovery entailed a significant and long-lasting shift of this distribution onto the long-term unemployed. A larger fraction of the labour force experienced more than six months of unemployment within the course of a year and accounted for a larger fraction of total time unemployed.

The cyclical developments in this distribution underscore the fact that the costs of an anti-inflationary macroeconomic policy are not equally distributed across the labour force. There is a tendency for the small minority of labour force participants who become long-term unemployed to account for the great bulk of all time spent unemployed. Further, it is difficult to pinpoint which groups are most prone to long-

term unemployment. All individuals, regardless of gender, age, region of residence, and other characteristics experienced significant increases in the likelihood of becoming long-term unemployed during the 1980s.

This distribution should be explicitly recognized when decisions are made to target monetary policy to specific inflationary targets. Otherwise, the fairness of such policies would be questionable. In addition, the long-lasting changes that have taken place in the distribution of unemployment – in spite of economic recovery – lead us to question the validity of assuming that the natural rate of unemployment is a useful guide for the conduct of policy. These changes suggest that deficient demand unemployment and structural unemployment are not conceptually distinct categories. There are several reasons why this might be so – including deskilling, asymmetries in wage-setting, and endogenous capacity – and they are important issues to consider in the 1990s as the Canadian economy moves through yet another boom and bust cycle.

6 Regional Unemployment Disparity and Economic Structure

Andrew Burns

Regional unemployment disparity is a fact of Canadian economic life. It has long been suspected that differing regional industrial structures are a principal reason for this disparity. According to this explanation, unemployment is higher in Newfoundland than in Ontario largely because Newfoundland's industries tend to be more seasonal and less stable. Therefore, individual workers in Newfoundland are, other things being equal, more likely to become unemployed, so the province's unemployment rate will be higher. While such arguments have held wide currency, little evidence has existed before now to support them.

In this paper the personal and labour market characteristics of some 300,000 individual workers are used to measure the extent to which economic structure – the aggregated characteristics of firms and workers – causes provincial unemployment rates to differ. Interprovincial unemployment-rate gaps are separated into structural and nonstructural components for 1971, 1981 and 1986.[1] The results of this analysis confirm that differing regional economic structures are indeed a prime contributing factor to interprovincial unemployment differentials.

An economy consists of a vast assortment of agents: firms and individuals that interact as they engage in numerous activities related to production and consumption. The structure of an economy is defined by the characteristics of the actors – firms and workers – operating within it. Economic theory leads us to expect similar agents to behave similarly and agents with different characteristics to behave differently from one another.

Thus large firms operate differently from small firms, and married women with small children can be expected to act differently from single men. Service-sector firms do not respond to market fluctuations in the same way as manufacturing firms, and workers who support families respond differently from those who do not. To the extent that two separate economies have the same institutional, cultural, political, and legislative environments, one would expect like agents in each economy to behave similarly. If conditions in the economies are different, then the behaviour of like agents might differ.

These observations lead us to the central hypothesis of this paper: that economic aggregates such as the unemployment rate can differ because either 1) the actors involved are different (i.e., there are differences in economic structure); or 2) objectively, similar actors behave differently.

This paper presents estimates of the extent to which differences in the objective characteristics of workers and firms operating in different provinces explain differences in provincial unemployment rates.

Aggregate Unemployment and Sectoral Unemployment Rates

Regional unemployment rates can vary either because like agents behave differently or because one region has relatively more high-unemployment agents than the other – that is, because characteristics associated with high unemployment are more prevalent in that region. For example, if workers in small firms are more likely to lose their jobs than those in larger firms, then a higher-than-average concentration of small firms in a given province would contribute to a higher unemployment rate in that province. On the other hand, if there is a greater tendency for firms in construction to have an unstable demand for labour, then differences in regional concentrations of construction firms would also contribute to regional unemployment disparity.

What characteristics of firms and workers can be expected to affect unemployment levels in a given region? Among firm characteristics likely to affect regional labour requirements are industry, firm size, market size, and production technology. Worker characteristics such as age, sex, marital and family status, education, occupation, family size, presence of small children, and full- or part-time status are also likely to influence unemployment probabilities. These worker and firm characteristics are jointly determined, and the overall distribution of these inextricably intertwined elements constitutes the economic structure (see box on p. 80).

Traditionally, efforts to assess the influence of industrial structure on regional unemployment have involved calculating "structurally corrected" regional unemployment rates, taking a given region as a reference point. If we take Ontario

The Determination of Industrial and Labour Force Structure

The industrial, occupational, and demographic structure of any economy (national or provincial) is dictated in part by the natural resources with which it is endowed. Abundant fish and distance from large markets are defining characteristics of Newfoundland's economy, and imply a cost advantage in the production of fish and an important cost disadvantage in the production of bulky durables and manufactured goods destined for large mainland markets. Similarly, southern Ontario, by virtue of its proximity to major U.S. markets and industry, is well positioned to specialize in the production of hard-to-transport durables.

The educational, demographic, and personal characteristics of a population are also, to some extent, a function of the resource base. At any given time, the demography of a province will be dictated by cultural, historical, and economic influences on the birth, death, and migration rates. Similarly, the skills of the labour force reflect choices made in the past which depended on the career paths available, which depended on industrial structure, which in turn depended on the resource base. The industrial structure of a province and the characteristics of its labour force are, therefore, inextricably intertwined and tied to history, culture, and the natural-resource base. It is not realistic to envision changes in industrial structure without contemporaneous changes in the labour force and vice versa. Because the characteristics of the labour force are so bound up with the history, resource base, and industrial structure of a region, it is necessary to consider both industrial structure and labour force composition as having been simultaneously determined and interdependent.

We use the term economic structure to refer to the ensemble of individual and industrial characteristics of an economy and its work force: the age, sex, marital status, educational attainment, occupation, and place of residence of the work force, as well as attributes which are more strictly economic – such as the mix of industry, the density of labour markets, and the nature of jobs. When we refer to the impact of structure on unemployment disparity, we mean the impact of both the industrial structure of a region and the characteristics of its labour force.

as the reference point, the structurally corrected unemployment rate for Manitoba, for example, is the unemployment rate which one would expect if the distribution of Manitoba's labour force across industries were the same as the industrial labour force distribution in Ontario.[2] This rate is calculated by first assuming that the labour force shares of different industries in Manitoba are the same as those in Ontario, and then applying the actual industry unemployment rates for Manitoba to these "corrected" industrial labour force shares. If differences in industrial structure were the sole explanation for differences in provincial unemployment rates, then this structurally corrected rate would be equal to Ontario's unemployment rate. If they explained none of the difference, then it would not differ from the actual unemployment rate.

The structurally corrected unemployment rate permits us to decompose the actual unemployment-rate gap between Ontario and Manitoba into two components: structural and nonstructural. The structural component is that part of the gap explained by differences in industrial labour force shares, while the nonstructural component is that part explained by differences in industrial unemployment rates.

In fact, it is not possible to accurately measure the influence of economic structure on the basis of a single characteristic, such as industrial structure. This is because no single characteristic can serve as an accurate predictor of an individual's likelihood of becoming unemployed. For instance, an insurance company president and a messenger working in the same industry would clearly have very different individual characteristics and therefore risks of unemployment.

A given industry may have different characteristics (such as occupational composition) in different regions that affect the likelihood of unemployment within that industry. For instance, if there is a particularly heavy concentration of retail head-offices in a given province, there will be proportionately more executives and managers than sales clerks in that province's retail industry, affecting its unemployment prospects. This point is illustrated arithmetically in Appendix C.

Even two or three characteristics, unless taken to a very fine level of detail, are unlikely to provide sufficient information to reliably predict unemployment probabilities. Taking into consideration both occupation and industry group would still not accurately indicate individual chances of becoming unemployed. A manager in the accommodation and food-services sector might be the assistant manager of a hamburger franchise or the director of a chain of hotels, with the associated differences in unemployment prospects. These differences can seriously bias estimates of the importance of economic structure.

The greater the number of characteristics and level of detail considered, the more likely that the estimated unemployment

probabilities will be correct. At the limit, we can calculate unemployment probabilities for every individual in the economy, conditional on all of that individual's characteristics and the characteristics of the labour market in which she/he participates. This is, in fact, the methodology which has been pursued in this paper.[3]

Individual Unemployment Probabilities

The unemployment rate of a province can be expressed as the average of all individual unemployment probabilities: it is equal to the sum of individual probabilities divided by the labour force. Individuals' unemployment probabilities will be a function of their objective characteristics, those of the labour market in which they operate, and the province-specific conditional probabilities associated with those characteristics. Provincial unemployment rates can differ either because conditional probabilities differ from province to province (similar people behave in a dissimilar manner) or because the distribution of characteristics among individuals differs from province to province (differences in economic structure). By holding the distribution of characteristics constant across all provinces, we can calculate structurally corrected unemployment rates, and from them a decomposition of provincial unemployment-rate gaps into their structural components (that part of the gap due to differences in the distribution of personal and employment characteristics within the labour force) and nonstructural components (the part due to differences in the unemployment probabilities associated with these characteristics).

In addition to personal and labour market characteristics, an individual's employment probability will be conditioned by the state of the economic cycle, world prices for inputs and products, and climatic and resource conditions in his/her province of residence.[4] By using a multivariate model, we were able to consider the simultaneous influence of some 81 distinct individual and labour market characteristics on individual unemployment probability – a level of disaggregation impossible with traditional approaches.

The first two columns of Table 6-1 show the actual and structurally corrected unemployment rates for all the provinces other than Ontario.[5] The third column indicates the difference between the province's unemployment rate and Ontario's, while the last two columns decompose that gap into its structural and nonstructural components. Chart 6-1 presents the same decomposition in graphical form.

The Nonstructural Unemployment-Rate Gap

Chart 6-1 shows that in 1971, 1981, and 1986, much of the interprovincial unemployment-rate disparity is explained by differences in the quantified characteristics of provinces' economic structures. However, a substantial part of the disparity cannot be accounted for by this factor.

How can this nonstructural component of unemployment rate differentials be explained? If perfect competition existed within industries and across regions, the probability of unemployment in any given industrial sector should be the same in all provinces – that is, objectively identical groups of workers should have the same rate of unemployment in any province. If this were in fact the case, the provincial unemployment-rate differentials would have no nonstructural component. To a large extent, these competitive requirements are satisfied. In Canada, labour is quite mobile, with approximately 1 per cent of all adults moving between provinces every year. Capital, at least in its more liquid forms, is extremely mobile, and technology is widely available and largely homogeneous. Nonetheless, the presence of significant nonstructural unemployment-rate gaps indicates that real interregional differences in labour market behaviour do exist.[6]

To those familiar with the Canadian economy, this line of thinking has an heuristic appeal. Regionally specific factors likely to affect the operation of labour markets – for instance, provincial policies such as minimum-wage legislation, industrial subsidies, and labour regulations – can be readily identified. Certain federal programs such as unemployment insurance also have variable regional components: the greater generosity of unemployment insurance in high-unemployment areas is frequently cited as a factor contributing to regional unemployment. In addition, regional attitudes towards work and unemployment can affect labour supply and unemployment probabilities. Wage spillover from high to lower productivity regions has also been cited as a cause of unemployment in the Atlantic region [see Drewes 1987; Burns 1990*b*].

Other unquantified factors which distinguish provincial economies and vary the conditions governing their labour markets are geographic location, resources, and regional climatic conditions. Southern Ontario's economic success is at least partly due to its proximity to important U.S. industrial and population centres. Equally, the transportation costs incurred by western and eastern provinces as a result of their remoteness from these centres impede regional competitiveness and constitute real barriers to trade. Climate can have a similar differential impact: the unemployment probabilities of agricultural workers in a drought stricken region are likely to be much higher than those of farm workers in an area enjoying favourable weather conditions. Likewise, the richness of the local resource base can affect unemployment prospects. Where production costs are low relative to market prices, workers are less likely to face job

Table 6-1

Structural and Nonstructural Components of Provincial Unemployment Rates, Canada, 1971, 1981, and 1986

	Unemployment rate	Structurally corrected[1]	Actual gap[2]	Structural component	Nonstructural component
			(Per cent)		
1971					
Newfoundland	6.5	5.81	1.20	0.69	0.51
Nova Scotia	6.0	5.74	0.70	0.26	0.44
New Brunswick	5.8	5.58	0.50	0.22	0.28
Quebec	7.7	6.67	2.40	1.03	1.37
Manitoba	5.3	5.44	–	–0.14	0.14
Saskatchewan	2.2	2.53	–3.10	–0.33	–2.77
Alberta	4.5	4.53	–0.80	–0.03	–0.77
British Columbia	7.4	6.39	2.10	1.01	1.09
1981					
Newfoundland	12.4	7.75	5.90	4.65	1.25
Nova Scotia	8.8	6.86	2.30	1.94	0.36
New Brunswick	10.6	7.08	4.10	3.52	0.58
Quebec	9.8	8.08	3.30	1.72	1.58
Manitoba	4.9	4.94	–1.60	–0.04	–1.56
Saskatchewan	3.6	4.49	–2.90	–0.89	–2.01
Alberta	2.9	3.71	–3.60	–0.81	–2.79
British Columbia	5.5	5.18	–1.00	0.32	–1.32
1986					
Newfoundland	17.5	10.34	10.50	7.16	3.34
Prince Edward Island	10.4	7.28	3.40	3.12	0.28
Nova Scotia	12.0	9.34	5.00	2.66	2.34
New Brunswick	14.4	10.02	7.40	4.38	3.02
Quebec	10.1	9.07	3.10	1.03	2.07
Manitoba	6.4	5.99	–0.60	0.41	–1.01
Saskatchewan	6.9	6.54	–0.10	0.36	–0.46
Alberta	10.1	8.56	3.10	1.54	1.56
British Columbia	11.3	8.66	4.30	2.64	1.66

1 Unemployment rate that would prevail if provincial economic structure were equivalent to that of Ontario.
2 Gap between structurally corrected unemployment rate and that of Ontario.
SOURCE Burns [1991].

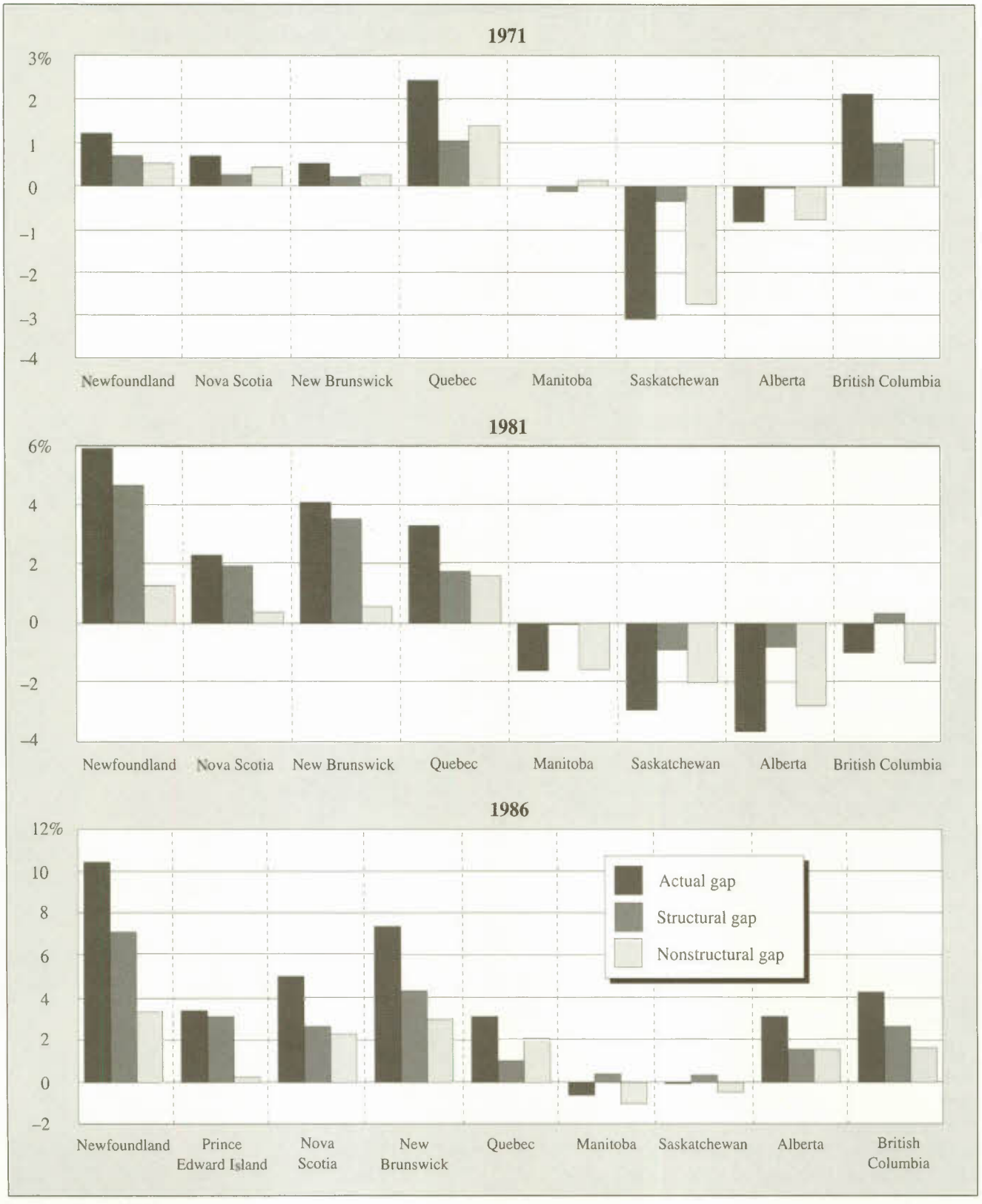
losses. The unemployment prospects of a miner in a marginal Newfoundland gold mine and those of an identical worker in an extremely productive Ontario mine are unlikely to be the same.[7]

Structural Unemployment and Adjustment

While economic structure is to some extent dictated by resources, geographic location, history, and culture, this structure is not immutable. Resources restrict the range of economically viable industrial structures, but as international prices and technology change, the economic structure most appropriate to a given economy's resource base also changes. If the new industrial mix contains more high-unemployment industries, then the level of structural unemployment will tend to rise. Alternatively, adjustment to an external shock may be neutral or imply lower structural unemployment. Even in this situation, however, a temporary increase in structural unemployment can be expected during the actual adjustment period.[8] An economy which adjusts rapidly will therefore maintain a higher level of employment – of capital equipment and resources as well as labour – than one that fails to adjust, or adjusts slowly.

Chart 6-1

Structural and Nonstructural Components of Provincial Unemployment-Rate Gaps, Canada, 1971, 1981, and 1986



SOURCE Burns [1991].

The fact that the equilibrium effect of a shock on the structural unemployment gap can differ considerably from the short-run impact is critical to interpreting our results. Figure 6-1 illustrates how the equilibrium structural unemployment-rate gap may differ from the measured gap, depending on how long after an initial shock the actual measure is taken.

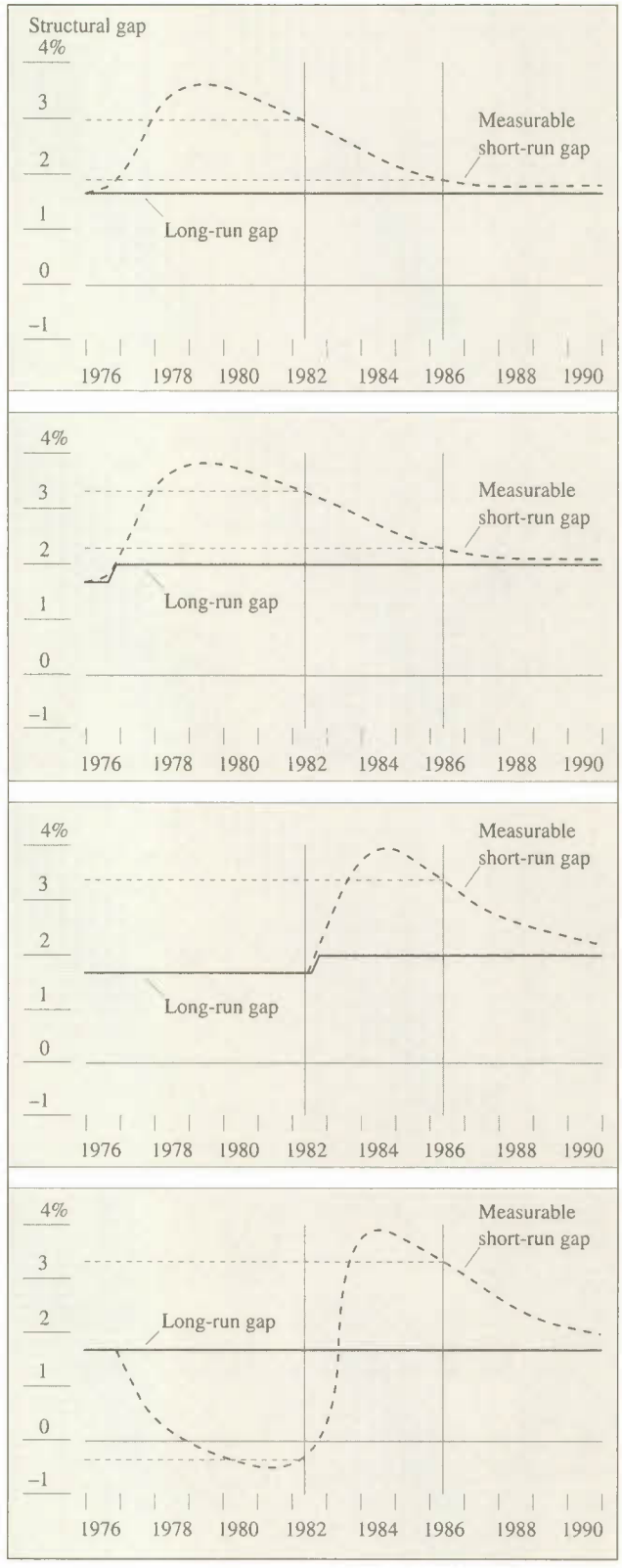
Panels one and two of Figure 6-1 show how the short-run structural unemployment-rate gap (measurable) might differ from the long-run structural gap (unobservable). Panel one illustrates the case where there is no change in the long-run structural gap in an economy, while panel two indicates the case where the long-run gap rises. If we were to measure the structural gaps of the two imaginary economies of panels one and two soon after the initial shock, our measures would be dominated by the short-run effect. It is only after several years that the measured structural gaps begin to reflect the long-run structural gaps and the pre- and post-shock changes in structural gaps become apparent. The measured structural gaps in 1981 for these two economies are more or less the same, giving the misleading impression that both economies' structural gaps have been impacted in the same manner. By 1986, however, transitory effects have begun to work their way out and it is clear that the economy of panel two's structural gap has been permanently increased.

The measures of gaps available to us are limited to three distinct points in time: June 1971, 1981, and 1986. This limited evidence does not, in and of itself, permit differentiation between structural unemployment resulting from the ongoing characteristics of an economy and that primarily generated by adjustment to an economic shock. Nor does it shed light on the relative speeds at which provincial economies have adjusted. However, our knowledge of the kinds of shocks to which different provinces have been subjected permits us to understand how structural unemployment has changed over time and to speculate as to the relative importance of equilibrium and disequilibrium effects in our measures.

There is reason to believe that the fall in structural unemployment in Quebec between 1981 and 1986 reflects an effect similar to that illustrated in the first panel of Figure 6-1. The oil crises, reduced tariffs, increased foreign competition, and political turmoil of the 1970s were a tremendous shock to the Quebec economy, and important changes in the provincial economic structure ensued. By 1986 it had already undergone significant transformation, as old industries such as textiles, clothing, and oil refining were replaced or revitalized. At the same time, reliance on external sources of entrepreneurship was attenuated by the emergence of domestic entrepreneurs, and by programs such

Figure 6-1

Illustration of the Relationship between the Measurable Short-Run Structural Gap and the Unobservable Long-Run Gap, 1976-90



as the Quebec Stock Savings Plan, which encouraged the development of a nationalistic stock of domestic venture capital.

British Columbia's experience is broadly reflected in the third panel. British Columbia enjoyed a relatively trouble-free passage through the 1970s, and it was not until after the onset of the 1981-82 recession that a major industrial restructuring began in response to high interest rates and declining prices for major exports. Indications are that, as of 1986, the restructuring remained incomplete, and that a considerable proportion of the structural unemployment gap reported in Table 6-1 resulted from these shocks.

The pattern shown in the fourth panel is indicative of Alberta's experience. The oil shocks initially caused the Alberta economy to boom, with unemployment falling as labour and investment capital were channelled into the oil sector. The subsequent fall in oil prices, coupled with the 1981-82 recession, reversed this process and the prolonged adjustment to these shocks contributed to the dramatic rise in Alberta's structural-unemployment gap by 1986.

The persistently large and growing structural components of the unemployment gaps between the Atlantic provinces and the rest of Canada suggest a serious adjustment problem. While these differentials were relatively small in 1971, by 1981 structural unemployment was much higher in all the Atlantic provinces than elsewhere in Canada, suggesting that the changes in the world and Canadian economies over that period disproportionately affected this region. The problem actually worsened during the 1981-86 period, suggesting that the region's economic structure has failed to adjust to new economic realities.

Manitoba and Saskatchewan present a relatively stable time-profile. In both 1971 and 1981 their unemployment rates were marginally lower than Ontario's; differences in economic structure accounted for about half the difference. In 1986, the gap and the portion explained by structure remained approximately the same, but the direction was reversed. These provinces' unemployment rates now slightly exceeded Ontario's. Although it is impossible to say which is the more important explanation for this reversal, one cannot help but wonder whether it is not related more to favourable conditions in Ontario than to the effects of an unfavourable shock in the Prairies.

Nonstructural Unemployment

The nonstructural components of regional unemployment-rate gaps can be used to independently verify the conclusions on the rise in noncyclical unemployment presented in Chapter 3.

The estimate of the natural rate of unemployment for the Atlantic provinces ascribes as much as 4 percentage points of the increase in unemployment between 1963 and 1987 to excessive real wages and to income support policies such as unemployment insurance. The estimates of the nonstructural component of the unemployment-rate gap seem to support such conclusions, suggesting that the reasons Newfoundland's unemployment rates were 3.34 percentage points higher than Ontario's in 1986 were nonstructural and related to the functioning of local markets. The nonstructural components are similarly large for Nova Scotia (2.34 percentage points) and New Brunswick (3.02 percentage points).

In the West, the impact of policy factors on the natural rate is estimated to be very low. Consequently, almost no nonstructural unemployment is found in either Manitoba or Saskatchewan. In Alberta and British Columbia, the nonstructural unemployment in 1986 is almost certainly due to spinoff effects from the unusually low levels of activity in the oil business (Alberta) and in the coal, pulp, and timber industries (British Columbia).

Conclusion

The measures of the structural and nonstructural components of regional unemployment differentials presented here allow us to isolate the impact of economic structure on regional disparity. This knowledge is critical if regional development policy is to be appropriately constructed. It indicates the extent to which regional unemployment disparity may be amenable to policies directed at changing the way regional labour markets function, on the one hand, and at promoting changes in economic structure, on the other. Where the structural part of the unemployment gap is large and persistent, policies aimed at restructuring and encouraging flexibility might bear fruit. Where it is relatively small, effort might be more usefully focused on reducing overall unemployment probabilities.

Clearly, the extent to which structural unemployment can be reduced depends on the degree to which the existing economic structure is dictated by market imperatives such as resources, geography, and comparative advantage, as opposed to nonmarket influences such as tradition, government policy, and resistance to change. Similarly, the extent to which structural unemployment is caused by adjustment to external shocks rather than longer-term factors is an important consideration in determining appropriate policy.

The kind of analysis presented here cannot precisely evaluate the respective contributions of these factors to the structural unemployment gap. A more detailed institutional analysis could usefully address the extent to which both structural and nonstructural unemployment gaps are amenable to policy changes.

Block III: Persistence in Unemployment

7 Unemployment Comes of Age: The Demographics of Labour Sector Adjustment in Canada

Miles Corak

There is probably no exaggeration in the claim that the past decade has been the most turbulent period of the postwar era for the Canadian labour force. The most notable developments of the 1980s were the large, sharp rise in the unemployment rate at the onset of the 1981-82 recession, and its sluggish decline over the course of the recovery. While the unemployment rate rose by almost 4.5 percentage points over a span of only 18 months, it took a full six years before it returned to its pre-recession level. This rather tortuous adjustment process is the main focus of this paper.

Indeed, if one were to choose a single word to summarize the debate surrounding labour sector policy, a prime candidate would surely be "adjustment." The fact that the labour sector is continually confronted with shocks of both a positive and an adverse nature, that these shocks are likely to be more frequent and more severe in the coming years, and that a premium should be placed on policies that promote flexibility and adjustment has been emphasized by numerous observers, the most recent being the Federal Government's Advisory Council on Adjustment [1989], the Canadian Labour Market and Productivity Centre [1990], and Ontario's Premier's Council [1990].

The purpose of this paper is to describe the dynamics of the Canadian unemployment rate during the 1980s, to offer an explanation of the adjustment process underlying these dynamics, and to sort out the implications for the conduct of government policy. The focus is on differences across age. This particular focus was chosen because demographic issues are intimately tied up with the adjustment process, and because the aging of the labour force will make demographics increasingly relevant during the 1990s.

The argument is presented in two main parts. First, we make a distinction between the shocks that confront the labour sector and the institutions and mechanisms that propagate these shocks. This distinction is used to describe the dynamics of the unemployment rate during the 1980s. The unemployment rate may be high due to large inflows of individuals who end up spending very little time unemployed – a scenario that suggests flux and adaptability – or it may be high because once they become unemployed, individuals tend to spend very long periods without work, an indication of rigidity. It is therefore important to distinguish between the roles played by the rate of inflow into and the rate of outflow from unemployment. We derive measures of these two rates and use them to examine the way in which adjustment takes place.

In the second step of the argument, we examine the underlying factors determining the exit rate from unemployment, paying particular attention to the question of why older individuals have lower exit rates – that is, longer unemployment spells – than younger individuals. Hypotheses on both the supply side and the demand side of the labour market are considered. We also examine the nature of skills and the provision of training. In particular, we distinguish between skills associated with adjustment and flexibility, so-called "general" skills, and those with value only to an individual firm, "specific" skills. Market imperatives dictate that firms will under-invest in the provision of general skills. When the hiring process involves significant investment in specific skills, or a high fixed cost of any other sort, older unemployed individuals will be at a disadvantage. Future policy discussions dealing with training and skills development should explicitly recognize this distinction.

In some sense the business cycle of the 1980s marks a watershed. In contrast to previous business cycles in which the dynamics of the unemployment rate were determined essentially by the exit rate, during the 1980s both the inflow rate and the exit rate were important in determining the movement of the unemployment rate. Even so, there has been a large and long-lasting decline in the exit rates of prime-age and older labour force participants. Once unemployed, individuals – particularly older individuals – had increasing difficulty finding another job. The adjustment of the Canadian labour market to shocks as severe as the 1981-82 recession may be characterized as an evolutionary process in which older workers are treated in a way similar to the way obsolete capital equipment is treated – they are scrapped and replaced by a new, younger vintage of worker. The direct substitution of employment in declining firms or sectors by employment in expanding sectors is of limited importance. Rather, the reallocation of labour in the face of the 1981-82 recession involved shedding older, long-tenure workers who then went into permanent or semipermanent retirement, combined with increased hiring of younger workers in the sectors of growth.

