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A Comparative Analysis of Unemployment in Canada and the United States

David Card and W. Craig Riddell

5.1 Introduction

In most countries the unemployment rate is a closely watched indicator of labor market performance. Judged by this standard the performance of the Canadian economy deteriorated sharply in the 1980s. The average decadal unemployment rate rose from 6.7 percent in the 1970s to 9.3 percent in the 1980s. Even more revealing is the increase in Canadian unemployment relative to U.S. Throughout most of the postwar period unemployment rates in the two countries followed very similar trends. This fact is illustrated in figure 5.1, where we show U.S. and Canadian unemployment rates for the past thirty years. Average unemployment rates were nearly equal in the two countries during the 1950s and 1960s, and only slightly higher in Canada in the 1970s. During the 1980s, however, average Canadian unemployment rates were a full 2 percentage points higher.

The emergence of a relative unemployment gap between Canada and the United States has sparked much speculation and research into its causes.¹ Initially many observers argued that the gap reflected the more severe economic downturn in Canada in the early 1980s. Following the longest expansion in the postwar era, however, it is difficult to argue that the unemployment gap is a short-run adjustment phenomenon. In this paper we investigate an alternative “structural hypothesis”: that the divergence in unemployment rates reflects an emerging structural difference in the nature of unemployment and

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1. See Ashenfelter and Card (1986), Fortin (1986), McCallum (1987), Moorthy (1990), Keil and Symons (1990), and Milbourne, Purvis, and Scoones (1991).

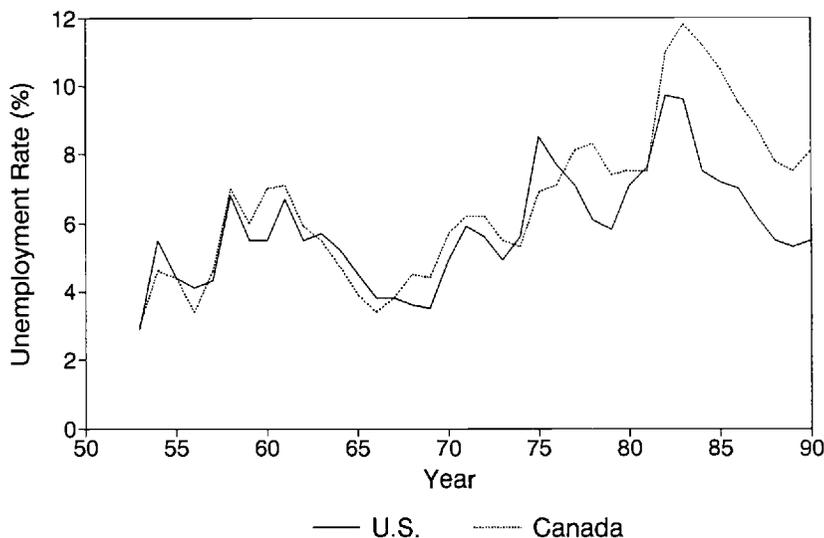


Fig. 5.1 Unemployment rates in the United States and Canada, 1953–90

labor supply in the two countries. To understand this difference we analyze individual employment and unemployment data from the United States and Canada at the beginning and end of the 1980s. Our investigation points to several complementary explanations for the relative growth of unemployment in Canada, including relative changes in the fraction of nonworking time that is reported as unemployment (particularly among women and men with very low levels of labor supply), and relative changes in the overall distributions of working and nonworking time.

Associated with the Canadian-U.S. unemployment gap is an even greater difference in the availability and utilization of income support programs for unemployed workers.² An important public policy question is whether the more generous unemployment insurance (UI) system in Canada is causally related to the relative growth in Canadian unemployment. Although we provide no definitive answer to this question, our analysis suggests that the potential availability of UI benefits cannot *by itself* explain the emergence of the gap in unemployment between Canada and the United States. Nevertheless, some of our evidence is consistent with the hypothesis that structural features of the Canadian UI system, including the system of regional extended benefits, contributed to the rise in unemployment in Canada relative to the United States.

2. See Blank and Hanratty (1991) for an analysis of the effects of this difference on the distributions of family income in the two countries. Anderson and Meyer (1993) and Green and Riddell (1993) provide overviews of the unemployment insurance systems in the United States and Canada, respectively.

The research strategy followed in this paper is unabashedly empirical. We regard the emergence of a gap in the unemployment rates of the two countries as a mystery, and sift through the available data for clues. Section 5.2 documents the unemployment gap using aggregate time-series data. Sections 5.3–5.5—the core of the paper—analyze microdata from the two countries before and after the relative rise in Canadian unemployment. Much of the analysis uses a “difference-in-differences” technique to net out any permanent country-specific effects or common time trends in the two countries. At the microlevel, labor market behavior in the two countries is remarkably similar and remarkably stable over time. The most notable relative shift in individual behavior in the two countries concerns the allocation of nonworking time between time spent unemployed and time spent out of the labor force. This conclusion leads us to an investigation in section 5.6 of the income support programs in the two countries. We summarize our findings in section 5.7.

5.2 The Emergence of the Unemployment Gap

Table 5.1 presents a variety of aggregate labor market indicators for the United States and Canada over the 1966–90 period. These data are drawn from very similar household surveys in the two countries—the Current Population Survey (CPS) in the United States and the Labour Force Survey (LFS) in Canada. In particular, the concepts of employment, unemployment, and labor force participation are based on responses to an almost identical battery of questions in the two surveys.³ We therefore believe that comparisons of U.S. and Canadian labor market data reflect behavioral differences between the two countries, rather than differences in the definitions of labor market status.

The first and fifth columns of the table report the adult civilian populations of the two countries.⁴ From the early 1960s to 1980 the adult population grew faster in Canada: 2.16 percent per year versus 1.96 percent per year in the United States. After 1981, growth rates of the adult populations in the two countries slowed to virtually the same rate—1.15 percent per year. The greater relative slowdown in population growth accounts for a slight relative downturn in the economic growth of Canada in the 1980s.

Trends in labor force participation rates show much bigger differences across the two countries. Historically, labor force participation rates were higher in the United States than in Canada. In 1953, for example, the partici-

3. In both countries an individual is counted as employed if he or she did any work in the preceding week or had a job but was absent for reasons of sickness, vacation, and so forth. An individual is counted as unemployed if he or she was available for work during the week and was either laid off from a job and expecting recall, or had looked for work in the preceding month.

4. We present labor market data for the civilian population in each country. Data for the entire population (including active members of the armed forces as employed) are very similar. Note that the adult population is age 15 and over in Canada, and age 16 and older in the United States.

Table 5.1 Population, Labor Force Participation, Employment-Population, and Unemployment Rates, 1966-90

	U.S.				Canada			
	Civilian Population	LFPR	Employment-Population	Unemployment Rate	Civilian Population	LFPR	Employment-Population	Unemployment Rate
1966	128,058	59.2	56.9	3.8	13,083	57.3	55.4	3.4
1967	129,874	59.6	57.3	3.8	13,444	57.6	55.4	3.8
1968	132,028	59.6	57.5	3.6	13,805	57.6	55.0	4.5
1969	134,335	60.1	58.0	3.5	14,162	57.9	55.3	4.4
1970	137,085	60.4	57.4	4.9	14,528	57.8	54.5	5.7
1971	140,216	60.2	56.6	5.9	14,872	58.1	54.5	6.2
1972	144,126	60.4	57.0	5.6	15,186	58.6	54.9	6.2
1973	147,096	60.8	57.8	4.9	15,526	59.7	56.4	5.5
1974	150,120	61.3	57.8	5.6	15,924	60.5	57.3	5.3
1975	153,153	61.2	56.1	8.5	16,323	61.1	56.9	6.9
1976	156,150	61.6	56.8	7.7	16,701	61.1	56.7	7.1
1977	159,033	62.3	57.9	7.1	17,051	61.6	56.6	8.1
1978	161,910	63.2	59.3	6.1	17,377	62.7	57.5	8.3
1979	164,863	63.7	59.9	5.8	17,702	63.4	58.7	7.4
1980	167,745	63.8	59.2	7.1	18,053	64.1	59.3	7.5
1981	170,130	63.9	59.0	7.6	18,368	64.8	59.9	7.5
1982	172,271	64.0	57.8	9.7	18,608	64.1	57.1	11.0
1983	174,215	64.0	57.9	9.6	18,805	64.4	56.8	11.8
1984	176,383	64.4	59.5	7.5	18,996	64.8	57.5	11.2
1985	178,206	64.8	60.1	7.2	19,190	65.3	58.5	10.5
1986	180,587	65.3	60.7	7.0	19,397	65.7	59.4	9.5
1987	182,753	65.6	61.5	6.2	19,642	66.2	60.4	8.8
1988	184,613	65.9	62.3	5.5	19,890	66.7	61.6	7.8
1989	186,393	66.5	63.0	5.3	20,141	67.0	62.0	7.5
1990	188,049	66.4	62.7	5.5	20,430	67.0	61.5	8.1

Notes: Civilian population (age 16 and over in the United States, age 15 and over in Canada) is in thousands. LFPR is the labor force participation rate among the civilian population.

pation rates of U.S. men and women were 86.0 and 34.4 percent, while those of Canadian men and women were 81.0 and 23.6 percent. During the 1960s female participation grew rapidly in Canada, and male participation rates declined more slowly than in the United States, so that by 1975 overall participation rates were nearly identical in the two countries. Interestingly, the much higher unemployment rates in Canada after 1982 did little to dampen Canadian participation rates, which remained slightly above U.S. rates throughout the 1980s.

The relative trend in employment-population rates between the two countries reflects the relative increase in labor force participation in Canada offset by higher Canadian unemployment rates.⁵ On net there was an actual increase in the relative employment-population rate in Canada between the 1960s and 1980s. This fact is illustrated in a slightly different way in figure 5.2, where we have plotted the differences in the labor force participation and unemployment rates between the United States and Canada for 1966–90, together with the difference in the “nonemployment” rate. The latter is simply the fraction of the population not working (1 minus the employment-population rate). Although differences in the unemployment and nonemployment rates between Canada and the United States have the same cyclical pattern, they have very different secular trends. The gap in nonemployment actually closed during the 1980s at the same time as the unemployment gap widened.

A comparison of relative employment rates paints a brighter picture of the Canadian labor market in the 1980s than a comparison of unemployment does. Which of these comparisons is preferred depends on one’s view of the difference between unemployment and nonparticipation. If the distinction is purely terminological (as suggested by Lucas and Rapping 1970), the employment rate is a better yardstick of labor market performance. If unemployment and nonparticipation are distinct labor market states, however, a comparison of unemployment rates may provide a better index of labor market performance. In any case the increase in relative unemployment in Canada occurred in conjunction with *rising* relative participation and employment, rather than with a relative decline in work activity in the Canadian economy. We return to this point in the following sections.

As noted in the introduction, we have adopted the working hypothesis that the unemployment gap between Canada and the United States cannot be explained as a short-run adjustment phenomenon. Nevertheless, it must be acknowledged that the 1982–83 recession was considerably deeper in Canada. Some evidence of this fact is presented in table 5.2, which shows the changes in real output and employment in the two countries between 1981 and 1982, together with data on earlier trends and subsequent growth rates.⁶ Relative to

5. Growth in the employment-population ratio is approximately the difference between growth in the labor force participation rate and the change in the unemployment rate.

6. We present two measures of overall employment growth in each country—one based on household surveys and another based on establishment surveys. The Canadian establishment sur-

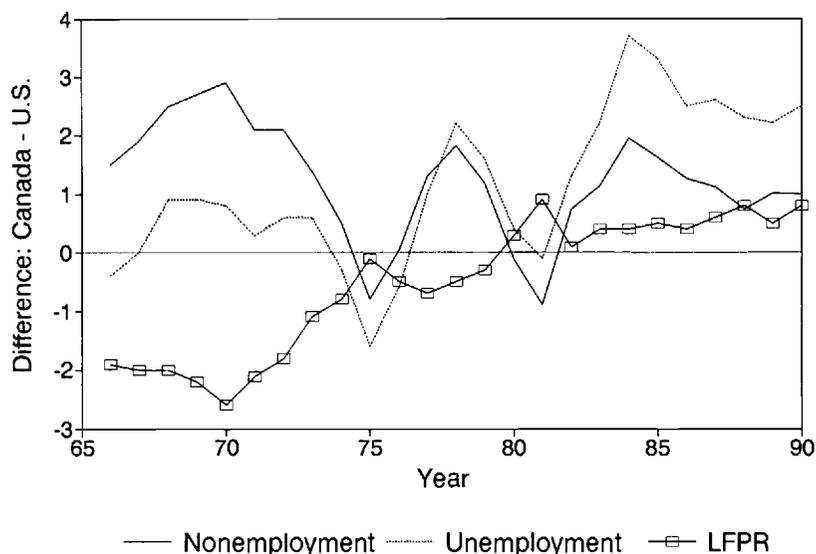


Fig. 5.2 Differences in labor market activity rates, Canada minus the United States

Note: LFPR means labor force participation rate.