It is a moot issue whether the experience of the 1980s can serve as a guide for the 1990s. The dynamics in the movement of the unemployment rate and its persistently high level in the face of economic recovery are due, to a large degree, to the severity of the monetary shock that was inflicted upon the economy in 1981-82. If such shocks do not reoccur – either by happenstance or by design – persistently high unemployment may be a thing of the past. Developments during 1990-91 suggest that this is not the case, and that the dynamics of unemployment during the 1980s may offer important lessons for the 1990s. Shocks like those of the 1980s are propagated by the underlying structures and institutions of the economy. The value of examining the past decade lies in the fact that the severe aggregate demand shock reveals these structures, and makes it easier to understand the policy options that are available to alter them.

The Dynamics of the Canadian Unemployment Rate

The distinction between impulses, or shocks, and the mechanisms that propagate them is often employed in the analysis of macroeconomic time series. In this section the rate of inflow into unemployment (which is equivalent to the incidence or "risk" of unemployment) and the rate of outflow (which is inversely related to the duration of unemployment spells) are presented. The former is a measure of the magnitude of the shocks that confront the labour sector, while the latter is an indicator of the propagation mechanisms that determine their consequences.

In Table 7-1 we show the economy-wide unemployment rate for Canada over the period 1975-89, as well as the unemployment rates for each of the three age groups that are the subject of the present analysis: 15-24 year olds, 25-44 year olds, and those aged 45 and over. The impact of the recession is marked. Between 1981 and 1983 the unemployment rate rose 4.3 percentage points to reach a peak of 11.8 per cent. It did not return to its pre-recession level until about 1988 or 1989. In a broad sense, all three age groups reveal this pattern – a very quick increase in the unemployment rate followed by a relatively sluggish decline. There are, however, important differences between the age groups, and these are best illustrated by the difference between each of the unemployment rates and those of 1980 (Table 7-2, Chart 7-1).

The youngest group experienced the largest unemployment rate increase – 6.6 percentage points – but also the quickest decline. After peaking at 19.8 per cent in 1983, this group's unemployment rate fell a full 2 percentage

Table 7-1

Unemployment Rate by Age Group, Canada, 1975-89

		Age group		
	Canada	15-24	25-44	45 and over
		(Per cent)		
1975	6.9	12.0	5.4	4.5
1976	7.1	12.7	5.7	4.1
1977	8.1	14.4	6.3	4.9
1978	8.3	14.5	6.7	5.1
1979	7.4	12.9	6.0	4.5
1980	7.5	13.2	5.9	4.5
1981	7.5	13.2	6.2	4.4
1982	11.0	18.8	9.4	6.7
1983	11.8	19.8	10.4	7.5
1984	11.2	17.8	10.2	7.5
1985	10.5	16.4	9.5	7.2
1986	9.5	15.1	8.7	6.5
1987	8.8	13.7	8.1	6.5
1988	7.8	12.0	7.2	5.7
1989	7.5	11.3	7.2	5.4

SOURCE Estimates by the author, based on data from Statistics Canada, the Labour Force Survey.

Table 7-2

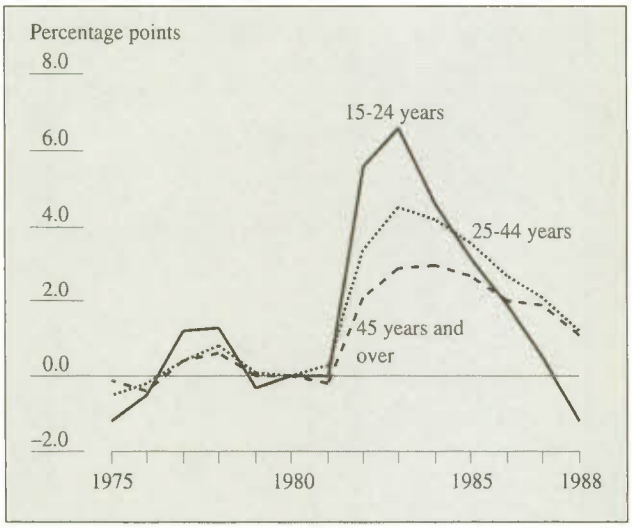
Difference between Annual Unemployment Rates in 1975-89 and that of 1980, Canada

		Age group		
	Canada	15-24	25-44	45 and over
		(Percentage points)		
1975	–0.6	–1.2	–0.5	–0.1
1976	–0.4	–0.5	–0.2	–0.4
1977	0.6	1.2	0.4	0.4
1978	0.8	1.3	0.8	0.6
1979	–0.1	–0.3	0.1	–
1980	–	–	–	–
1981	–	–	0.3	–0.2
1982	3.5	5.6	3.4	2.1
1983	4.3	6.6	4.5	2.9
1984	3.7	4.6	4.2	3.0
1985	3.0	3.2	3.6	2.7
1986	2.0	1.9	2.7	2.0
1987	1.3	0.5	2.1	1.9
1988	0.3	–1.2	1.2	1.1
1989	–	–1.9	1.2	0.9

SOURCE Estimates by the author, based on data from Statistics Canada, the Labour Force Survey.

Chart 7-1

Difference between Unemployment Rates for 1975-88 and that of 1980, Canada



SOURCE Estimates by the author, based on data from Statistics Canada, the Labour Force Survey.

points in the following year, and by more than 1 percentage point in each of the subsequent three years. It had returned to its 1980 level by 1987, and by 1989 it was 2 percentage points lower.

While the change in the unemployment rate for the 25-44 year olds and those 45 and over was not as great, it was more persistent. By 1989, their unemployment rates remained a full percentage point above 1980 levels. Indeed, the employment rate of the 45-and-over age group did not peak until 1984, when it stood at 7.5 per cent – 3 percentage points higher than in 1980. During the following five years it fell by 2 percentage points. The rise in the unemployment rate of the 25-44 age category was slightly sharper, but it also seems to have stopped declining in 1988 at 7.2 per cent, 1.2 percentage points above its 1980 level. These differences among the patterns of adjustment of the age groups are the main reason that the return of the aggregate unemployment rate to its pre-recession level was so sluggish.

The unemployment rate is determined by the rates at which individuals flow into and out of unemployment. The inflow rate is defined as the percentage of the labour force that is newly unemployed in a given month. Individuals may become unemployed either by moving from nonparticipation into active search for a job, or moving from employment as a result of a job loss or a voluntary separation. The outflow rate is defined as the percentage of the unemployed that leave unemployment, either by withdrawing from labour force participation, or by becoming employed. These two rates can be used to examine several explanations for the dynamics of the unemployment rate that might be termed "accounting" explanations.[1]

The unemployment rate rises whenever inflows exceed outflows, and falls when the opposite is the case. After a shock to either the inflow or the outflow rate that lasts only one period, the unemployment rate will take several periods to return to its previous value. This is because not all the new entrants into the ranks of the unemployed leave immediately. The unemployment rate in any period is the proportion of the labour force who have newly entered the state of unemployment plus the fraction of those unemployed during the previous period who have not left. Thus a one-period increase in the unemployment rate "persists." In other words, while it takes only an instant to become unemployed, it usually takes much longer to become reemployed. The lower the exit rate, the more sluggish the adjustment process.[2]

Table 7-3 presents annual averages of the monthly inflow and outflow rates for the Canadian labour force.[3] The rise in the aggregate unemployment rate during the period 1981-83 is the result of an increase in the inflow rate, and a concomitant decrease in the outflow rate. The inflow rate increased from a monthly average of about 2.5 per cent of the labour force in 1981 to 3 per cent during 1982. This is a very large increase. It implies that approximately 60,000 more individuals became unemployed per month. This change reflects the fact that employment actually declined by 5.2 per cent at the outset of the recession. Over the same period the rate of outflow fell from a monthly average of 33 per cent to one of 27 per cent. There are no other recorded changes of such a magnitude. In part, the persistence of unemployment after 1983 represents an adjustment to these shocks, an adjustment that is inherent in the fact that the duration of an unemployment spell, as determined by the exit rate, is more than one period in length. However, this process alone cannot account for the fact that the actual unemployment rate has taken five to six years to return to pre-recession levels.

Chart 7-2 presents the inflow and outflow rates by age group. Younger people have much higher inflow and outflow rates than do older people. Those 45 years and over have the lowest inflow and outflow rate. It follows that if the age profile of the unemployed changes, the overall exit rate and consequently the dynamics of the unemployment rate will also change. In particular, if the composition of the unemployed becomes more heavily weighted with older individuals – whose exit rates are normally low – the exit

Table 7-3

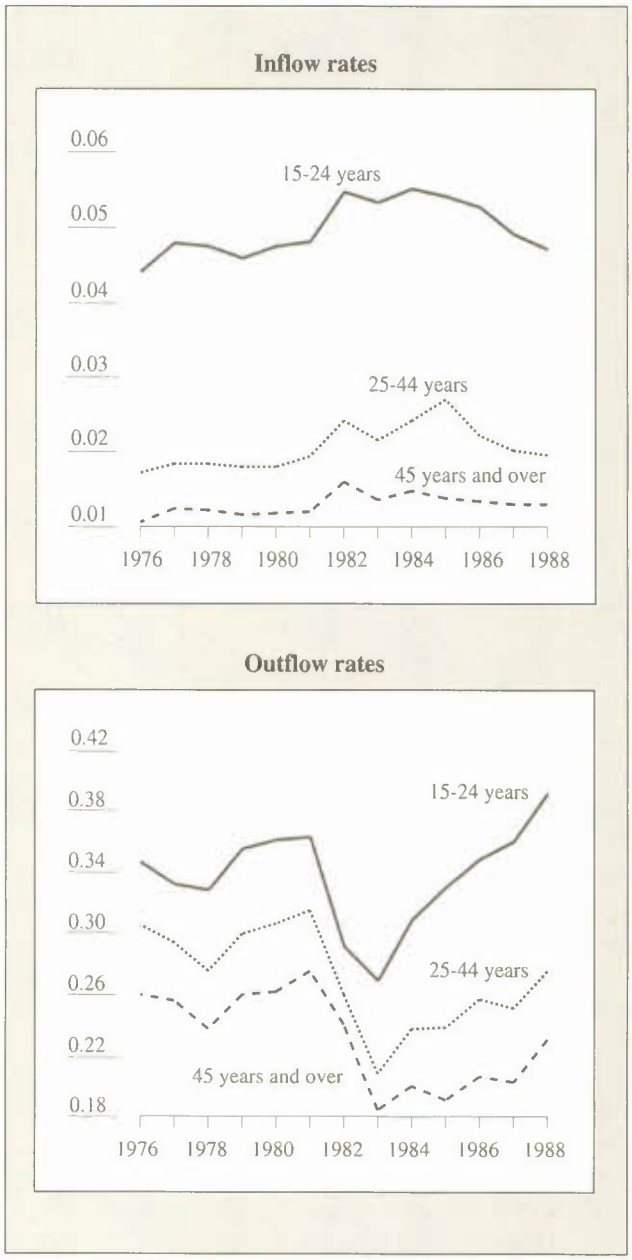
Annual Averages of Monthly Inflow and Outflow Rates, Canada, 1976-89

	Inflow rate	Outflow rate
	(Per cent)	
1976	2.26	31.8
1977	2.48	30.6
1978	2.45	29.4
1979	2.38	31.9
1980	2.43	32.5
1981	2.50	33.1
1982	2.97	27.1
1983	2.73	23.0
1984	2.90	25.8
1985	2.75	26.2
1986	2.68	28.1
1987	2.47	27.9
1988	2.36	30.4
1989	2.33	30.8

SOURCE Estimates by the author, based on data from Statistics Canada, *The Labour Force*, Cat. 71-001.

Chart 7-2

Inflow and Outflow Rates by Age Group, Canada, 1976-88



SOURCE Corak [1990*d*].

rate of the entire group will fall. This will contribute to greater persistence in the overall unemployment rate.

The proportion of inflows into unemployment accounted for by each of the three age groups is presented in Table 7-4. The percentage accounted for by the 25-44 year olds rose in 1981-82, as did the proportion accounted for by the 45-and-over age group. Together, these two groups accounted for 50.2 per cent of the newly unemployed in 1981, and for 54.5 per cent in 1982. Consequently, the proportion of the youngest group fell from about 50 per cent to 45 per cent. This 5-percentage-point change in the composition of the inflow cohort during this year is the largest single-year change over the 1976-89 period. Thus, at least for the period immediately following the onset of the recession, there is some truth in the view that the average duration of unemployment for the aggregate labour force, and hence persistence in the aggregate unemployment rate is due to an increase in the proportion of the unemployed who "normally" have long unemployment spell durations.

It should be noted that this cyclical change has occurred alongside, and has probably abetted, a trend in the same direction. The proportion of the inflows accounted for by 15-24 year olds has been falling steadily throughout the period, but especially after 1982. Much of this trend is mirrored in the proportion of the inflows accounted for by the 25-44 year olds, while the proportion accounted for by the oldest age category has been essentially unchanged. Thus, while changes in the age profile of inflows to unemployment certainly provide some explanation of unemployment dynamics at the onset of the recession, they may also have been a factor in subsequent developments.

Table 7-4

Proportion of Average Accounted for by Each Age Group, Canada, 1976-89

	Age group			
	15-24	25-44	45 and over	Total
	(Per cent)			
1976	52.4	34.2	13.4	100.0
1977	51.9	33.9	14.2	100.0
1978	51.7	34.5	13.9	100.0
1979	51.7	34.8	13.5	100.0
1980	52.0	34.9	13.2	100.0
1981	49.8	37.4	12.8	100.0
1982	45.4	40.1	14.4	100.0
1983	46.7	39.7	13.3	100.0
1984	44.0	42.6	13.5	100.0
1985	44.2	42.7	13.1	100.0
1986	43.1	44.0	12.9	100.0
1987	42.4	43.6	13.8	100.0
1988	40.8	44.9	14.3	100.0
1989	39.7	46.1	14.2	100.0

SOURCE Estimates by the author, based on data from Statistics Canada, *The Labour Force*, Cat. 71-001.

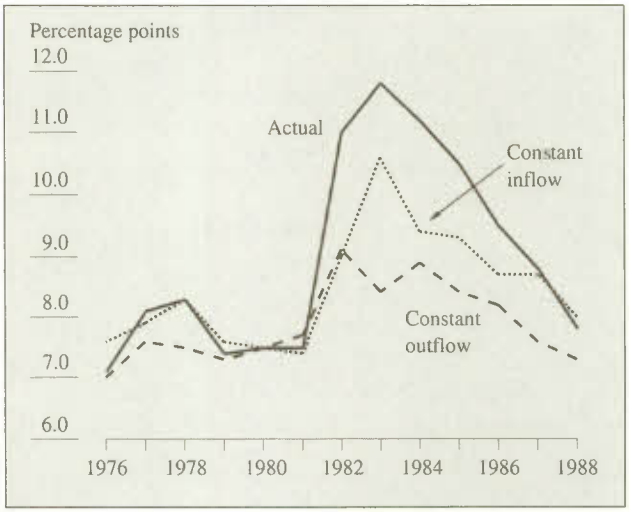
The problems of longer spells and persistent unemployment during the 1980s were due not simply to changes in the composition of the inflows, but also to the slowness of the inflow and outflow rates to return to pre-recession levels (see Chart 7-2). Only the inflow and outflow rates of 15-24 year olds returned to their 1980-81 values, in 1988 for inflows and in 1987 for outflows – at least four years after the initial shock. The inflow rates of the older groups appear to have stabilized at a higher level, and while their outflow rates have increased regularly since 1983, they remain significantly below their pre-recession peaks.

The implications of the evidence presented here can be summarized as follows. The shocks experienced by the labour sector at the onset of the 1981-82 recession were particularly severe, and the central parameter determining the speed of adjustment to these shocks is the exit rate from unemployment. The economy-wide exit rate fell, in part, because the inflows into unemployment were more heavily weighted with groups that "normally" have low exit rates. However, the adjustment to the recession was particularly sluggish because there were only minimal improvements in the exit rates of the older groups. Over the recovery there was a great improvement in the hiring rates for the young, but very little increase in those for the old. Chart 7-3 presents these results by offering evidence that at least for the period after 1982, the outflow rate is the major influence on the actual developments in the unemployment rate. The actual unemployment rate is compared with the rate of unemployment that would have prevailed had either the inflow or outflow rate remained at its 1980 value. If actual developments are more closely tracked by the simulated unemployment rate that holds the inflow rate constant, one could conclude that changes in the outflow rate are more important than changes in the inflow rate in determining the dynamics of the actual unemployment rate.

Since neither of the simulated unemployment rates is dominant during 1982, both inflows and outflows were important in causing the sharp rise of the unemployment rate at the onset of the recession. This distinguishes the 1981-82 recession from the pattern observed during previous run-ups of the unemployment rate. For example, the rise in the unemployment rate during 1977 and 1978 and its fall in 1979 is closely tracked by the simulation that permits exit rates to take on their actual values. During milder cyclical changes, the inflow rate is not important at all in explaining the movement in the unemployment rate. Increased inflows into unemployment due to layoffs are probably countered by reductions in inflows due to a lower rate of voluntary job separations. This leaves the dynamics of the unemployment rate to be determined by reductions in hiring, and hence falling exit rates. After 1982 the exit rate is in fact more important. In 1983 the actual unemployment rate was 11.8 per cent. If the inflow rate were allowed to

Chart 7-3

Actual and Simulated Unemployment Rates, Canada, 1976-88



SOURCE Estimates by the author, based on data from Statistics Canada, the Labour Force Survey.

take its actual value and the outflow rate held constant, it would have been 8.4 per cent, while if the opposite were true it would have reached 10.6 per cent. While the contrast between the two simulated unemployment rates is somewhat less pronounced during subsequent years, the dominance of the outflow rate remains evident throughout the remainder of the decade.

A certain asymmetry in the dynamics of the unemployment rate should be expected. The rise in the unemployment rate will always tend to be sharper than the decline. The speed of adjustment is determined by the exit rate. The economy-wide exit rate was lower during the 1980s for two reasons. First, the recession of 1981-82 was characterized by an increase in the proportion of older individuals becoming unemployed, a trend which continued for the remainder of the decade. Older individuals normally have lower exit rates, that is, longer unemployment spells than younger individuals. An increase in the proportion of the unemployed that are older will therefore imply a more sluggish decline in the unemployment rate. Second, the differences between the exit rates of the old and young increased during the 1980s. Older individuals experienced longer and longer unemployment spells, while the spells of the young became shorter and shorter.

Age and the Structure of the Adjustment Process

This section will attempt to highlight some of the institutional features of the labour sector that determine the rate of exit from unemployment. The analysis of exit rates in the previous section sheds a certain amount of light on this, but is limited in at least three respects. First, the derivation of the exit rate implicitly aggregates individuals who left unemployment because they found employment with individuals who left because they ceased to actively search for employment. As such, it does not enable us to determine whether individuals moved into employment or nonparticipation, an important aspect of the adjustment process. Second, the exit rates are calculated for the first month of unemployment and are implicitly assumed to be constant throughout the remainder of the spell. However, many previous analyses have found that there is some tendency for them to fall the longer the individual remains unemployed. Thus using the exit rate for the first month of unemployment probably overstates the actual overall value. Finally, it does not enable us to examine factors other than age that determine the exit rate.

In a previous study [Corak 1990*c*], to examine the exit rate in more detail, we used a panel data set to track a representative group of individuals during 1986 and 1987. The major question we addressed was: Why should age be a significant determinant of the length of time that an individual spends without a job? A host of reasons can be postulated: older workers may be less educated, they may have unrealistic wage expectations, or they may have financial resources invested in fixed assets, such as homes. In other words, older individuals may possess characteristics that limit their mobility and the extent to which they are capable of taking advantage of opportunities that arise in other firms, industries, or localities.

Independent of all these characteristics, is it reasonable to expect age to influence the length of time without a job? It could be argued that the old have a "taste" for more leisure than younger individuals, and that this leads them to spend more time unemployed or to search less intensively for re-employment. This is a supply-side explanation. It could also be argued that the old face constraints in the job market that are different from those faced by the young, that is, that firms use hiring practices that discriminate against older job applicants. This is a demand-side explanation.

We examined the duration of unemployment spells and controls for a large number of individual characteristics. This permits the influence of age, per se, to be separated from the influence of other characteristics that are unevenly distributed across different age groups, and explicitly recognizes that spells of unemployment may end in one of three ways: movement out of the labour force (nonparticipation), a recall to employment with the individual's former employer (recall), and finally finding employment with a new employer (new firm). This distinction sheds some light on the relative merits of the simple supply-side and demand-side explanations of the influence of age on spell duration. If the unemployment experience of older workers is dictated by the supply-side explanation, then older workers should be much more prone to end their unemployment spells in nonparticipation than their younger counterparts. That is, spells ending in nonparticipation should be shorter for the old than for the young. In effect, the length of this type of spell offers a measure of search intensity, or "taste" for leisure. If spells ending in nonparticipation are not shorter for the old than the young, and if older individuals take longer to find re-employment with a new firm, then this supports a demand-side explanation.

The data set examined here was drawn from the Labour Market Activity Survey, and consisted of observations on the first unemployment spell that an individual experienced during 1986 and 1987. The analysis was restricted to males claiming not to be full-time students during 1986 or 1987, and an unemployment spell is defined as beginning with a transition between employment and unemployment, where unemployment entails job search.[4]

The average spell duration for the completed unemployment spells obtained from this data set is summarized in Table 7-5 by age and spell type. Overall, spells that end with nonparticipation are the longest, lasting on average 18.5 weeks. Those spells ending with recall to the former employer are the shortest, lasting 15.6 weeks on average. The breakdown of average duration by age lends support to a demand-side explanation. Individuals in the 45-69 age category spend the longest time looking for a job before giving up their search: 21.6 weeks on average compared to about 17 weeks for their younger counterparts. This suggests that the old are less likely to give up searching for employment than the young. In other words their search intensity is greater. At the same time, there is a clear linear relationship between age and spell length for spells that end in employment at a new firm, and no significant relationship for spells ending in recall. If the search intensity of the old is greater than that of the young, then the fact that they take longer to find employment with a new firm implies that the problem lies on the demand side. In some way, older unemployed individuals are being discriminated against.

Tabulations of this sort cannot be considered definitive because there is no control for other characteristics that may be associated with age and that are the actual determinants of spell duration. When such controls are introduced and an appropriate estimation procedure used, these results are tempered somewhat but not overturned. The controls include a host of demographic characteristics, job-related characteristics, and several income variables.[5] Thus, even when taking any differences in the distribution of these characteristics into account, one can still conclude that hiring decisions are biased against older job applicants.

The results associated with these controls are also of interest in their own right. Among the findings are that those who have the greatest difficulty finding employment with a new firm are persons who had a great deal of tenure with their former employers, those who were in lower paid occupations, and those who were paid high wages relative to others in the same occupation. These variables were not important, however, in determining the length of unemployment spells ending in nonparticipation or recall to the same firm.

What light do these results shed on the adjustment process? One obvious implication is that adjustment is always easier when individuals are not obliged to find work with a different firm, in a different industry, or in a different region. Very large negative shocks that lead to a large number of bankruptcies will close this option to individuals and firms, and lead to longer unemployment spells. In this way, the sluggishness of the decline in the unemployment rate during the recovery period is in proportion to the extent of its rise during the recession. A severe recession is different from a mild contraction because there is less scope for a pattern of temporary layoffs to act as the adjustment mechanism.

To fully appreciate these results it is necessary to address the way the marketplace might be said to be discriminating against older individuals. This can be done by explicitly recognizing the relationship that exists between workers and firms in terms of the organization of the workplace and the type of skills that workers are required to use. This relationship can be summarized in the distinction between general and specific skills.

Table 7-5

Average Completed Unemployment Spell-Length by Age and Reason for Termination of Spell, Canada, 1986-87

	Spell type					
	Nonparticipation		Recall		New firm	
	Mean	Number	Mean	Number	Mean	Number
	(Weeks)		(Weeks)		(Weeks)	
Age group						
16-24	17.6	107	15.5	169	13.7	368
25-34	17.5	133	15.3	294	17.2	495
35-44	16.3	106	15.5	178	19.1	272
45-69	21.6	148	16.2	206	20.9	216
Total	18.5	494	15.6	847	17.2	1,351

SOURCE Estimates by the author, based on data from Statistics Canada, the Labour Market Activity Survey.

General skills are those that increase an individual's productivity in all firms, while specific skills are of value only in a particular firm. Literacy or numeracy skills are examples of the former, while familiarity with a firm's clients is an example of the latter. The market offers little incentive for firms to provide general skills to their employees. When the firm pays the costs of such training, it runs the risk that it will lose its investment if the individual leaves to work elsewhere. To prevent this, the individual's wage has to be higher by the full extent of his or her increase in productivity. Thus the firm would be paying the cost of training, but receiving none of the benefits. General skills have the characteristics of a "public good," a good whose benefits are not restricted to the individual or the firm providing it. Such goods tend to be underprovided by the private market. There is more incentive for firms to provide specific skills, because these skills do not raise an individual's productivity in other firms, and therefore his or her opportunities to leave the firm are not any greater with or without them. At the same time, the employee must be encouraged to remain with the firm for a period long enough to permit the investment to be recouped. If a long-term bond is not developed between the firm and its workers, even specific skills will be underprovided.

The evidence that firms discriminate against older workers should be interpreted in this context. Firms prefer to invest in workers who are not likely to leave the firm or to have an intermittent work history, and might choose younger job applicants over older ones for this reason. In fact, as long as firms believe that older workers are less productive than younger ones, or that their work history will be shorter or more intermittent, then whether or not this is in fact the case, the old will be at a disadvantage and hiring becomes discriminatory. This interpretation is supported by the observation that older workers take longer to find employment with a new firm, but it is also supported by the observation that they take no longer to be recalled by their former employer than do their younger counterparts. Since the firm has already made its training investment in the worker, since part of it has been recouped, and since it already knows the individual's productivity, there is no reason to treat that worker differently because of age.

The degree of an individual's specific skills will influence the inflow rate. Individuals with extensive specific skills will have lower inflow rates, since the firm will attempt to develop long-term relationships with such employees. The extent of general skills, on the other hand, will influence the outflow rate of an individual who happens to be unemployed. The more developed these skills are, the easier it will be to find re-employment. General skills are therefore important for the adjustment process.

In summary, the distinction between general and specific skills, the incentives embodied in the marketplace for their provision, and the interaction between general and specific skills, on the one hand, and the age structure of the labour force, on the other, are important in understanding the structure of the labour sector. Nevertheless, while this analysis explains why older workers have a lower exit rate than the young, it does not explain why the gap has changed to the detriment of the old during the latter half of the 1980s. It seems likely that this period witnessed the development of attitudes favouring labour force adjustment through attrition and early retirement. Unemployed older workers are being perceived as individuals who have had their chance at being employed, or have been compensated for unemployment (through unemployment insurance benefits, severance payments, or early retirement packages), and that any new job openings should be given to the young as a way of sharing the employment possibilities. According to this view, policy should be aimed at ensuring that this compensation is adequate, and not necessarily at reintegrating these individuals into productive employment. In addition, the very severity of the recession made adjustment internal to the firm a limited option. The fact that labour had to be reallocated between firms and industries placed older workers at a relative disadvantage, because they lacked, or were perceived by employers to lack, the general skills necessary to make the transition.

The adjustment to the shocks in this period might be characterized as "evolutionary." The economy was hit with a very severe shock during 1981-82, so severe, in fact, that employment actually declined for the first time since the war. As a result, there were a large number of bankruptcies and plant closings. This implies that the inflows into unemployment were more heavily weighted with individuals who had long employment tenure, who normally did not experience unemployment often, and who normally take a long time to leave unemployment – that is, older workers. The recovery in the unemployment rate would have been sluggish even if the inflow and outflow rates had returned immediately to their pre-recession levels. However, the exit rates of these groups fell and remained depressed throughout the remainder of the decade. The firms and sectors hiring during the upturn were not the same firms and sectors that released workers during the recession. Old capital equipment, plants, and firms were scrapped, and replaced by new vintages. The reallocation of labour proceeded in a similar manner. Direct substitution of employment in sectors in decline with employment in sectors of growth was minimal. Rather, new sectors absorbed new labour force entrants at increasing rates. This process was facilitated by the fact that the baby-boom generation was reaching working age. Older workers were left at the bottom of the hiring queue.

Indeed, given the very long durations of joblessness and the proliferation of early retirement packages, it could be that a significant fraction of them went on to permanent or semipermanent retirement.

Conclusion

During the 1980s unemployment came of age. It burst onto the scene with an urgency that strained the capacity of labour sector institutions and governments to adequately respond, and in spite of a strong economic recovery, it returned to its pre-recession level very slowly. The recession of the 1980s was particularly severe, and the sluggishness of the decline in the unemployment rate during the recovery is in proportion to the magnitude of the job losses at the onset of the recession. One obvious policy recommendation is to avoid confronting the labour sector with negative shocks of such magnitude, particularly when they result in a large number of bankruptcies and plant closings, which reduce the scope to make adjustments internal to the firm.

The sluggishness of the decline in the aggregate unemployment rate during the 1980s was also due to an increase in the proportion of older individuals among the unemployed and a decrease in their ability to find re-employment. The exit rate from unemployment – or the duration of unemployment spells – is the central parameter in determining the speed of the adjustment process. The exit rate of older individuals decreased significantly relative to that of the young during the 1980s. Some of the most important determinants of the exit rate are length of tenure in the previous job, previous occupation, and relative wage. Even when these are controlled for, older groups still have lower exit rates than younger groups. The distinction between general and specific skills is important in understanding these differences. Older individuals are likely to have a high level of specific skills, while the young are more likely to have general skills. The latter are portable across firms and industries, the former are not. The adjustment process during the 1980s can be thought of as "evolutionary," as older individuals were relegated to long periods of joblessness and encouraged into permanent or semipermanent retirement, while the young were hired at increasing rates by new or expanding firms.

The distinction between general and specific skills is important in understanding the adjustment process. Individuals with well-developed general skills will have higher exit rates from unemployment, but there is little incentive for the private sector to provide such skills. Indeed, much of the debate surrounding the adjustment process and older workers has centred on refining the means to compensate them for their loss of employment. For example, the Program for Older Worker Adjustment is essentially a very limited compensation scheme. The recent recommendations of government and nongovernment bodies that deal with older workers focus on methods of improving compensation payments – for instance, recommending measures that ensure that firms make severance and vacation payments to laid-off employees, and that ensure that these payments along with any pension income do not lead to reductions in unemployment insurance benefits.

With the aging of the labour force, however, it will become increasingly important in the 1990s that older unemployed individuals be reintegrated into the working world. There will be less scope to accommodate adverse shocks in the evolutionary way in which they were accommodated during the 1980s. The emphasis will have to shift from promoting early retirement in declining firms or sectors, coupled with the hiring of younger individuals in the area of growth, to the direct substitution of employment for older workers in areas in decline for employment in areas of growth. This will involve placing a greater emphasis on developing their general skills.

While there has been a great deal of discussion in policy circles on the need for more and better training, the distinction between general and specific skills is not often emphasized. The de Grandpré Report, for example, exhorts the private sector to increase its provision of training, but does not address the matter of what type of skills it should provide, or even what type it is capable of providing [Advisory Council on Adjustment 1989]. Increasing the private provision of training will require important changes in the long-term relationship between workers and firms if investment in general skills is to be increased. Without long-term bonds between firms and workers, the private sector will tend to under-invest in general skills, and focus only on the provision of firm-specific skills. This will do little to increase the flexibility of the labour force.

On the other hand, the Premier's Council Report offers a careful taxonomy of skills, and recognizes that the market has not provided sufficient training in general skills [1990, 4-6, 91-102]. It also expresses the view – supported by the current study – that the private sector alone will not provide the requisite investments in skills training: cooperation between firms and unions at the industry level, and between these parties and government will be essential. If structures and institutions that determine the adjustment process in the labour sector are to be improved, then the challenges of this type of cooperation should become the focus of future policy debate.