Table 5.2 Severity of the 1982 Downturn and Extent of the Subsequent Recovery in the United States and Canada

	U.S.			Canada		
	Real GNP	Employment		Real GNP	Employment	
		E-Series ^a	H-Series ^b		E-Series ^a	H-Series ^b
Severity of the 1982 downturn						
Trend growth 1970–81 (% per year)	2.7	2.5	2.4	4.4	3.0	3.0
Growth 1981–82 (%)	-2.6	-1.8	-0.8	-3.3	-3.5	-3.6
1981–82 change relative to trend	-5.3	-4.3	-3.2	-7.7	-6.5	-6.6
Extent of recovery post-1982						
Trend growth 1981–89 (% per year)	3.0	2.2	2.2	3.1	1.4	2.0
1981–89 growth rate relative to 1970–81 growth rate	0.3	-0.3	-0.2	-1.3	-1.6	-1.0

Note: Growth rates are measured as changes in logarithms of series.

^aEmployment as measured by establishment survey. The Canadian establishment survey was revised in 1983 and in 1987. Growth rates are calculated from a spliced series we constructed.

^bCivilian employment as measured by household survey.

earlier trends, real output fell 5.3 percent between 1981 and 1983 in the United States, and 7.7 percent in Canada. The relative change in employment is similar. After 1983 the growth rates of output and employment returned to their earlier level in the United States but not in Canada. In fact the growth rates of output and employment in the United States and Canada were similar in the 1980s, whereas Canadian growth rates were significantly higher in the 1970s. Although one could argue from this evidence that the Canadian economy failed to fully recover from the 1982–83 recession, we believe a more reasonable hypothesis is that the factors leading to more rapid Canadian growth in the 1960s and 1970s (such as faster adult population growth and faster growth in labor force participation rates) had largely dissipated in the 1980s. The data suggest a return to labor market equilibrium in the late 1980s with permanently higher rates of unemployment in Canada.

Further evidence of a shift in the relation between unemployment and other indicators of labor market equilibrium in Canada is provided in figure 5.3. Here we have plotted a relative version of the classical Beveridge curve relating the unemployment rate to the job vacancy rate. Although true job vacancy data are unavailable for either the United States or Canada, a very similar help wanted index (HWI) is available for both countries.⁷ A relative Beveridge curve based on the HWI fits the pre-1982 data for the two countries remarkably well.⁸ After 1982, however, the figure suggests a sharp increase in the level of Canadian unemployment relative to the level of job listings. In fact, the excess unemployment during 1983–88 averages 2–3 percentage points—about the size of the unemployment gap between the United States and Canada. Thus a comparison of relative Beveridge curves suggests that the unemployment gap that emerged in the late 1980s resulted from a shift in the unemployment-vacancy relation in Canada, rather than from deficient labor demand.⁹

A similar conclusion emerges from a comparison of the correlations between unemployment and GNP growth in the two countries—the so-called Okun's law relationship. A regression of the unemployment gap between Canada and the United States on the difference in real GNP growth rates and an dummy variable for post-1981 observations shows a relative increase of 2.1

vey has been redesigned twice since 1983, forcing us to splice the available series. Thus the establishment-based employment growth rates in table 5.2 should be interpreted with caution.

7. The HWI is a simple index of the volume of classified newspaper advertisements for help wanted. See Hagar-Guenette (1989) for a brief history of the Canadian HWI and some analysis of its cyclical properties.

8. Interestingly, the country-specific Beveridge curves for 1966–81 show outward-shifting combinations of unemployment and vacancies throughout the 1970s. The curves are stabilized by intercountry differencing.

9. We have also compared the unemployment-vacancy relationship within particular Canadian provinces to the overall U.S. Beveridge curve. These comparisons also show a shift in the unemployment-vacancy relationship in Canada.

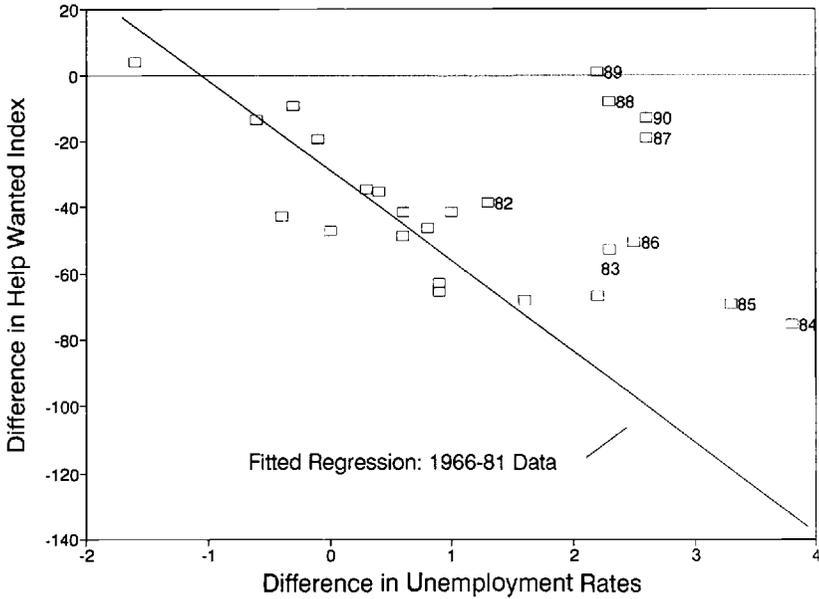


Fig. 5.3 Help wanted and unemployment, Canada minus the United States

percentage points in Canadian unemployment after 1981.¹⁰ Comparisons of both the Beveridge curve and the Okun relationship suggest a structural explanation for the unemployment gap in the late 1980s, rather than a demand-based explanation.

5.3 A Microdata Analysis of Unemployment

We turn to a microdata analysis of employment and unemployment outcomes in the United States and Canada. We use individual-level data to examine changes over the 1980s in the labor market activities of different groups, and to analyze the components of the relative rise in Canadian unemployment. Our comparisons are drawn from CPS and LFS supplements conducted in 1980 and 1987. These surveys contain retrospective data on employment and unemployment experiences in 1979 and 1986, as well as contemporaneous data on labor market activities during the survey week.¹¹ The

10. The estimated regression is $DU = 0.5 - 0.14 \cdot DG + 2.1 \cdot (\text{Post } 1981)$, where DU is the difference in Canadian and U.S. unemployment rates and DG is the difference in real GNP growth rates. The estimated standard error of the relative growth coefficient is 0.08; the estimated standard error of the Post 1981 coefficient is 0.3; and the R^2 of the regression is 0.63. The regression is estimated on annual data for 1954–89.

11. The CPS supplement (the annual demographic file) is conducted as part of the March CPS survey. The LFS supplement (the Survey of Consumer Finances) is conducted as part of the April LFS survey.

1980 surveys pre-date the emergence of the Canada-U.S. unemployment gap and therefore provide a convenient benchmark against which to judge the later data. Although an earlier benchmark might be desirable, limitations in the CPS and LFS make it difficult to extract reliable annual labor force data in earlier surveys.¹²

Table 5.3 provides basic demographic and labor market information on individuals in the four surveys. For the two U.S. surveys and for the later (1987) Canadian survey we present information on both the overall adult population and the subset of family heads.¹³ This distinction is necessary because information from the earlier Canadian survey is available only for family heads. Approximately 80 percent of adults in both countries are family heads. This fraction was remarkably stable in the United States over the early 1980s, suggesting that a comparison of changes in the employment and unemployment experiences of family heads will give a reasonably accurate picture of the overall population. Compared to the adult population as a whole, family heads are 3–4 years older and slightly more likely to be female. They also have higher education levels, slightly stronger labor force attachments, and about 10 percent higher average weekly wages.

The age and sex distributions of the population are very similar in the United States and Canada. The U.S. population is better educated: in table 5.3 rows 3 and 4 show that the fraction of individuals with less than high school education is substantially higher in Canada, while the fraction with college or university degrees is lower. The percentage of individuals employed in the survey week (row 5) is also two to three points higher in the United States. Average weeks worked in the previous year are roughly similar in the two countries, however, and average weeks in the labor force in the previous year are actually higher in Canada.¹⁴ The unemployment rate of family heads during the survey week is 1 percentage point higher in Canada in 1980 and 2.5 percentage points higher in Canada in 1987. Compared to the aggregate statistics in table 5.1, the individual microdata show a slightly smaller relative rise in Canadian unemployment.¹⁵

An alternative measure of unemployment can be obtained from reported weeks of employment and unemployment in the previous year. Simple averages of this “retrospective unemployment rate” (across individuals with posi-

12. The March CPS survey began collecting information on exact weeks worked in the previous year only in 1976. Similar limitations also affect earlier Surveys of Consumer Finances.

13. We define the adult population as age 16–68 in both countries. Our family definition corresponds to the Survey of Consumer Finances definition of “economic families.” Our definition of “heads” includes husbands and wives in families where both are present, as well as single heads of either sex.

14. Note that the survey week measures of employment and unemployment in table 5.3 are for a particular month (March in the United States, April in Canada) and do not take account of seasonal adjustment factors.

15. From table 5.1 the gap in overall unemployment rates between Canada and the United States rose from 0.4 percentage points in 1980 to 2.6 points in 1987.

Table 5.3 Characteristics of Overall Population and Family Heads in the United States and Canada, 1980 and 1987

	U.S.				Canada		
	All 1987	Heads 1987	All 1980	Heads 1980	All 1987	Heads 1987	Heads 1980
1. Average age	38.2 (0.1)	41.7 (0.1)	37.9 (0.1)	41.6 (0.1)	38.0 (0.1)	41.4 (0.1)	40.6 (0.1)
2. Female (%)	51.5 (0.2)	52.9 (0.2)	51.8 (0.1)	53.0 (0.2)	50.4 (0.2)	51.8 (0.2)	52.2 (0.2)
3. Education \leq 8 years (%)	8.1 (0.1)	8.3 (0.1)	11.2 (0.1)	12.0 (0.1)	14.2 (0.1)	15.6 (0.2)	22.4 (0.2)
4. Education \geq 16 years (%)	18.3 (0.1)	21.1 (0.1)	15.0 (0.1)	17.4 (0.1)	11.7 (0.1)	13.3 (0.2)	9.7 (0.1)
5. Employed (%)	67.1 (0.2)	70.3 (0.2)	64.8 (0.1)	67.9 (0.2)	65.0 (0.2)	66.9 (0.2)	66.1 (0.2)
6. Unemployed (%)	5.0 (0.1)	4.0 (0.1)	4.7 (0.1)	3.7 (0.1)	7.1 (0.1)	6.5 (0.1)	4.8 (0.1)
7. In labor force in previous year (%)	77.9 (0.1)	79.0 (0.1)	76.8 (0.1)	77.4 (0.1)	79.8 (0.2)	79.1 (0.2)	76.5 (0.2)
8. Average weeks work in previous year	33.6 (0.1)	35.7 (0.1)	32.5 (0.1)	34.6 (0.1)	33.7 (0.1)	35.1 (0.1)	34.4 (0.1)
9. Average weeks in labor force in previous year	35.8 (0.1)	37.6 (0.1)	34.2 (0.1)	36.0 (0.1)	37.6 (0.1)	38.7 (0.1)	36.6 (0.1)
10. Weeks unemployed (%) ^a	6.7 (0.1)	5.6 (0.1)	5.8 (0.1)	4.7 (0.1)	10.5 (0.1)	9.8 (0.1)	6.3 (0.0)
11. Average weekly wage (\$)	373.3 (1.4)	416.6 (1.6)	242.2 (0.7)	269.2 (0.9)	440.0 (2.1)	483.5 (2.5)	306.9 (1.4)
12. Heads (%)	80.3	—	80.0	—	80.9	—	—

Sources: U.S. data are from the March 1987 and March 1980 Current Population Surveys. Canadian data are from the 1987 and 1980 Surveys of Consumer Finances (conducted in April). Heads samples include only family heads (see text).

Notes: Standard errors in parentheses. Samples include individuals aged 16–68.

^aAverage fraction of weeks in the labor force spent in unemployment.

^bIn national currencies.

tive weeks in the labor force) are reported in row 10 of table 5.3. For strict comparability with the contemporaneous unemployment rate, the average retrospective unemployment rate should be weighted by each individual's total weeks in the labor force.¹⁶ Weighted averages of the retrospective unemployment rate are slightly lower than the unweighted averages, as shown in table 5.4.

Regardless of weighting, the retrospective data indicate a larger relative

16. In steady state an individual with n weeks in the labor force in the previous year would be in the labor force in any given week with probability $n/52$. This individual's expected contribution to the contemporaneous unemployment rate is $u \cdot n/52$, where u is the probability of unemployment in any week in the labor force (i.e., the individual retrospective unemployment rate).

Table 5.4 Retrospective Unemployment Rates for Family Heads

	U.S.		Canada		Relative Change Canada - U.S.
	1986	1979	1986	1979	
Unweighted	5.6	4.7	9.8	6.3	2.6
Weighted	4.9	3.9	9.3	6.0	2.3

Note: Retrospective unemployment rate is the average fraction of weeks in the labor force spent in unemployment, times 100.

increase in Canadian unemployment than the contemporaneous data does. This difference raises the question of which unemployment measure is "correct." From a measurement perspective, the CPS and LFS questionnaires are very similar. We see no measurement-based explanation for a greater divergence in retrospective unemployment rates. From a behavioral perspective, three factors can cause the retrospective rate to differ from the contemporaneous rate. First, individuals who would be classified as unemployed in a contemporaneous survey may either "forget" their unemployment experience or may consider themselves out of the labor force retrospectively.¹⁷ Second, some discouraged job seekers (who are counted as out of the labor force in the contemporaneous survey) may consider themselves as unemployed in the retrospective survey. To check on the latter phenomenon we examined data on the fractions of discouraged workers in the United States and Canada over the 1980s (see below). We find little change in the relative fraction of discouraged workers in the two countries. A third factor is the timing of the different unemployment measures. The contemporaneous surveys measure unemployment in March (United States) or April (Canada) of 1980 and 1987. The retrospective surveys measure average annual unemployment over 1979 and 1986. Differences in the relative seasonality of unemployment in the two countries, or slight differences in the timing of the 1980 downturn, may potentially account for the greater relative increase in Canadian unemployment indicated by the retrospective data.

A final interesting comparison in table 5.3 is the relative growth of average weekly wages. Average weekly earnings of family heads in the United States rose 43.7 percent between 1979 and 1986. For family heads in Canada the increase was 45.5 percent. Relative to the increase in consumer prices, however, U.S. wage earners fared better: the U.S. price index rose 41.2 percent between 1979 and 1986, while the Canadian index rose 49.4 percent. Thus

17. Levine (1990) presents a detailed comparison of retrospective and contemporaneous unemployment in the United States. His analysis suggests that younger workers, women, and individuals whose main activity in the survey week is not "looking for work" are more likely to underreport unemployment in a retrospective survey. Akerlof and Yellen (1985) suggest that the likelihood of remembering unemployment is proportional to the severity of the unemployment experience. Neither study gives much guidance as to why retrospective Canadian unemployment rates would diverge more than contemporaneous rates.

there was a slight increase in real weekly earnings of U.S. family heads over the 1980s (conditional on working and reporting positive earnings) and a small decrease in the real weekly earnings of Canadian family heads.

Table 5.5 repeats the analysis in table 5.3 for the subset of currently unemployed workers in each survey. In both countries unemployed workers are younger, more likely to be male, and less likely to be family heads than the overall population. All of these contrasts are stronger in the United States. Currently unemployed workers report higher average weeks in the labor force last year than the overall population does (especially in Canada) but substantially lower average weeks of employment. A comparison of the relative wages of unemployed workers to the wages of the overall work force reveals a much bigger wage gap in the United States (20–30 percent) than in Canada (5–10 percent). As with the demographic comparisons, this difference sug-

Table 5.5 Characteristics of Unemployed Workers in the United States and Canada, 1980 and 1987

	U.S.				Canada		
	All 1987	Heads 1987	All 1980	Heads 1980	All 1987	Heads 1987	Heads 1980
1. Average age	31.7 (0.2)	36.7 (0.2)	29.8 (0.2)	35.0 (0.2)	33.6 (0.2)	37.1 (0.2)	36.0 (0.2)
2. Female (%)	42.5 (0.7)	45.5 (0.9)	42.7 (0.7)	46.4 (0.8)	43.1 (0.7)	46.7 (0.9)	46.5 (1.0)
3. Education \leq 8 years (%)	9.5 (0.4)	10.8 (0.5)	11.9 (0.4)	14.1 (0.6)	15.5 (0.5)	17.5 (0.7)	25.5 (0.8)
4. Education \geq 16 years (%)	7.9 (0.4)	9.6 (0.5)	5.6 (0.3)	7.4 (0.4)	5.9 (0.3)	6.3 (0.4)	5.4 (0.4)
5. In labor force in previous year (%)	86.9 (0.5)	89.7 (0.5)	86.9 (0.5)	90.8 (0.5)	94.0 (0.4)	94.7 (0.4)	92.9 (0.5)
6. Average weeks work in previous year	23.5 (0.3)	26.2 (0.3)	25.7 (0.3)	29.7 (0.3)	22.7 (0.3)	24.0 (0.3)	28.6 (0.4)
7. Average weeks in labor force in previous year	36.6 (0.3)	39.8 (0.3)	35.6 (0.3)	39.6 (0.3)	43.8 (0.2)	45.5 (0.3)	43.0 (0.3)
8. Weeks unemployed (%) ^a	35.4 (0.6)	34.5 (0.7)	28.0 (0.5)	25.9 (0.6)	47.1 (0.5)	47.2 (0.6)	33.2 (0.7)
9. Average weekly wage (\$) ^b	268.5 (4.4)	317.0 (5.9)	196.9 (2.7)	230.2 (3.5)	393.0 (13.0)	428.9 (17.1)	297.5 (7.7)
10. Average length of unemployment spell ^c	13.6 (0.2)	14.5 (0.3)	11.2 (0.2)	11.3 (0.2)	19.2 (0.2)	19.8 (0.3)	0.0 (0.0)
11. Heads (%)	64.0	—	62.8	—	73.6	—	—

Sources: See table 5.3.

Notes: Standard errors in parentheses. Samples include individuals classified as unemployed in the survey week.

^aAverage fraction of weeks in the labor force spent in unemployment in the previous year.

^bIn national currencies.

^cAverage duration of the current (interrupted) spell of unemployment.

gests that the incidence of unemployment is more highly concentrated among young and less-skilled workers in the United States than in Canada.

5.4 Analysis of Retrospective Unemployment and Employment

From this general overview we turn to a more detailed analysis of employment and unemployment experiences in the previous calendar year. We begin with a cross-sectional analysis of the components of aggregate unemployment in the United States and Canada in 1986. Table 5.6 contains retrospective labor market information for younger and older and male and female workers in the CPS and LFS surveys. As shown in column 1, the labor force shares of the age-sex groups are very similar in the two countries. Labor force experiences in the previous year, however, differ markedly between the two countries. Most importantly, Canadians in every group report more weeks of unemployment. For women, the extra weeks of unemployment are associated with similar weeks of employment and higher weeks in the labor force. For men, on the other hand, the added weeks of unemployment are associated with lower weeks of employment (1.3 weeks less than U.S. men) and slightly more weeks of labor force attachment (0.6 extra weeks in the labor force relative to U.S. men).

Column 9 shows the ratio of each group's relative share of weeks of unemployment to its relative share of weeks of employment. Two interesting findings emerge from this statistic. First, relative to U.S. women Canadian women generate more unemployment per week of employment. Indeed, Canadian women generate proportionately more unemployment than Canadian men, while the reverse is true in the United States. Second, Canadian youths generate proportionally fewer weeks of unemployment than their U.S. counterparts do.

A final aspect of table 5.6 is the UI reciprocity rate, shown in column 10. This is the probability of receiving UI payments in the preceding year among those with positive weeks of unemployment.¹⁸ As is well known, the UI reciprocity rate in the United States is low: only about one-quarter of those with unemployment experiences in 1986 report any UI income.¹⁹ The reciprocity rate is especially low among youth and women, falling to only 8 percent for 16–24-year-old females. In Canada the overall reciprocity rate is close to 60 percent, and reciprocity rates are more equal across demographic groups. In combination with the relative patterns of the incidence of unemployment, UI reciprocity patterns suggest that the burden of unemployment is more equally distributed in Canada than in the United States. On the one hand, Canadian unemployment is less concentrated among specific demographic groups. On

18. Of course many individuals (particularly in the Canadian survey) report UI reciprocity but 0 weeks of unemployment. These individuals are excluded from the reciprocity rates in table 5.6.

19. See Blank and Card (1991) and below.

Table 5.6 Contributions to Overall Unemployment by Various Demographic Groups in the United States and Canada, 1986

	Share of Labor Force (1)	Average Weeks in Labor Force (2)	Prob of Unemployment (%) (3)	Average Weeks of Unemployment		Share Total Unemployment (6)	Average Weeks Worked (7)	Share Total Weeks (8)	Relative Share of Unemployment/Weeks (9)	Prob UI (%) (10)
				Conditional (4)	All (5)					
A. United States										
Females	45.9	43.7	14.7	16.2	2.4	40.8	41.3	44.1	0.93	19.4
Males	54.1	47.6	15.7	18.7	2.9	59.2	44.6	55.9	1.06	31.2
Age 25 +	79.8	47.7	12.9	18.5	2.4	70.9	45.3	84.0	0.84	33.3
Age 16-24	20.2	38.1	24.7	15.7	3.9	29.1	34.3	16.0	1.81	10.8
Females 25 +	36.1	45.5	12.5	17.0	2.1	28.4	43.4	36.3	0.78	25.0
Females 16-24	9.9	37.2	23.1	14.6	3.4	12.4	33.9	7.8	1.60	8.3
Males 25 +	43.8	49.6	13.3	19.7	2.6	42.6	47.0	47.7	0.89	39.7
Males 16-24	10.3	39.0	26.2	16.6	4.3	16.6	34.7	8.3	2.01	12.9
All	—	45.8	15.3	17.6	2.7	—	43.1	—	1.00	25.9
B. Canada										
Females	44.0	45.6	21.5	22.0	4.7	43.3	40.9	42.5	1.02	55.2
Males	56.0	48.2	21.0	23.1	4.9	56.7	43.3	57.5	0.99	61.7
Age 25 +	77.5	49.3	19.3	23.6	4.6	73.5	44.7	82.0	0.90	64.7
Age 16-24	22.5	39.4	28.0	20.2	5.7	26.5	33.7	18.0	1.47	44.9
Females 25 +	33.3	47.7	20.4	23.0	4.7	32.5	43.0	33.9	0.96	59.8
Females 16-24	10.6	38.8	25.0	19.4	4.9	10.8	34.0	8.6	1.26	43.3
Males 25 +	44.2	50.4	18.4	24.2	4.5	41.0	46.0	48.1	0.85	68.7
Males 16-24	11.9	39.8	30.8	20.7	6.4	15.7	33.5	9.4	1.67	46.0
All	—	47.0	21.3	22.6	4.8	—	42.2	—	1.00	58.8

Sources: See table 5.3.

Notes: All tabulations are for individuals who report positive weeks in the labor force during the year. Prob UI is the fraction of individuals with positive weeks of unemployment in the previous year who report receiving UI income in the year.

the other hand, higher UI reciprocity rates (especially among youth and women) serve to reduce the individual costs of unemployment.

The comparisons in table 5.6 indicate that unemployment experiences in the United States and Canada differ along both age and sex dimensions.²⁰ Ideally, we would like to analyze changes over the 1980s in the employment and unemployment outcomes of men, women, youth, and older workers. Unfortunately, 1979 data are only available for family heads in Canada. It is difficult to construct a representative sample of Canadian youth in the earlier survey. In the remainder of the paper we therefore concentrate on measuring changes in the labor market outcomes of family heads in the United States and Canada during the 1980s by sex, making no attempt to disaggregate by age.

Table 5.7 presents means of the labor force outcomes for family heads in the two countries in 1979 and 1986, along with differences between Canada and the United States in the changes between 1979 and 1986 (referred to as difference-in-differences in what follows). Mean weeks of employment, unemployment, and labor force participation are tabulated in two ways: for the subset of individuals in the labor force in the previous year and on a per capita basis. Looking first at the averages for 1979, annual labor force participation rates were higher for men in Canada than in the United States but lower for women. Per capita weeks in the labor force were also higher for male heads in Canada but were about the same for female heads in the two countries. Per capita weeks of employment were lower among Canadian women (by about 1.2 weeks) and higher among Canadian men (by 0.75 weeks).