8 Long-Term Unemployment in Canada: Its Causes and Policy Implications

Syed Sajjadur Rahman and Surendra Gera

During the 1980s, the burden of persistently high Canadian unemployment was increasingly borne by a relatively small number of individuals who were unemployed for long periods of time. In 1980, about 3.3 per cent of the labour force were unemployed for six months or more during the year; they accounted for 15.6 per cent of the unemployed and 42.5 per cent of total time spent unemployed [see Corak, Chapter 5]. By 1987, the long-term unemployed accounted for 4.2 per cent of the labour force, 23.1 per cent of the unemployed, and 54 per cent of all time spent unemployed.

This growing concentration of unemployment among the long-term unemployed raises a number of questions about the costs, causes, and consequences of long-term unemployment (LTU). This paper analyses the evidence on LTU in Canada and attempts to answer the following questions: 1) How great a problem is it? 2) What are its causes? 3) What are its macroeconomic implications? 4) How effective are existing policies aimed at reducing it, and which alternative policies might be more effective?

The Dimensions of Long-Term Unemployment in Canada

One of the most remarkable trends in recent Canadian unemployment experience has been the significant increase in the average duration of unemployment. Between 1979 and 1989 – two years in which unemployment rates were approximately the same – the average reported length of ongoing periods of unemployment rose from 14.1 to 17.9 weeks; it reached as high as 21.8 weeks in 1983 (Table 8-1).[1] Completed unemployment spells, while not measured per se, would have been considerably longer – approximately double these durations.[2] This implies that a typical job loser could expect to be out of work for nearly two months longer in 1989 than in 1979 – that is, for 8.3 as compared with 6.5 months.

A major reason for this increase is the growth in the incidence of long-term unemployment, that is, in the proportion of all unemployed individuals who experienced prolonged unemployment (Table 8-2). (Unless otherwise specified, we define long-term unemployment as continuous unemployment lasting 12 months or more.) The incidence of LTU rose from 3.5 per cent in 1979 to a high of 10.1 per cent in 1985; while it subsequently declined, its 1989 level of 6.6 per cent was nevertheless nearly twice as high, after seven years of economic recovery and expansion, as the level that prevailed at the beginning of the decade.

While the 1989 incidence of LTU was high by previous standards, the long-term unemployed still comprised only a small proportion of all unemployed persons. This is construed by some as grounds for discounting the seriousness of the problem in Canada. Moreover, it is a cyclical phenomenon; its incidence tends to diminish when the overall unemployment rate declines. This might be interpreted as an indication that there is no need for a specific policy focus

Table 8-1

Average Duration of Unemployment[1] by Age, Canada, Selected Years, 1979-89

	Average weeks of unemployment							
	1979	1981	1983	1985	1986	1987	1988	1989
All age groups	14.1	15.1	21.8	21.7	20.3	20.5	18.3	17.9
15-24	12.9	13.0	18.4	15.7	14.4	14.2	12.0	11.3
25-44	14.3	15.9	23.1	23.1	21.5	21.8	19.4	19.0
45 and over	18.9	19.3	26.7	29.7	28.9	28.5	26.1	25.4

1 Duration of incomplete spells.

SOURCE Statistics Canada, *The Labour Force*, Cat. 71-001.

Table 8-2

Unemployment Rate and Incidence of Long-Term Unemployment, Canada, 1976-89

	Unemployment rate	Incidence of LTU (months)	
		6 and over	12 and over
	(Per cent)	(Per cent)	
1976	7.1	13.5	4.0
1977	8.1	14.7	3.5
1978	8.3	16.4	3.4
1979	7.4	15.0	3.5
1980	7.5	15.0	3.7
1981	7.5	15.6	4.3
1982	11.0	19.8	5.1
1983	11.8	28.0	9.6
1984	11.2	26.1	9.9
1985	10.5	25.6	10.1
1986	9.5	23.5	8.8
1987	8.8	23.6	9.2
1988	7.8	20.2	7.1
1989	7.5	20.1	6.6

SOURCE Estimates by the authors, based on Statistics Canada, *The Labour Force*, Cat. 71-001.

on long-term unemployment, and that the unemployment rate is the more appropriate policy target.

The aggregate figures, however, mask some of the more pernicious aspects of long-term unemployment. First, the low incidence tends to obscure the highly disproportionate burden of total unemployment time that is borne by the long-term unemployed. Second, while the incidence of LTU is relatively small at the national level, it is very significant for some demographic groups and regions. Finally, when LTU declines more slowly than the unemployment rate during periods of recovery and expansion – as occurred in the 1980s – it could in fact curb the rate at which aggregate unemployment can be reduced, thereby contributing to the persistence of high levels of unemployment.

Long-Term Unemployment and the Unemployment Rate

As we have observed, the aggregate unemployment rate and the incidence of LTU tend to move in the same direction over time, but not at the same speed (see Table 8-2). Rather, the experience over the most recent business cycle suggests that the incidence of LTU increases sharply during a recession, but then declines more slowly than the unemployment rate during the subsequent expansion (Chart 8-1). As unemployment increased during the 1981-82 recession, the incidence of LTU initially fell, due to rising numbers of newly unemployed persons. A number of the newly unemployed, however, failed to obtain jobs within a year and thus became long-term unemployed, causing the incidence to rise. It continued to rise steeply throughout late 1982 and early 1983, although the rate of increase in aggregate unemployment had by then slowed down. From late 1983 through 1989 the overall unemployment rate declined; however, the long-term unemployed were still not finding work in sufficient numbers to reduce the incidence of LTU to its pre-recession level. The failure of the incidence to decline as rapidly as the unemployment rate gives rise to the characteristic hook shape in the chart below.

The experience of the recent business cycle, then, raises the possibility that: 1) the incidence of LTU will increase from its present level during the current economic downturn; and 2) when it does, the higher incidence will become the new benchmark.

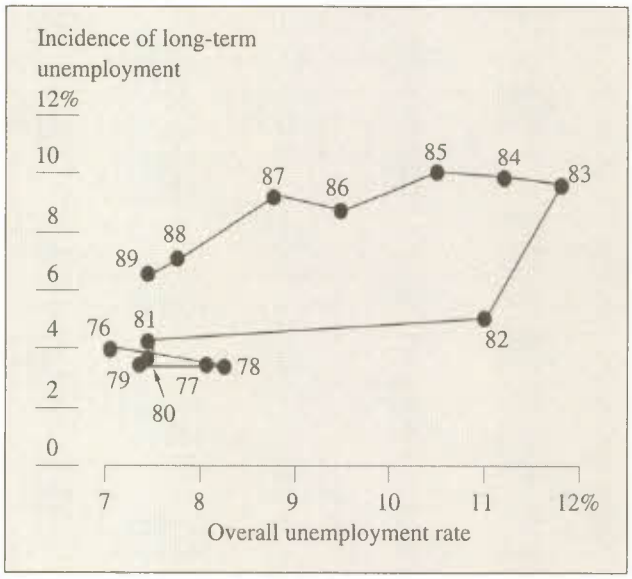
The Disaggregated Incidence of Long-Term Unemployment in Canada

Regional Trends

Regional differences in LTU compound the effects of regional disparities in unemployment rates (Chart 8-2). In

Chart 8-1

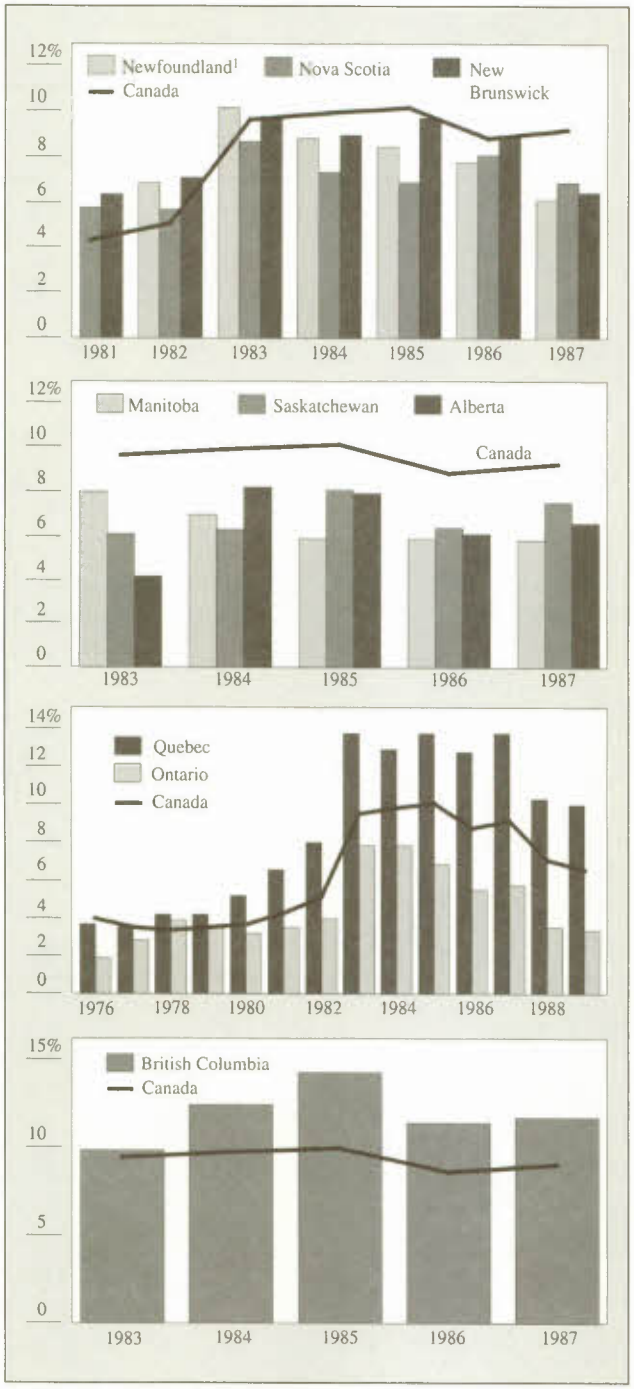
Relationship between Long-Term and Overall Unemployment Rates, Canada, 1976-89



SOURCE Estimates by the authors, based on data from Statistics Canada, *The Labour Force*, Cat. 71-001.

Chart 8-2

Incidence of Long-Term Unemployment, Canada and the Provinces, Selected Years, 1976-89



1 Data for Newfoundland for 1981 are not available.

SOURCE Estimates by the authors, based on data from Statistics Canada, the Labour Force Survey.

general, the incidence is highest in those provinces with unemployment rates above the national average, such as Quebec and British Columbia, and lower in those provinces with below average unemployment, such as Ontario and the Prairie provinces. The one exception to this pattern is the Atlantic region, where provincial unemployment rates are higher than the national rate but LTU incidences are generally below the national average.

Incidences of LTU in 1989 were above their 1980 levels in all regions except Ontario. This persistence is a manifestation of an increased incongruity between job vacancies and job seekers in regional labour markets, resulting from a number of factors. The significant industrial restructuring in Quebec and British Columbia in the 1980s has certainly contributed to labour-supply/demand mismatches and thereby to long-term unemployment in both provinces. In British Columbia, this restructuring is partly the result of a prolonged decline in international prices for primary goods, which caused dislocation in the primary sector of that province's economy. In Quebec, the effects of restructuring are exacerbated by the relative immobility of labour due to cultural and language differences. The unevenness of the recovery from the 1981-82 recession has contributed further to the persistence of LTU in some regions. Recent regional long-term unemployment can thus be seen as both a cause and a symptom of labour market maladjustments.

Demographic Trends

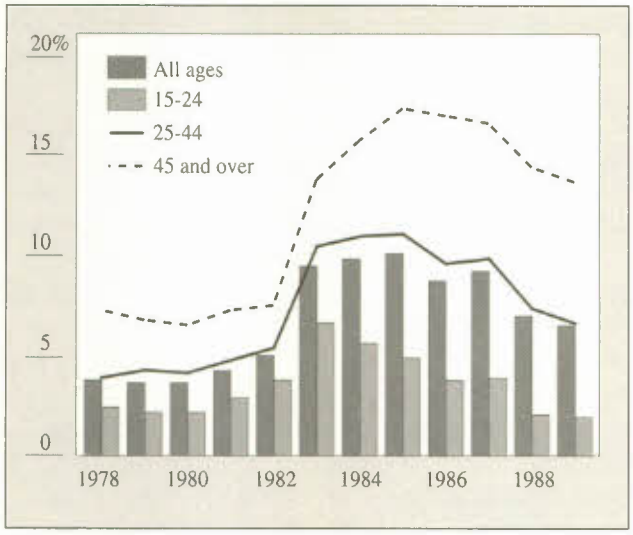
Many personal attributes contribute to an individual's likelihood, once unemployed, of remaining so for a long period. These include age, sex, marital status, education, and work experience. In Canada, the risk of long-term unemployment is most strongly correlated with age.[3]

The incidence of LTU tends to rise with age, with young workers (aged 15-24) the least susceptible to prolonged unemployment (Chart 8-3). One important reason for this is young people's much higher propensity to leave the labour force, often to continue their education [Hasan and de Broucker 1985]. For many, further education provides an alternative to lengthy unemployment. It is notable also that since 1983 the incidence of LTU in this group has been declining both in absolute terms and relative to other age groups. Two major factors probably account for this decline: increased participation in education and the easing of pressures in youth labour markets as their number declined in the 1980s.

Prime-aged workers (aged 25-44) are more likely to experience long-term unemployment than are youths, while older workers (those aged 45 and over) are the most vulnerable. These age-related disparities have widened during the

Chart 8-3

Incidence of Long-Term Unemployment by Age, Canada, 1978-89



SOURCE Estimates by the authors, based on data from Statistics Canada, the Labour Force Survey.

1980s, as the incidence of LTU first increased more steeply and then declined more slowly among older workers.

The dramatic rise in the incidence of LTU among workers over the age of 45 suggests that this group has significant adjustment problems, and the persistence of this long-term unemployment at elevated levels indicates that these problems have not been resolved by the general economic recovery between 1983 and 1989. Workers in this age group have characteristics that might place them at particular risk for prolonged unemployment when they lose their jobs. Their skills are often highly firm-specific, making it difficult for them to adapt to new work environments, while their high rate of home ownership makes their relocation costs high relative to those of other groups. Moreover, older workers might encounter age discrimination among prospective employers (see Chapter 7).

From a policy perspective, one important issue is whether the adjustment problems of older workers are related primarily to age, per se, or whether other characteristics are important. Once unemployed, is an older worker more likely to become long-term unemployed than a younger worker with similar characteristics?

To address these questions, we used data from the Labour Market Activity Survey (LMAS) to calculate the probabilities that workers with certain characteristics would become long-term unemployed independent of other characteristics (Table 8-3). The results can be summarized as follows:

Table 8-3

Conditional Probability of Long-Term Unemployment, Canada, 1986[1]

	Probability
Variable:	
Canada	0.321
Sex	
Male	0.333
Female	0.306
Age (years)	
17-19	0.208
20-24	0.291
25-34	0.363
35-44	0.365
45-54	0.393
55-64	0.472
Education	
None or elementary	0.314
High school (some or completed)	0.269
Some postsecondary	0.256
Postsecondary (certificate or diploma)	0.234
University	0.188
Marital status	
Married	0.351
Single	0.387
Other	0.434
Household status	
Head	0.343
Nonhead	0.394
Student status	
Student	0.210
Nonstudent	0.364
Regions	
Atlantic	0.365
Quebec	0.325
Prairie	0.257
British Columbia	0.345
Ontario	0.229
Reason for separation	
Temporary layoff	0.160
Other	0.325

1 Based on the maximum likelihood estimates of a logit model.

SOURCE Estimates by the authors, based on Statistics Canada, the Labour Market Activity Survey.

- The probability of becoming long-term unemployed increases with age; it is about three times higher for older workers than for younger workers.

- Individuals in the Atlantic provinces, British Columbia, and Quebec are more likely to become long-term unemployed than those in the Prairies and Ontario. The result for the Atlantic provinces indicates the importance of recurrent spells of unemployment, which is not surprising given the seasonal nature of employment in this region.

Is Long-Term Unemployment a Problem in Canada?

Long-term unemployment imposes considerable social and private costs. For society, its presence in significant numbers leads to the marginalization of a segment of the labour force, and therefore to higher costs for unemployment insurance and other social programs. For the individual, it erodes work skills, limits the prospects for further employment, and ultimately undermines morale. Over the longer term, the displacement of the long-term unemployed from the effective labour force could act to slow economic adjustment and reduce the potential for economic growth [OECD 1988, 95].

The growth of long-term unemployment also raises distributional concerns. The increasing concentration of total unemployment time among a relatively small number of long-term unemployed individuals places an undue share of the burden of unemployment on them. The effects of regional disparities in unemployment rates have been compounded by differential regional incidences. Older workers have been disproportionately affected by LTU. Furthermore, the increase in the incidence of LTU during the 1981-82 recession and its persistence throughout the subsequent recovery and expansion raise the likelihood that this pattern will recur during the present economic downturn and recovery.

On all counts – the social and private costs exacted, the inequitable nature of its impact, and the prospects for rising incidence over the current business cycle – it is apparent that long-term unemployment is a malignant presence in Canadian labour markets. It is a phenomenon that warrants further analysis in order to better our understanding of its causes and consequences, and requires policy action to limit its extent and mitigate its effects.

Is Canada's Experience Different?

Most OECD countries, including Canada, underwent an increase in long-term unemployment in the early and mid-1980s. However, the Canadian and U.S. experiences are notable in that, since the late 1970s, the two countries' LTU incidences have been much lower than those of any European country except Sweden (Table 8-4). This disparity has become particularly pronounced in the late 1980s, as the relatively large declines in the incidence of LTU that occurred in North America after 1985 did not occur in Europe. In fact, in some OECD countries – namely, Belgium, the Netherlands, the United Kingdom, and Japan – the incidence of LTU has continued to rise.

Table 8-4

Long-Term Unemployment and Total Unemployment,[1] Selected OECD Countries and Selected Years, 1979-88

	Incidence of long-term unemployment			
	1979-80	1981-82	1983-85	1986-88
United States	4.3 (6.5)	7.0 (8.7)	11.7 (8.1)	8.1 (6.2)
Canada	3.4 (7.5)	4.8 (9.3)	10.1 (11.2)	9.2 (8.7)
Sweden	6.2 (1.7)	7.2 (2.4)	11.4 (2.6)	8.2 (2.0)
Australia	19.0 (6.1)	20.1 (6.4)	29.9 (8.9)	28.2 (7.8)
France	31.5 (6.2)	36.2 (7.9)	43.8 (9.5)	46.0 (10.6)
Japan	16.3 (2.1)	14.2 (2.3)	13.7 (2.6)	19.2 (2.7)
Belgium	58.0 (7.5)	56.0 (10.9)	66.4 (12.6)	71.7 (11.7)
Germany (FRG)	18.5 (3.3)	18.7 (5.7)	30.7 (8.2)	32.0 (8.0)
Netherlands	26.5 (6.0)	26.8 (10.8)	51.2 (14.9)	56.0 (12.7)
United Kingdom	21.8 (5.3)	27.5 (9.8)	39.1 (11.5)	41.9 (10.6)

1 Figures in parentheses are total unemployment rates.

SOURCE Estimates by the authors, based on Organisation for Economic Co-operation and Development, Employment Outlook.

It is notable also that Canada's long-term unemployment in the latter part of the 1980s has been far less severe than that of many countries with equivalent or lower unemployment rates. For instance, Australia, the United Kingdom, and Germany have unemployment rates similar to Canada's, but they have far higher incidences of LTU. Japan had an unemployment rate less than one third of Canada's in 1988, but an LTU incidence three times higher. Canada and the United States, while severely affected by recession-related job losses, have, for some reason, been more successful than other countries at reintegrating workers displaced by recession. This international evidence suggests that the real reasons for the origins and persistence of LTU go beyond the increased rate of job loss associated with cyclical downturns, and are closely related to the speed with which the unemployed can be successfully reassimilated into productive employment.

The Causes of Long-Term Unemployment in Canada

The causes of LTU are inseparable from the causes of unemployment. Demand shocks, such as recession, and supply shocks, such as oil-price hikes, increase the rate of job loss in the economy. While most unemployed individuals find work quickly when economic conditions improve, a minority become locked in a long-term unemployment trap. This is generally due to the interaction between factors affecting labour demand, such as the evolving nature and composition of economic activity and the hiring preferences of employers; job seekers' personal characteristics, including age, skills, length of time unemployed; and the intensity of the job search. Our evidence from a number of sources indicates that while LTU is initially generated by an increased rate of job loss, its persistence is much more closely linked to the labour market's failure to rapidly reintegrate the unemployed.

Long-Term Unemployment and the Dynamics of Unemployment

In an accounting sense, unemployment increases whenever the inflow of newly unemployed persons into unemployment exceeds the outflow of newly hired workers and individuals who leave the labour force. A decline in the outflow caused by a reduction in the number of job openings will not only raise the level of unemployment, but also lengthen its duration, thereby contributing to the persistence of elevated unemployment rates. Some job seekers who would otherwise have found work will now remain unemployed.

Variations in inflows also have an impact on the persistence of unemployment. Suppose that a series of job losses causes an influx into unemployment. At first this will raise the level of unemployment and tend to depress its average duration, since an increased proportion of the unemployed are now newly out of work. Over time, however, if the increase in the influx is not matched by an increase in the outflow, many of the displaced workers will remain unemployed for longer periods of time.

The Canadian Evidence on Unemployment Inflows and Outflows

Evidence on inflows into and outflows from unemployment in Canada can be analysed by means of the Labour Force Survey, which allows us to measure the number of people each month who are employed, unemployed, or outside the labour force, and those who move between these states.[4]

The *inflow rate* is the number of individuals moving from employment or from outside the labour force into unemployment in a given month, as a proportion of the labour force. The *outflow rate* is the proportion of unemployed individuals who either find employment or leave the labour force in a given month. Both rates are significantly affected by the stage of the business cycle.

In 1981-82 the inflow rate increased sharply – by 22 per cent – with the onset of recession (Table 8-5). After 1984 it declined, and by 1989 it was lower than it was at the beginning of the decade. The outflow rate, on the other hand, dropped sharply in 1982-83 and then increased somewhat, but, like the inflow rate, was lower in 1989 than in 1981. Thus, during the recession and early recovery periods, both the faster rate of job loss (reflected in higher inflow rates) and the lower rate of hiring (reflected in lower outflow rates) contributed to the rise in unemployment. The persistence of high rates of unemployment throughout the recent expansion was due to the relative decline in outflow rates.

This decline in aggregate outflow rates can be attributed to workers over 25 (Chart 8-4).[5] The relatively high inflow and low outflow rates of prime-aged and older workers during the 1983-89 period help explain the recent persistence of unemployment in Canada. Members of these groups continued to be subject to long spells of unemployment throughout the expansionary phase.

Younger people (aged 15-24) have consistently had higher rates of inflow and outflow than this older group, indicating more movement into and out of employment and

Table 8-5

Annual Averages of Monthly Inflow and Outflow Rates, Canada, 1976-89

	Inflow rate	Outflow rate
	(Per cent)	
1976	3.3	43.4
1977	3.4	41.0
1978	3.5	39.1
1979	3.3	41.8
1980	3.2	41.1
1981	3.2	42.6
1982	3.9	37.0
1983	4.1	33.0
1984	4.2	35.0
1985	3.9	34.8
1986	3.6	36.5
1987	3.4	36.2
1988	3.1	38.3
1989	2.9	38.0

SOURCE Estimates by the authors, based on Statistics Canada, gross flows data, and the Labour Force Survey.

the labour force. Since the recession, their inflow rates have declined and outflow rates increased, signalling an improvement in their unemployment situation.

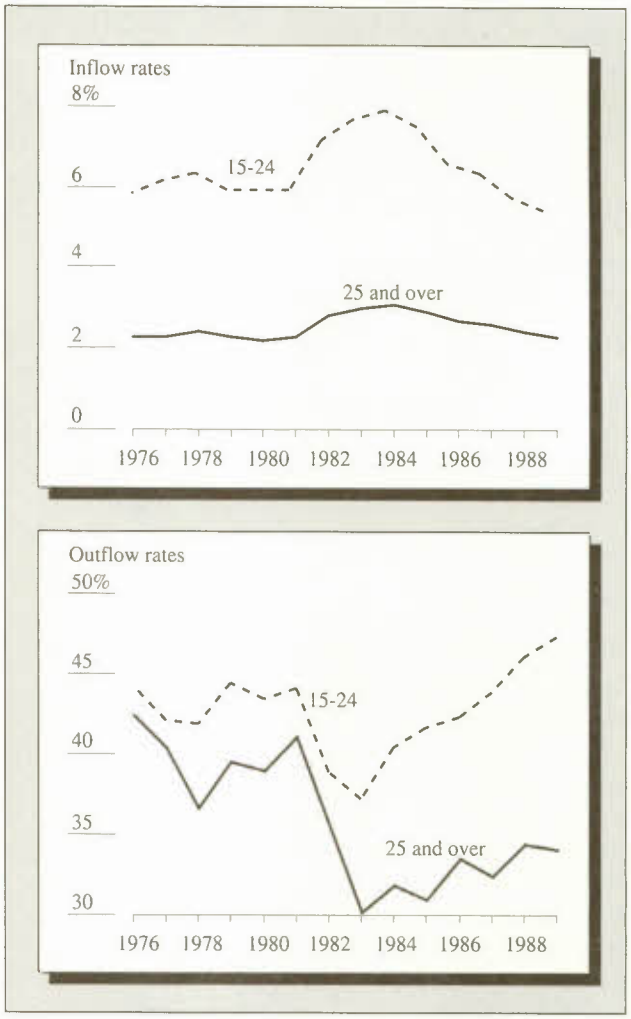
Regional Inflow and Outflow Rates

Evidence on regional inflow and outflow rates reinforces our finding that the slow adjustment of outflow rates during the expansionary period was responsible for the persistence of unemployment at the national level. All regions experienced increased inflows into and diminished outflows from unemployment during the recession of 1981-82 (Chart 8-5). The impact of the recession was most severe in British Columbia, where the inflow rate went up by about 38 per cent and the outflow rate declined by 24 per cent, and in Ontario, where the impacts on these two rates were about half of those in British Columbia.

The pattern of inflows into and outflows from unemployment during the recovery and expansion is one of sharp contrasts, and determines the regional differences in the persistence of unemployment in the 1980s. In 1989, among all the regions, only Quebec's inflow rate was lower and its outflow rate higher than the 1981 level; it took until 1988, however, for the outflow rate to reach its pre-recession level. In Ontario, the other province whose overall unemployment performance was impressive in the 1980s, the decline in unemployment between 1981 and 1989 was the result of a reduced inflow into unemployment rather than an increased outflow from it. The experience in the western provinces has not been as positive. In 1989, in British Columbia and the Prairies, the inflow rates remained above and the outflow rates significantly below their 1981 levels. As a result, the unemployment rates in these provinces remained persistently high in the 1980s. In the Atlantic region, the changes in the inflow and the outflow rates were relatively small during 1981-82. However, while the inflow rate remained relatively stable between 1981 and 1989, the outflow rate in 1989 was below its 1981 level.

Chart 8-4

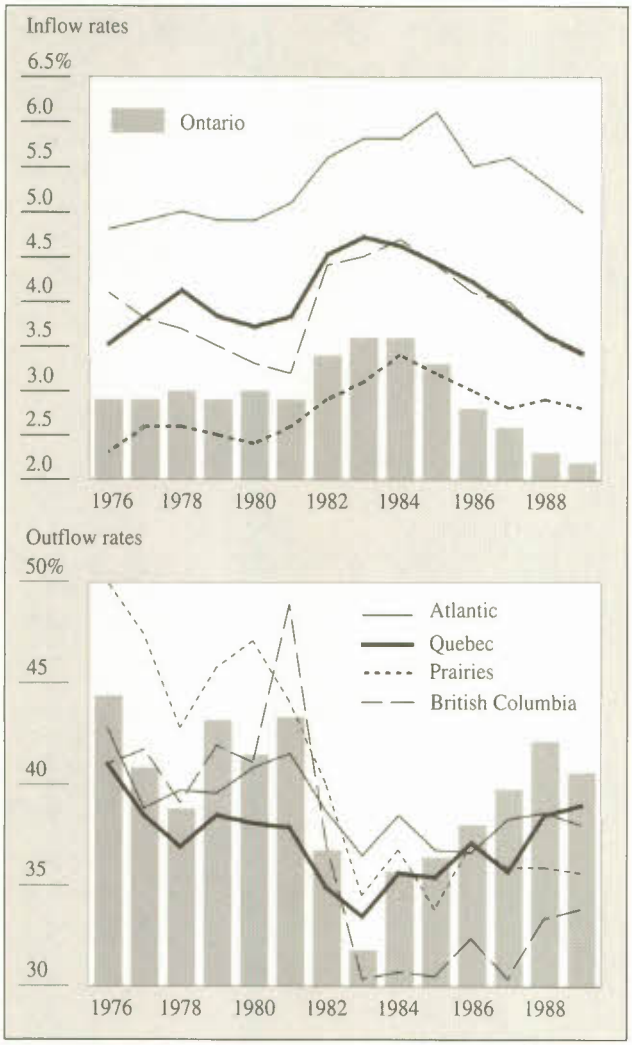
Inflow and Outflow Rates by Age, Canada, 1976-89



SOURCE Estimates by the authors, based on Statistics Canada, gross flows data and the Labour Force Survey.

Chart 8-5

Inflow and Outflow Rates by Region, Canada, 1976-89



SOURCE Estimates by the authors, based on Statistics Canada, gross flows data and the Labour Force Survey.

Regional inflow and outflow rates indicate the strong impact on unemployment of aggregate demand disturbances. Fluctuations in these rates in Ontario and Quebec are more responsive to cyclical variations than they are in other provinces; this is borne out by the fact that inflow and outflow rates have more or less returned to their pre-recessionary levels, albeit with fairly substantial lags. In western Canada, the persistence of high unemployment is also due in part to fluctuations in world commodity prices during the late 1970s and the early 1980s. Agricultural and energy prices were very firm in the 1970s, but very weak in the 1980s. The prolonged dip in these prices in the 1980s has had a strong impact on the resource-exporting provinces in western Canada and led to structural changes in the pattern of labour demand, which has in turn led to an increase in the inflow rates into and a decline in the outflow rates from unemployment.

The Exit Probability of the Long-Term Unemployed

As the duration of an individual's unemployment lengthens, finding work becomes more difficult, for several reasons. Long-term unemployed individuals often become discouraged, which could decrease the intensity of their search. As a result, their work skills could deteriorate through lack of use. And their declining prospects will be further reduced if employers screen out the long-term unemployed as undesirable job contenders.

Our evidence shows that the prospects for re-employment for the long-term unemployed have diminished considerably since the mid-1970s. In Chart 8-6 we compare the probabilities of exit from unemployment for the short-term unemployed (those who have been unemployed for less than three months) and the long-term unemployed (those who have been unemployed for between 6 and 12 months).[6]

The exit probabilities of the short- and long-term unemployed have diverged considerably since 1977, when they were almost identical. For both groups, they declined sharply during the 1981-82 recession. Nevertheless, while for the short-term unemployed the prospects of leaving unemployment had rebounded to nearly pre-recession levels

Chart 8-6

Exit Probabilities of the Short- and Long-Term Unemployed, Canada, 1976-89

SOURCE Estimates by the authors, based on data from Statistics Canada, the Labour Force Survey.

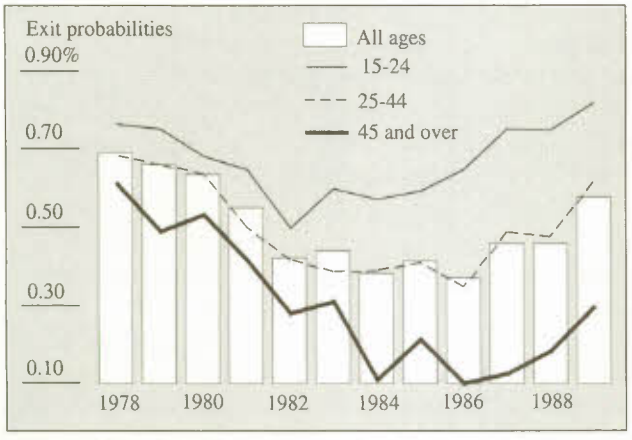
by 1989, the exit probability of the long-term unemployed remains well below its 1980-81 value.