During the 1980s the participation rates of female heads in Canada grew 2.4 percentage points relative to those in the United States. Average weeks in the labor force also grew significantly for Canadian women. Much of this relative growth took the form of added weeks of unemployment: per capita weeks of employment rose 0.2 weeks faster in Canada than in the United States, while per capita weeks of unemployment rose 1.1 weeks faster in Canada. The relative trends in annual labor supply for female heads are similar to the aggregate trends identified in table 5.1 and figure 5.2. Over the 1980s Canadian women increased both their employment and unemployment weeks relative to U.S. women.

The relative trends for male heads are very different. Per capita weeks of employment fell in both countries during the 1980s, but the fall was bigger in Canada (-2.3 weeks versus -1.0 weeks). This relative loss of employment was counteracted by a small decrease in relative weeks of labor force partici-

20. We have also tabulated the relative contributions of individuals in different industries to unemployment in the two countries in 1986—see appendix table 5A.1. This exercise shows very similar industry shares of employment, weeks in the labor force, and weeks of unemployment in the United States and Canada. We can find no significant role for industry-specific factors in explaining the growth of unemployment in Canada. (See also Ashenfelter and Card 1986, table 7).

Table 5.7 Labor Force, Employment, and Unemployment during Calendar Year, Family Heads in the United States and Canada, 1979 and 1986

	Canada		U.S.		Relative Difference, ^a 1986 - 1979
	1979	1986	1979	1986	
A. Female heads					
1. Labor force participation rate (%)	61.7	68.1	65.8	69.8	2.4
2. Weeks unemployment in labor force	3.12	4.84	1.88	2.19	1.41
3. Per capita weeks unemployment	1.93	3.30	1.24	1.53	1.08
4. Employment-population rate (%)	60.7	66.2	64.3	68.3	1.6
5. Weeks employment in labor force	41.65	42.42	40.92	42.89	-1.20
6. Per capita weeks employment	25.71	28.89	26.92	29.92	0.18
7. Weeks in labor force for labor force participants	44.77	47.26	42.80	45.09	0.20
8. Per capita weeks in labor force	27.67	32.19	28.15	31.46	1.25
9. Retrospective unemployment rate (weighted by labor force weeks)	7.0	10.2	4.4	4.9	2.7
B. Male heads					
1. Labor force participation rate (%)	92.6	90.8	90.5	89.3	-0.6
2. Weeks unemployment in labor force	2.68	4.35	1.73	2.46	0.94
3. Per capita weeks unemployment	2.48	3.95	1.57	2.20	0.84
4. Employment-population rate (%)	92.0	88.9	90.1	88.5	-1.5
5. Weeks employment in labor force	47.46	45.90	47.78	47.30	-1.08
6. Per capita weeks employment	43.96	41.69	43.24	42.25	-1.28
7. Weeks in labor force for labor force participants	50.14	50.25	49.51	49.77	-0.15
8. Per capita weeks in labor force	46.44	45.64	44.81	44.45	-0.44
9. Retrospective unemployment rate (weighted by labor force weeks)	5.3	8.7	3.5	4.9	2.0

Sources: See table 5.3.

Note: Based on data for family heads aged 16-68.

^aThe change from 1979 to 1986 in Canada minus the corresponding change in the United States.

^bThe fraction of the population who report any weeks in the labor force during the year.

pation, resulting in a net increase of 0.8 weeks in per capita unemployment among Canadian male family heads.

Retrospective unemployment rates for men and women are shown in row 9 in table 5.7. The retrospective unemployment rate of Canadian women rose 2.7 percentage points faster than the rate for U.S. women, while the relative increase for Canadian men was 2.0 percentage points. Using the fact that the retrospective unemployment rate is a weighted average of rates for different groups, with weights equal to the relative shares of labor force weeks, the overall increase in Canadian retrospective unemployment from 1979 to 1986 can be decomposed into components attributable to male and female heads. This decomposition attributes 45 percent of the relative increase in retrospective unemployment to Canadian women and 55 percent to Canadian men.

The comparisons of annual weeks of employment and unemployment in tables 5.3–5.7 make no allowance for any differences in the weekly hours of workers in the United States or Canada. To check for possible differences, we used information on usual hours per week in the U.S. surveys to construct a full-time/part-time indicator similar to the one in the Canadian surveys.²¹ This indicator classifies full-time work as thirty or more hours per week. A comparison of percentages who report usually working full time in the previous year is presented in table 5.8. These tabulations suggest that hours per week are slightly lower for female heads in Canada than in the United States but about the same for males in the two countries. There is no evidence of a major shift in the relative fractions of full-time work during the 1980s. We conclude that the absence of weekly hours information is probably not a major problem for our analysis of changes in relative employment in the two countries.

The data in table 5.7 suggest that the relative increase in unemployment among Canadian women between 1979 and 1986 occurred mainly as a result of a relabeling of nonworking time from “out of the labor force” to “unemployment.” A more detailed investigation of this phenomenon is presented in figures 5.4 and 5.5. Figure 5.4 shows the cumulative distribution functions of weeks worked during the year for female heads in Canada and the United States in 1979 and 1986.²² The plots illustrate the dramatic increases in female employment in both countries over the early 1980s. In 1979, for example, 39 percent of Canadian women and 36 percent of U.S. women reported 0 weeks of work. By 1986 these fractions had fallen to 34 and 32 percent, respectively. At the other end of the distribution, 39 percent of Canadian women and 35 percent of U.S. women reported 52 weeks of work in 1979. By 1986 these fractions had risen to 45 and 43 percent, respectively.

Figure 5.5 shows the average number of weeks in the labor force reported by female heads in the four surveys, conditional on the number of weeks of

21. The Canadian surveys do not provide exact information on hours per week in the previous year, only whether or not the respondent “usually worked full time” in the previous year.

22. Note that we have plotted the distribution function only for 0–51 weeks. The cumulative distribution at 52 weeks is 1.

Table 5.8 Percentage of Family Heads Working Full-Time in the Previous Year

	U.S.		Canada		Relative Change Canada - U.S.
	1986	1979	1986	1979	
Female heads	78.7	77.7	74.2	74.5	-1.3
Male heads	94.7	95.2	95.4	96.1	-0.2

Sources: See table 5.3.

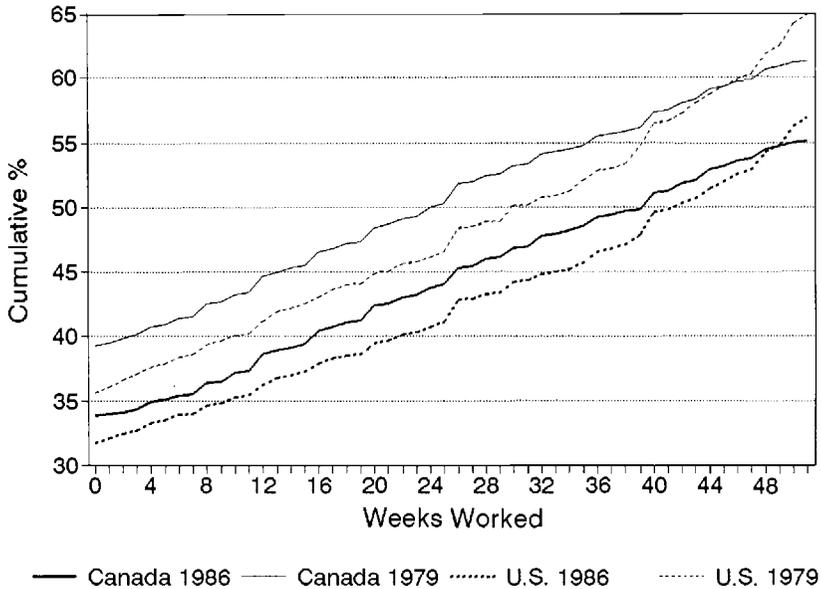


Fig. 5.4 Cumulative distribution of weeks worked, female heads, 1979 and 1986

employment in the previous year. Since weeks in the labor force consist of weeks of employment and weeks of unemployment, average weeks of unemployment are represented by the vertical distance between the forty-five-degree line and the graph. For example, Canadian women with 4 weeks of work in 1979 reported 12.2 weeks in the labor force, while U.S. women reported 8.5 weeks. In 1986 Canadian women with 4 weeks of work reported an average of 20.6 weeks in the labor force while U.S. women reported an average of 10.3 weeks. The increase in reported weeks of unemployment among women with 4 weeks of work was therefore 6.6 weeks greater in Canada than in the United States. Throughout most of the range of weeks worked in the previous year, the graph shows a similar pattern. At every level of annual work experience there was a striking increase in the propensity of Canadian women to report nonworking time as unemployment.

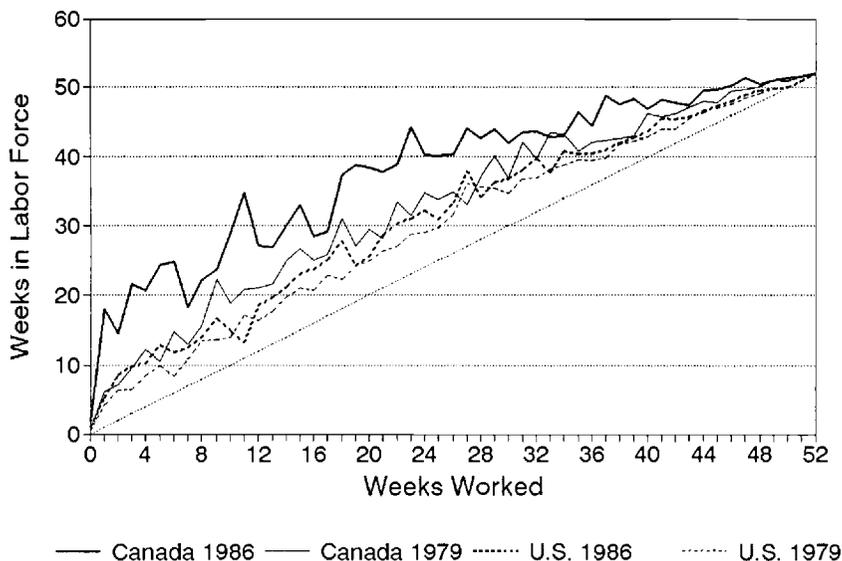


Fig. 5.5 Average weeks in labor force by weeks worked, female heads, 1979 and 1986

This analysis is repeated in figures 5.6 and 5.7 for male family heads. A comparison of the distribution functions of weeks worked indicates a significant relative shift in Canada over the 1980s. In 1979 the Canadian distribution was almost entirely to the right of the U.S. distribution (indicating higher employment levels). The 1986 distribution functions for the two countries are similar in the lower tail but show a substantially larger fraction of Canadian men with 10–26 weeks, and a lower fraction with 40–50 weeks of work.

Figure 5.7 shows the conditional means of weeks in the labor force by weeks of employment in the previous year for male heads in the United States and Canada in 1979 and 1986. Mean weeks of unemployment (conditional on weeks of employment) increased in both countries between 1979 and 1986, with fairly similar relative increases in Canada and in the United States. The most important exception is for men with 0 weeks of employment. For these men, who represent approximately 10 percent of male heads in each country, there was a 3.0-week relative increase in the average number of weeks of unemployment in Canada. Given the size of the group, this relative increase accounts for a large fraction (80 percent) of the overall increase in per capita weeks of unemployment of Canadian men.

A complete decomposition of the relative rise in unemployment in Canada for either sex can be obtained from an identity that expresses the mean per capita weeks of unemployment in either country and either year as a weighted average of the conditional mean weeks of unemployment reported by individuals working different numbers of weeks:

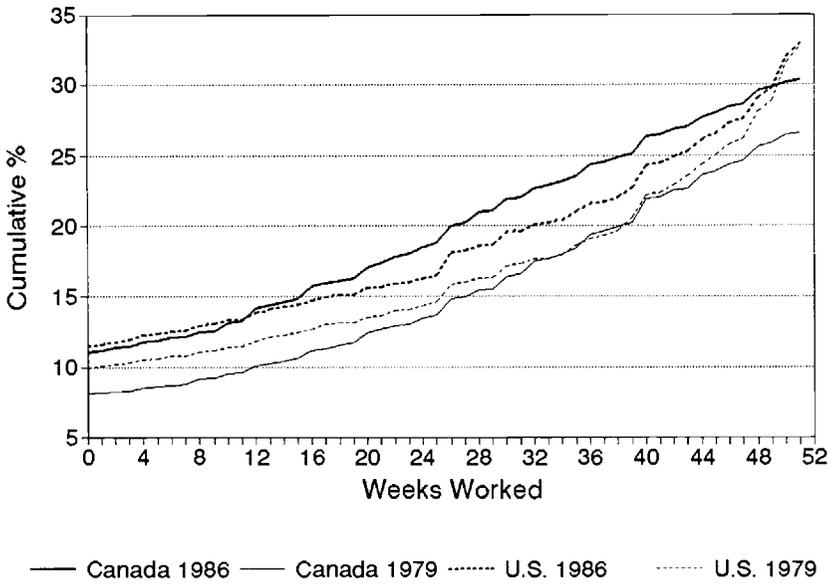


Fig. 5.6 Cumulative distribution of weeks worked, male heads, 1979 and 1986

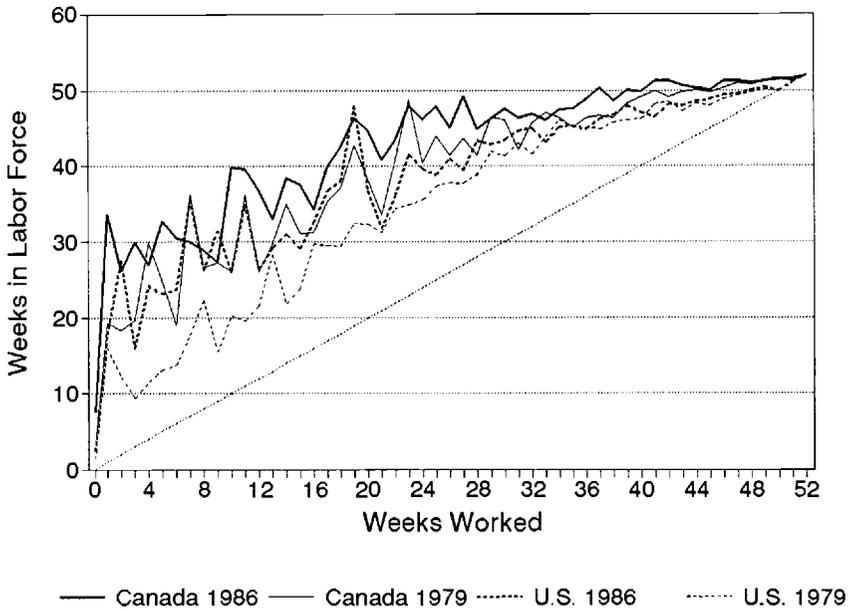


Fig. 5.7 Average weeks in labor force by weeks worked, male heads, 1979 and 1986

$$U_t^j = \sum_{w=0}^{52} P_t^j(w) U_t^j(w),$$

where U_t^j represents mean per capita weeks of unemployment in country j and year t , $P_t^j(w)$ represents the fraction of individuals in country j and year t who worked w weeks ($0 \leq w \leq 52$), and $U_t^j(w)$ represents the mean weeks of unemployment among those who worked w weeks. It follows that the difference-in-differences of average unemployment between Canada and the United States over the 1980s can be written as

$$\begin{aligned} U_2^c - U_1^c - (U_2^a - U_1^a) = & \sum_{w=0}^{52} \{ (U_2^c(w) - U_2^a(w)) \cdot P_2^c(w) \\ & - (U_1^c(w) - U_1^a(w)) \cdot P_1^c(w) + (P_2^c(w) \\ & - P_2^a(w)) \cdot U_2^a(w) - (P_1^c(w) - P_1^a(w)) \cdot U_1^a(w) \}, \end{aligned}$$

where superscripts a and c denote the United States and Canada, respectively, and subscripts 1 and 2 denote 1979 and 1986, respectively. The first two terms on the righthand side represent the effect of relative changes in the mean weeks of unemployment at each level of weeks worked, while the third and fourth terms represent the effect of relative changes in the fractions of workers with each level of weeks worked.²³

Figures 5.8 and 5.9 display the relative contributions of these two components to the overall relative increase in per capita unemployment in Canada for female and male heads.²⁴ Looking at the figure for female heads, it is clear that relative changes in the distribution of weeks of employment in the United States and Canada over the 1980s play only a small part in the increase in unemployment. Approximately 90 percent of the increase is attributable to relative increases in unemployment at each level of weeks worked. Among male heads relative changes in the distribution of weeks of employment (i.e., the sum of the third and fourth terms in the above equation) contribute approximately 25 percent of the overall increase in relative Canadian unemployment. The balance is attributable to relative increases in weeks of unemployment conditional on weeks of employment among Canadian men.

As noted above, changes in the number of weeks of unemployment generated by men with 0 weeks of employment are the single most important factor in the rise in unemployment among Canadian men. Women with 0 weeks of work in the previous year also contributed to the overall change in relative female unemployment. There are two interpretations of the relative increase

23. This decomposition is not unique. We have compared results using a decomposition that weights the differences in the conditional means of unemployment by the U.S. probabilities and found no major differences in the inferences.

24. The contributions at each level of weeks are divided by the overall difference-in-differences of per capita unemployment to convert the components into relative shares.

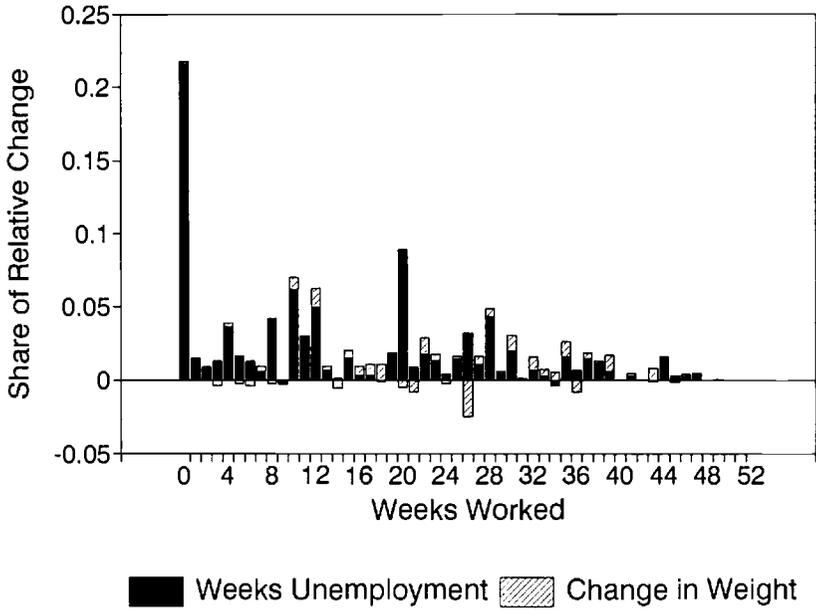


Fig. 5.8 Decomposition of relative growth in unemployment, female heads

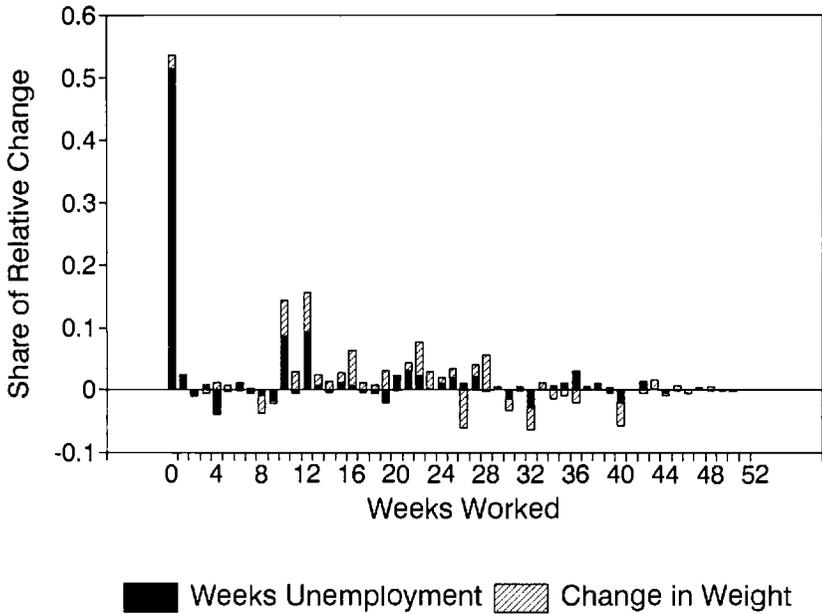


Fig. 5.9 Decomposition of relative growth in unemployment, male heads

in unemployment among these individuals. One possibility is that labor market changes in Canada led to a change in the type of individual with 0 weeks of work (toward a group with more "permanent attachment" to the labor force). An alternative is that, even holding constant the characteristics of individuals with 0 weeks of employment, there was an increase in the fraction of the year reported as unemployment. In an effort to distinguish these hypotheses, we present information on the characteristics of individuals with 0 weeks of work in table 5.9. For both sexes in all four surveys the population who did no work in the previous year (henceforth "nonworkers") mainly comprises two groups: those who were out of the labor force for the entire year, and those who were in the labor force for the entire year. The relative fractions of these two subgroups are shown in rows 2 and 3 of both panels of the table.

Table 5.9 Weeks of Unemployment and Characteristics of Individuals with 0 Weeks of Work in the Previous Year, 1979 and 1986

	Canada		U.S.		Relative Difference, ^a 1986 - 1979
	1979	1986	1979	1986	
A. Female heads					
1. Mean weeks unemployment	0.75	1.95	0.51	0.99	0.72
2. 0 weeks unemployment (%)	97.3	94.3	96.0	95.4	-2.4
3. 52 weeks unemployment (%)	0.9	2.9	0.3	1.1	1.2
4. Percentage of total per capita unemployment attributable to women with 52 weeks unemployment	18.3	29.7	8.6	22.8	-2.8
5. Average age	45.5	47.9	46.3	47.1	1.6
6. Education \leq 8 years (%)	33.4	28.4	19.1	15.2	-1.1
7. Percentage of all female heads with 0 weeks work	39.3	33.8	35.7	31.7	-1.6
B. Male heads					
1. Mean weeks unemployment	3.53	7.46	1.41	2.38	2.96
2. 0 weeks unemployment (%)	91.7	82.9	95.6	93.1	-6.3
3. 52 weeks unemployment (%)	5.6	12.6	2.0	3.6	5.4
4. Percentage of total unemployment attributable to men with 52 weeks unemployment	18.2	35.3	12.7	18.8	11.0
5. Average age	56.8	55.6	56.0	55.4	-0.7
6. Education \leq 8 years (%)	51.2	38.0	34.3	24.3	-3.3
7. Percentage of all male heads with 0 weeks work	8.0	11.1	9.9	11.5	1.5

Sources: See table 5.3.

Notes: Samples consist of family heads aged 16-68 with 0 weeks of employment during the year.

^aThe change from 1979 to 1986 in Canada minus the corresponding change in the United States.

The group with 52 weeks of unemployment accounts for a majority of the total unemployment generated by nonworkers and a significant share of total per capita unemployment (see row 4 of each panel). Indeed, the relative increase in the number of Canadian men who report a full 52 weeks of unemployment in the previous year accounts for 40 percent of the relative rise in per capita unemployment in Canada over the 1980s.²⁵

It is also interesting to compare the demographic characteristics of nonworkers in the two countries. In both the United States and Canada, nonworking men are about 15 years older than other heads, with an average age over 55. Nonworking heads are also less educated than the overall population. A large fraction of the rising unemployment gap between Canada and the United States is therefore a result of the labor supply behavior of older, less-educated men.²⁶ The relative rise in long-term unemployment among this group is clearly an important subject for further analysis.

It is also interesting to note the importance of the relative labor supply behavior of individuals with 10 or 12 weeks of employment in figures 5.8 and 5.9. During the 1980s the minimum number of weeks of employment required for eligibility for UI payments in many regions of Canada was 10 or 12 weeks (see below). Evidently, the numbers of men and women reporting 10 or 12 weeks of employment rose faster in Canada than in the United States from 1979 to 1986. In addition there were sizable relative increases in the number of weeks of unemployment declared by workers with 10 or 12 weeks of employment in Canada. For women the 10- and 12-week spikes in figure 5.8 account for 13 percent of the relative rise in Canadian unemployment over the 1980s. For men the 10- and 12-week spikes account for 22 percent of the relative rise in Canadian unemployment.