In addition, a certain polarization in the experience of long-term unemployment occurred in the 1980s, with those age groups with the highest incidences of LTU also experiencing the greatest drop in prospects for re-employment, as measured by their exit probabilities (Chart 8-7). The exit probability is lowest among workers aged 45 and over; it declined significantly between 1981 and 1989 – from 52 to 24 per cent. By comparison, the exit probability for 15-24 year olds – already the highest of any age group – actually rose during this period from 65 to 78 per cent. That of the 25-44 year olds, the intermediate group, declined slightly from 59 to 52 per cent. Thus widening differences in exit probabilities have actually reinforced existing age-related differentials in long-term unemployment during the past decade.

Over the recent business cycle, the exit probabilities for the long-term unemployed have been highest in Ontario and Newfoundland, followed by the other Maritime provinces and the Prairie provinces; in Quebec, which has the largest number of long-term unemployed of any region, it has remained consistently below the national average (Chart 8-8). Exit probabilities declined in all regions except Newfoundland during the recession, but rebounded during the recovery and expansion, particularly in Ontario and British Columbia. In Ontario, this reflects a generally tight provincial labour market, while in British Columbia it is indicative of robust economic growth and increasingly favourable conditions in global commodity markets. The comparatively high exit probabilities in the Atlantic provinces account for the coexistence of relatively low LTU incidences and high unemployment rates in that region. Quebec's exit probability declined between 1981 and 1989 from 48 to 35 per cent, reflecting the negative impact of that province's large pool of long-term unemployed on any one individual's chances of escaping LTU.

Chart 8-7

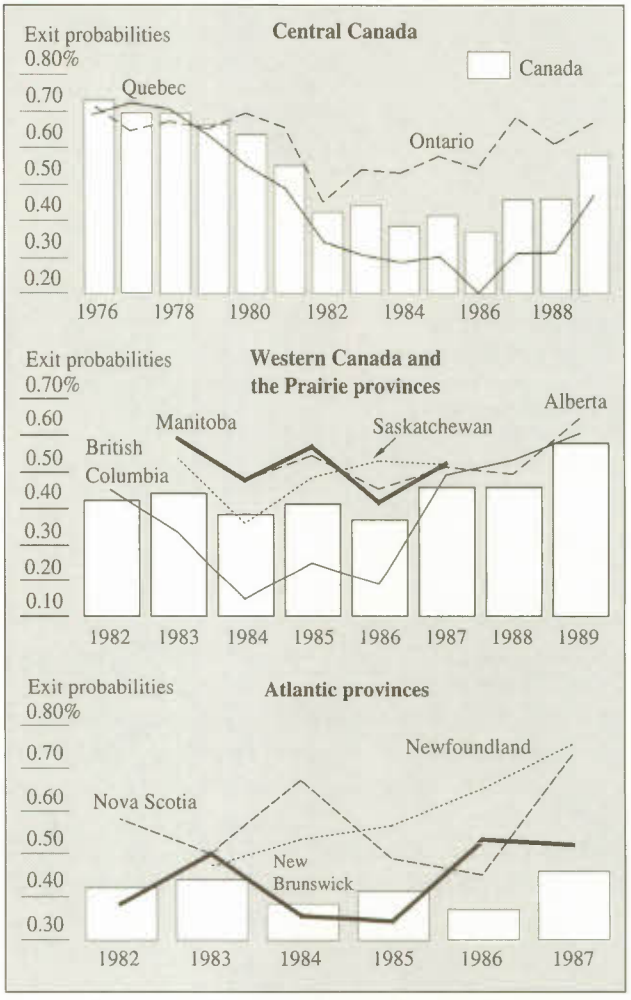
Exit Probabilities of the Long-Term Unemployed by Age, Canada, 1978-89



SOURCE Estimates by the authors, based on data from Statistics Canada, the Labour Force Survey.

Chart 8-8

Exit Probabilities of the Long-Term Unemployed by Region, Canada, Selected Periods, 1976-89



SOURCE Estimates by the authors, based on data from Statistics Canada, the Labour Force Survey.

Causes of the Decline in Exit Rates

In looking at the causes of declining exit probabilities, it is instructive to determine what the long-term unemployed

Table 8-6

Self-Reported Obstacles to Finding Work, Canada, 1986

	Percentage of group reporting each cause	
	Short-term unemployed	Long-term unemployed
	(Per cent)	
Not enough information	0.81	5.77
Not the right skills	1.37	10.35
Not enough education	1.05	8.06
Not enough experience	1.49	10.69
Shortage of jobs in the area	2.94	19.56

SOURCE Estimates by the authors, based on Statistics Canada, the Labour Market Activity Survey.

perceive as obstacles to finding a job. The 1986 Labour Market Activity Survey asked the unemployed what problems they encountered when looking for a job. Five choices were provided: 1) not enough information; 2) not the right skills; 3) not enough education; 4) not enough experience; and 5) a shortage of jobs in the area. Among both the long-term unemployed (defined here as those unemployed for more than six months of the year) and the short-term unemployed (those unemployed for less than six months of the year) the most frequently cited problems were a shortage of jobs in the area, followed by lack of experience and not possessing the right skills (Table 8-6). These problems were cited far more frequently by the long-term than by the short-term unemployed.

Lack of Jobs

Given the buoyant state of the economy in 1986, it is somewhat surprising that lack of jobs was cited as the single most important reason for not finding work. One explanation could be the severity of the 1981-82 recession. Overall, between 1981 and 1983 the number of unemployed rose by about half-a-million, with the steepest increase occurring among older workers. The number of unemployed workers aged 45 and over jumped by about 87 per cent during this period, compared with a 40-per-cent rise among workers aged 15-24 and a 52-per-cent increase among those aged 25-44. Employment also declined in 1982 for the first time since 1957-58 and did not regain its 1981 level until 1985. A reduced number of job opportunities has therefore heightened competition for work within the large pool of unemployed persons. Those who do not succeed in this competition face the prospect of long periods of unemployment.

The reduced rate of hiring of the long-term unemployed – evident in their diminished exit probability – appears, therefore, to be at least partly a cyclical problem. But the cyclical sensitivity of unemployment and long-term unemployment cannot be judged simply on the basis of absolute numbers of job seekers. Unemployment can rise either because the number of jobs has fallen, reflecting a reduced demand for labour, or because there are more people looking for work, indicating an increased supply of labour.

The ratio of employment to the working-aged population (i.e., the employment rate) provides a proxy measure of the demand for labour at a given time. Similarly, the participation rate can serve as an indicator of labour supply. The amount of unemployment will depend on relative movements in these two variables. A rise in the employment rate translates into a reduction in the unemployment rate if the participation rate remains constant. On the other hand, a rise in the participation rate will cause a rise in the unemployment rate unless the employment rate also rises.

Between 1981 and 1982, the employment rate declined by close to 5 percentage points because of heavy job losses (Table 8-7). At the same time, the participation rate fell by about 1 percentage point as significant numbers of individuals left the labour force. Had the participation rate not declined, the increase in the unemployment rate during this period would have been greater than the 3.5-percentage-point rise that actually occurred.

The recovery saw increases in both the employment and the participation rates. The decline in the unemployment rate observed during this period would have been greater had the participation rate not increased. The distribution of employment gains among the unemployed and new labour force entrants had significant implications for the persistence of unemployment. The new entrants competed for jobs that would have otherwise gone to the existing unemployed, thereby reducing the drop in unemployment. Those unemployed persons who did not find a job now lapsed into long-term unemployment.

The evidence on age-specific employment and participation rates reveals widely varying experiences for different age groups. For the young (aged 15-24), growth in the employment rate exceeded that of the participation rate during the recovery period, and their unemployment rate therefore declined between 1983 and 1988. Conversely, for the 25-54 year olds, growth in the participation rate exceeded that of the employment rate, thus offsetting some of the

Table 8-7

Decomposition of Changes in the Employment-to-Population Ratio, Canada, 1977-88

	Employment-to-population ratio	Employment-to-labour force ratio	Participation rate
	(Percentage point change)		
All ages			
1977	–0.27	–1.05	0.79
1978	1.52	–0.26	1.78
1979	2.19	1.00	1.17
1980	1.02	–0.04	1.07
1981	0.98	–0.10	1.08
1982	–4.71	–3.71	–1.04
1983	–0.55	–0.97	0.42
1984	1.38	0.68	0.70
1985	1.60	0.88	0.72
1986	1.67	1.04	0.63
1987	1.57	0.76	0.80
1988	1.94	1.18	0.76
15-24			
1977	0.25	–1.96	1.33
1978	1.86	–0.07	1.74
1979	1.59	1.79	2.77
1980	1.32	–0.26	1.64
1981	1.55	–0.12	0.85
1982	–3.34	–6.39	–2.76
1983	–0.05	–1.13	0.20
1984	1.13	2.40	1.20
1985	1.79	1.74	0.85
1986	1.93	1.57	1.46
1987	1.56	1.69	1.11
1988	1.87	1.87	0.70
25-54			
1977	0.25	–0.73	0.99
1978	1.86	–0.38	2.24
1979	1.59	0.76	0.83
1980	1.32	–0.02	1.34
1981	1.55	–0.19	1.74
1982	–3.34	–3.14	–0.21
1983	–0.05	–1.02	0.98
1984	1.13	0.12	1.01
1985	1.79	0.70	1.08
1986	1.93	0.88	1.05
1987	1.56	0.52	1.04
1988	1.87	0.96	0.91
55 and over			
1977	–1.33	–0.81	–0.52
1978	–0.20	–0.20	0.18
1979	0.80	0.72	0.08
1980	–1.12	0.16	–1.28
1981	–1.39	0.09	–1.48
1982	–3.76	–2.35	–1.44
1983	–2.97	–1.12	–1.87
1984	–1.61	0.19	–1.80
1985	–1.52	–0.25	–1.27
1986	–2.76	0.72	–3.46
1987	–1.14	0.19	–1.32
1988	0.50	0.93	–0.42

Table 8-7 (cont'd.)

SOURCE Estimates by the authors, based on Statistics Canada, gross flows data, and the Labour Force Survey.

impact of employment gains for the existing unemployed and contributing to the persistence of unemployment.

For workers aged 55 and over there has been a steady decline in the participation rate that merits close examination. It is possible that many of these workers withdrew from the labour force or took early retirement. Lengthy periods of joblessness leading to diminished employment prospects can generate feelings of depression, discouragement, and alienation that could directly reduce employability. In addition, those who experience prolonged or repeated spells of unemployment could be disadvantaged as a result of their loss of work experience or on-the-job training, a phenomenon called "scarring." This scarring could be reinforced if employers use prolonged unemployment as a screening device in hiring. Together, these effects might produce a vicious cycle whereby those who lack meaningful work skills are unable to find stable jobs that would enable them to acquire such skills. Older workers, whose skills are often highly firm-specific, are particularly vulnerable to this kind of pattern.

The Changing Nature of Jobs and Mismatches in the Labour Market

It could be argued that the changing nature of employment, rather than an insufficient number of jobs, was responsible for the decline in re-employment prospects for unemployed individuals during the past decade. It has been suggested that the recession of 1981-82 and the accompanying shifts in national and international markets produced a rationalization of the industrial structure in Canada that has had a significant impact on the composition of employment growth in the subsequent expansion. Three aspects of the emerging job structure are particularly relevant to

the growth of long-term unemployment: the evolution of the service sector as the predominant employer, the growth of nonstandard employment, and changing skill requirements.[7]

While the service sector has been expanding its share of total employment since the turn of the century, the pace of this expansion has accelerated in the past two decades to the point where services accounted for virtually all job growth in the 1980s. Associated with the rise of the service sector has been an increase in nonstandard jobs – part-time, short-term, and temporary work; and own-account self-employment. These types of employment, which are typically characterized by low pay and limited potential for advancement, account for half of all new jobs in the 1980s. At the same time, the skills needed are also changing. While information-based employment – that is, work primarily concerned with the creation and use of data and knowledge – accounted for less than half of all jobs in Canada in the 1970s, two thirds of new job creation between 1971 and 1986 was in this category. An acceleration in the growth of highly skilled jobs during the last decade, resulting partly from the shift of employment towards services, has been accompanied by a decline in the number of jobs at intermediate skill levels that characterize many goods industries. The proportion of low-skilled jobs which predominate in traditional service industries, has remained roughly constant throughout this period.

The changing composition of employment has significant implications for the ease with which displaced workers can find new jobs. The jobs created during the recovery were often radically different from those which unemployed workers lost during the recession. For instance, many of those who lost their jobs in the 1980s were employed in goods industries, typically in jobs with intermediate skill levels. Yet virtually all of the employment gains in the past decade have been in service industries, most frequently in jobs with either high-skill levels that workers leaving jobs in goods industries often do not possess, or very low-skill levels and associated low earnings. Growth in service industries has been heavily concentrated in large urban centres, while goods-sector job losses have often occurred outside these centres. Many of the jobs lost have been "standard" full-time, salaried positions, while a disproportionately large percentage of jobs gained have been nonstandard.

All of these factors have contributed to a mismatch between job openings and unemployed workers available to fill them, resulting in prolonged unemployment for some individuals.[8] For many unemployed workers, finding a job necessitates difficult compromises – moving to the city, accepting a part-time rather than a full-time job, or taking a lower-skilled position and a drop in income. Those who are reluctant or unable to make these compromises often face long periods of unemployment; this is particularly true of older workers, whose skills are often firm-specific and therefore less portable. While the changing nature of employment has increased the necessity for unemployed workers to move between industries, mobility between industries actually decreased in the 1980s [Gera and Rahman 1991, and Chapter 9 in this volume].

Reduced Search Intensity among the Long-Term Unemployed

Another factor contributing to long spells of unemployment could be that individuals who have been unemployed for long periods search less intensively – perhaps because they are disillusioned – and receive less information about potential employment as a result. This could explain the fact that many long-term unemployed individuals cited "lack of information" as one obstacle to finding work. Clemenson [1987] finds evidence that the long-term unemployed do search comparatively less intensively, and that they rely more on informal search methods such as checking with friends and relatives, looking at job advertisements, and placing or replying to advertisements. This could be a step in the process by which the long-term unemployed become a marginal element of the labour force.

Other Factors

Other factors might also prolong unemployment. For instance, it has been shown that the generosity of the unemployment insurance system increases the duration of unemployment [Milbourne et al. 1989] and changes the attitudes of the unemployed, leading to repeated spells of unemployment [House 1990]. Employers' uncertainty about future product demand and reactions to factors such as higher fixed nonwage costs might also affect their willingness to take on new employees [Flanagan 1988; Corak 1990*d*].

The Macroeconomic Implications of Long-Term Unemployment

Long-term unemployment has two important macroeconomic implications. First, because the long-term unemployed tend to become marginalized, their presence does not exert any significant downward pressure on wages. As a result, a rise in the unemployment rate could exert a low

disinflationary effect if there is significant long-term unemployment. Second, it could generate a process known as unemployment hysteresis, whereby high unemployment rates become self-perpetuating. In this section we examine each of these macroeconomic implications in turn.

Wage Inflation and Long-Term Unemployment

Labour unions typically negotiate wages on the basis of a markup on expected prices, while employers generally try to establish prices by marking up expected wages. If these markups are excessive, the result is higher inflation. The long-established trade-off between inflation and unemployment (expressed graphically in the Phillips curve) means that there tends to be an inverse correlation between the movements of these two economic variables; that is, a rise in unemployment is usually accompanied by a drop in the rate of inflation. However, this trade-off can be affected by changes in the composition of unemployment – particularly an increase in long-term unemployment. If, as time passes, the long-term unemployed cease to be active participants in the labour market, their presence will have progressively less downward impact on inflation. Therefore a rise in the incidence of LTU could permit higher wage inflation at a given rate of unemployment.

In order to empirically investigate the impact of LTU on wage inflation, it is necessary to separate the effects of short-term and long-term unemployment on wage movements. To accomplish this, we conducted a regression analysis to estimate the nature of the relationship between wage inflation and other economic variables, including short-term and long-term inflation, for the 1977-87 period.[9] The results show that the long-term unemployed (those continuously unemployed for 12 months or more) exerted little or no influence on Canadian wages during this period, but that increases in short-term unemployment depressed wages. To the extent that the long-term unemployed exert no pressure on wages, a policy-induced reduction in LTU will improve the unemployment/inflation trade-off.[10] This implies that measures to reduce LTU will also reduce the rate of unemployment accompanying any given rate of inflation.

Hysteresis and Long-Term Unemployment

The conventional notion in economics is that the rate of unemployment accompanying a stable rate of inflation, the so-called "nonaccelerating inflation rate of unemployment" (NAIRU) changes only due to structural changes in the economy. According to the concept of hysteresis, the NAIRU will change in response to movements in past unemployment rates, because persistently high unemployment leads to structural changes in the economy that cause the natural rate to rise. While there has been considerable research on the processes leading to hysteresis in Europe, less has been done on the Canadian experience. Nevertheless, there are some indications that hysteresis did contribute to the rise in unemployment in Canada [Burns 1990]. Both the deterioration of skills and the deprivation of job experience associated with long-term unemployment contribute to hysteresis, and to the persistence of elevated unemployment rates.

The effective exclusion of the long-term unemployed from the wage-bargaining process can also generate hysteresis through insider-outsider wage bargaining. The insider-outsider models are based on two arguments: 1) that turnover costs associated with hiring, training, and firing workers discourage firms from replacing existing workers (insiders) with unemployed workers (outsiders); and 2) that insiders are able to influence the wage-bargaining process without taking into account the interests of outsiders. A key implication of both arguments is that the influence of insiders on the wage-setting process prevents firms from reducing wages in the face of an excess supply of labour. As a result, unemployment might persist even when there are high levels of unemployment overall [Blanchard and Summers 1986; Lindbeck and Snower 1989].

Reducing Long-Term Unemployment: Policies and Prospects

Long-term unemployment can be reduced both through policies designed to reintegrate the long-term unemployed into the active work force, and through programs such as early retirement options for older workers that induce them to leave the labour force altogether. Because of the pressures imposed by the aging of the Canadian population, the latter approach is generally undesirable and should be viewed as a last resort. We therefore focus here on policies whose aim is to reintegrate the long-term unemployed into the productive labour force.

These policies generally fall into two categories. One method of helping the long-term unemployed to find work is by providing services that increase their competitiveness on the job market, such as training, placement assistance, and counselling. Another method is to expand employment opportunities for this group through targeted job-creation programs such as hiring subsidies, direct employment creation projects, and measures to promote self-employment.

The Job Development Program

While all labour market programs for the unemployed in Canada are accessible to the long-term unemployed, the major program dedicated exclusively to them is the federal Job Development Program, which provides training and work experience to individuals who have been out of work for at least 24 of the previous 30 weeks. Its objective is to reintegrate them into the labour force by increasing their competitiveness and providing them with new employment opportunities. The program consists of four options, which are outlined below.

1 The General Projects option subsidizes training on the job and/or at educational institutions for up to 52 weeks. Commercial employers receive subsidies of up to 60 per cent of participants' wages, subject to hourly and weekly ceilings, and nonprofit employers are fully subsidized, also subject to certain wage ceilings. Employers also receive additional subsidies for expenditures such as staff, training, capital, and operating costs.

2 Under the Individually Subsidized option, training programs that are designed to meet the specific needs of long-term unemployed individuals who also face other social or cultural barriers to employment are provided by a sponsor, who submits a comprehensive proposal. The subsidies are similar to those under the General Projects option, with the important exception that the wage subsidy declines over the life of the project, starting at 80 per cent for up to 13 weeks and decreasing to 25 per cent for the last 13 weeks.

3 The Severely Employment-Disadvantaged option subsidizes employment on community projects for individuals identified as having problems such as functional illiteracy, problematic work habits, lack of motivation, seriously inadequate education or training, prolonged periods of institutionalization, or a history of drug or alcohol abuse. Much higher subsidies are available under this option than under others. While the maximum program duration is 52 weeks, participants in this program can also take part in other federal programs under the Canadian Jobs Strategy for up to three years.

4 Under the Direct Purchase option, places are purchased in occupational training courses and programs offered in provincial educational institutions. The aim is to increase employment opportunities and earning potential by meeting the skill requirements of prospective employers.

Performance of the Job Development Program

The Job Development program has served a fairly high proportion of the long-term unemployed at a relatively low cost per participant. In 1988-89, for example, 89,000 people or about 42 per cent of the long-term unemployed participated at a cost to the federal government of $480.7 million, or approximately $5,400 per participant (Table 8-8).

Evaluations of the program indicate that it is having some success. For example, a one-year follow-up survey for 1987-88 conducted by Employment and Immigration Canada [1988] indicates that the impact rate – the percentage of individuals who were employed or in training one year after participating in the program – was 62.1 per cent. In addition, three-month follow-up surveys for April to December 1988 show that the skill-utilization rate – the percentage of employed participants who were using skills acquired while in the program – was 74 per cent. About 80 per cent of program participants in 1987-88 stated that the program would help them keep their present job or obtain a new or better one in the future.

Table 8-8

The Job Development Program and Long-Term Unemployment, Canada, 1985-89

	Number of long-term unemployed (1)	Total number participating (2)	Proportion of long-term unemployed participating (3) = (2)/(1)	Total expenditure
	(Thousands)	(Thousands)	(Per cent)	($ millions)
1985-86	322.8	96.1	29.7	326.6
1986-87	293.9	186.9	63.5	834.2
1987-88	269.2	110.0	40.8	596.8
1988-89	210.7	89.0	42.2	480.7

SOURCE Estimates by the authors, based on Employment and Immigration Canada, Annual Reports, and Statistics Canada, the Labour Force Survey.

A study of the program by Goss, Gilroy & Associates [1989] also concluded that it had a favourable impact on employability. Wage gains, however, were observable only for participants in the individually subsidized option. While program participants spent more time on unemployment insurance after completing the program than those who did not participate, the favourable postprogram employment patterns suggest that for many participants the unemployment spells were short. An employer survey indicated that displacement of other potential employees by participants in the Job Development Program was negligible.[11]

The Job Development Program thus appears to be a relatively effective way of reintegrating long-term unemployed individuals. It also responds to equity considerations by shifting the demand for labour towards them, thereby raising their incomes.

Concerns about the Job Development Program

There are two concerns about the current design of the program: the eligibility criterion, and the fact that it does not specifically target older workers.

Eligibility Criterion — The current eligibility criterion for participation is at least 24 weeks of unemployment out of the previous 30 weeks. This "24 out of 30" rule has been questioned. For example, the House of Commons Standing Committee on Labour, Employment, and Immigration recommended in April 1988 that the "24 out of 30" rule be waived for a minimum of 10 per cent of program participants in each region of Canada, and that it also be waived for all individuals residing in areas where the average unemployment rate exceeds one and one-half times the national average. The government accepted the first recommendation but rejected the second on the grounds that it could not be reconciled with the existing scope and intent of the Canadian Jobs Strategy.

Corak examined the eligibility requirements for the Job Development Program in a recent paper [1990*b*]. His analysis indicates that an overwhelming majority of individuals leave unemployment within four months of losing their job, and that after that the probability of leaving unemployment is significantly less. Thus persons who are likely to become long-term unemployed can be identified by about the fourth month of unemployment. Corak's conclusion is that the present six-month waiting period for eligibility should be shortened to four months.

Targeting Older Workers — The Job Development Program does not specifically target older workers who are long-term unemployed. Yet the evidence indicates that the incidence of long-term unemployment is significantly higher among older workers than among other age groups, and that this differential widened considerably over the last business cycle. Employers are often reluctant to hire them because of the perception that their shorter expected tenure does not justify hiring and retraining costs. The needs and problems of this group, then, should warrant special attention in the context of the Job Development Program.

The Reintegration of Older Workers

The reintegration of older workers takes on particular relevance in light of the aging of the Canadian population. *Legacies*, the 26th Annual Review of the Economic Council [1989], suggests that the proportion of the total population accounted for by the 20-64 year olds will decline from 60 per cent in 1988 to about 50 per cent in 2040. In this environment, older workers will have to play an increasingly important and productive role. It is in the national interest, therefore, to ensure their full participation – an objective endorsed by the Economic Council in its 1991 research report, *Good Jobs, Bad Jobs*.

Current Programs for Older Workers

The major Canadian labour market program addressing the needs of severely disadvantaged unemployed older workers – the Program for Older Worker Adjustment (POWA) – is compensatory in nature. Despite its name, it contains no adjustment component per se. It is a joint federal-provincial program and provides income support of between $600 and $1,000 per month to workers aged 55-64 who lose their jobs in a major layoff, remain unemployed after exhausting their unemployment insurance entitlement, and have no realistic prospects for re-employment through regular training or mobility assistance programs. Compensatory programs such as POWA tend to be expensive, and consequently, to have very restricted coverage. Moreover, they ignore the productive potential of older workers.

Some recent programs have emphasized reintegration. For example, the federal Outreach program enlists the aid of community-based organizations to extend employment services to clients whose needs might be better served in this way than by Canada Employment Centres. In 1988-89, 13 special projects were created for the long-term unemployed and eight for older workers.

One provincial program emphasizing the reintegration of older workers is Transitions, which provides financial incentives to Ontario workers aged 45 or older to undertake training in order to facilitate their re-employment. Each participant is provided with $5,000 in training credits, valid over two years, which can be applied against formal training expenses incurred by an employer and/or against tuition fees for courses offered by public or private training institutions. Demand for the program so far has been strong, exceeding its funding capacity. In the 1988-89 fiscal year, its $4 million budget financed training for 850 people; there were 1,900 applicants of whom 1,300 were eligible. Between April 1989 and December 1989, 1,800 people applied for the program, of whom 1,300 were eligible and 1,000 received training.

Policy Innovations

One desirable policy innovation is to make the targeting of assistance to older workers preventive in nature. For example, *ex ante* assistance could be provided when permanent layoffs occur or when factories and other large employers are closed down, displacing large numbers of older workers. The principles of Ontario's Transitions program should be adopted by all other jurisdictions in Canada.

In addition, because of the regional nature of long-term unemployment in Canada, placement and counselling services would be most effective at local levels. To this end, one policy instrument could be the formation of "job clubs" [OECD 1988] that could include volunteers from local business and community organizations as well as previously long-term unemployed individuals who have succeeded in finding work.

Policies addressing long-term unemployed older workers should take into account both efficiency and equity. Providing relatively higher employment subsidies for older workers, as in Australia and Germany, provides a greater incentive to hire them [OECD 1988]. Making part-time employment available might be another solution for those older workers whose skills are less in demand.

In a similar vein, the experience of some OECD countries suggests that schemes to generate self-employment have had encouraging results. However, it has also been found that self-employment promotion schemes are more successful for those whose unemployment has been of short duration and whose skills have not been seriously eroded. Here too, the *ex ante* identification of unemployed older workers who might be prone to long-term unemployment is important.

Conclusions

The incidence of long-term unemployment in Canada increased during the 1981-89 business cycle, and there is a high probability that it will rise further during the current economic downturn. Despite its relatively low incidence by international standards, Canada's rising incidence of LTU, its uneven distribution – particularly across age categories and regions – and the growing concentration of time spent unemployed among the long-term unemployed are all compelling reasons to include long-term unemployment as a major focus of Canadian labour market policy. This policy objective becomes even more important when one considers the implications for labour market adjustment of long-term unemployment, and the scarring effects it has on individuals.

Long-term unemployment is one manifestation of a transformation in the nature of employment that is occurring as a result of structural changes in the economy. Declining resource prices, a series of energy-price shocks, and increasing international competition have translated into a rationalization of Canadian industry that has profoundly affected both the nature and regional distribution of employment. The mismatches between labour demand and labour supply arising from this rationalization, together with the severe recession of the early 1980s, resulted in long spells of unemployment for some workers. It is clear that the characteristics of emerging jobs have been at least as important as the characteristics of individual workers in determining the sources of long-term unemployment.

The unevenness of this structural change and of its impact on local and regional economies has resulted in significant regional discrepancies in the severity of long-term unemployment. It is essential that policies designed to assist the long-term unemployed recognize and address the regional diversity of unemployment.

The major federal program addressing the needs of the long-term unemployed, the Job Development Program, has generally performed well. Together, this program and the Canada Employment Centres provide a comprehensive and interlinked set of services for the long-term unemployed. But the Job Development Program should be reoriented to specifically assist older workers, who are most prone to long-term unemployment and therefore most in need of help. In addition, certain changes in the program's design would improve its effectiveness. For example, shortening the eligibility criterion from 24 to 17 weeks unemployment out of 30 would permit earlier identification of those most at risk of becoming long-term unemployed, thereby minimizing the erosion of their skills.

The approach to the older long-term unemployed encapsulated in the Program for Older Worker Adjustment also needs some rethinking. While a compensatory program such as POWA eases their financial situation, in the longer run their reintegration into the regular work force deserves special policy attention. These reintegration efforts should encompass program design elements that not only enhance the competitiveness of the older long-term unemployed, but also provide them, at least initially, with employment.

9 Sectoral Labour Mobility, Unemployment, and Labour Market Adjustment in Canada: Evidence from the 1980s

Surendra Gera and Syed Sajjadur Rahman

Shifts in the industrial composition of economic activity pose considerable challenges to workers. These shifts can be either economy-wide or sector-specific, and lead to changes in the industrial composition of employment, as some industries expand and others contract. The challenge for workers is to adjust quickly to these shifting patterns of employment. If the pace of labour reallocation from declining sectors to expanding sectors is fast, such changes create little or no unemployment. But if the pace of adjustment is slow, unemployment will increase. Understanding the interactions between sectoral labour mobility processes and unemployment is critical for the design of labour market policies that will alleviate the stresses associated with changes in the industrial composition of economic activities.

The purpose of this paper is to investigate the relationships between intersectoral labour mobility, unemployment, and the labour market adjustment process in Canada in the 1980s. We focus on three key questions. First, we ask whether, at the aggregate level, periods of high unemployment are characterized by low interindustry mobility. Such circumstances can lead to persistence in unemployment. Also, slow mobility combined with large inflows into the unemployment pool can turn a negative transitory shock into a more permanent effect. The result is an increase in the natural rate of unemployment. Second, at the microeconomic level, the paper examines sectoral mobility patterns of individuals who are separated from their jobs. Are there differences in interindustry mobility among different groups of individuals? For example, is the duration of joblessness higher for individuals who move to a different industrial sector after having separated from a job (industry movers) or for individuals who seek a new job within the same industrial sector (industry stayers)? Third, what factors inhibit interindustry labour mobility?

The basis for the analysis in this paper is what is commonly referred to as the "sectoral-shifts hypothesis." This hypothesis was first presented for the United States by Lilien [1982] to explain the relationship between sectoral labour mobility and unemployment. The sectoral-shifts hypothesis is summarized in the first section. The second section provides evidence on intersectoral labour mobility in Canada, and in the third section, the factors that may lead to slow labour mobility between industrial sectors are identified. Our major conclusions are presented in the final section.

The Sectoral-Shifts Hypothesis: Implications for Sectoral Labour Mobility and Unemployment

In every economy, there are some periods during which there are exceptional shifts in the pattern of labour demand, and hence employment. These shifts can reflect aggregate disturbances which affect some industries more than others, or highly specific shocks that affect only a small number of industries. These industry-specific shocks include, for example, rapid technological change, shifts in product demand, and major changes in input costs (for example, the oil-price shock of the late 1970s). If workers can move between firms and industries easily and quickly, the adjustment to such shocks would be accomplished without generating significant unemployment. If, on the other hand, the labour reallocation process is slow, the duration of unemployment will increase.