A final aspect of figure 5.8 is the sharp increase in unemployment among Canadian women with 20 weeks of employment. Amendments to the Canadian UI program in 1979 introduced a minimum eligibility standard of 20 weeks of work for labor force entrants and reentrants (those with limited labor force attachment in the two years prior to their claim). In addition since the early 1970s Canada's unemployment insurance program has offered maternity leave benefits for claimants with at least 20 weeks of employment in the preceding year.²⁷ Although this requirement did not change in the 1980s, increases in the labor force participation rates of married women might have been expected to increase the number of women adjusting their employment patterns to become eligible for maternity benefits. As with the spikes at 10–

25. Canadian men with 52 weeks of unemployment account for 82–88 percent of unemployment among those with 0 weeks of work. From figure 5.9 the behavior of the 0-weeks group accounts for one-half of the relative rise in unemployment among Canadian men.

26. The falling employment and labor force participation rates of older U.S. men have been a subject of much interest (see Juhn 1992). Corak (1991) has noted the increasing contribution of older men to Canadian unemployment.

27. See Statistics Canada (1984).

12 weeks of work, the importance of the 20-week group in figure 5.8 suggests that Canada's UI program played some role in the rise in Canadian unemployment.

5.5 Analysis of Unemployment during the Survey Week

We turn next to an analysis of unemployment during the survey weeks of the CPS and LFS. A striking conclusion of the retrospective analysis is that much of the relative increase in Canadian unemployment is associated with a reclassification of nonworking time from "out of the labor force" to "unemployment." An important question is whether a similar conclusion emerges from contemporaneously measured labor force data. By using retrospective information on employment last year for individuals in the survey week, it is possible to compare contemporaneous labor force classification probabilities among individuals with different degrees of "attachment" to the labor force.

Table 5.10 gives a breakdown of the contemporaneous labor market activities of male and female household heads in 1980 and 1987. For reference we

Table 5.10 **Contemporaneous Labor Market Activity Rates in the United States and Canada, 1980 and 1987**

	In Labor Force (%)		Unemployed (%)		$P(U N)^a$		Unemployment Rate	
	All	Heads	All	Heads	All	Heads	All	Heads
A. Females								
Canada								
1987	62.2	62.2	43.8	43.7	13.9	13.4	9.8	9.4
1980	—	55.1	—	49.2	—	8.7	—	7.7
United States								
1987	62.8	63.5	41.3	39.9	10.0	8.6	6.5	5.4
1980	57.2	47.6	46.7	45.6	8.3	7.1	6.8	5.6
Difference-in-differences ^b	—	1.2	—	0.2	—	3.2	—	1.9
B. Males								
Canada								
1987	82.1	85.3	26.1	21.8	31.2	32.7	9.9	8.4
1980	—	88.0	—	17.3	—	30.8	—	6.1
United States								
1987	81.9	86.4	24.0	18.2	24.6	25.3	7.2	5.3
1980	82.7	87.4	22.9	16.8	24.5	25.1	6.8	4.8
Difference-in-differences ^b	—	-1.7	—	3.1	—	1.8	—	1.8

Sources: See table 5.3.

Notes: Based on labor market activity during the survey week for individuals aged 16-68.

^a $P(U|N)$ is the probability that a nonworking individual is classified as unemployed (versus out of the labor force).

^bThe change from 1980 to 1987 in Canada, minus the corresponding change in the United States.

also report the activity rates of all individuals in the two U.S. surveys and the later Canadian survey. To understand the connection between the statistics reported in the table, let $P(U|LF)$ represent the probability of unemployment, given labor force participation (i.e., the conventional unemployment rate); let $P(N)$ represent the unconditional probability of nonemployment; let $P(LF)$ represent the probability of being in the labor force (i.e., the labor force participation rate); and let $P(U|N)$ represent the probability of unemployment given nonemployment. Observe that

$$P(U|LF) = \frac{P(N) \cdot P(U|N)}{P(LF)}.$$

It follows that the logarithm of the unemployment rate is

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

The difference-in-differences of the logarithm of the unemployment rate can therefore be decomposed into components attributable to relative changes in the nonemployment rate, the labor force participation rate, and $P(U|N)$.

Applying this decomposition to female family heads shows that virtually all of the 24 percent relative increase in unemployment in Canada is attributable to the increase in the probability of unemployment, given nonemployment. For male heads, on the other hand, only one-quarter of the 22 percent relative increase in Canadian unemployment is attributable to the rise in $P(U|N)$. The balance is attributable to the proportionally larger increase in nonemployment rates in Canada than in the United States.

A longer-run perspective on these decompositions is provided by figures 5.10 and 5.11. These show aggregate-level differences between Canada and the United States in participation rates, nonemployment rates, and $P(U|N)$ for males and females between 1966 and 1989. Starting in the mid- to late 1970s there was a relative rise in $P(U|N)$ among Canadian women that accounts for virtually all of the relative rise in unemployment. For men there was a similar trend in $P(U|N)$, but the timing is slightly different, with more of the relative increase occurring in the late 1970s and less in the early 1980s. Over the longer run (comparing the 1960s to the 1980s), most of the relative rise in unemployment among Canadian men and women has derived from a relative increase in $P(U|N)$.

One explanation for the relative increase in the probability that nonemployed individuals in Canada are classified as unemployed is that the pool of nonworkers has become "more attached" to the labor force. To check this hypothesis we have assembled data on $P(U|N)$ by weeks of work in the previous year in table 5.11. There was a relative reduction in the number of nonworking female heads with no work experience in the previous year, together with relative increases in each of the categories with 8 or more weeks of work. These patterns suggest some increase in the labor market attachment of female heads in Canada. Nevertheless, changes in the distribution of nonworkers by

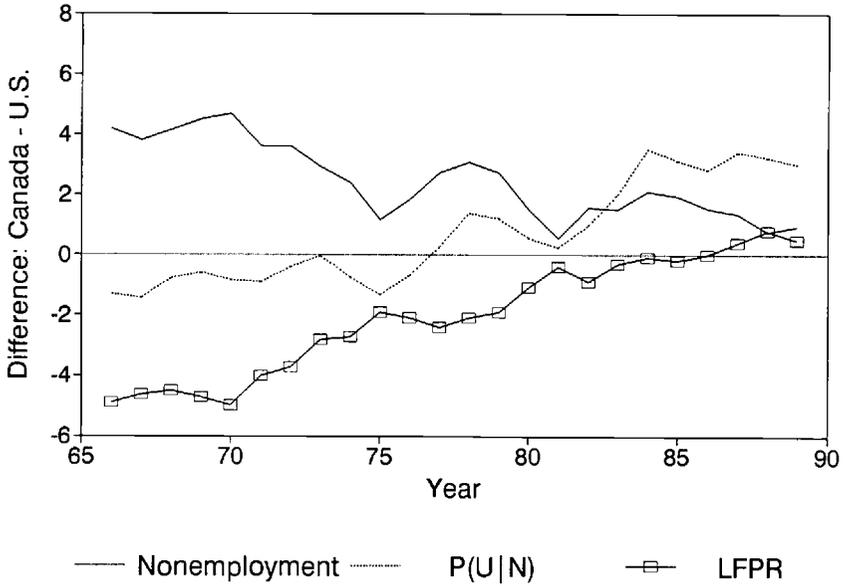


Fig. 5.10 Differences in labor market activity rates of women, Canada minus the United States

Note: LFPR means labor force participation rate.

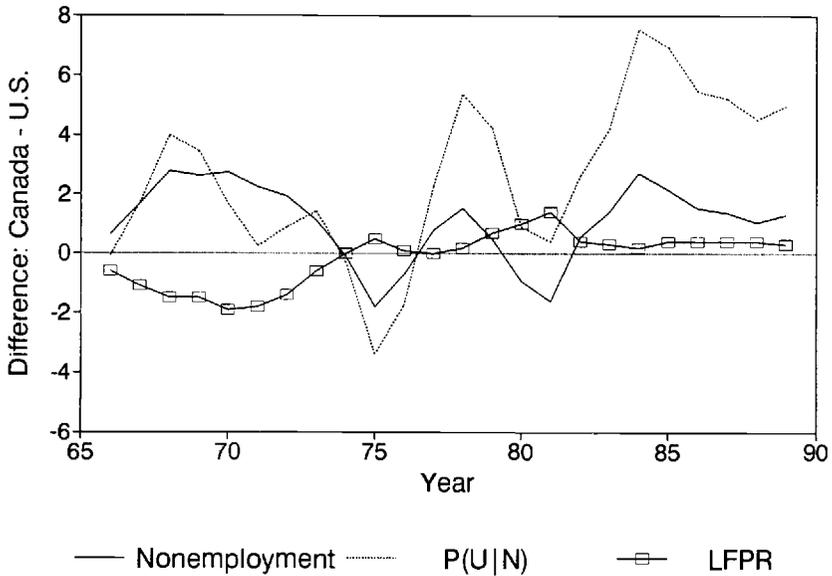


Fig. 5.11 Differences in labor market activity rates of men, Canada minus the United States

Note: LFPR means labor force participation rate.

Table 5.11 Probability of Reporting Unemployment among Nonworkers and Distribution of Nonworkers by Weeks of Work in the Previous Year

Weeks Worked Last Year	Canada		U.S.		Difference- in-Differences
	1987	1980	1987	1980	
A. Probability of unemployment among nonworkers (%)					
Female heads					
0	4.3	2.7	3.6	2.4	0.5
1-7	19.8	9.2	14.7	11.3	7.3
8-16	31.0	19.4	17.8	14.7	8.5
17-26	46.7	31.9	21.8	18.6	11.6
27-39	42.5	32.5	30.0	28.6	8.6
40+	48.4	39.7	33.4	29.6	4.8
All	13.4	8.7	8.6	7.1	3.2
Male heads					
0	11.0	5.4	5.7	3.2	3.1
1-7	42.6	30.9	36.0	19.2	-5.1
8-16	47.2	33.6	36.9	25.5	2.2
17-26	55.1	45.7	52.5	43.2	0.2
27-39	59.3	54.7	64.8	66.3	6.1
40+	53.2	60.2	60.2	66.6	-0.5
All	32.7	30.8	25.3	25.1	1.8
B. Distribution of nonworkers by weeks of work in the previous year (%)					
Female heads					
0	74.4	76.5	76.0	74.8	-3.3
1-7	2.6	3.0	3.9	4.5	0.2
8-16	6.3	5.7	5.0	5.2	0.8
17-26	5.3	4.9	4.9	5.1	0.5
27-39	4.5	3.6	3.1	3.8	1.5
40+	6.9	6.3	7.1	6.6	0.1
Male heads					
0	48.4	43.8	59.7	56.4	1.3
1-7	3.4	3.0	3.8	3.5	0.1
8-16	10.2	8.9	5.8	5.8	1.4
17-26	10.8	10.1	6.8	7.1	1.0
27-39	11.1	12.8	7.6	8.4	-0.9
40+	16.2	21.5	16.5	18.9	-2.8

Sources: See table 5.3.

Notes: Based on individuals aged 16-68 who are classified as unemployed or out of the labor force in the survey week.

weeks worked in the previous year are minor and account for only a very small share of the relative increase in $P(U|N)$ for women.

For male heads, by comparison, the relative changes in the distribution of weeks worked are toward fewer weeks worked in Canada—suggesting that Canadian men became relatively less attached to the work force. This distributional effect was counteracted by significant relative increases in $P(U|N)$

among men with 0 and 27–39 weeks of work in the previous year. The increase in $P(U|N)$ among men with 0 weeks of work in the previous year is especially important because this group constitutes 50–60 percent of non-working male heads. Indeed, the 3.1-point relative increase in $P(U|N)$ for those with 0 weeks accounts for 80–90 percent of the overall relative increase in $P(U|N)$ among Canadian males. Changes in the relative distributions of previous work experience explain essentially none of the rise in the likelihood of reported unemployment among nonworkers in Canada.

A second possibility is that relative changes in $P(U|N)$ have been driven by relative changes in the characteristics (such as age or education) of nonworkers in Canada and the United States. To examine this hypothesis we estimated linear probability models for $P(U|N)$ by sex, country, and year, including age, education, marital status, and weeks worked last year as control variables. We then carried out an Oaxaca-style decomposition of the relative change in $P(U|N)$ between 1980 and 1987 into a component attributable to relative changes in the mean characteristics of nonworkers in the two countries and another attributable to relative changes in the coefficients of the linear probability models. For both male and female heads this decomposition suggests that relative changes in the demographic characteristics of nonworkers were only a minor factor in the relative rise in Canadian unemployment.