The suggestion that intersectoral labour mobility and unemployment are intimately linked was initially proposed by Lilien in the sectoral-shifts hypothesis [1982, 1982*a*]. He argued that the pace of the labour reallocation that occurs as a result of sectoral shifts in employment is critical in determining the natural rate of unemployment. The slower the pace, the higher the natural rate is likely to be. As a result, the natural rate of unemployment will vary over time according to the amount of labour reallocation that is required.

The sectoral-shifts hypothesis offered an explanation for the rising trend in the unemployment rate observed in the United States, particularly during the 1970s. It was a departure from the traditional macroeconomic view that aggregate fluctuations are generally caused by aggregate shocks – that is, that much of the observed unemployment is related to the business cycle. Lilien suggested that sector-specific events, such as those mentioned above, lead firms to adjust the size of their labour force over and above the normal continual adjustments. If the pace of labour reallocation is slow, it will take time for separated workers to be matched

with new jobs and an increase in the level of unemployment will be inevitable.

This argument raises a number of interesting issues.[1] For example, will periods of high unemployment be associated with high or with low levels of sectoral mobility? Lilien [1987] suggests that "unemployment generated by a particular set of demand shocks is inversely not positively related to the speed of labour reallocation." In other words, the lower the level of sectoral mobility, the slower the pace of reallocation, and the higher the unemployment rate. At the individual level, who then would account for the major part of the variations in unemployment caused by sectoral shifts? Would it be the "stayers," who, having lost their job, find a job in the same industry, or the "movers," who, having lost their job in one industry, find a new job in another industry? To Lilien, "it is the failure of workers to abandon their sectors of attachment for industries where they may be productively employed that is responsible for rising unemployment" [1987, 65]. In other words, stayers should account for a higher proportion of unemployment.[2]

The relationship between intersectoral labour mobility and unemployment has been studied for the United States by Murphy and Topel [1987]. They find that intersectoral mobility declined sharply during the recessions of 1975 and 1983. Thus the pace of labour reallocation appears to be greater in expansionary periods than in recessionary periods. Murphy and Topel also found that stayers contributed more to cyclical fluctuations in unemployment levels than movers. They interpret their evidence as contradicting Lilien's hypothesis.[3]

Sectoral Labour Mobility and Unemployment: The Canadian Evidence

In this section, we present evidence on intra- and interindustry labour mobility, unemployment, and the overall labour market adjustment process in Canada. One set of data pertains to the behaviour of the total unemployment rate and interindustry labour mobility patterns over the most recent business cycle (1981-86). The other set of data is evidence on the characteristics and postseparation status of individuals who were separated from their jobs in 1986. Particular attention is paid to the unemployment experience of industry stayers and movers.

Table 9-1 presents the evidence on interindustry mobility rates – defined as the proportion of the employed who changed industries – for Canada and the United States for the 1980-86 period. The Canadian evidence is based on data from Osberg [1988] and the U.S. evidence is from Murphy and Topel [1987]. The Canadian mobility rates are based on a 52-industry classification and are constructed using Labour Force Survey (LFS) data. Osberg constructed a datafile based on a special feature of the LFS – namely, that respondents were interviewed monthly over a six-month period. It was therefore possible to compare responses to the September interviews with the responses of the same people to Statistics Canada's Annual Work Patterns Survey (AWPS) of the following January and with the LFS of the following February.

Table 9-1

Aggregate Unemployment and Interindustrial Mobility by Gender, Canada and the United States, 1980-81, 1982-83, and 1985-86

	1980-81	1982-83	1985-86
		(Per cent)	
Canada			
Mobility rate[1]			
Male	9.42	6.92	8.52
Female	10.08	5.54	8.94
Unemployment rate	7.30	12.40	9.80
United States			
Mobility rate (male)[2]	8.24	7.57	7.62*
Unemployment rate	6.15	9.33	5.82

*Data are for 1985.

1 The annual mobility rates for Canada are defined as the proportion of those employed in both September and February who changed industries of employment.

2 The annual mobility rates for the United States are defined as the proportion of experienced male workers who reported that their current employer is different from the one who employed them for the longest period over the past year.

SOURCE Estimates by the authors, based on Osberg [1988]; and Murphy and Topel [1987].

The results show that during the 1980s interindustry mobility was procyclical in Canada, increasing during periods of economic expansion and decreasing during economic slowdowns; in other words, the mobility rate and the total unemployment rate moved in opposite directions. Interindustry mobility tended to decline during the high-unemployment period of 1982-83 and to increase during periods of low unemployment. On an annual basis, about 8.5 per cent of male workers and about 9 per cent of female workers changed industries during 1985-86.[4] These findings suggest that Lilien's postulation of a negative relationship between mobility rates and the total unemployment rate holds true for Canada.

The inverse relationship between interindustry labour mobility and level of unemployment over the 1981-86 business cycle indicates that labour market maladjustments intensified during that period, which was reflected in the persistence of unemployment.

The data in Table 9-1 indicate that the negative relationship between interindustry labour mobility and unemployment rate also holds for the United States. However, there is greater upward and downward fluctuation in the mobility rate for males in Canada than in the United States over the course of the business cycle. Also, Canada's unemployment rate both rose more sharply during the recession and fell more slowly during the subsequent recovery and expansion years than did that of the United States. These differences suggest that there is an asymmetry between the two countries with respect to the responses of their unemployment rates to changes in interindustry mobility. Canadian mobility rates were more volatile in response to changes in the level of economic activity; however, while Canada's unemployment rose faster during the recession, its subsequent decline was sluggish compared to that of the United States. This means that labour market adjustment was slower in Canada in the postrecession years.

What happens to workers who separate from their jobs? How do they adjust to their new circumstances? Successful labour market adjustment depends on their ability to find new employment opportunities. Some labour market conditions will ease the transition from one job to another. The most favourable condition is one where there is an abundance of jobs. Good matches between the skills demanded and supplied is also an important consideration. In addition, a dynamic labour market characterized by high industrial and occupational mobility and by the prospect of high wages in subsequent jobs enhances the possibility of relatively painless adjustment. Unfortunately these ideal circumstances do not always exist. When they don't, the adjustment process can be relatively painful.

We examined the intersectoral mobility of individuals in the labour force. The key questions we asked are: what is the sectoral mobility of workers who have become separated from their jobs? Do they gain or lose in terms of wages? What is their unemployment experience? Do industry stayers or movers experience higher unemployment?

The evidence on individual adjustments is drawn from the Labour Market Activity Survey (LMAS) of 1986 (details on the LMAS are provided in Appendix D). The focus is on separations from the first job held in 1986, the success or failure of the separated individuals in finding a second job in 1986, and the characteristics of the second job.[5]

The evidence presented for 1986 should not be interpreted as representative of sectoral labour mobility and unemployment experiences over all phases of the business cycle. Rather, it should be treated as evidence pertaining to a specific point in time and at a given level of total employment and unemployment. Nevertheless, the evidence for 1986 is important, for that year was part of an expansionary phase of the Canadian economy and followed the preceding recessionary phase by about four years. The mobility patterns observed in 1986 may therefore be said to be relatively independent of the lingering effects of the downturn.

Finally, a distinction is made between individuals who found a new job in 1986 after being separated from their previous job earlier in the year, and those who remained jobless. Not all individuals who separate from their job in a given year will find another job in the same year. Some may not find a new job at all and may suffer long spells of unemployment. For policy purposes, it is important to know the characteristics of the latter group and understand their particular adjustment experiences.

Separation and Postseparation Experiences from the LMAS

Our estimates from the LMAS data show that over 28 per cent of the Canadian labour force – about 3.6 million workers – experienced at least one job separation during 1986. This provides an indication of the turnover rate – the rate at which workers normally leave their employers – in the labour market. It suggests that the Canadian labour market is characterized by a considerable amount of "churning."

Job separations can occur for various reasons. Workers can be laid off as a result of firm-initiated decisions (**involuntary separations**) which are frequently related to fluctuations in demand and production levels. Such layoffs may be temporary (the worker expects to be recalled by the same firm) or permanent. Separations can also be worker-initiated (**quits or voluntary separations**). Within this category, workers quit for either **personal or nonpersonal** reasons, for example, quitting for better wages and job opportunities is considered a **nonpersonal** reason. Examples of personal reasons for quitting are illness, returning to school, or family responsibilities. There is also an **"other reason"** category (see Appendix D for precise definitions of the various types of separation).

Industrial and Occupational Mobility

The pattern of movement of workers between firms, industries, and sectors and between occupations is an

important indicator of flexibility in the labour market. Highly flexible labour markets facilitate the movement of workers from job to job. The LMAS provides details about the movement of workers between jobs in 52 industries and 49 occupations. The evidence provided here considers the industry and occupation characteristics at various levels of aggregation (see Appendix D for details).

Table 9-2 reports the mobility of workers between industries by selected characteristics. Four types of mobility are considered. First, do the separated workers find a new job in the **same industry**? Second, do they move to a closely related industry but not to the same industry (**same industry group**)? Here, the 52 industries are collapsed into seven industry groups. One example of this type of mobility would be the movement from one industry to another within the manufacturing industry group. Third, do they stay within the same sector but outside the same industry and the same industry group (**same sector**)? The sectors considered here are the goods and the service sectors. Fourth, do they move to a **new sector**?

A majority of the separated workers (more than 60 per cent) found another job in a different industry in 1986. On a disaggregated basis:

- The mobility patterns of the involuntarily separated and the quits were broadly similar. Close to one quarter of the job finders moved to a new sector.

- While interindustry mobility generally tended to decline with age, the two youngest age groups (16-19 and 20-24) demonstrated relatively high mobility.

- Separated male workers were more mobile than their female counterparts.

Table 9-2

Job Finders' Industrial Mobility by Selected Demographic Characteristics, Canada, 1986

	Same industry	Same industry group	Same sector	New sector	Total
			(Per cent)		
All job finders	38.2	12.0	27.5	22.3	100.0
Reason for separation					
Quit – nonpersonal	39.4	11.8	27.6	21.2	100.0
Involuntary	34.5	11.9	28.0	25.5	100.0
Age					
16-19	28.7	11.8	38.6	20.9	100.0
20-24	35.6	11.7	30.3	22.5	100.0
25-34	40.3	12.4	23.1	24.2	100.0
35-44	43.3	12.1	21.9	22.7	100.0
45-54	50.3	9.4	25.1	15.2	100.0
55-64	42.2	18.5	18.7	20.6	100.0
Sex					
Male	36.4	12.1	24.3	27.2	100.0
Female	40.5	11.9	31.5	16.1	100.0
Region					
Atlantic	33.2	10.6	31.2	24.8	100.0
Quebec	39.8	11.6	25.5	23.2	100.0
Ontario	38.0	12.9	26.8	22.3	100.0
Prairie	35.1	12.8	30.1	22.0	100.0
British Columbia	45.0	8.6	27.0	19.3	100.0

SOURCE Estimates by the authors, based on the Labour Market Activity Survey.

• There was some diversity in regional industrial mobility patterns. British Columbia had the highest proportion (45 per cent) of separated workers staying in their original industry. In contrast, the proportion of separated workers who left their original industry was the highest in the Atlantic provinces; this could be attributed to the seasonal nature of employment there.

Table 9-3 reports the movement of workers between different occupations. Here, **same occupational group** is defined as closely related occupations other than the original occupation (**same occupation**). **New occupational group** includes occupations other than the original and closely related occupations. The evidence suggests that a large proportion of the separated workers moved to new occupations in 1986. About 38 per cent of the job finders stayed with their previous occupations, about 10 per cent moved to a closely related occupation, and just over half moved into a second job in a new occupation group. Other notable results are:

• There was very little difference between the occupational mobility patterns of the quits and the involuntarily separated.

• Occupational mobility declined with age.

• Females were less likely to move to a new occupational group than males.

• Over half of the job finders in all regions found those new jobs in a new occupation. Overall, occupational mobility patterns were similar across the regions, though movement to a new occupational group was highest in the Atlantic provinces.

Wage Changes between the First and Second Job

One important consideration in the labour adjustment process and particularly the costs associated with it, is the

Table 9-3

Job Finders' Occupational Mobility by Selected Demographic Characteristics, Canada, 1986

	Same occupation	Same occupational group	New occupational group	Total
		(Per cent)		
All job finders	38.5	10.0	51.5	100.0
Reason for separation				
Quit – nonpersonal	39.2	9.5	51.2	100.0
Involuntary	38.8	9.7	51.5	100.0
Age				
16-19	23.1	8.3	68.5	100.0
20-24	33.1	10.3	56.6	100.0
25-34	43.4	10.3	46.2	100.0
35-44	45.9	10.2	43.9	100.0
45-54	53.2	10.6	36.1	100.0
55-64	55.0	10.7	34.2	100.0
Sex				
Male	37.7	7.9	54.4	100.0
Female	39.4	12.8	47.8	100.0
Region				
Atlantic	35.4	9.2	55.4	100.0
Quebec	39.2	9.2	51.6	100.0
Ontario	38.3	11.3	50.2	100.0
Prairie	37.4	9.1	53.4	100.0
British Columbia	41.8	8.0	50.1	100.0

SOURCE Estimates by the authors, based on the Labour Market Activity Survey.

Table 9-4

Job Finders' Wage Outcome by Industrial and Occupational Mobility, Canada, 1986

	Wage increase	No wage change	Wage decrease	Total
		(Per cent)		
All job finders	54.5	13.8	31.7	100.0
Industrial mobility				
Stayers				
Same industry	55.7	17.9	26.4	100.0
Same industry group	54.8	12.0	33.2	100.0
Same sector	53.9	11.3	34.7	100.0
Movers				
New industry	53.8	11.3	34.9	100.0
New industry group	53.6	11.1	35.3	100.0
New sector	53.1	10.9	36.0	100.0
Occupational mobility				
Stayers				
Same occupation	53.5	18.9	27.6	100.0
Same occupational group	57.3	11.1	31.6	100.0
Movers				
New occupation	55.2	10.7	3.1	100.0
New occupational group	54.8	10.6	34.6	100.0

SOURCE Estimates by the authors, based on the Labour Market Activity Survey.

impact of job changes on workers' incomes. A decrease in wages following a job change implies a costly adjustment from the worker's point of view. In addition, the expectation that wages may decline following a move may inhibit job mobility and thus the allocative efficiency of the labour market.

We find, however, that over half of the job finders experienced a wage gain, whether they changed industries or sectors or not (Table 9-4). The same pattern is evident both for workers who moved between different occupations and those who stayed in their initial occupation.

Another important aspect of changes in wages is the magnitudes of those changes. Table 9-5 shows the magnitude of hourly wage gains and losses incurred in the transition from one job to another. Among the wage gainers, the group that benefited the most was those who moved to a new job in a new sector. The greatest wage losses were shown by individuals moving to a closely related occupational group. In general, the average hourly wage loss exceeded the average hourly wage gain, except for workers moving to a new sector or within the same industry group.

The Duration of Joblessness and Sectoral Labour Mobility

The length of time spent between jobs is often used as an indicator of the hardship associated with job separation and of the ease with which the labour market facilitates worker mobility. The LMAS data indicate that a majority of the job finders were able to make the transition with no or little time spent between jobs. About one third switched from one job to another with no intervening spell of joblessness. This includes those who searched for a new job while still employed, a large proportion of individuals who quit their jobs, and prime-aged and male workers. Workers who resided in Ontario were also heavily represented in this group. The evidence indicates that about two thirds of all job finders found a job within four weeks and another 23 per cent found a job within the next 10 weeks.

However, not all job finders were so fortunate – 3.2 per cent waited 27 weeks or more before finding a new job. While this proportion is relatively small, their contribution to the persistence of unemployment in the 1980s was significant. Evidence suggests that, in 1986, 23.5 per cent of the unemployed had been continuously unemployed for 27 weeks or more.[6] As Table 9-6 shows, the incidence of

Table 9-5

Job Finders' Average Hourly Wage Gains and Losses by Industrial and Occupational Mobility, Canada, 1986

	Average wage gain	Average wage loss
	(Dollars per hour)	
All job finders	2.58	2.79
Industrial mobility		
Stayers		
Same industry	2.47	2.98
Same industry group	2.79	2.71
Same sector	2.40	2.58
Movers		
New industry	2.65	2.70
New industry group	2.61	2.70
New sector	2.90	2.84
Occupational mobility		
Stayers		
Same occupation	2.45	2.54
Same occupational group	2.54	4.10
Movers		
New occupation	2.65	2.91
New occupational group	2.67	2.73

SOURCE Estimates by the authors, based on the Labour Market Activity Survey.

long-term joblessness (those jobless for 27 weeks or more) among job finders was higher for the involuntarily separated, older workers, female workers, and workers in British Columbia.

For job finders who experienced some unemployment between jobs, the mean duration of joblessness – the average length of time it took for a separated worker to find a new job – was 8.4 weeks in 1986 (Table 9-7). The duration of joblessness varied in the following ways:

- On average, it was shorter for the quits (5.8 weeks) than for those who were involuntarily separated (9.6 weeks).

- Relative to other age groups, older workers (aged 55-64) who were involuntarily separated from their jobs took longer to find a second job (12.6 weeks).

- Female job finders spent about a week more between jobs than their male counterparts.

- Involuntary job separators in British Columbia took longer to find a job than those in other provinces. Overall, the time spent between jobs was the lowest in Ontario and Quebec (about 8 weeks), reflecting the strength of the recovery in these regions.

There are also differences in the transition periods experienced when one considers industrial and occupational mobility (Table 9-8). Particularly notable was the higher mean duration for the involuntarily separated relative to the quits both among the industry stayers and industry movers. Among the involuntarily separated, the industry movers in general experienced a higher mean duration of joblessness than the industry stayers. The pattern is similar when movement among the occupations are considered. The occupation stayers had a shorter duration of joblessness than the occupation movers in both separation categories. Finally, the involuntarily separated experienced greater periods of joblessness than the quits, whether they stayed within their occupational group or moved to another occupation.

We tested statistically the influence of different factors on duration of joblessness for job finders, still using LMAS data for 1986. We included demographic factors such as age, sex, marital status, and education; industry and occupation of first job; industry and occupational mobility; access to alternative sources of income such as unemployment insurance benefits and social assistance; reason for separation; and region.[7]

The results confirm the findings reported earlier. Involuntarily separated job finders, older workers, females, occupation and industry movers, and individuals in all regions except Ontario experienced longer periods of joblessness. In addition, as the level of education increased, the duration of unemployment between jobs decreased. The period of joblessness for those individuals who received unemployment insurance and/or social assistance benefits sometime during 1986 was greater than for individuals who did not receive such benefits. Finally, most people who found a new job found it in their own sector, and sector stayers and movers had somewhat similar durations of joblessness between jobs.

There is cause for concern, however. Adjustment was difficult for some groups, notably involuntarily separated and older workers. Their movement from one job to another was characterized by longer durations of joblessness and (relatively) less success in finding jobs in other industries.[8]

Individuals Who Did Not Find a Job

A more important dimension of the labour market adjustment process concerns those individuals who did not find employment after being separated from their first job in

Table 9-6

Job Finders' Weeks of Joblessness by Selected Demographic Characteristics, Canada, 1986

	Weeks of joblessness						
	0	1-4	5-9	10-14	15-26	27 or more	Total
	(Per cent)						
All job finders	33.7	30.6	15.0	7.6	9.8	3.2	100.0
Reason for separation							
Quit – nonpersonal	47.4	34.1	9.2	3.6	3.6	2.2	100.0
Involuntary	19.5	29.5	21.3	10.9	14.6	4.2	100.0
Age							
16-19	26.5	34.8	19.0	9.0	9.3	1.4	100.0
20-24	30.5	32.2	15.9	7.4	10.1	3.9	100.0
25-34	39.2	28.6	13.5	7.2	8.7	2.9	100.0
35-44	36.5	29.7	14.0	6.2	10.8	2.8	100.0
45-54	34.7	25.1	12.9	10.1	11.4	5.8	100.0
55-64	31.2	30.2	10.9	9.0	12.0	6.6	100.0
Sex							
Male	36.0	30.5	14.2	7.2	9.5	2.6	100.0
Female	30.9	30.8	16.1	8.1	10.1	4.0	100.0
Region							
Atlantic	27.4	30.4	15.7	9.3	13.4	3.6	100.0
Quebec	29.6	32.7	17.3	8.5	8.7	3.1	100.0
Ontario	36.5	32.1	13.8	6.4	8.9	2.3	100.0
Prairie	33.9	27.4	15.2	7.9	11.7	3.9	100.0
British Columbia	34.5	26.1	15.0	9.0	9.9	5.5	100.0

SOURCE Estimates by the authors, based on the Labour Market Activity Survey.

1986, about half of all those who experienced a job separation in 1986. The proportion of individuals who did not find a second job was greater for those who were in the goods sector (about 56 per cent) than for those whose initial job was in the service sector (about 47 per cent). Also, a greater proportion of older workers (aged 55-64), especially those in the goods sector, did not find a second job in 1986; about 36 per cent of them were jobless for 27 weeks or more during the year. Overall, the probability of being jobless for 27 weeks among workers who did not find a job in 1986 increased with age.

Impediments to Intersectoral Mobility

The evidence discussed above suggests that the mobility rate in the latter part of the 1980s was lower than in the pre-recessionary period of the early 1980s. There are several possible reasons for this, such as the industrial restructuring that took place in the 1980s and changes in the composition of employment that resulted, spillover effects of a decline in employment in one industry on unemployment in another, and uncertainty about employment prospects resulting in less incentive for separated individuals to search for a job in another sector.

Industrial Restructuring and the Changing Nature of Jobs

In its 25th Annual Review [1988], the Economic Council of Canada suggested that the recession in the early 1980s was accompanied by a rationalization of the industrial structure in Canada in response to shifts in demand and supply in domestic and international markets. For example, the rise and subsequent fall in energy prices led to a rationalization of the energy-producing and energy-intensive industries. Raw-material producers were faced with depressed prices, which led them to reconsider their

Table 9-7

Job Finders' Mean Duration of Joblessness by Reason for Separation and Selected Demographic Characteristics,[1] Canada, 1986

	Mean duration of joblessness		
	Quit – nonpersonal	Involuntary	Average
	(Weeks)		
All job finders	5.8	9.6	8.4
Age			
16-19	4.9	8.2	7.3
20-24	6.7	9.2	8.4
25-34	5.7	9.4	8.3
35-44	5.2	10.0	8.5
45-54	6.3	11.3	10.0
55-64	4.6	12.6	10.2
Sex			
Male	5.5	9.3	8.0
Female	6.2	10.0	8.7
Region			
Atlantic	5.9	10.0	9.0
Quebec	5.8	8.8	8.0
Ontario	5.4	9.1	7.7
Prairie	6.6	10.1	9.2
British Columbia	7.4	11.0	10.0

1 The mean duration of joblessness is calculated for those individuals who had at least one positive week of joblessness between job 1 and job 2.

SOURCE Estimates by the authors, based on the Labour Market Activity Survey.

strategic positions in international markets. The intensification of global competition affected production levels in, and the structure of, the traditional smokestack industries. This restructuring, which particularly affected the goods industries, had a significant impact on the composition of employment.

The functioning of the labour market was considerably affected by the changing composition of employment. For example, the employment shift to the service sector and changing skill requirements led to increased mismatches between labour demand and labour supply. Another important change was the expansion of relatively low-paying and less stable nonstandard forms of employment. This type of employment can pose difficult choices for unemployed individuals who were previously employed in a full-time position. For example, accepting a part-time job may translate into a lower standard of living. This factor and the uncertainty attached to this type of unemployment might lead unemployed individuals to search for a "standard" job, and thus be prepared to remain unemployed for longer. This is another example of labour demand and supply mismatch.

Evidence suggests that in Canada in the 1980s a great majority of lost high-wage jobs were replaced by low-wage jobs [see Gera and Grenier, Chapter 10 in this volume]. The fact that displaced workers losing high-wage jobs tended to wait for re-employment in high-wage sectors, thus prolonging their durations of unemployment, may reflect attempts to preserve firm- or industry-specific human capital. But, it may also reflect rent-seeking behaviour in which workers queue for high-wage jobs rather than accepting low-wage jobs.[9]

Table 9-8

Job Finders' Mean Duration of Joblessness by Reason for Separation and Industrial and Occupational Mobility,[1] Canada, 1986

	Mean duration of joblessness		
	Quit – nonpersonal	Involuntary	Average
	(Weeks)		
All job finders	5.8	9.6	8.4
Industrial mobility			
Stayers			
Same industry	5.5	8.7	7.6
Same industry group	6.7	9.4	9.0
Same sector	6.0	10.2	8.8
Movers			
New industry	6.1	10.0	8.8
New industry group	5.9	10.1	8.7
New sector	5.8	10.1	8.6
Occupational mobility			
Stayers			
Same occupation	5.2	9.2	7.7
Same occupational group	8.9	9.8	10.1
Movers			
New occupation	6.3	9.8	8.7
New occupational group	5.8	9.8	8.4

1 The mean duration of joblessness is calculated for those individuals who had at least one positive week of joblessness.

SOURCE Estimates by the authors, based on the Labour Market Activity Survey.

Employment Uncertainty

Employment uncertainty may well be a major reason that some workers stay within the same industry when separated from a job. For example, they may be unable to judge whether the reduced demand for their employers' product(s) is a temporary phenomenon related to the business cycle or a permanent shift. However, if the shift is permanent, they may be better off to incur the costs and the loss of firm-specific skills entailed in moving to another firm or sector. Alternatively, separated workers may simply lack information about the employment prospects in other sectors and so prefer to wait for employment in the same sector.

We calculated a measure of the employment uncertainty facing Canadian workers over the last three decades. The results suggest that it has indeed increased more in the 1980s than in the 1970s.[10] Specifically, intersectoral disparities in employment growth rates have increased. The incentive for separated workers to search for a new job in the same sector appears to have risen over time.

Spillover Effects

Another factor that affects interindustry mobility is spillover effects, or changes in employment in one industry affecting employment in related industries. To illustrate, a decrease in manufacturing employment that is caused by a decline in the demand for manufactured goods, given no technological change, will result in a related reduction in demand for raw-material inputs, and for service inputs like computer and engineering services. As a result, unemployment also rises in those industries, and there is a convergence of unemployment rates in manufacturing and in the industries linked to manufacturing.

That convergence decreases the mobility of workers. To continue the previous example, a worker released from the manufacturing sector would now find it more difficult to obtain employment in industries related to manufacturing, which would normally be the natural source of employment on the basis of skill requirements. This would increase the incentive to stay within the same sector, or to spend more time looking for employment in other sectors.

A sectoral analysis of spillover effects shows that the sector generating the most significant effects in Canada is the manufacturing sector.[11] A decline in manufacturing employment causes a rise in unemployment rates in the construction industry in particular, but also in the wholesale and retail trades, and in communications and business and personal services [Gera and Rahman 1991]. These spillover effects are the result of changes in the demand for manufacturing inputs and decreases in the demand for the products of the other sectors arising from a loss in income, since, as unemployment increases in the manufacturing sector, the income of workers declines.

Impediments to Intersectoral Mobility among Older Workers

There may be greater constraints on the sectoral mobility of older workers. They often possess working skills that are highly industry-specific and not easily transferable to other industries. This skill-specificity hinders their intersectoral mobility, particularly where there are negative spillover effects. Another critical element is their wage profile – since older workers tend to receive higher wages, they have less incentive to change jobs.

The mobility patterns observed for older workers also may have been affected by the increased supply of young workers who began entering the labour force in great numbers in the 1970s. Young workers expect to work for lower wages and tend to be highly mobile. This can have a negative impact on the mobility of older workers by reducing the wage gains they can expect to receive if they move to another industry, especially since they also would sacrifice their seniority. The net impact may be lower returns to mobility and higher relative returns to waiting for re-employment. This point is borne out by evidence that, in 1982, about 50 per cent of older workers were re-employed with the same employer after being separated from their jobs.[12] The attachment of older workers to their former employers and industries appears to be strong in Canada.

Finally, other explanations also have been offered about the (relatively) longer durations of joblessness and higher persistence of unemployment among older workers. It has been argued that the observed adjustment difficulties of these workers may be due in part to their search behaviour and to the hiring practices of employers. Older workers are said to prefer more leisure time relative to younger workers and so to search less intensively for a job. On the other hand, employers may use age as a discriminating factor because of the investment that a firm makes in its workers (in terms of training) and the return it expects from them.

Evidence based on the LMAS of 1986 and reported by Corak in Chapter 7 of this volume suggests, in fact, that the intensity with which older unemployed workers search for jobs is no less than that of prime-aged workers. The reasonable conclusion, then, is that reluctance on the part of

employers to hire older workers accounts for the latter's stronger tendency towards long-term unemployment.[13]

Conclusion

In our analysis of patterns of interindustry labour mobility, unemployment, and labour market adjustment in the 1980s we find that the mobility rate in 1985-86 was lower than that of the pre-recession period of 1980-81. To the extent that interindustry labour mobility is an indicator of the smoothness of the labour market adjustment process, the lower mobility rate later in the 1980s indicates that labour market adjustment to change was slower.

The evidence from the cross-section data indicates that:

- The unemployment experience of the majority of the job finders can be viewed as frictional in nature and part of the efficient functioning of the labour market. Industry movers accounted for a higher proportion of this frictional unemployment than those who found a new job in their original industry.

- Involuntarily separated and older job finders experienced relatively higher durations of unemployment.

- About 20 per cent of separated workers who did not find a job in 1986 remained jobless for over six months. Older and involuntarily separated workers bore a disproportionate share of this long-term unemployment.

- Uncertainty about employment prospects in other industries and spillover effects could have led to a decline in interindustry mobility and to a rise in the duration of joblessness, particularly among those who did not find a job.

If unemployment fluctuations are primarily caused by sectoral shocks, aggregate demand policies may not be the most effective tool to combat the resulting labour market shifts. About the only situation where such a policy might be useful is where there are high spillover effects; expansionary aggregate demand policies may help offset negative spillover effects and ease the process of labour reallocation. However, our empirical analysis suggests that only a few sectors generate or are affected by large spillover effects. Relying on aggregate demand policies in these circumstances may be too extreme.

Policies designed to facilitate the adjustment of the labour force across industries and regions may have a higher payoff in the presence of sectoral shifts. One key policy consideration here is what happens to the level of specific training in the aftermath of a large sector-specific shock. If there are employment uncertainties, research indicates that when relative labour demand shifts in response to changes in the industrial composition of economic activity, specifically trained labour will not move quickly to new opportunities until uncertainty about the permanence of those changes is resolved. Thus unemployment spells may be prolonged as trained workers wait for their industry to recover or for the situation to become clearer. If the changes are permanent, people who become unemployed and eventually do find new employment often sacrifice previously accumulated skills in the process. Therefore, after a large sector-specific shock, the average amount of specific training in the labour force will be lower and the pool of marginal workers who are susceptible to unemployment will grow. This process leads to a higher natural rate of unemployment after the shock, although probably the natural rate will decrease later as specific training in the new occupations and industries accumulates over time. In this type of scenario, then, the main policy goal should be to facilitate the reallocation of labour from contracting to expanding industries. A key element of such a policy package would be to create an environment in which workers could easily acquire other types of specific training.

10 Interindustry Wage Differentials in Canada: Evidence and Implications

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Wages play an extremely important role in the functioning of labour markets. Wages that are flexible change in response to variations in the demand for, and supply of, labour, increasing if there is an excess demand for labour and falling if there is excess supply. The result is an equilibrium or market-clearing wage that equates labour demand and supply. Unemployment that exists at this wage is "frictional" or voluntary.