A third explanation for the relative rise in $P(U|N)$ in Canada is that a greater fraction of U.S. workers have become discouraged and withdrawn from the labor force over the 1980s, while their Canadian counterparts have continued to look for work. In both the CPS and the LFS the distinction between unemployed and discouraged workers hinges on self-reported job search effort and is therefore highly subjective.²⁸ Any change in the fraction of discouraged workers in the United States relative to Canada, however, will lead to a relative change in $P(U|N)$. Akyeamong (1989) presents data on discouraged workers in Canada compiled from supplementary questions in the March LFS survey. Similar data are collected for one-quarter of individuals in the CPS each month and published as annual series in U.S. Bureau of Labor Statistics (1988). Using these sources we have computed unemployment rates for the United States and Canada that include discouraged workers in the count of unemployed workers. The resulting series are graphed in figure 5.12 along with the conventional unemployment rates. The addition of discouraged workers raises unemployment rates in both countries by about 8–10 percent, but leaves the cyclical and trend components of the series unaffected. There is no indication that the relative increase in $P(U|N)$ in Canada over the 1980s has occurred because of a relative change in the fraction of discouraged workers in the United States and Canada.

28. A discouraged worker is an individual who was not working in the survey week and has not looked for work in the previous 4 weeks, but who was available for work and stated that he or she wanted a job. Finally, the individual must give as a reason for not looking that he or she "believes no work is available" (in both the LFS and CPS) or "couldn't find a job" (in the CPS).

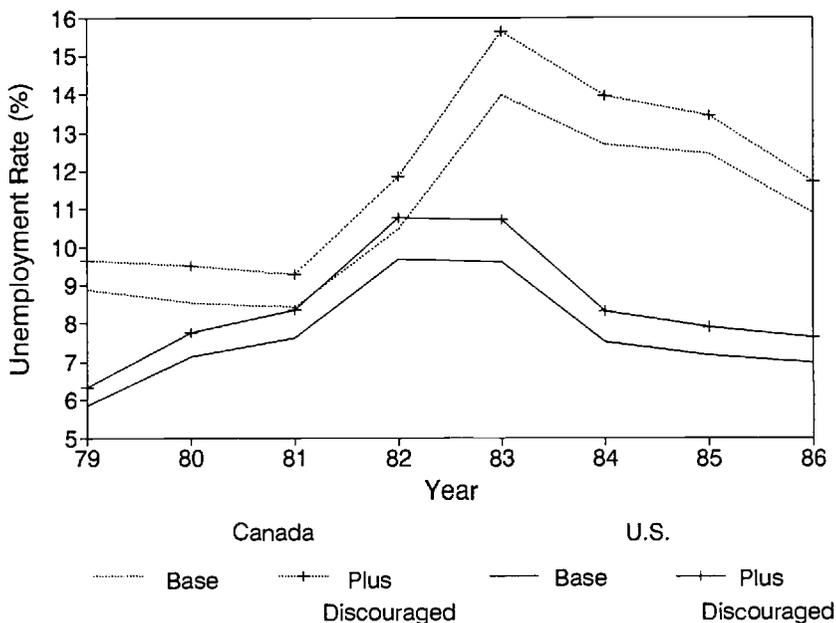


Fig. 5.12 Unemployment rates excluding and including discouraged workers, the United States and Canada

In summary, the results in tables 5.10 and 5.11 reinforce the conclusions from our analysis of retrospective unemployment. Virtually all of the relative increase in female unemployment in Canada is explained by an increase in the propensity of Canadian women to report nonworking time as unemployment. Retrospectively, this is represented by an increase in the number of weeks of unemployment in the previous year reported by women with a given number of weeks of employment. Contemporaneously, it appears as an increase in the conditional probability of unemployment among nonworkers, holding constant the number of weeks worked in the previous year and such variables as age, education, and marital status.

The relative increase in unemployment of Canadian men is a result of similar changes in the propensity to report nonworking time as unemployment, augmented by relative changes in the distribution of employment. Our retrospective analysis indicates that over 50 percent of the relative increase in Canadian male unemployment is attributable to the increase in reported unemployment among men with 0 weeks of work during the year. Contemporaneously, this behavior is reflected in the significant increase in the probability of unemployment among nonworking men with 0 weeks of work in the previous year. A comparison of the distribution of weeks worked among Canadian men shows a relative decrease in full-year employment and a corresponding increase in part-year employment (particularly 10–26 weeks), leading to

higher levels of retrospective unemployment and higher rates of contemporaneous nonemployment.

5.6 Unemployment and Unemployment Insurance

The preceding analysis suggests that up to three-quarters of the growth in the unemployment gap between Canada and the United States in the 1980s is attributable to a relative increase in the fraction of nonworking time that is classified as unemployment. For men this increase is particularly strong among individuals with 0, 10, or 12 weeks of employment in the previous year. For women the increases are more evenly distributed across the entire distribution of annual work experience, but also show peaks at 0, 10–12, and 20 weeks of work experience. These patterns are suggestive of a number of hypotheses. Perhaps most obviously, since 1979 the Canadian UI system has provided a relatively strong incentive for individuals with low labor supply characteristics to work at least 10–12 weeks and, in the case of new entrants, reentrants, and women at risk of childbirth, at least 20 weeks. Depending on the region of the country, these thresholds are enough to ensure eligibility for UI benefits for 10–42 weeks. In the United States, on the other hand, UI eligibility requires 20 weeks of work (or the earnings equivalent of 20 weeks of full-time work at the minimum wage) in most states.²⁹ We conjecture that the more generous UI system in Canada and the changes made to the UI system in the late 1970s have led some Canadians with low-labor force attachment to work just enough to continue collecting UI benefits (i.e., 10, 12, or 20 weeks) and to report their nonworking time as unemployment.

Table 5.12 presents information on the UI programs of the two countries during the 1970s and 1980s. The first two columns of the table give the ratio of the average weekly number of UI recipients in each country to the average weekly count of unemployment. The comparison is striking: the number of active UI claimants is only about one-third as large as the number of unemployed workers in the United States, but is 85 percent or more of the unemployment count in Canada. During the 1980s the ratio fell slightly in the United States but actually rose in Canada, reaching over 100 percent in 1989.

The differences between the United States and Canada in the ratio of UI recipients to unemployed workers reflect three basic differences. First, a larger fraction of unemployed workers in Canada are eligible for benefits. Appendix table 5A.2 presents illustrative calculations of the UI eligibility rate among unemployed individuals in the two countries in 1987. These calculations suggest that the eligibility rate is indeed higher in Canada: 53 percent versus 42 percent in the United States. Second, a relatively large number of

29. See Statistics Canada (1984) and Green and Riddell (1993) for overviews of UI rules in Canada. See U.S. Department of Labor Employment and Training Administration (1989) and Anderson and Meyer (1993) for overviews of UI rules in the United States.

Table 5.12 Characteristics of UI Systems in the United States and Canada, 1968–88

	UI Recipients/ Number Unemployed (%) ^a		Weekly UI Benefit/ Weekly Earnings (%) ^b		Average Duration of UI Claims (weeks) ^c	
	U.S. (1)	Canada (2)	U.S. (3)	Canada (4)	U.S. (5)	Canada (6)
1968	33.2	88.6	34.3	24.2	11.6	13.1
1969	32.5	83.6	34.4	26.9	11.4	13.8
1970	37.0	80.1	35.7	27.7	12.3	14.4
1971	41.6	81.4	36.5	28.6	14.4	14.9
1972	35.6	105.9	36.1	41.4	14.0	13.5
1973	32.4	110.3	36.1	42.7	13.4	14.4
1974	39.6	106.5	36.5	42.1	12.7	13.1
1975	51.7	104.0	37.1	41.6	15.7	14.2
1976	41.6	95.9	37.1	40.7	14.9	14.6
1977	37.9	87.7	36.4	40.4	14.2	15.0
1978	34.1	87.6	36.4	41.3	13.3	15.9
1979	34.2	84.9	36.1	37.7	13.1	16.0
1980	37.9	80.8	36.4	38.1	14.9	15.2
1981	34.5	79.3	35.9	36.7	14.5	14.8
1982	37.0	88.9	37.5	36.3	15.9	17.0
1983	30.3	89.3	36.8	36.4	17.5	21.2
1984	25.3	86.0	35.3	39.8	14.3	19.2
1985	27.8	87.7	35.3	40.8	14.3	19.6
1986	28.7	91.9	35.8	42.0	14.6	18.8
1987	27.4	91.8	35.3	43.0	14.6	18.4
1988	27.0	99.8	34.8	43.7	13.7	17.9
1989	28.7	100.9	35.4	44.3	13.2	18.1

^aThe ratio of the average weekly number of UI recipients to the average weekly number of unemployed individuals. UI recipients in the United States include regular and extended benefit recipients and exclude beneficiaries of special programs for exservicemen, federal workers, and railroad workers, as well as recipients of temporary programs.

^bThe ratio of average weekly UI payments to average weekly earnings of insured workers (United States) or average weekly earnings in the economy (Canada).

^cEstimated average duration of benefit claims.

individuals who are classified as out of the labor force in the LFS receive UI benefits in Canada (see Levesque 1989). This group includes individuals receiving benefits during periods of training, sickness, and maternity leave, as well as others who are not actively searching for work. Third, take-up rates for benefits may differ between the countries. Blank and Card (1991) estimate that the take-up rate among eligible unemployed workers in the United States is 65–75 percent (it fell sharply in the early 1980s). While no similar estimates are available for Canada, we suspect that the take-up rate is higher.

Columns 3 and 4 of table 5.12 show the ratio of average weekly UI benefits

to average weekly earnings in each country.³⁰ Prior to the revision of the Canadian UI system in 1971, benefits payments were low in Canada relative to the United States. The 1971 act increased the generosity of benefits substantially, to an overall average of just over 40 percent of average weekly earnings. Subsequently the relative generosity of UI payments in the two countries has remained fairly constant, although the data suggest an upward trend in relative payments in Canada during the 1980s.³¹ It is important to keep in mind that the ratios in table 5.12 are *not* averages of the replacement rates actually earned by unemployed workers. These will tend to be higher than the rates in the table, since unemployed workers have average earnings that are below the economy-wide average (see tables 5.3 and 5.5).

Columns 5 and 6 show the average duration of benefit claims in the two countries. The maximum duration of regular UI benefits in the United States is 26 weeks; historically, the average potential duration of benefit claims has been relatively constant at 22–23 weeks. Regular benefits are supplemented by so-called extended benefits, which offer up to 13 extra weeks of benefits to claimants in states with relatively high insured unemployment rates, and by ad hoc supplemental benefit programs, which offer additional temporary extended benefit rights. Benefit weeks paid under these programs are not included in the average duration figures for the United States: hence, the figures in table 5.12 understate the rise in average durations associated with previous recessionary periods. Since 1984, however, extended and supplemental benefit programs have been negligible in all states but Alaska.

In contrast to the U.S. case, the average duration figures in table 5.12 for Canada include extended benefit programs, which are a built-in feature of the Canadian UI system. The average duration of Canadian UI claims rose some 30 percent during the 1982–83 recession, reflecting both the availability of longer benefits and slower exit rates from the UI program. The average duration of claims has not fallen back to its pre-1982 level, even as the economy-wide unemployment rate has returned to about the same level as 1979–81. The average duration of (in-progress) unemployment spells in Canada also rose between the beginning and the end of the 1980s. Interestingly, the average duration of unemployment spells in the United States was also higher in 1989 than 1979, even though the U.S. average unemployment rate was slightly lower in 1989 than in 1979.³²

30. These ratios make no allowance for the tax treatment of UI benefits, which has varied over the period. By 1984 UI benefits were fully taxable in each country. In addition, since 1977 Canadians with income above a certain threshold have been required to pay a surtax on a portion of UI benefits.

31. Statutorily, UI benefits are paid at 60 percent of the claimant's former wage rate in Canada, up to a maximum. In the United States, benefits are paid at rates that average about 50 percent of the former wage, subject to a minimum and maximum rate.

32. In Canada the average duration of (in-progress) unemployment spells was 14.9 weeks in 1979–80 and 17.9 weeks in 1989. In the United States the average duration of unemployment

An important question is whether the Canadian UI system is responsible for the sluggish decline in UI durations, and perhaps the simultaneous rise in relative Canadian unemployment rates. To answer this question, we have used regional extended benefit information for each labor market region in the country, together with a fixed pool of unemployed workers (characterized by their weeks of work in the previous year) to simulate expected maximum benefit eligibility in each year from 1972 to 1989.³³ The fixed unemployment pool consists of all unemployed workers in the 1987 LFS. We use each individual's reported weeks of work in 1986 as an estimate of his or her weeks of work during the UI qualification period. For each year (using data for June as an approximate midpoint) we calculate the maximum weeks of UI that each individual in the unemployment pool could expect in that year in each labor market region. We then weight the averages across regions, using 1981 population weights.