Unemployment will increase, however, if for some reason wages fail to perform their market-clearing function. If wages are rigid and above their equilibrium value, employers will reduce hirings. The result will be an increase in involuntary unemployment, that is, unemployed individuals who have the same abilities as employed workers and who are willing to work for the same wages will be unable to find a job.[1] The situation will be exacerbated if economic changes occur. In economic downturns, the inability of wages to adjust to a fall in the demand for goods and services and therefore in the demand for labour will result in higher unemployment than otherwise would be the case. Further, the combination of a larger unemployment pool and high and rigid wages will lead to persistent unemployment.

There is evidence to suggest that some firms do, in fact, pay wages that are higher than the market-clearing level. Furthermore, there are differences in the wages of equally skilled workers in different industries. There are three broad types of explanations as to why some firms or industries pay higher wages to workers with skills similar to those in other firms or industries.

The first class of explanation is based on competitive labour market theory. They imply that interindustry wage differences are "compensating differentials," related to differences in the characteristics of jobs or human capital (skill) requirements. For example, they may represent differences in working conditions – workers in some industries receive higher wages for night-shift work [see Kostiuk 1990]. Compensating wage premiums may also exist for work hazards such as risk of injury or death.[2] Temporary wage differentials may exist because of shifts in labour demand or supply across sectors and imperfect short-run mobility of labour. According to these explanations, if all characteristics of workers and jobs could be observed, there would be no wage differentials for equally skilled workers.

The second class of explanation emphasizes institutional factors that are particularly important in the labour market. According to this view, the presence of unions, and government regulations such as minimum wages, contribute to wage rigidity.

According to the third class of explanation, wage differentials are attributable to the fact that workers earn "economic rents." These rents are reflected in wages that exceed those available in the workers' best alternatives. Efficiency wage theories offer an explanation for the existence of such rents. Their major thrust is to explain why it is that some employers seem to find it profitable, in some circumstances, to pay their workers a wage that is higher than that paid to similar workers in a competitive market. They argue that worker productivity (net of training and turnover costs) depends positively on the wage rate. Consequently, high-wage employers may be reluctant to reduce wages, even in the presence of an excess supply of labour, because any cost savings they may realize as a result of such wage reductions would be more than offset by a decrease in worker productivity. During severe recessions, such wage rigidity on the part of employers may contribute to persistence in unemployment.

The purpose of this paper is, first, to determine whether there are differences in the wages of equally skilled workers in different industries, and if so, whether such differences represent rents, as predicted by the efficiency wage argument. We then consider whether interindustry wage differentials can explain the observed persistence in unemployment in the 1980s.

The structure of the paper is as follows. In the first section, we present evidence on interindustry wage differentials. In the second section, we consider the various explanations of interindustry wage differentials. From this analysis, we conclude that the large and persistent interindustry wage differentials that we observe cannot easily be accounted for by either the "competitive" explanations based on differences in skill mix, compensating differentials, or temporary differentials, or by the "institutional"

explanations. We do, however, find some evidence to support efficiency wage models as explanations. The implications of the interindustry wage structure for the recent unemployment experience in Canada are analysed in the third section, and in the fourth section we conclude by reviewing the major findings and discussing their implications for policy.

The Interindustry Wage Structure: Canadian Evidence

Interindustry wage differentials have been documented in many studies. Earlier studies typically compare average wages by industry and only look at the manufacturing industries. More recent studies include industries in other sectors, and control extensively for other factors affecting wages that may differ by industry. Ostry and Zaidi review the evolution of the ranking of, and variations in, wages across industries in the manufacturing sector in Canada in this century [1979, Chapter 12]. They observe that the ranking of average wages by industry commonly shifts in the early stages of industrialization but tends to become stable in the later stages. The variation in interindustry wage differentials has been remarkably constant through time, although hourly wage rates have displayed a positive association with business cycles. In another important Canadian study, Kumar [1974] examines wage rates in 26 Canadian manufacturing industries for two occupational categories – skilled and unskilled – to determine wage differentials by industry. He links wage differentials to various characteristics of each industry, some of them reflecting the competitive environment and others reflecting institutional factors.

Other studies of interindustry wage differentials, conducted in the United States and other countries, use large data sets containing information on individuals and find strong support for large and persistent interindustry wage differentials, even after controlling for a wide variety of worker and job characteristics.[3]

The Magnitude of Industry Wage Differentials

Using data from Statistics Canada's Labour Market Activity Survey for 1986,[4] we estimated interindustry wage differentials at different levels of industry aggregation, for various types of workers and for the different regions. These differentials were obtained after controlling for individual differences in human capital and other personal attributes that can affect wages. Table 10-1 presents some evidence on the nature and importance of industry wage differentials for broadly defined industries. It reports the percentage difference between the wages of an employee in a given industry and the average wage in all industries.[5]

Two main findings emerge. First, there are substantial interindustry wage differentials, even after taking into account the occupational, human capital, locational, and demographic characteristics of individuals. Wages in wholesale and retail trade and "other services" are lower than average, while in the other five industry groups (other primary; manufacturing; construction; transportation, communication, and utilities; and finance, insurance, and real estate) they are higher than average. Workers in other primary industries (such as mining) are paid the highest wage; they earn approximately 18 per cent more than the average wage, and consequently, about 24 per cent more than similar workers in wholesale and retail trade.

Table 10-1

Wages Relative to the Industrial Average by Industry Group, Canada, 1986

	(Per cent)
Other primary	17.7
Manufacturing	2.4
Construction	13.4
Transportation, communications, and utilities	8.0
Wholesale and retail trade	–6.3
Finance, insurance, and real estate	6.1
Other services	–5.3

SOURCE Gera and Grenier [1991].

Table 10-2 presents interindustry wage differentials further disaggregated by industry. We find industry wage premiums ranging from 33 per cent above the average (in the tobacco products industries) to 32 per cent below the average (in health and welfare services and religious organizations). On the basis of these data, some general observations can be made about the wage structure of Canadian industry. Primary industries is a high-wage sector, but within it, fishing and trapping is a low-wage industry. Within the manufacturing sector, which generally pays wages slightly above average, the tobacco; petroleum and coal products; chemical; paper; and primary metal industries are high-wage industries (paying higher-than-average wages); while the textiles, furniture, and leather industries are low-wage industries (paying lower-than-average wages). Within the trade group, retail trade is a low-wage industry, while wholesale trade is a high-wage industry. "Other services" are generally low-wage, but services to business

Table 10-2

Wages Relative to the Industrial Average by Industry, Canada, 1986

	Wage status	(Per cent)
Other primary		
Forestry	High	18.9
Fishing and trapping	Low	–9.5
Metal mines	High	18.9
Mineral fuels	High	25.5
Nonmetal mines	High	13.7
Quarries and sand pits	Medium	0.8
Services incidental to mining	High	22.7
Manufacturing		
Food and beverages	Low	–3.5
Tobacco products	High	33.4
Rubber and plastics	High	7.1
Leather	Low	–10.0
Textiles	Low	–19.0
Clothing	Low	–8.1
Wood	High	8.7
Furniture and fixtures	Low	–14.4
Paper and allied	High	12.0
Printing, publishing, and allied	High	6.4
Primary metal	High	11.5
Metal fabricating	High	3.7
Machinery	Medium	0.8
Transportation equipment	High	7.2
Electrical products	High	2.6
Nonmetallic mineral	High	4.8
Petroleum and coal products	High	20.8
Chemical and chemical products	High	14.4
Miscellaneous	Medium	–3.4
Construction		
General contractors	High	11.4
Special-trade contractors	High	17.0
Service industries incidental to construction	Medium	–2.4
Transportation, communications, and utilities		
Transportation	High	8.7
Storage	Medium	6.3
Communications	High	10.5
Electric power, gas, and water utilities	High	14.4
Trade		
Wholesale	High	3.8
Retail	Low	–11.1
Finance, insurance, and real estate		
Finance	High	9.3
Insurance carriers	High	13.7
Insurance agencies, real estate	Low	–4.1
Other services		
Education and related	Medium	–1.0
Health and welfare	Low	–3.1
Religious organizations	Low	–31.8
Amusement and recreation	Low	–11.4
Services to business management	High	4.8
Personal	Low	–16.7
Accommodation and food	Low	–20.3
Miscellaneous	Low	–2.8

SOURCE Gera and Grenier [1991].

management is a high-wage industry. At this level of industry disaggregation, the wage structure of Canadian industry seems to be similar to that of the United States [see Krueger and Summers 1988].

Explanations of Industry Wage Differentials

It is clear from the discussion above that there are significant interindustry wage differentials. A number of explanations have been proposed to account for them. We have grouped these arguments into three main classes: explanations that are compatible with a "competitive" labour market, that is, explanations that focus on differences in the characteristics of jobs that would cause wages to be higher in one industry than in another (for example, wages are higher in an industry that has a high proportion of skilled jobs); "institutional" explanations that focus on the nature of contractual arrangements between employers and workers, often determined by whether or not there is a union; and efficiency wage explanations that account for the fact that workers in some industries are paid a wage premium (rent) compared to similar workers in other industries.

"Competitive Labour Market" Explanations

Occupational Structure and Wage Differentials

To test the argument that interindustry wage differentials reflect differences in the skills required or in the characteristics of jobs in different industries, we examined interindustry wage differentials separately for white-collar and blue-collar workers. The results, reported in Table 10-3,

Table 10-3

White- and Blue-Collar Wages Relative to the Industrial Average by Industry, Canada, 1986

	Wage status	White-collar	Blue-collar
		(Per cent)	
Other primary			
Forestry	High	11.4	13.8
Fishing and trapping	Low	27.8	–19.4
Metal mines	High	10.1	18.3
Mineral fuels	High	30.2	16.0
Nonmetal mines	High	17.6	6.5
Quarries and sand pits	Medium	–0.1	–2.5
Services incidental to mining	High	23.6	16.6
Manufacturing			
Food and beverages	Low	–8.1	–5.4
Tobacco products	High	26.7	38.4
Rubber and plastics	High	10.9	2.0
Leather	Low	–1.9	–13.9
Textiles	Low	–12.4	–23.1
Clothing	Low	11.2	–15.9
Wood	High	6.7	3.2
Furniture and fixtures	Low	–16.0	–18.6
Paper and allied	High	19.1	4.9
Printing, publishing, and allied	High	0.5	7.2
Primary metal	High	22.1	3.6
Metal fabricating	High	3.3	1.3
Machinery	Medium	2.8	–2.9
Transportation equipment	High	8.7	2.9
Electrical products	High	5.9	–1.6
Nonmetallic mineral	High	–5.9	2.0
Petroleum and coal products	High	9.5	31.8
Chemical and chemical products	High	14.8	11.9
Miscellaneous	Medium	2.6	–8.4
Construction			
General contractors	High	8.4	8.7
Special-trade contractors	High	11.1	13.8
Service industries incidental to construction	Medium	–3.3	5.5
Transportation, communications, and utilities			
Transportation	High	13.1	1.9
Storage	Medium	7.1	3.4
Communications	High	14.2	4.8
Electric power, gas, and water utilities	High	16.9	10.1
Trade			
Wholesale	High	4.6	–1.5
Retail	Low	–12.3	–8.9
Finance, insurance, and real estate			
Finance	High	10.6	–11.4
Insurance carriers	High	14.9	–31.9
Insurance agencies, real estate	Low	–2.2	–12.3
Other services			
Education and related	Medium	2.8	–6.5
Health and welfare	Low	4.3	–82.7
Religious organizations	Low	–31.0	10.5
Amusement and recreation	Low	–8.8	–13.8
Services to business management	High	5.8	9.3
Personal	Low	–15.7	–12.2
Accommodation and food	Low	–18.1	–29.0
Miscellaneous	Low	–1.4	–4.0

SOURCE Gera and Grenier [1991].

indicate that the industry wage structure is fairly similar for white-collar and blue-collar workers – the average variation in wages across industries is 18.9 per cent for white-collar workers and 13.6 per cent for blue-collar workers. In other words, the range of variation – up and down – in the wage levels of blue- and white-collar workers is similar. Furthermore, we find that most high-wage industries pay high wages to white-collar and blue-collar workers alike. This pattern is also evident in industries that pay low wages. We reached the same conclusion when we examined interindustry wage differentials for three specific occupations – managerial, clerical, and fabrication – industries that pay high wages to workers in one occupational group also tend to pay workers in other occupational groups high wages. These results provide strong evidence against the argument that interindustry wage differentials are largely caused by differences in the characteristics of jobs.[6]

Differences in Patterns of Human Capital Accumulation

Another explanation for the existence of interindustry wage differences is that they arise from differences in patterns of human capital accumulation across industries, and that such differences are related to individual characteristics such as age, length of job tenure, sex, and level of educational attainment and also to differences in firm size.

It could be argued, for example, that firms pay wage premiums to older workers (aged 45-64) and to workers with long job tenure, because they have acquired substantial human capital. Table 10-4 shows wage differentials according to demographic and other characteristics. We find that while interindustry wage differentials for older workers and workers with long tenure are smaller than for younger workers and those with short tenure, the differences are minor. Similarly, only very small differences exist when females are compared with males; when less educated workers are compared with those with more education; and when small firms are compared with large firms.[7] We conclude from this evidence that variations in age, job tenure, sex, education, and firm size cannot account for much of the observed variation in wages across industries. In each case, wage levels show a close association, being consistently high or low for all workers regardless of their individual characteristics.

Table 10-4

Wages Relative to Industrial Average, Selected Characteristics, Canada, 1986

	Average variation in interindustry wages[1]	Sample size
	(Per cent)	
Age		
20-24	17.6	4,376
45-64	14.3	8,134
Tenure		
Up to 2 years	17.8	12,068
Greater than 8 years	12.9	10,080
Sex		
Male	14.3	17,594
Female	16.2	15,350
Education		
Elementary and high school	16.9	21,476
University	17.9	3,864
Firm size		
1-99 employees	17.5	14,395
500 or more employees	16.5	9,539
Full time/part time		
Full-time workers	14.1	27,834
Part-time workers	19.6	5,110
Unionized/nonunionized sample		
Unionized workers	11.9	12,533
Nonunionized workers	17.7	20,411

1 Based on estimated wage differentials for two-digit industries.
SOURCE Gera and Grenier [1991].

Table 10-5

Wages Relative to the Industrial Average by Industry Group, Canada, 1970, 1980, and 1985

	1970	1980	1985
		(Per cent)	
Other primary	23.4	27.0	31.3
Manufacturing	6.2	4.3	6.8
Construction	11.5	8.2	4.2
Transportation, communications, and utilities	10.5	12.9	14.7
Trade	–10.4	–11.2	–10.8
Finance, insurance, and real estate	3.0	3.8	5.1
Other services	–9.2	–6.5	–7.0

SOURCE Gera and Grenier [1991].

Stability in the Industry Wage Structure

A third explanation is that wage premiums exist because of short-run immobility of labour or temporary labour demand shocks. Table 10-5 shows estimated wage differentials for industry groups based on census data for the years 1970, 1980, and 1985. The results show that the wage structure was similar in all three years: other primary industries consistently paid the highest wages and trade consistently paid the lowest, while the ranking of the other industries changed only slightly. The degree of variation across industries was also more or less constant.

Interindustry wage differentials appear to be fairly constant over space as well. Table 10-6 shows the variation in interindustry wage differentials for the five Canadian regions in 1986. Although there is some variation – ranging from 13.6 per cent in Ontario to 18 per cent in British Columbia – the differences are small, suggesting that the degree of dispersion across regions is fairly stable.[8]

Labour Quality

A fourth common explanation is that there are differences across industries in unmeasured aspects of labour quality, such as motivation and innate ability. Therefore, the industry wage differentials that are observed might be explained by differences in workers' productive abilities that are not captured by measures based on individual characteristics.

Table 10-6

Wages Relative to Industrial Average by Region, Canada, 1986

	Average variation in wages across industries	Sample size
	(Per cent)	
Canada	15.1	32,945
Regions[1]		
Atlantic	15.8	8,090
Ontario	13.6	6,917
Quebec	16.8	5,180
Prairie	16.0	9,576
British Columbia	18.0	3,179

1 Based on estimated wage differentials for two-digit industries.
SOURCE Gera and Grenier [1991].

This is a difficult proposition to test empirically. One approach suggested by Krueger and Summers [1988] is to determine how observed measures of labour quality (such as educational attainment) differ across industries. If interindustry wage differentials are attributable to measured differences in labour quality, one would expect a substantial drop in the variation of wages once human capital measures are taken into account. Our results [reported in Gera and Grenier 1991] and those of Krueger and Summers [1988] for the United States suggest that such unmeasured differences in labour quality do not play a significant role in explaining interindustry wage differentials.[9]

The problem of unmeasured labour quality can also be addressed by using longitudinal data for individuals. By tracing workers as they switch from a job in one industry to a new job in a different industry, it is possible to determine how they fare in terms of wages (presumably their labour quality does not change).

The Labour Market Activity Survey (LMAS) provides data for workers who left a job in 1986 and found a new job in a different industry during that year.[10] What we find is that job-movers who switch to a high-wage industry are also paid a high-wage premium [see Gera and Grenier 1991]. To test this result, we examined the impact of changing industries on the wages of job-movers who had been laid off (39 per cent of the LMAS sample) and those who had left their jobs voluntarily (54 per cent of LMAS sample).[11] In both cases, job-movers received the wage premium of the industry they joined. These results are consistent with the findings reported in Table 10-2 that the directions of wage changes experienced by job-movers reflect the industry wage structure. We therefore conclude that industry wage differentials exist mainly for reasons other than differences in unmeasured labour quality.[12]

Compensating Differentials

A fifth possibility is that industry wage differentials reflect "compensating" differentials, that is, workers are compensated for nonwage aspects of the industry. These include, for example, nonstandard weekly hours, the risk of injury on the job, health hazards, and shift work.

It is difficult to provide empirical evidence on compensating differentials. The data available do not permit us to directly examine the impact of working conditions on interindustry wage differences. There is some evidence, however, to suggest that they do not reflect compensating differentials. First, Krueger and Summers [1988] find for the United States that the inclusion of working condition variables barely affects the estimated wage premiums. In fact, the dispersion tends to increase rather than decrease when the variables representing working conditions are taken into consideration. Furthermore, they find that the consideration of fringe benefits tends to increase wage differences as well. They conclude that wage differentials exist over and above what can be explained by compensating factors.[13]

Another dimension of compensating differentials is full-time versus part-time work. In Table 10-4 we report industry wage differentials for full- and part-time workers. We find that the industry wage premiums for full-time workers are not substantially different from those of the entire sample. An interesting finding is that part-time workers receive industry wage premiums to a greater extent than do full-time workers. Industries that pay full-time workers above their mean wage tend to pay part-time workers above their mean wage as well. These results cast doubt on this dimension of the compensating wage differentials argument.

It is difficult to reconcile the close similarity we found in the patterns of interindustry wage differences across occupations with compensating differentials, since it is unlikely that whenever working conditions are poor for blue-collar workers, they are also poor for managers and clerks. In addition, if industry wage premiums reflect compensating differentials and not rents, then there is less incentive for workers to treat jobs as being especially valuable, implying that there is no relationship between industry wage premiums and quit rates. We will show later in this chapter that in fact wage premiums are closely associated with lower

turnover rates.[14] This strongly suggests that workers in high-wage industries receive rents for good jobs or good matches, and not merely as compensating differentials.

Institutional Explanations

The extent of unionization is often cited as a major cause of interindustry wage differentials. For instance, Krueger and Summers [1988] argue that interindustry wage differentials exist because unions cause wages to rise in certain industries without suffering severe employment losses.[15] This would lead to greater variation in wages among unionized than among nonunionized workers. In fact, our results (and those of Krueger and Summers) show that this is not the case – nonunionized workers show greater interindustry wage variation (17.7 per cent) than unionized workers (11.9 per cent). One explanation for this result is that perhaps unions have achieved some degree of wage parity among workers with similar characteristics, while the determination of wages of nonunionized workers is more arbitrary. We also find that wages in the unionized and nonunionized sectors tend to be closely related and that the level of variation in wages is high in both. This suggests that much the same process is responsible for generating relative wages in both sectors.[16]

Efficiency Wages

The evidence on interindustry wage differentials presented so far suggests that workers in some industries do receive rents. The large wage differentials that remain after accounting for a wide range of factors are quite difficult to explain in terms of differences in either skills or working conditions. They are remarkably stable across time and space, and they are not just temporary differentials arising from intersectoral shifts in labour demand and the consequent short-run imperfect labour mobility. Furthermore, high-wage industries tend to pay high wages to workers in different occupations.

The challenge, then, is to explain why high-wage industries did not lower wages when faced with an excess supply of labour. Why do some workers earn labour market rents? Recent studies on efficiency wages provide some explanation.[17] There are several conceptually distinct, but complimentary, efficiency wage hypotheses. These can be classified into four groups.[18]

One is the "shirking model." This model postulates that firms pay higher wages to increase workers' effort. The basic argument is that firms can only imperfectly monitor the behaviour of workers on the job. If workers are only paid their opportunity cost, they have little incentive to work hard, since losing their jobs would not be costly. By paying higher wages, firms make the cost of losing a job greater for the worker, thus increasing the cost to workers of being found shirking and encouraging good performance. Unemployment serves as a worker-discipline device in this model. By paying higher wages, firms also reduce their expenditures for monitoring their workers.

Another model postulates that efficiency wages are paid in order to minimize turnover costs; presumably workers who receive a high wage are less likely to quit their jobs than those receiving a low wage. If firms must bear the cost of turnover, and if quit rates are a decreasing function of wages paid, premium wages may reduce the cost of hiring, recruiting, and training new workers.

A third model focuses on selection effects. According to this argument, firms pay higher wages to attract a pool of higher quality job applicants, since more productive workers have better opportunities. As evaluating worker quality is costly and difficult, high wages are desirable.

The fairness wage model argues that factors such as internal equity, social conventions, and employee loyalty lead firms to share their income with all their workers, regardless of the external market conditions. Akerlof and Yellen [1987] present a model where workers' morale and loyalty to the firm and work norms depend on the perceived fairness of the wage. The basic notion is that workers try to get even when they do not get what they think they deserve.

We now turn to a consideration of some empirical evidence on the efficiency wage theories. The objective here is to demonstrate the potential importance of efficiency wage arguments, not to distinguish among various rationales for their existence.

One implication of the efficiency wage models is that there are benefits to firms of sharing rents. High wages may help firms to economize on turnover costs and shirking, for example. Turnover is costly to firms in terms of searching for suitable employees, lost production during vacancies, and the loss of specific training [Salop 1979]. Freeman and Medoff [1984] demonstrate that the savings in terms of lower quit rates in the presence of a union are 1 to 2 per cent of labour costs. Firms may also gain indirectly from lower turnover in terms of enhanced teamwork that continuity in work relationships engenders. Raff and Summers [1987], for example, discuss the introduction of the five-dollar-a-day pay system at Ford Motor Company in 1914. They note that high turnover had great consequences for

output, and higher wages led to increases in productivity and output and reductions in absenteeism and turnover.

We investigated the relationship between turnover and wage premiums to determine whether wage differences represent compensating differentials or efficiency wages. If they represent compensating differentials, we would expect to find no relationship between turnover and wage premiums. If, on the other hand, they represent rents, we would expect to find a negative relationship between turnover and industry wage differentials. Furthermore, if workers in high-wage industries receive economic rents, we would expect to find a positive relationship between the length of job tenure and industry wage differentials since, in effect, longer job tenure reflects a lower turnover rate.

Our findings [reported in Gera and Grenier 1991] show that industry wage premiums are strongly associated with lower quit rates and higher job tenure. These results are consistent with the argument that premiums reflect economic rents and not merely compensating differentials, and provide some support for efficiency wage arguments for rent sharing between firms and workers. They are also consistent with the findings of other researchers [see, for example, Krueger and Summers 1988].[19]

Interindustry Wage Differentials and Unemployment

Our analysis of interindustry wage differentials has shown that there are differences in the wages of equally skilled workers in different industries and that these differentials have been stable over time. This section explores the implications of the existence of these wage differentials for Canada's unemployment performance in the 1980s.

We asked two interrelated questions. First, does the growth of high-wage jobs matter more than the growth of low-wage jobs in reducing the level of unemployment? Second, if so, does the existence of wage differentials help explain the persistent unemployment in the 1980s?

Summers [1986] examines unemployment rates across individual U.S. states and finds that the growth of high-wage jobs matters more in reducing the unemployment rate. Two reasons could account for this finding. First, as we have seen, turnover rates tend to be higher for workers in low-wage jobs; in other words, high-wage jobs show greater stability. Second, through spillover effects, high-wage jobs stimulate job creation in other sectors of the economy [see, for example, Gera and Rahman 1991].

Our research shows that over the period 1976-89, changes in employment in high-wage industries had twice as much impact on unemployment rates as employment growth in low-wage industries. For example, 10-per-cent employment growth in high-wage industries in a province would reduce that province's unemployment rate by 1.1 percentage points; in contrast, 10-per-cent employment growth in low-wage industries would lead to only a 0.6-percentage-point reduction in the provincial unemployment rate [for details, see Gera and Grenier 1991].[20] A further illustration is given in Table 10-7, which shows that between 1976 and 1989, net employment growth in Canada was positive – employment increased by 4 percentage points in the low-wage sector and decreased by 2 percentage points in the high-wage sector. Over the same period, the unemployment rate decreased in Ontario. That reflected the fact that employment in the high-wage sector was relatively stable while low-wage employment grew.

The strong downward impact of high-wage employment growth on the unemployment rate becomes even clearer when the focus is on its contribution in the 1980s. In Canada between 1981 and 1989, the share of low-wage employment increased by 2 percentage points, the share of high-wage employment decreased by 1 percentage point, and the unemployment rate was unchanged. In the 1985-89 subperiod, however, the share of low-wage employment did not change, the share of high-wage employment increased by 1 percentage point, and the unemployment rate fell by a full 3 percentage points. A similar pattern is evident in Ontario, where stable or declining shares of low-wage employment coupled with growing shares of high-wage employment resulted in substantial decreases in the rate of unemployment.

What these findings suggest is that while overall employment growth matters for a reduction in the rate of unemployment, growth in high-wage jobs matters much more. Can this differential response of unemployment to high-wage and low-wage employment growth help explain the persistence of unemployment in the 1980s? We looked at the job losses and gains in these sectors during the 1980s. The high-wage industries were slow to recover from the severity of the recessionary shock. The high-wage sector lost some 400,000 jobs during 1981-83 and did not regain them until 1986. In contrast, the low-wage sector gained some 45,000 new jobs between 1981 and 1983 and 800,000 more during the remainder of the 1980s. But the overall unemployment rate was still slow to decline. The slow pace of job generation in the high-wage industries, then, combined with the smaller impact of low-wage employment growth on total unemployment, may help to explain why in the 1980s unemployment in Canada was so persistent.

Table 10-7

Employment Growth and Unemployment in Canada and Ontario, Selected Periods, 1976-89

	Change in unemployment rate	Change in employment[1]	Change in the ratio of high-wage to total employment	Change in the ratio of low-wage to total employment	Change in labour force
	(Percentage points)	(Per cent)	(Percentage points)		(Per cent)
Canada					
1976-89	0.4	34.6	–2.0	4.0	32.3
1981-89	–	15.0	–1.0	2.0	13.5
1985-89	–3.0	12.7	1.0	–	7.8
Ontario					
1976-89	–1.1	38.9	–0.3	2.0	34.3
1981-89	–1.5	20.6	1.0	–	16.8
1985-89	–2.9	14.4	1.0	–1.0	9.6

1 Employment data based on 46 industries.
SOURCE Gera and Grenier [1991].

It has been argued that workers displaced from the high-wage sector prefer to wait for high-wage jobs, rather than accept a less attractive low-wage job, thus contributing to a longer duration of unemployment.[21] One reason for this could be that workers losing high-wage jobs may feel that accepting a low-wage job would signal to potential high-wage employers that they are not qualified for better jobs, so reducing their chances of employment in the high-wage sector. Moreover, with generous unemployment insurance benefits it may be more efficient to search full time for a new job while unemployed than while working. In a recent study of Canadian males, Ham and Rea [1987] find that individual behaviour is influenced by the duration of potential unemployment insurance benefits. As the point of benefit exhaustion approaches, they tend to search more intensively for a job. In other words, the average search intensity while unemployed is negatively related to the number of weeks of benefit entitlement.

Summary and Conclusions

The main results of the analysis presented in this paper can be summarized as follows:

- Interindustry wage differentials do exist for equally skilled workers and are relatively stable over time. The pattern is very similar for workers across occupations.

- The finding that the interindustry wage structure is the same for workers performing different tasks provides strong evidence against compensating differentials.

- Interindustry wage differentials are consistent with rent-sharing explanations, such as those based on the notion of efficiency wages.

- Growth in high-wage employment matters much more for the reduction of unemployment than growth in low-wage employment.

Two factors may have contributed to persistence in unemployment in the 1980s. First, wage rigidity may have contributed to job loss in high-wage industries in the 1980s. Second, the evidence suggests that the workers who were displaced from these high-wage jobs may have remained unemployed longer in order to regain employment in the high-wage sector; moreover, their search intensity was lower during the initial weeks of unemployment and increased only as the point of benefit-exhaustion approached.

These findings lead us to conclude that policies that improve the health of the high-wage sector, and in particular the manufacturing sector, will help to reduce unemployment. Furthermore, since shocks or policies that harm high-wage industries could generate persistent unemployment, a legitimate concern may well be whether stabilization policies should take into account an analysis of their potential impact on different sectors of the economy.

The existence of industry wage-premiums or rents also has important implications for industrial and trade policy. Recently, it has been argued that export industries tend to

be high-wage and that export promotion would raise national productivity and real wages [see, for example, Lawrence and Schultze 1990]. According to this argument, some industries – such as those in the high-technology sector – are more important than others, and market forces on their own will not channel sufficient resources into them. As a result, countries whose trade and industrial policies are more supportive will drive U.S. producers out of these important sectors. These analysts argue in favour of industrial policies to stimulate such high-wage sectors.

In conclusion, the evidence presented in this paper suggests that, because of its beneficial impact on the unemployment rate through spillover effects, promoting employment growth in the high-wage sector could be a desirable policy goal and deserves further research.

Appendices

A Noncyclical and Actual Rates of Unemployment in the Provinces

Chart A-1

Noncyclical and Actual Rates of Unemployment in the Provinces, Canada, 1963-86

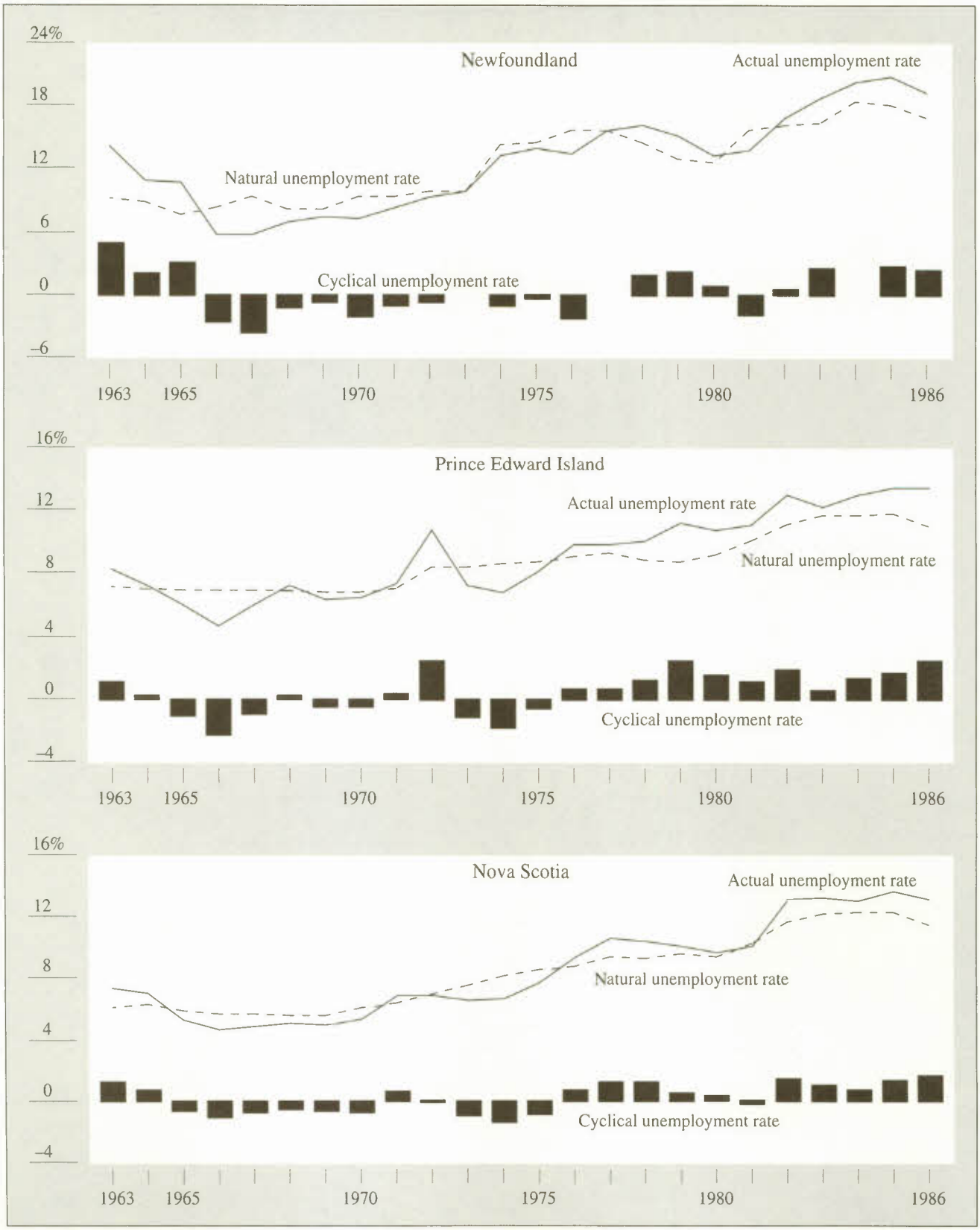


Chart A-1 (cont'd.)

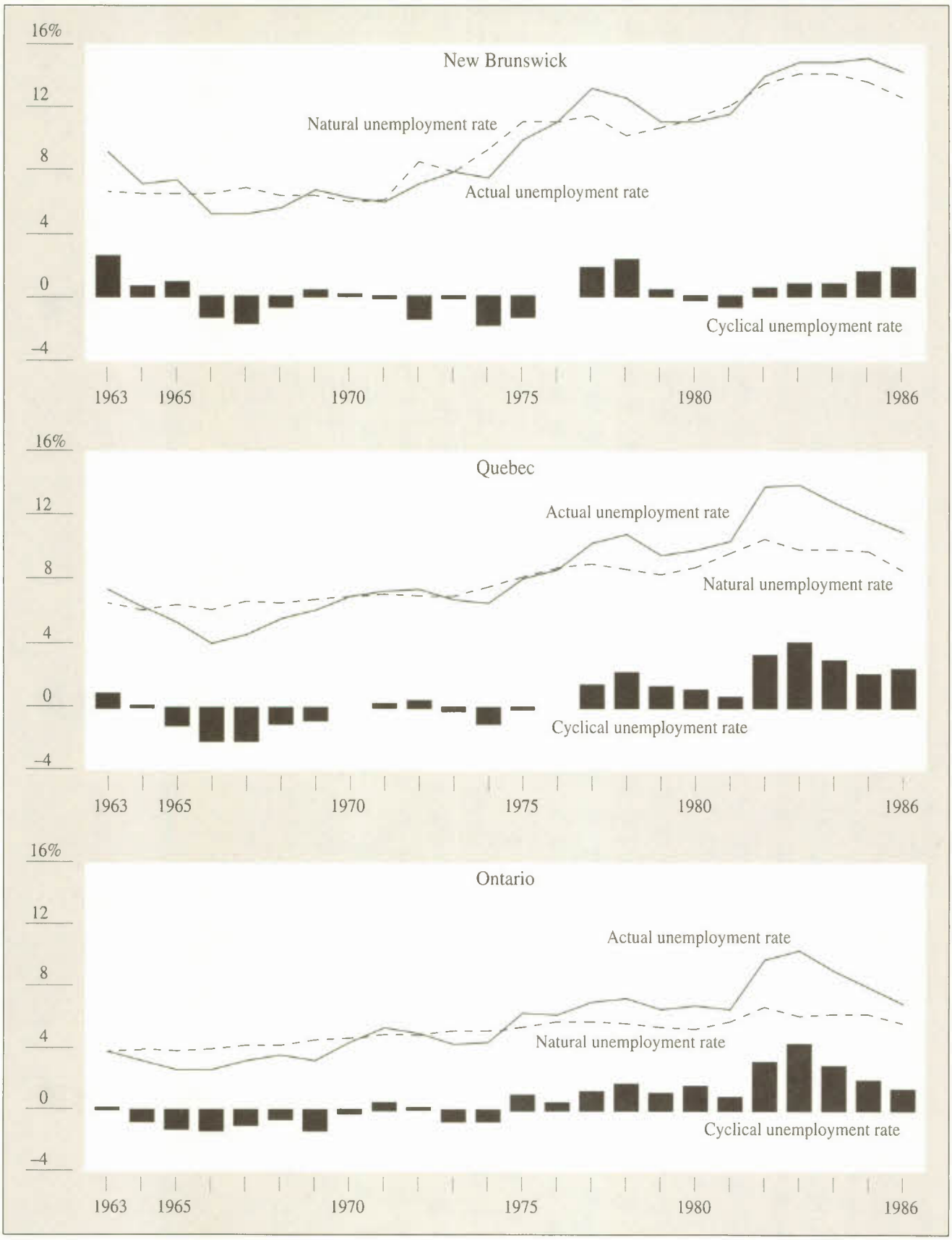


Chart A-1 (cont'd.)

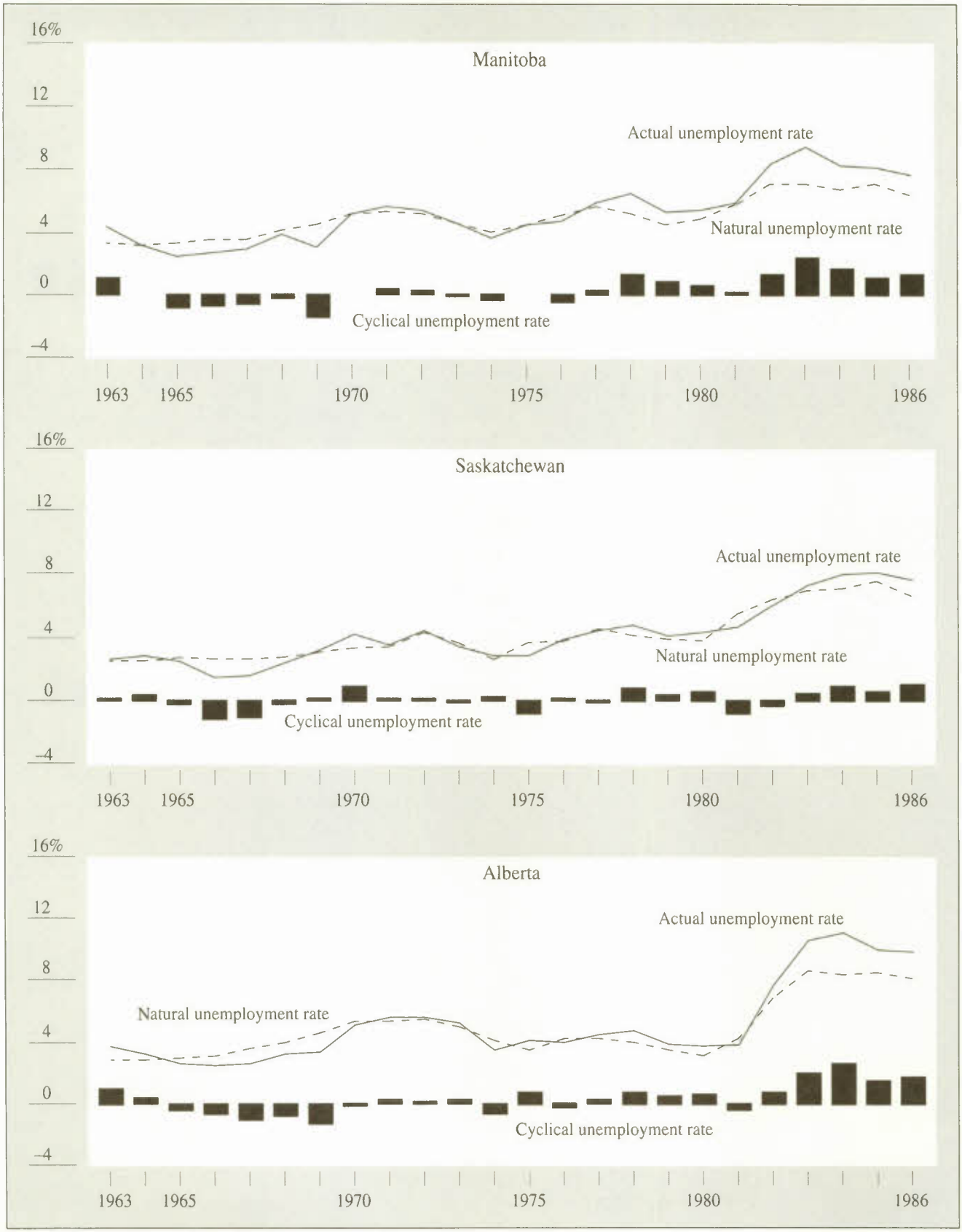
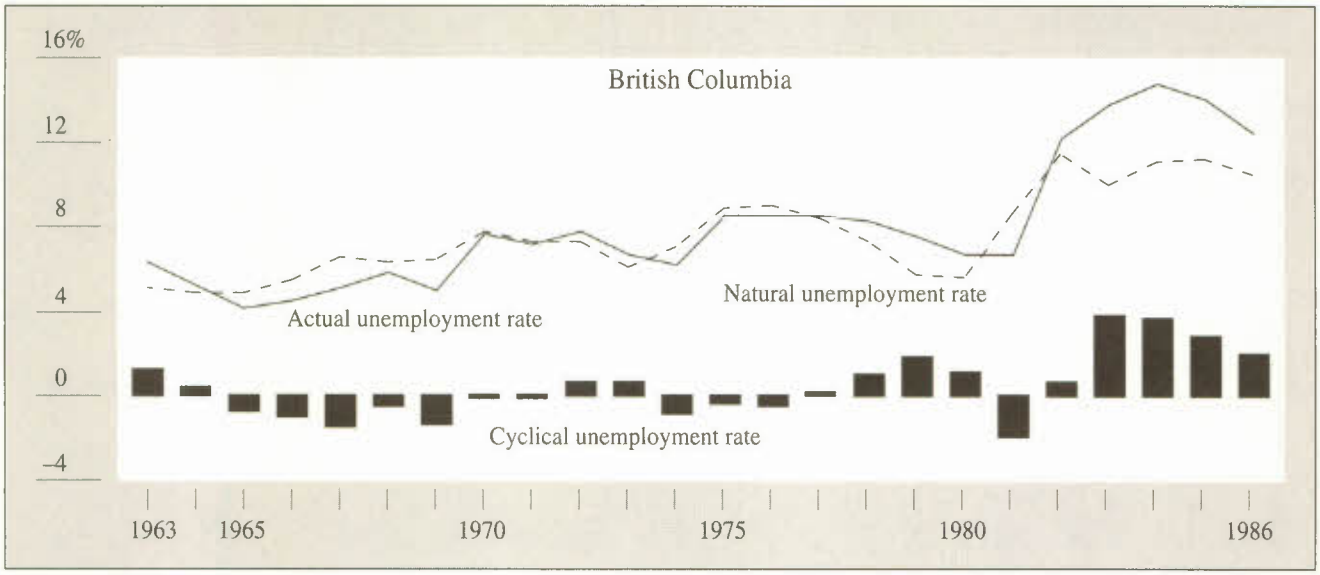


Chart A-1 (concl'd.)



SOURCE Burns [1990*b*], Chart 3-12.

B Contribution of Each Duration Category to the Average Annual Unemployment Experience of the Labour Force and the Unemployed

Table B-1

Contribution in Months of Each Duration Category to the Average Annual Unemployment Experience of the Labour Force (AAE-LF), Canada, 1977-87*

	Duration category (months)					
	0-1	2-3	4-6	7-9	10-12	AAE-LF
	(Months)					
1977	0.042	0.16	0.26	0.22	0.19	0.87
1978	0.052	0.16	0.23	0.18	0.17	0.78
1979	0.057	0.15	0.22	0.15	0.14	0.71
1980	0.055	0.15	0.21	0.15	0.15	0.72
1982	0.049	0.18	0.32	0.29	0.36	1.20
1983	0.046	0.17	0.31	0.32	0.41	1.30
1984	0.049	0.16	0.30	0.27	0.38	1.20
1985	0.051	0.16	0.26	0.25	0.32	1.00
1986	0.027	0.12	0.22	0.23	0.31	0.91
1987	0.021	0.12	0.20	0.15	0.25	0.74

*Data for 1981 are not available.
SOURCE Corak [1990].

Table B-2

Contribution in Months of Each Duration Category to the Average Annual Unemployment Experience of the Unemployed (AAE-U), Canada, 1977-87*

	Duration category (months)					
	0-1	2-3	4-6	7-9	10-12	AAE-U
	(Months)					
1977	0.20	0.76	1.26	1.02	0.91	4.15
1978	0.24	0.70	1.04	0.79	0.75	3.51
1979	0.26	0.68	1.00	0.68	0.63	3.25
1980	0.25	0.68	0.99	0.71	0.71	3.35
1982	0.18	0.64	1.14	1.05	1.28	4.39
1983	0.17	0.61	1.13	1.18	1.48	4.56
1984	0.19	0.61	1.12	1.02	1.41	4.35
1985	0.19	0.65	1.06	1.00	1.28	4.17
1986	0.13	0.56	1.04	1.13	1.52	4.40
1987	0.12	0.68	1.08	0.83	1.38	4.08

*Data for 1981 are not available.
SOURCE Corak [1990].

C Regional Unemployment Disparity and Economic Structure

Table C-1 presents a simple illustrative example of aggregation bias. Assume two regions (1, 2), each with two industries (a, b) and two occupations (x, y). The table has been constructed so that each industry in each region has the same labour force and that the unemployment rate in each industry/occupation pair is the same in each region. The only difference between the two regions is that region 2 has proportionately more workers in occupation y/industry b than does region 1. The third panel of the table shows the industry unemployment rates for each of the two regions ignoring occupational differences. The overall unemployment rate in region 1 is 60/400 = 15 per cent, while in region 2 it is 66/400 = 16.5 per cent. The question is whether the difference is due to structure or behaviour.

If we were to calculate the corrected unemployment rate from an industrial breakdown alone, we would conclude that the influence of structure was zero. By construction, the industry labour force shares in each region are the same. It follows that the structurally corrected unemployment rate will be the same as the observed unemployment rate in each region. This, in turn, would seem to imply that none of the difference in regional unemployment rates can be attributed to differences in industrial structure.

Such a conclusion is, however, erroneous, and arises because the two industries are not homogeneous. Industry b in region 2 uses more individuals in occupation y than it does in region 1. In this instance, unemployment probabilities are jointly determined by occupation and industry. Failure to account for this fact results in biased estimates of the structurally corrected unemployment rate.

Table C-1 presents the corrected unemployment rates assuming the same distribution of occupations and industries in region 2 as in region 1. In this case the influence of structure is clear. The corrected unemployment rates in the two regions are the same, reflecting the fact that their occupation/industry unemployment rates are identical. The only difference between regions is the distribution of occupations within industry b which in region 1 is biased towards the higher risk occupation y. The occupationally/industrially corrected unemployment rate indicates that all of the interregional differences in unemployment rates are due to differences in economic structure.

Table C-1

Illustration of Aggregation Bias

	Region 1		Region 2	
	Industry a	Industry b	Industry a	Industry b
Occupation x				
U	15	10	15	4
N	100	100	100	40
UR_{ij}	15	10	15	10
Occupation y				
U_{ij}	15	20	15	32
N_{ij}	100	100	100	160
UR_{ij}	15	20	15	20
Total				
U_i	30	30	30	36
N_i	200	200	200	200
UR_i	15	15	15	18

D The Labour Market Activity Survey, 1986

The Labour Market Activity Survey (LMAS) was sponsored by Employment and Immigration Canada and conducted as a supplement to Statistics Canada's Labour Force Survey of January/February 1987. The survey documents the labour force experience of almost 67,000 individuals in 1986. Of these, 51,000 participated in the labour market during the year. These 51,000 observations were assigned varying weights to represent the 13.7 million persons active in the Canadian labour market at some time during 1986. The results reported in the text are based on this weighted form. It was repeated in 1988 to chronicle the experiences of the same individuals as those in the previous survey, for 1987.

Our Subsample

The analysis in this chapter uses a subsample from the LMAS. The LMAS reports up to a maximum of five jobs per individual during 1986. However, the number of observations for third, fourth, and fifth jobs held during the year is too small to allow very much statistical analysis. For this reason, our subsample consists of the first- and second-job experiences only, and includes observations on individuals who separated from the first job they held in 1986 and who did (or did not) find a second job in the same year. An additional consideration is the fact that a number of individuals surveyed held more than one job simultaneously. This makes it difficult to observe the separation from one (the first) job. To overcome this problem we have excluded from the subsample job overlaps whose duration extended beyond four weeks.

Industrial and Occupational Classifications

The LMAS data identify the industry and occupation categories of each job held in 1986. The survey identifies 52 industries and 49 occupational categories. The results in this study often report information about industry and occupation in three ways:

Industry/occupation: The units here are the 52 industries and 49 occupational groups.

Industry/occupational group: The industry groups were aggregated to form seven industry groups. The occupations were combined into 13 occupational groups (see Figure D-1).

Industry sector: The industry groups were divided into two sectors – the goods sector and the service sector.

For industrial and occupational groups used in the LMAS, see Figure D-1 below.

Reasons for Separation

Several reasons for separation are listed in the LMAS. We have divided them into four groups:

Quit personal: Personal or family responsibilities (including changes in family circumstances, serious family illness, etc.); changed residence; retirement.

Quit – nonpersonal: Dissatisfaction with job because of: low pay; lack of opportunity for advancement; lack of opportunity to use training or skills; unsatisfactory working conditions, including physical conditions; worries about layoffs, job security, or reduction in working hours; move to a new job; return to school.

Involuntary: Job losses: employer-initiated separations related to seasonal nature of job; nonseasonal economic or business conditions; company moving or going out of business; installation of, or conversion to, new equipment; an on-call arrangement; end of a temporary nonseasonal job; dismissal by the employer; sale of the business or firm.

Job interruptions: temporary job separations related to bad weather; labour dispute (strike or lockout); unpaid vacation.

Other: Other reasons for separation listed in the survey, or not specified.

Figure D-1

Industrial and Occupational Groups Defined in the LMAS, 1986

	LMAS code range
Goods Sector	01-30, 5
Primary	01-08
Manufacturing	09-28
Construction	29-30, 52
Service Sector	31-51
Distributive services	31-36
Information services	37-39, 44
Nonmarket services	40-41, 48-51
Personal services	42-43, 45-47
Occupational groups	
Managerial	01-03
Professional	04-09
Education	10-12
Health	13-16
Clerical	17-22
Sales	23-24
Services	25-28
Primary occupations	29-32
Mining and processing	33-37
Fabrication	38-42
Construction	43-45
Transportation	46-49
Other occupations	50

Notes

Chapter 1

1 Perry [1970] produced this unemployment series by taking a fixed weighted average of the unemployment rates of different age/sex groups, thus controlling for changes in labour force composition. In our construction of "Perry-weighted" unemployment rates, the age/sex adjustment is based on a decomposition of the labour force into 12 categories – men and women aged 15-19, 20-24, 25-34, 35-44, 45-54, and 55 years and over.

2 The "dynamic" view of the labour market emphasizes that labour markets should be studied in terms of movement of individuals between various states in the labour market, namely employment, unemployment, and not-in-the-labour-force. The flows which occur over a period of time allow us to understand two related dimensions of unemployment: the extent, or incidence, of unemployment, and the duration of unemployment experienced by individuals. The gross flow data, derived from Statistics Canada's monthly Labour Force Survey, provides a measure of the number of persons who remain employed, unemployed, or out of the labour force, or who move between these states. Researchers have used these data to analyse the unemployment rate under "steady-state" conditions in terms of its incidence and duration. For details of this methodology and its application to Canadian gross flow data, see Hasan and de Broucker [1985].

3 The years 1966, 1975, and 1981 are contrasted with 1989 because they are years of moderately low but not cyclically minimal unemployment. The broad conclusions that emerge in the discussion are not sensitive to the choice of years.

4 For an excellent survey of the causes of prolonged unemployment in Canada, see Kaliski [1987].

5 The "structuralists'" view is that various supply-side structural factors (including high real wages and government regulations) have contributed to higher natural rates in Western European economies [Sachs 1987]. This explanation has been subject to critical examination by several authors in the volumes edited by Lawrence and Schultze [1987] and Gordon [1988].

6 According to the American Heritage Dictionary, hysteresis is "the failure of a property that has been changed by an external agent to return to its original value when the cause of the change has been removed." In the physical sciences, hysteresis refers to situations where equilibrium is path-dependent. Hysteresis effects in unemployment analysis were first discussed by Phelps [1972].

7 For theoretical and empirical developments related to hysteresis effects and unemployment, see Blanchard and Summers [1986, 1987]; Layard and Nickell [1987]; Lindbeck and Snower [1989]; Solow [1990]; Sachs [1987]; and Bentolila and Blanchard [1990]. For some implications of the hysteresis argument, i.e., the non-uniqueness and path dependence of the natural rate of unemployment and the revival of the discussion of the unemployment-inflation trade-off, see Hargreaves-Heap [1980]; Gordon [1989]; and papers by Coe and several other authors in the volume edited by Cross [1988]. For empirical tests of unemployment persistence, see Franz [1987]; Layard and Bean [1989]; Budd et al. [1987]; Barro [1988]; Hughes and Hutchinson [1988]; and Alogoskoufis and Manning [1988].

8 For a detailed review of the (waning) commitment to the full-employment objective in Canada over the period 1945-85, see Campbell [1991].

9 This point was originally stressed by Summers [1986].

10 Kaliski also made this point. He argued that "it is quite likely that, just as in Malinvaud's world classical unemployment, caused by a destruction of physical capital, can turn Keynesian, so here some Keynesian unemployment may have, through a destruction of human capital, become structural" [1987, 689].

11 For a debate over the zero-inflation target in Canada, see Lipsey [1990].

12 The board's operation and mandate will be modelled after the proposal developed by the Canadian Labour Market and Productivity Centre [Canadian Labour Market and Productivity Centre 1990].

Chapter 2

1 Much of this section is derived from Campbell [1987]. See also Bellemare and Poulin-Simon [1988].

2 Canada, Department of Reconstruction, *Employment and Income with Special Reference to the Initial Period of Reconstruction*, Ottawa, 1945; Provincial Conference on Reconstruction, *Proposals of the Government of Canada*, Ottawa, 1945.

3 Canada, House of Commons, *Debates*, 1943, p. 2; Bothwell and Kilbourn [1979, 164]; Canada, White Paper, 1945, pp. 1-23.

4 Canada, House of Commons, *Debates*, 1950, pp. 2, 52, 58, 1207-9, 2155, 3486, 416, 82-4; 1949, pp. 1435, 3185; 1946, p. 114; 1951 (first session), p. 4164; 1950, pp. 54-60; 1950, p. 57.

5 Ibid., 1955, p. 3.

6 Ibid., 1953-4, pp. 1947, 2086, 2104-5, 5, 440ff., 1447, 1613, 4708, 2104, 3226, 2026, 3725-7; 1955, pp. 3, 2721, 2728-30, 1416.

7 Ibid., 1957-8, pp. 3359-61.

8 Ibid., 1960-1, p. 2; Bothwell et al. [1981, 218-9, 313]; Bank of Canada, *Report*, 1959, p. 14; Economic Council of Canada, Annual Review, *Report*, 1965, pp. 8-9; Canada, Senate, Special Committee on Manpower and Employment, *Report*, 1961, p. 50; Canada, Royal Commission on Banking and Finance, *Report*, 1963, p. 410; Canada, House of Commons, *Debates*, 1960-61, p. 41; Muszynski [1985, 259ff.].

9 Canada, House of Commons, *Debates*, 1963, pp. 3, 997.

10 Campbell [1987, 143-9]; House of Commons, *Debates*, 1963, pp. 997, 999-1001, 1007-8; 1964, pp. 969, 971-2, 976, 980, 982.

11 Canada, House of Commons, *Debates*, 1968, pp. 1670-9, 1603-4, 1691, 1693.

12 Ibid., 1969, p. 6; 1970, p. 103.

13 Ibid., 1973, pp. 1428, 1430, 1433, 1438; 1974, pp. 1421, 2076, 2078-80.

14 Ibid., 1975, pp. 7020, 7024-6, 7028-9.

15 Ibid., 1976, pp. 13823, 13826-7.

16 Ibid., 1979, pp. 6, 2257-60.

17 Barber and McCallum [1980, 1]; Kaliski [1987, 667]; Purvis and Smith [1986, 32]; Fortin [1987].

18 Canada, House of Commons, *Debates*, 1980, pp. 4184ff.; 1981, pp. 12721-2; 1982, p. 18876.

19 Ibid., 1984, p. 6; 1985, pp. 10979-81, 10988.

20 Canada, Royal Commission on the Economic Union and Development Prospects for Canada, *Report*, Ottawa, 1985, vol. III, p. 432-5. Hereafter referred to as the Macdonald Commission.

21 Canada, Commission of Inquiry on Unemployment Insurance, *Report*, Ottawa, 1986, p. 65. Hereafter referred to as the Forget Report.

22 Canada, Employment and Immigration Commission, *Labour Market Developments in the 1980s*, Ottawa, 1981, p. 13. Hereafter referred to as the Dodge Report.

23 Economic Council of Canada, Annual Review [1982, 1, 3, 12-3, 47, 60]; Macdonald Commission, vol. II, p. 205; Forget Report, pp. 32-6, 75.

24 Data based on Statistics Canada, *Historical Statistics*, 1987.

25 Economic Council of Canada, Annual Reviews, 1969, pp. 6-7; 1972, pp. 143-63; 1974, p. 40; 1977, pp. 81-3; 1978, p. 93; Economic Council of Canada, Annual Review [1976, 5]; Canada, Department of Finance, *Economic Review*, 1980, p. 20; Macdonald Commission, vol. III, pp. 585-6, 599; Forget Report, p. 39.

26 Canada, Department of Finance, *Economic Review*, 1980, p. 20.

27 Canada, House of Commons, *Debates*, 1973, p. 1430; Bank of Canada, *Report*, 1972, pp. 7-8; Economic Council of Canada, Annual Reviews, 1973; 1974; 1976, pp. 5-23, 25, 30-1; 1978, pp. 83, 93; Dodge Report, pp. 15, 28; Canada, Department of Finance, *Economic Review*, 1980, p. 26; Macdonald Commission, vol. II, pp. 285-86, vol. III, pp. 586-8.

28 Economic Council of Canada, Annual Reviews, 1976, pp. 24, 77-8; 1979, pp. 12-4.

29 Economic Council of Canada, Annual Reviews, 1976, pp. 25, 29, 30, 35; 1978, pp. 83-9; 1982, pp. 8-9, 97; Forget Report, pp. 19, 36; Canada, House of Commons, *Debates*, 1980, p. 4184.

30 Gunderson [1987, 1-2, 47-8]; Economic Council of Canada, Annual Reviews [1976, 1982]; Kaliski [1987]; Barber and McCallum [1980]; Hasan and de Broucker [1985, 90]; Dodge Report, p. 18; Fortin [1987]; Macdonald Commission, vol. III, pp. 432-5; Siedule and Newton [1979]; Kaliski [1984].

31 Ashenfelter [1983, 114-5]; Economic Council of Canada, Annual Review, 1966, pp. 37-76; Campbell [1987, 157-66, 177-84]; Forget Report, p. 18.

32 Riddell [1986, 18]; Bank of Canada, *Report*, 1976, 1983, 1985.

33 We use the terms natural rate of unemployment and NAIRU interchangeably. Strictly speaking, the natural rate and the NAIRU are conceptually different. The natural rate is a concept of labour market equilibrium, given the technology, social institutions, and the type of shock to which the economy is subject. NAIRU is essentially a disequilibrium concept – the unemployment rate required to prevent a given level of inflation from accelerating. While those differences are important from a theoretical point of view, the basic message they convey in a general sense is essentially the same. And, under certain conditions and in the absence of shocks, the NAIRU and the natural rate may be identical.

34 Economic Council of Canada, Annual Reviews, 1964, pp. 37-8; 1966, pp. 37-8; 1967, pp. 2-5; 1969, pp. 6-7; 1973, pp. 48-9; 1978, pp. 83-9; 1979, pp. 14ff.; 1982, p. 12; Macdonald Commission, vol. III, pp. 424, 432-5, 309.

35 Macdonald Commission, vol. III, p. 435.

36 Marin [1984, 205ff.]; Armingeon [1975, 340]; Hirsch [1980, 121]; Katzenstein [1980, 586]; Steiner [1981]; Ward [1978, 77], Martin [1979].

37 Smith [1982, 201]; Van Otter [1980]; Martin [1979]; Jones [1976]; Pempel [1982, 31].

38 Ward [1978, 71-2]; Smith [1982, 199]; Reischauer [1980, 496]; Vogel [1979, 116-7]; Johnson [1982, 306]; Wesson [1981, 192]; Magaziner [1980, 2]; Van Otter [1980, 148]; Steiner [1981, 358]; Ruin [1982, 141].

39 Jones [1976, 176]; Martin [1979, 104-7]; OECD [1981].

40 Ward [1978, 38, 88, 165]; Stockwin [1982, 124-6]; Campbell [1977, 2]; Reischauer [1980, 491]; Magaziner [1980, 34]; Smith [1983, 51]; Katzenstein [1980, 586].

41 Armingeon [1975, 154]; Stockwin [1982, 101]; Martin [1979]; Thorburn [1986].

42 Stockwin [1982, 9, 130]; Pempel [1982, 41, 52-3]; Allen [1980, 36]; Magaziner [1980, 4-6]; Ruin [1982, 141].

43 Van Otter [1980, 149]; Smith [1982, 179, 197]; Jones [1976, 15]; Katzenstein [1980, 589-90]; Martin [1979, 104-7]; Robinson [1972]; Heindenheimer [1983, 144-6]; Groenweld [1982]; Pempel [1982, 12]; Allen [1980, 33, 40]; Stockwin [1982, 136, 158]; Magaziner [1980, 34-9]; Vogel [1979, 68-77]; Johnson [1982, 265, 273].

44 Dahlberg [1988, 100-1]; Leijon [1988, 92]; Jonzon [1988, 145-6].

45 This update on recent developments in the Swedish economy and on the reasons behind those developments is based on *The Economist* [1990, 67], and Vihriala [1991, 43-44].

46 French [1980, 105-23]; Canada, Department of Industry, Trade and Commerce, *Action for Industrial Growth: A First Response*, Ottawa, 1978, p. 6.