The resulting series of average maximum eligibility weeks is plotted in figure 5.13, along with the average UI claim duration series from table 5.12. Because of the nature of the regional extended benefit formulas, average maximum eligibility tracks the average unemployment rate in the economy very closely. The average duration of UI claims also tracks maximum eligibility until 1985 or 1986. More recently, however, maximum eligibility has returned to its pre-1982 level, while the average duration of UI claims has leveled off. These simulations therefore suggest that the extended benefit rules are not to blame for the high level of UI durations in 1987–89.³⁴ Rather, high levels of unemployment and longer UI durations have persisted even as the maximum durations of benefits declined in the late 1980s.

Further information on the differences in UI reciprocity between the United States and Canada is presented in table 5.13. Here we have used our extracts of family heads in the CPS and the LFS to calculate the fraction of individuals who report receiving UI income in the previous year.³⁵ As expected from the

spells was 10.8 weeks in 1979 and 11.9 weeks in 1989. (Canadian data are from Statistics Canada, *The Labour Force*, various years; U.S. data are from the 1992 *Economic Report of the President*, table B-39).

33. During the period 1978–90 forty-eight regions were used to administer the extended benefit provisions of the UI system. Eligibility was extended by 2 weeks for each 0.5 percentage-point increase in the regional unemployment rate over and above 4.0 percent, up to a maximum of 32 weeks (see Statistics Canada 1984).

34. Because the simulations assume a fixed pool of unemployed workers in each economic region, the decline in average eligibility between 1983 and 1989 reflects the decline in average unemployment rates experienced in most economic regions of Canada. We are unaware of any changes in the composition of unemployed workers that would offset the decline in maximum UI eligibility displayed in figure 5.13. Indeed, the decline in average weeks worked in the previous year by currently unemployed workers over the 1980s (see table 5.5) suggests that average weeks of maximum eligibility would have fallen *faster* than indicated by the simulations in figure 5.13.

35. A difficulty with these calculations is that the 1979 Survey of Consumer Finances does *not* report person-specific information on UI reciprocity, only the number of UI recipients in the family. For families with no UI recipients this is not a problem—we assumed that none of the individ-

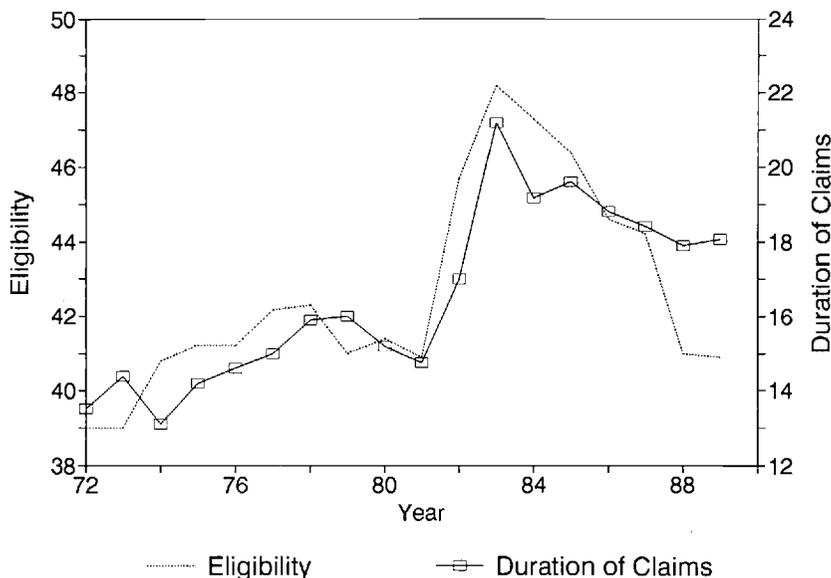


Fig. 5.13 Average weeks of eligibility and average weeks of benefits claimed, Canadian UI system

data in tables 5.6 and 5.12, the probability of UI receipt is uniformly higher in Canada, especially for women. There were substantial relative shifts in UI reciprocity rates across the two countries, however, even controlling for weeks of work in the previous year. Inspection of the difference-in-differences in table 5.13 indicates that relative reciprocity rates fell in the 1980s for Canadian heads with relatively low annual weeks of work (0 and 1–17 weeks of work). Since individuals (especially men) with 0 weeks of work are a major source of the growing unemployment gap between Canada and the United States, it is difficult to argue that the increase in Canadian unemployment is mainly a result of the UI system. On the other hand, the growth in relative reciprocity rates among men and women with 8–16 weeks of work is consistent with the spikes at 10–12 weeks in figures 5.8 and 5.9. Similarly, the growth in relative reciprocity rates among female heads with 17–26 weeks of work is consistent with the spike at 20 weeks in figure 5.8. Attributing *all* of the relative increase in unemployment at the 10-, 12-, and 20-week spikes to the UI system, our analysis suggests that at most 22 percent of the relative increase in male un-

uals in the family received UI. For families with two or more UI recipients we assumed that both heads (if present) received UI. For families with two heads and one UI recipient, we allocated UI reciprocity to the head with more weeks of unemployment if either head reported positive weeks of unemployment, and to the head with fewer weeks of work if neither head reported any weeks of unemployment.

Table 5.13 Probability of UI Reciprocity during the Year in the United States and Canada, 1979 and 1986

	Canada		U.S.		Difference-in-Differences
	1979 ^a	1986	1979	1986	
A. Female heads					
All	12.2	13.2	3.9	3.4	1.5
By weeks worked during year					
0 weeks	9.1	2.8	0.3	0.6	-6.6
1-7 weeks	21.8	20.7	4.8	4.4	-0.7
8-16 weeks	30.6	34.4	6.8	6.8	3.8
17-26 weeks	38.8	49.5	11.2	10.5	11.4
27-39 weeks	40.0	48.4	15.3	13.2	10.5
40+ weeks	6.4	11.1	3.9	3.1	5.5
B. Male heads					
All	14.8	14.6	6.5	6.6	-0.3
By weeks worked during year					
0 weeks	13.9	8.4	1.0	1.7	-6.2
1-7 weeks	40.8	36.6	10.5	12.3	-6.0
8-16 weeks	38.8	50.5	16.6	20.4	7.9
17-26 weeks	52.3	61.6	26.1	28.6	6.8
27-39 weeks	52.2	61.9	33.6	35.7	7.6
40+ weeks	9.7	7.6	4.5	4.2	-1.8

Notes: Probability of UI reciprocity is the probability of reporting UI income during the calendar year.

employment and 20 percent of the relative increase in female unemployment is attributable to the Canadian UI system. We regard this estimate as an upper bound on the UI effect. Clearly, a large fraction of the emergent unemployment gap—particularly the component attributable to individuals with very low levels of annual labor supply—remains unexplained.

5.7 Conclusions

We have presented a variety of macroeconomic and microeconomic evidence aimed at discovering the sources of the unemployment gap that emerged between Canada and the United States in the 1980s. We have argued that the long-run persistence of this gap—through more than seven years of economic expansion—suggests a permanent structural difference in the nature of unemployment in the two countries. We have uncovered several important facts that are relevant for the interpretation of the unemployment gap. Most important, higher aggregate unemployment in Canada is not simply a consequence of lower aggregate employment. Indeed, employment-population rates are fairly similar in the two countries and became more similar during the late 1980s. Rather, individuals who are not working in Canada are more likely to be classified as unemployed. Most of the unemployment

gap between Canada and the United States at the end of the 1980s is attributable to this propensity.

We have used individual microdata on male and female family heads from 1979–80 and 1986–87 to analyze the components of the relative increase in Canadian unemployment in the past decade. Looking at either contemporaneous or retrospective measures of unemployment, the relative growth of unemployment among Canadian women during the 1980s is attributable to an increase in the likelihood that nonemployment is reported as unemployment. This increase occurred across women with different levels of actual employment experience during the year, with relatively larger shares attributable to women who worked 0, 10–12, and 20 weeks in the previous year. For men, one-half of the relative increase in Canadian unemployment during the 1980s is attributable to the behavior of a single group: those with no weeks of employment during the entire calendar year. During the 1980s there was a sharp increase in the probability that Canadian men with no work experience in the previous year would remain attached to the labor force. Another 20 percent of the relative rise in male unemployment is attributable to the growth in reported weeks of unemployment among Canadian men with 10–12 weeks of employment in the previous year.

An important theme in our study is the role of UI benefits in the emergence of a unemployment gap between the United States and Canada. Unemployed workers are more likely to receive unemployment benefits in Canada than in the United States. This differential widened during the 1980s, as did the relative generosity of UI benefits in Canada and the relative duration of Canadian UI claims. However, an analysis of the regional extended benefit system in Canada suggests that the UI system itself is not the cause of the high level of unemployment at the close of the 1980s. If the same group of workers had entered the pool of unemployment in 1979 as in 1989, our simulations suggest that the average duration of available UI benefits would have been the same. By the same token, UI reciprocity rates among men and women with 0 weeks of work actually fell in Canada relative to the United States over the 1980s. The portion of widening unemployment gap accounted for by individuals with 0 weeks of work is clearly not attributable to the Canadian UI system.

Nevertheless, we do find evidence that Canadian workers have increasingly tailored their labor supply behavior to the characteristics of the UI system. Relative increases in the numbers of Canadian men and women reporting exactly 10 or 12 weeks of employment, and relative increases in the weeks of unemployment reported by these workers, account for 13 percent of the relative rise in female unemployment and 22 percent of the relative rise in male unemployment. Similar increases for women with exactly 20 weeks of work account for another 8 percent of the relative rise in female unemployment. UI reciprocity rates also increased for Canadian men and women with these labor supply patterns. These findings point to a significant role of the UI system in accounting for the rise in relative Canadian unemployment, although most of the rise in the Canadian-U.S. unemployment gap remains unexplained.

Appendix

Table 5A.1 Industry Shares of Labor Force and Relative Shares of Unemployment and Employment, 1986

	U.S.		Canada	
	Labor Force Share ^a (1)	Relative Share Unemployment/ Employment ^b (2)	Labor Force Share ^a (3)	Relative Share Unemployment/ Employment ^b (4)
Agriculture	2.4	1.27	4.0	0.75
Forestry, fishing, mining	0.9	1.82	2.6	2.17
Nondurable manufacturing	6.9	1.00	8.7	1.04
Durable manufacturing	10.1	0.88	8.1	0.92
Construction	6.1	1.90	5.7	2.15
Transportation, communication, utilities	6.2	0.72	7.3	0.68
Wholesale trade	3.6	0.71	4.3	0.68
Retail trade	15.1	1.10	13.0	0.91
Finance, insurance, real estate	5.9	0.45	5.2	0.55
Health, education, recreation	15.3	0.53	16.7	0.62
Personal services	4.4	1.13	9.5	1.50
Business services	8.7	0.87	7.1	1.15
Public administration	4.1	0.45	7.2	0.76
Currently unemployed	10.5	3.4	—	—
Never worked	—	—	0.7	—

Sources: See table 5.3.

Notes: See notes to table 5.6.

^aFraction of all individuals in labor force last year declaring an attachment to industry in the previous year. In the United States, industry is not asked of currently unemployed individuals.

^bRatios of the industries' shares of weeks of unemployment in the previous year to the industries' shares of weeks of employment in the previous year.

Table 5A.2 Approximate UI Eligibility Calculations for Currently Unemployed Individuals, 1987

Reason for Disqualification	Unemployed (%)
Canada	
Age 65 or older	0.4
Full-time student	5.7
No work in previous year	20.5
Previous job uncovered	2.7
Unemployed < waiting period	10.5
Worked 1-9 weeks in previous year ^a	7.0
Ineligible (%)	46.8
Eligible (%)	53.2
United States	
Unemployed < waiting period	6.0
Unemployed > maximum duration	24.3
Insufficient earnings/weeks in previous year	30.2
Quit previous job	7.5
Previous job uncovered	0.1
Ineligible (%)	58.3
Eligible (%)	41.7

Sources: Calculations for Canada are based on Levesque (1989). Calculations for the United States are based on Blank and Card (1991).

^aIgnored by Levesque. Estimate based on weeks of work reported by currently unemployed (excluding full-time students) in 1987 Survey of Consumer Finances.

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