47 Canada, Department of Industry, Trade and Commerce, *Action for Industrial Growth: A First Response*, Ottawa, 1978, p. 6; French [1980, 81]; Phidd and Doern [1978, 291-2, 301]; Morici et al. [1982, 2]; Canada, Second Tier Committee on Policies to Improve International Competitiveness, *Report*, Ottawa, 1978.

48 Canada, *Agenda for Cooperation: A Discussion Paper on Decontrol and Post-Control Issues*, Ottawa, 1977, pp. 30, 32; Maslove and Swimmer [1980].

Chapter 3

1 The current paper draws from two other papers by the same author [see Burns 1990*a* and 1990*b*].

2 For a detailed description of the methodology for calculating national and provincial natural rates, see Burns [1990 and 1990*b*].

3 These results are more or less in accord with the findings of Miller [1985].

4 Hysteresis is a term borrowed from physics. Technically, an object is characterized by hysteresis when it shows no tendency to return to the previous equilibrium when displaced.

5 Because our analysis of the impact of government subsidies to business and monetary policy on the unemployment rate led to only very inconclusive results, it is not reported here. Interested readers are referred to Burns [1990*b*].

6 Both the theoretical and empirical literature on the impacts of unemployment insurance are voluminous. Gregory and Duncan [1980] find that unemployment insurance – in addition to subsidizing prolonged job search-increased youth participation rates while leaving labour demand unchanged, implying higher rates of measured unemployment. Summers [1988] presents an efficiency-wage model where small changes in unemployment insurance had large unemployment effects.

7 Experiments with different specifications show that UI has a significant unemployment impact. The sensitivity of UI to model specification suggests that there is some underlining collinearity between the UI proxy and other explanatory variables.

8 Grossman [1983] argues that minimum wages lead to distortions in the wage structure and increased mismatch due to workers' concerns with relative wages.

9 See, for example, Gordon [1988]; Bean et al. [1986]; and Fortin [1989].

10 Rahman and Gera, Chapter 8, and Gera, Rahman, and Arcand, Chapter 4, discuss these issues.

Chapter 4

1 The survey did not cover the military, fishing, trapping, agriculture, and domestic services.

2 For details on the Job Vacancy Survey, see Statistics Canada [1978].

3 Abraham [1983] considers a number of possible sources of downward bias in the U.S. and Canadian JVS data and assesses the likely magnitude of each understatement in the reported vacancy rates that can be attributed to each source.

4 Denton et al. [1975], Betcherman [1986], and Kapsalis [1988] have constructed this type of series for Canada. For the United States, see Medoff [1983], and Abraham and Katz [1987].

5 For more details on the construction of the series, see Statistics Canada [1983].

6 The coefficient of correlation between the normalized help-wanted index and the vacancy rate over the 1971-78 period was 0.64 at the 0.99 significance level.

7 For detailed econometric results, see Gera et al. [1991].

8 These rates are commonly known as "Perry weighted" unemployment rates [see Perry 1970]. In our calculations, the age/sex adjustment is based on a decomposition of the labour force into 12 categories, including men and women aged 15-19, 20-24, 25-34, 35-44, 45-54 and 55 and over.

Summers [1986] argues that there is no reason why the logic of adjusting changes in labour force composition should be applied only to changes in its age/sex composition. The "Perry-weighting" exercise can be applied to other changes in labour force composition such as marital status, education, and industry. Less-educated workers tend to have higher unemployment rates than do more-educated workers. However, this generation of Canadians are much more educated than their counterparts of 20 years ago, a trend which should be working to lower unemployment rates. Manufacturing, construction, and mining industries tend to have higher average unemployment rates than do services, and trade and finance, whose share of the labour force has increased. Single people tend to have higher unemployment rates than do married people, and the share of the married labour force in Canada has been declining over time. Thus it is not clear that changes in the labour force composition have resulted in an increase in the measured unemployment rate. The results of this exercise show that for the 1980s, the adjustment for the changing marital status of the labour force is quantitatively more important than the age/sex adjustment [see Gera et al. 1988]. The marital adjustment rose in the late 1970s, but unlike the adjustment for age/sex, it has not declined over the 1980s. Finally, the industry adjustment indicates that changes in the industrial composition of the labour force have worked to decrease unemployment slightly.

9 Reid and Meltz [1979], and Betcherman [1986] found similar evidence. For evidence on the outward shift in the U.S. unemployment/vacancy relationship see Abraham and Katz [1987]; Medoff [1983]; Baily [1984]; Cohen and Solow [1967]; Summers [1986]; and Blanchard and Diamond [1989]. For the United Kingdom, see Jackman et al. [1984]; Jackman and Roper [1987]; and Dow and Dicks-Mireaux [1958]. For Germany, see Franz [1987]. For evidence on a group of European countries, see Budd et al. [1987].

10 The outward shifts in the regional UV curves were estimated on the basis of a five-equation system using iterative multivariate generalized least squares (or the iterative Zellner estimation technique). The reason for choosing this procedure was that if nonzero correlations between the disturbance terms in regional equations exist, then estimating the regional equations separately using the ordinary least squares estimation will produce inefficient estimates of the regression coefficients [Johnston 1972].

11 For discussion of the model and what factors shift the UV curve, see Gera et al. [1991].

12 See, for example, Hasan and Gera [1982].

13 For an excellent discussion of these issues, see the *Commission of Inquiry on Unemployment Insurance Report*, Supply and Services Canada, 1986.

14 Canada is not the only country to experience a rise in long-term unemployment recently; it has increased in the European OECD countries, Japan, and the United States as well. The major difference between Canada's long-term unemployment and that of the other – particularly the European – OECD countries, is the magnitude of the problem. For a detailed discussion, see Rahman and Gera [1990].

15 The long-term unemployment variable used in the regressions for the Atlantic and Prairie regions was the national variable. This proxy was necessary because there is no consistent time series for these regions.

16 For more discussion on this hypothesis see, Sachs [1987]; Blanchard and Summers [1986]; Lindbeck and Snower [1986]; and Hargreaves-Heap [1980]. For some empirical results, see Burns [1990] and Chapter 3 in this volume.

17 We calculated an additional measure of regional mismatch. This measure presupposes that a good match between regions will occur if the ratio of unemployment to vacancies is the same in each region. The incidence of structural unemployment can then be measured by the proportion of unemployed who would have to be in a different region for perfect matching to take place. Our calculations, based on notified-job-vacancy data, indicate that the regional mismatch between unemployment and vacancies decreased in 1982-85, but has recently increased to the levels of the late 1970s. This increase in mismatching suggests that there has been a rise in structural unemployment in Canada over this period [see Gera et al. 1988].

18 The index of variation of industrial employment growth rates is defined as the standard deviation of the employment growth rates of the individual industries from the average employment growth for all industries, weighted by the share of each industry in total employment. The index was constructed using data for seven industries – construction, agriculture, commercial services, manufacturing, noncommercial services, other primary industries, and public administration.

19 Corak discusses the issue of long-term unemployment and older workers in Chapter 7 of this volume.

Chapter 5

1 See, for example, Crow [1988]; Lipsey [1990]; and Lucas [1989].

2 For a summary of Keynesian and structuralist interpretations of unemployment that dominated debates during the 1950s and 1960s, see Lipsey [1965], Ostry and Zaidi [1979], and Solow [1965].

3 Hasan and de Broucker [1985, Tables 3-3, 3-6, A-1], and Skulmis [1983] present steady-state estimates. The work of Sider [1985] with U.S. data applies non-steady-state methods to the same issue. Salant [1977] has a clear discussion of the biases inherent in a survey like the Labour Force Survey, and outlines the methodology to correct for them. Corak [1988] surveys much of this literature.

4 These surveys also imply certain biases, the most notable of which is a "recall bias." Corak [1990] discusses these in detail and surveys many of the studies that have used the Canadian data.

5 "C" represents the cohort of those unemployed at some point during the year.

6 This measure, rather than weighting each of the unemployed equally, weights them according to the length of time spent unemployed. It is derived from data on the distribution of unemployment as [Σ (mean) (% total U)]/100, where the summation is over the duration intervals of unemployment experience, (mean) refers to the average unemployment experience for a particular duration interval, and (% total U) refers to the percentage of the total time spent unemployed accounted for by those in that duration interval. For example, the figure for 1978 is derived from the following data:

	Mean	% total U
Duration interval		
Less than 1 month	0.79	6.70
2-3 months	2.25	19.90
4-6 months	4.66	29.52
7-9 months	7.71	22.63
10-12 months	11.16	21.26

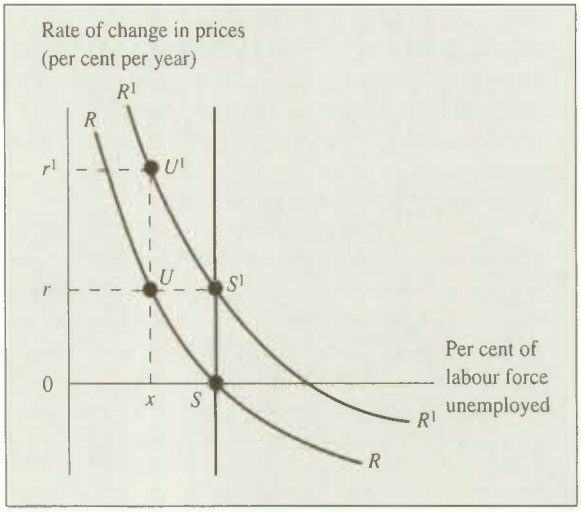
7 The long-term unemployed are defined as individuals who were unemployed more than six months.

8 See Corak [1990], Tables 5 to 9.

9 Carlson and Horrigan [1983] adopt this perspective in a comment related directly to the Clark-Summers interpretation.

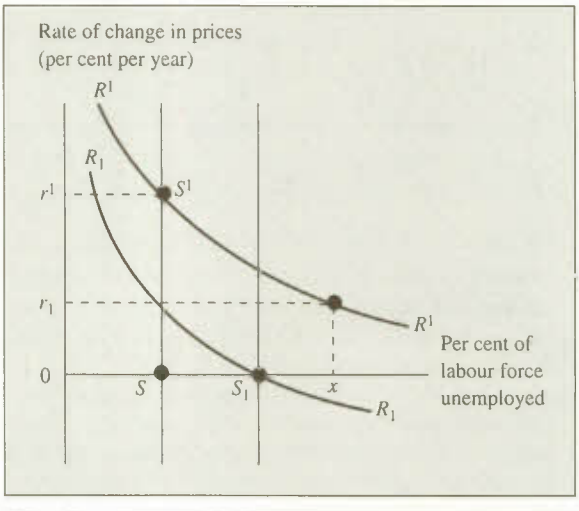
10 This is summarized in the figure below. The vertical axis of the diagram measures the rate of change in prices – the inflation rate – while the horizontal axis measures the unemployment rate. The curves labelled R–R and R^1–R^1 represent the short-term trade-off that is said to exist between these two variables. The vertical line between the points S–S^1 represents the so-called "natural rate of unemployment." An expansion in the growth of the money supply can move the economy from, say point S to point U along the R–R curve. Unemployment will be lower, but the inflation rate will be higher. When the expectation of this higher rate of inflation is built into new wage settlements, a wage-price spiral may result. This is represented by the shift of the R–R curve to R^1–R^1. If the monetary authorities do not increase the rate of growth of the money stock any further, this higher rate of inflation will erode the real stock of money, cause increases in the interest rate, reduce aggregate demand, and eventually move the economy to point S^1. In the final analysis, the unemployment rate returns to its original level – the natural rate – but the rate of inflation is higher.

Expansionary Monetary Policy and the Natural Rate of Unemployment



11 This may also be represented diagrammatically (see figure below). Assume that the economy is situated at point S^1, with an inflation rate of r^1. A reduction in the growth rate of the money supply that is consistent with zero inflation causes a recession that increases the unemployment rate to x and reduces inflation to r_1. Eventually, when the expectation of zero inflation is built into wage and price setting, the R^1–R^1 curve will shift to R_1–R_1, but during this time-interval the recession engenders structural changes that increase the natural rate to S_1. A zero inflation rate has been obtained, but at the cost of a permanently higher unemployment rate.

Restrictive Monetary Policy and an Endogenous Natural Rate of Unemployment



12 The robustness of the empirical estimates varies with the estimating equations used, as well as the sample period. Indeed, only rarely do analysts attach standard errors to the estimates. Many Canadian studies have been produced. Estimates of the natural rate obtained during the 1980s range from 6 to 12 per cent, with most estimates being around 8-9 per cent. Ford and Rose [1989] is one example of the many whose results are sensitive to the estimation period used. One set of estimates is produced for the period 1966-81, and another for the period 1982-85. The natural rate estimates differ by more than 1 per cent. In the former sample period, the natural rate for 1987 is 8.1 per cent, but in the latter it is 9.3 per cent. Further, for some specifications of the estimating equations a natural rate of 30 per cent is produced! Setterfield et al. [1990] is an example of a Canadian study in which specific attention is paid to the robustness of the econometric results to model specification, definition of the variables used, and the standard errors of the estimates. They conclude that they "could find a [natural rate] model with desirable econometric properties to recommend almost any feasible male unemployment rate as the [natural rate] in Canada in the mid 1980's. . . . [The natural rate] may depend to an unwarranted degree on how econometricians resolve technical issues of estimation" [16-17].

13 This hypothesis, the "insider-outsider" theory, is the centrepiece of the model of Blanchard and Summers [1986], and of the work of Lindbeck and Snower [1989].

14 In more technical terms, there might be positive externalities in the production process that are external to the firm, but perhaps internal to the industry.

Chapter 6

1 The results reported here are drawn from Burns [1991].

2 The provincial unemployment rate is equal to the sum of the unemployment rates in all industries weighted by the industry labour force shares. Provincial unemployment rates can differ because industry labour force shares differ from province to province, because industry unemployment rates differ, or as a result of some combination of the two effects.

3 Burns [1989] provides an in-depth discussion of the estimates of the probabilities, and Burns [1991] discusses their use in the calculation of the impact of industrial structure.

4 Howitt and McAfee [1987] provide an interesting search-theoretic model which allows for demand deficient unemployment, search unemployment and, if extended somewhat, different unemployment rates in different labour markets.

5 For the purposes of this table, the census unemployment rates have been made to conform to the monthly (not seasonally adjusted) Labour Force Survey unemployment rates for June of each year. For an explanation of the methodology, see Burns [1991].

6 Even with the much greater effective level of disaggregation in our estimates, it is possible that the degree of unemployment disparity explained by structure could be understated due to aggregation bias. Differences in the make-up of the broad aggregate groupings we use to distinguish between industries could lead to different estimated unemployment probabilities.

Take, for instance, the canning and auto-parts industries. In our disaggregation both are manufacturing industries. It may be that the unemployment probability associated with the canning industry is the same in all provinces; similarly, the probability associated with the auto-parts industry might be the same across the country. Despite the interprovincial equality of subsector unemployment probabilities, if the proportions of canning versus auto-parts workers differ from province to province, and the unemployment probability of each subsector is different, then the average unemployment probability of the manufacturing sector will differ across provinces. That difference will be reflected in different estimated conditional probabilities, and what should be considered a structural effect will be miscategorized as nonstructural.

7 Insofar as these differences serve to make one industry or sector different from another, their effect on estimated coefficients is analytically identical to aggregation bias. In this case, it is the quality of the resources or the climate that distinguishes between industries.

If one were to follow a reductionist line of reasoning, all differences could be attributed to structure, assuming that structure were measured sufficiently finely. The dividing line between structural effects and behavioural effects will always be arbitrary, to some extent. Where we draw the line between structural and nonstructural effects will depend on the available data, and also on pragmatic considerations such as the usefulness of further disaggregation. In our case, the limiting factor is data.

8 The logic of this argument is identical to that of Lilien [1982], although the modelling and context are substantially different.

Chapter 7

1 The source for the following discussion is Darby et al. [1985]; and Corak [1990*a*].

2 To see this, let the unemployment rate – the number of unemployed divided by the number in the labour force – be represented as $UR = U/LF$. The change in the unemployment rate may be derived as:

$$\Delta UR = \phi - \pi UR_{-1}$$

where ϕ is the rate of inflow into unemployment (the number of new job searchers divided by the number in the labour force), π is the rate of outflow from unemployment, and UR_{-1}

is the unemployment rate in the previous period. This is a slight simplification of the actual partial adjustment equation that governs the dynamics of the unemployment rate, but it does illustrate the fact that the unemployment rate will rise (ΔUR will be positive) whenever inflows exceed outflows. It also illustrates that the rate of inflow and outflow are the important parameters determining how quickly the unemployment rate will change. Further, since $\Delta UR = UR - UR_{-1}$, the above equation can also be written as $UR = \phi + (1 - \pi)\ UR_{-1}$. Thus the unemployment rate at any point in time consists of all the new entrants plus those individuals unemployed in the previous period who did not leave.

3 To calculate these inflow and outflow rates we followed the method of Darby et al. [1985] by using the number of individuals that have been unemployed from 0 to 4 weeks at the time the Labour Force Survey is conducted, U^{0-4}. This number represents the number of new entrants to unemployment. The annual averages of this figure are used to calculate the exit rate as: $\pi = 1 - (U - U^{0-4})/U$, 1 minus the retention rate. The rate of inflow is given as: $\phi = U^{0-4}/LF$. The major reason for adopting this method is to avoid the use of gross flows data. The validity of these data has been questioned; it is likely that, because of reporting errors stemming in part from rotation group and recall biases, gross flows data overstate the number of transitions that occur in the labour sector, particularly between the states of unemployment and not-in-the-labour-force. Poterba and Summers [1986] examine the U.S. version of this data in this light, and Stasny [1983] assesses the Canadian data: By using U^{0-4} directly as it is given in the Labour Force Survey, these problems can be avoided. Thus the transition rates that are calculated refer to unemployment, in the job search sense of the term. The two remaining states cannot be distinguished [see Corak 1990*d*].

4 The unemployment experience of females involves issues of gender discrimination and family responsibilities, and is outside the scope of this analysis.

5 The complete list of control variables is: age, education, household head or not, marital status, receipt of supplementary income or unemployment insurance benefits, province, industry, occupation, union status, reason for separation from previous job, wage rate, relative wage rate, length of previous job, seasonal controls, growth in provincial GDP, and the difference between Canadian and U.S. interest rates. The estimation procedure also permitted the probability of leaving unemployment to change with the length of the unemployment spell, and controlled for any unobserved differences between individuals.

Chapter 8

1 These data are from the Labour Force Survey (LFS), which defines the duration of unemployment as the number of continuous weeks in which a person is considered unemployed. It reports on incomplete or in-progress unemployment spells and therefore is not a precise picture of the average length of completed spells of unemployment. Nevertheless, the survey provides useful information on the incidence of long-term unemployment in Canada.

2 If the number of persons entering and leaving unemployment were constant over time, the average duration of completed unemployment spells would be double the average duration of in-progress spells. While this "steady-state" condition does not of course hold, in the absence of precise data on completed spells the doubling technique provides a rough approximation of their length.

3 We also examined the incidence of LTU by sex, marital status, and educational level and found that:
- Male workers, particularly older males, experienced more LTU than female workers.
- Married males were more vulnerable to LTU than single males.
- There was a higher incidence of LTU among less-educated persons than among those with greater education levels.
- The industry and occupation of the last job held also mattered. Workers in goods-producing industries experienced relatively higher incidences than those in service industries. However, the incidence of LTU has risen in every industry and occupation.

4 These are gross flows data, based on the Labour Force Survey. One sixth of the LFS sample is rotated each month and is surveyed for the next five months. This means that five sixths of the sample is identical between any two consecutive months and can be matched to trace a person's experience of employment, unemployment or movement into or out of the labour force for the current and previous months. These matched data constitute the gross flows data set. For more details, see Hasan and de Broucker [1985].

5 Our gross flows data did not allow the disaggregation of the 25-and-over age group. However, Corak [see Chapter 7] uses the LFS to disaggregate inflow and outflow data for workers aged 25-44 and 45 and over. He reports that for both these groups, but particularly for older workers, inflow rates were high and outflow rates low between 1983 and 1988.

6 The *exit probability* is the percentage of each of the above unemployed groups who leave the state of unemployment in a given quarter. A note of caution in interpreting the data on exit probabilities: since they include not only those who move from unemployment to employment but also those who leave the labour force, the probabilities may overestimate the chances of certain groups of unemployed persons finding work. Nevertheless, the degree of variation in these exit probabilities does serve to illustrate the different degrees of risk of remaining unemployed to which different groups are exposed. The annual exit probabilities were calculated as averages of quarterly exit probabilities. The quarterly exit probabilities were calculated in the following way. For the short-term unemployed, the probability is measured by comparing the number of those unemployed for three to six

months with the number of those unemployed for less than three months at a point three months (a quarter) earlier. For the long-term unemployed, the probability is measured by comparing the stock of persons unemployed for a year or more with the stock of persons unemployed for six to twelve months at a point six months (two quarters) earlier. The formula used is as follows:

$$\frac{U^1_{t-1} - U^2_t}{U^1_{t-1}}$$

where $U(i)$ = number of unemployed for i months/years or more at time t. The appropriate U^2_t in the case of the long-term unemployed would have been the number of individuals unemployed for 12-18 months. However, as unemployment data for this particular duration were not available, we used data for those unemployed for 12 months or more as a proxy. Our judgment is that most of those unemployed for 12 months or more would in fact fall into the 12-18 month category.

This method of computing exit probabilities does not control for the influence of other factors such as peoples' individual characteristics. Nevertheless, it provides a general idea of the chances of escaping from unemployment.

7 This argument is based on evidence provided in Economic Council of Canada, Annual Review [1990].

8 As one of the referees points out, measures of the severity of the mismatches should include evidence on the duration of vacancies as well as on the duration of unemployment. The duration of vacancies provides a notion of the labour demand situation. However, we are not aware of the existence of such a data base.

9 For details on the methodology and results, see Rahman and Gera [1990].

10 The impact of policies such as wage subsidies on the unemployment/inflation trade-off are discussed in some detail in Gera [1988]. This analysis suggests that because wage subsidies target workers who are relatively disadvantaged as a result of high unemployment, less bargaining power, rigid wages, or other characteristics, they place no upward pressure on wage costs in the aggregate. Thus unemployment could fall without any attendant increase in inflation – a phenomenon that has been referred to as "cheating the Phillips curve" [Baily and Tobin 1977].

11 For a detailed discussion on this point, see Gera [1988].

Chapter 9

1 Empirical testing of the impact of sectoral shifts on unemployment has been mainly at the aggregate level (see, for example, Lilien [1982] for the United States; and Samson [1985] for Canada). For debate surrounding empirical issues, see Abraham and Katz [1986]; Charette and Kaufman [1987]; Neelin [1987]; Burns [1990]; and Gera and Rahman [1991].

2 There is an interesting controversy surrounding the interpretation of the sectoral-shifts hypothesis regarding intersectoral labour mobility and unemployment. In contrast to Lilien's interpretations of the sectoral-shifts hypothesis, Murphy and Topel [1987] argue that labour mobility among the different industries must be countercyclical. Mobility should be highest (or lowest) in periods of high (or low) unemployment. And industry movers should account for the major part of variations in unemployment. These findings are contrary to their interpretation of the sectoral-shifts hypothesis. For more on this debate, see Gera and Rahman [1991].

3 Another inference drawn by Murphy and Topel on the basis of the sectoral-shifts hypothesis is that the distribution of unemployment arising from sector-specific shocks will be non-neutral across the economy. However, they find that in the United States, "the trend toward higher unemployment is not heavily concentrated in particular sectors in the economy. Unemployment has increased in all major industries, in all age and schooling groups, and in all major regions of the country. The timing and magnitude of changes in unemployment are very similar across identifiable groups." This broad-based neutrality of the unemployment experience leads them to question the importance of sector-specific factors as a determinant of unemployment in the United States. However, they do not rule out all influences. Changes in one sector can spill over into other sectors, particularly the related ones. Murphy and Topel find that the manufacturing sector generates geographically concentrated spillover effects, which could be an explanation for the apparent aggregate neutrality in unemployment rates, especially if the effects are large and are transmitted rapidly.

4 Osberg [1988] extends his analysis to the relationship between interindustry mobility and local unemployment rates for the 67 economic regions in Canada. His results suggest that for female workers, there is a significant negative relationship between the movements in the mobility and unemployment rates. He does not find a statistically significant relationship for males.

5 The term "first job" does not refer to the very first job ever held by an individual, but to the first job held in 1986, regardless of when the job started.

6 See, for example, Rahman and Gera [1990].

7 For a detailed discussion of this multivariate analysis, see Gera and Rahman [1991].

8 The fact that these workers experience relatively severe adjustment problems is corroborated by evidence on the experiences of the permanently laid-off workers in 1981 and 1984. In January 1986, Statistics Canada conducted the "Survey of Displaced Workers" in order to obtain information on the labour force experience of workers who lost their full-time jobs during the period 1981-84 and who were not recalled or rehired by the same employer. For details of the survey and findings, see Picot and Wannel [1987].

9 See Gera and Grenier, Chapter 10 in this volume. For the evidence in the United States, see Summers [1986].

10 For details of the methodology used, see Gera and Rahman [1991].

11 For a detailed discussion of industry spillover effects, see Economic Council of Canada, Annual Review [1990].

12 See Department of Employment and Immigration, *An Overview of International Trade and Domestic Labour Market Adjustment in Canada*, November 1985.

13 See Corak [1990*c*] and Chapter 7 in this volume.

Chapter 10

1 The concept of involuntary unemployment relies on some notion of segmented labour markets [see Summers 1986]. If labour markets are segmented, it is possible to observe involuntary unemployment in the sense that the unemployed are unable to get a job at a wage that other workers of that ability are receiving. Segmented labour markets also raise the possibility that some of the unemployed prefer to remain unemployed in order to queue for high-wage jobs.

2 For a detailed review of compensating wage differentials, see Digby and Riddell [1986].

3 See, for example, Dickens and Katz [1987]; Krueger and Summers [1988]; and Murphy and Topel [1987].

4 The main advantages of that survey are that 1) it provides for a large number of control variables that affect wages; 2) the industry categories are quite detailed (52 industries); and 3) information is available for more than one job for each individual, which makes it possible to analyse workers who changed jobs. The sample was stratified so that each Canadian region had a sufficient number of observations. The weights we used are those provided by the survey.

The subsample we use in our analysis excludes self-employed workers and paid workers in agriculture, public administration, and defence, because the process that determines remuneration for those workers has some characteristics that may complicate a study of interindustry wage differentials. This choice of industries is similar to that of Krueger and Summers [1988].

5 The estimates are based on a regression analysis which takes into account the individual differences in human capital and other personal attributes that affect wages. More precisely, we report the coefficients of industry dummy variables in regression equations where the dependent variable is the natural logarithm of the hourly wage. The coefficients of the industry variables are further restricted in such a way that the sum of the coefficients weighted by the share of each respective industry in total employment is equal to zero. See Gera and Grenier [1991] for more details.

6 See Gera and Grenier [1991] for more details. Similar findings are reported by Dickens and Katz [1986] for the United States.

7 For a discussion of how firm size can affect wages, see Brown and Medoff [1989].

8 These results are consistent with the general conclusions of other studies that industry wage differentials are relatively constant over space and time. See, for example, Krueger and Summers [1988].

9 Murphy and Topel [1987] develop a statistical procedure for assessing the potential importance of unobserved labour quality in driving the wage differentials. Their results lead them to conclude that unobserved ability accounts for the bulk of the industry wage differentials. These findings have been questioned by Katz and Summers [1989].

10 The Labour Market Activity Survey (LMAS) tracks up to five jobs per worker during 1986. Because the number of observations for the third, fourth, and fifth jobs held is too low for meaningful statistical analysis, the evidence presented here pertains to those individuals who separated from the first job they held in 1986 and found a second job during the year. The data set contains 32,945 first-job holders; 1,996 of them left their job in 1986 and found another in a different 2-digit industry during the year.

11 Job leavers include those who quit their job for personal and nonpersonal reasons, which are defined as the following:
Personal reasons: personal or family responsibilities (including changes in family circumstances, serious family illness, etc.); changed residence; and retirement;
Nonpersonal reasons: dissatisfied with job for reasons of low pay, no opportunity for advancement, no opportunity to use training or skills, working conditions including physical conditions, transportation problems and hours of work, other; worried about layoff, job security or reduction in hours; found new job; and going to school. Job losers are those who lose their job for the following reasons:
Job losses: employer-initiated separations; seasonal nature of job; nonseasonal economic or business conditions; company moving or going out of business; installation of, or conversion to, new equipment; an on-call arrangement; end of a temporary nonseasonal job; dismissal by the employer; sale of the firm;
Job interruptions: temporary job separations; bad weather; labour dispute (strike or lockout); unpaid vacation.

12 Krueger and Summers [1987] and Dickens and Katz [1987] argue that the evidence of regularities in the industry wage structure over time and space combined with the findings that more profitable industries pay higher wages casts further doubt on unmeasured labour quality as an explanation for wage differentials. The argument is: Why would there be a correlation between unmeasured labour quality and product market characteristics?

13 Workers may be compensated for differences in unemployment risk across industries. Murphy and Topel [1987] find that this factor accounts for only quite a small fraction of interindustry wage differentials.

14 For other research showing the relationship between wages and turnover, see, for example, Pencavel [1970]; Freeman [1980]; and Krueger and Summers [1987, 1988].

15 This would be particularly true if the demand for labour in those industries is inelastic.

16 This pattern has also been found in the United States. See Katz and Summers [1989].

17 In the recent literature, two other rent-sharing explanations – the insider-outsider model and the union threat model – have been proposed as possible explanations of industry wage differentials. The insider-outsider model is based on two arguments: (i) that turnover costs associated with hiring, training, and firing workers discourage firms from replacing existing workers (insiders) with unemployed workers (outsiders), and (ii) that insiders are able to influence the wage-bargaining process without taking into account the interests of outsiders. A key implication of both arguments is that the influence of insiders on the wage-setting process prevents firms from reducing wages in the face of an excess supply of labour. As a result, unemployment may persist even in the face of high levels of unemployment overall. For a detailed discussion of insider-outsider models, see Blanchard and Summers [1986]; Solow [1985]; Lindbeck and Snower [1986]; and Katz [1988]. Dickens's and Katz's union threat model [1986] argues that wage premiums may be related to the presence of unions or to the threat of collective action by workers. Firms may find it profitable to pay higher than competitive wages to unionized workers to prevent strikes and maintain industrial peace.

18 See, for example, Akerlof and Yellen [1987].

19 Carmichael [1990] points out that other models could also lead to the same conclusions. The conclusion that can be drawn from this is that the existence of large interindustry wage differentials is certainly consistent with the efficiency wage models, but it does not prove by itself the validity of those models.

20 Employment growth will not lead to equal percentage reductions in unemployment if it is associated with either population growth or an increase in labour force participation.

21 Summers [1986] suggested this notion of transitional unemployment while explaining the unemployment patterns of males in the United States. The concept of "transitional unemployment" or "wait unemployment" was earlier suggested by Hall [1975]. This view dates back to the seminal work of Harris and Todaro [1970] in the context of underdeveloped economies. It is related to the presence of a segmented labour market – a labour market with a high-wage primary sector and a low-wage secondary sector. For other models along the similar lines, see McDonald and Solow [1985]; and Dickens and Lang [1988]. Efficiency wage theories have important links with the segmented labour market theory since it can be argued that the primary sector pays efficiency wages, while the secondary sector does not. Katz [1986] argues that the shirking model also provides a rationale for segmented labour markets with a wage differential for similar workers across the primary and secondary sectors and rationing of primary sector jobs. Jones [1987] argues that efficiency wage considerations are important when it is expensive for primary-sector employers to monitor the workers' effort. Employers then find it optimal to hire from the pool of the unemployed, using acceptance of low-wage jobs as device to screen out less-motivated individuals. Our evidence does support the idea that higher turnover rates are associated with low-paying jobs.

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