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THE PERSISTENCE OF UNEMPLOYMENT: How Important were Regional Extended Unemployment Insurance Benefits?

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ABSTRACT

This paper assesses the contribution of regionally extended unemployment insurance benefits to the persistence of the Canadian unemployment rate during the 1980s. We use administrative data associated with the operation of the U.I. program to produce counts of the number of U.I. claimants by benefit phase. The data suggest that the change in the number of unemployed individuals above the level prevailing in 1981 is much larger than the change in the number of regionally extended benefit recipients. We also examine the time-series properties of the number of U.I. claimants by benefit phase, and find that the number of regionally extended recipients is not unusually persistent. Indeed, this series displays less persistence than the number of claimants in other benefit phases. We recognize that the increase in potential benefit duration caused by regionally extended benefits may lengthen the time claimants spend in the initial and labour force extended benefit phases, but conclude that this indirect channel would have to be particularly strong in order to prevent one from concluding that the number of regionally extended benefit recipients was of relatively little importance as an explanation of the increased level and persistence of the Canadian unemployment rate during the 1980s.

I. Introduction

The deteriorating performance of the Canadian labour market since the recession of the early 1980s has attracted considerable research attention, much of it focused on the notable divergence in relative Canadian-US unemployment rates in the years since 1982.[1] A recurrent weakness in this literature has been the failure to identify Canadian structural factors that appear to have changed sufficiently and at the right time to account for the increased level and persistence of Canadian unemployment. In an important recent contribution, Milbourne, Purvis and Scoones (1991) (MPS) contended that the change in question occurred in 1977 when, as part of a package of revisions to the Unemployment Insurance (UI) legislation dating from 1971, regional extended unemployment insurance benefits were modified to depend on the difference between a benefit region's unemployment rate and a figure of 4 percent. This change, however, was argued to have had relatively negligible effects until the dramatic increase in unemployment rates in almost all regions in 1981-82, whereupon regional benefits automatically produced a more generous UI system and hence gave rise to persistence consistent with the sluggish recovery of the Canadian economy throughout most of the 1980s.

One potential difficulty with the empirical argument presented by MPS is that they had no evidence on the number of UI claimants in receipt of regional extended UI benefits.[2] This note seeks to remedy this problem and to document the importance of regional extended UI benefits in the 1978-88 decade.[3] First, we detail the number of UI recipients in each benefit phase, and in particular compare the number of claimants receiving regionally extended benefits with those in the other phases. Second, we discuss the relationship between administrative counts of unemployment insurance recipients and measures of unemployment from the Labour Force Survey. Third, we discuss the

appropriate counterfactual for the policy change in question: how would unemployment have behaved in the 1980s if it had been governed by the pre-1977 UI legislation? Fourth, we present some simple descriptions of the time series properties of the number of claimants in each benefit phase.

Our main findings are that the number of claimants receiving regional extended UI benefits rose from a little under 20 percent of all UI recipients in 1981-82 to about 28 percent by mid-decade, with a subsequent decline to 23 percent by 1988. Though not negligible, we do not interpret this as a major shift in the composition of UI claims. Indeed, using 1981 as a base, the change in the number of unemployed exceeds the change in the number of claimants collecting regional extended benefits by a very large margin. Furthermore, when simple estimates of the degree of persistence in various measures of UI claimants are generated, the total of regional extended UI beneficiaries does not have a higher degree of persistence than the totals of claimants of other types of UI benefits; if anything, the (short) time series results go in the opposite direction.

Overall, in the absence of estimates of a fully specified behavioural model, it is difficult to determine the degree to which the existence and generosity of regional extended UI benefits might have affected the length of time spent in other benefit phases, and indeed the level of unemployment itself. However, our conclusion from using the UI beneficiary data is that, unless this type of indirect effect is particularly strong, regional extended UI benefits were of relatively little importance in the increased level and persistence of Canadian unemployment in the 1980s.

II. The Benefit Phases of Unemployment Insurance Claims

The data we employ are based on administrative records of regular UI and Fishing claims and are broken down by benefit phase. First, there is the initial benefit phase (IBP), during which one week of benefits is payable for each insurable week of employment to a maximum of 25 weeks. Second, there is the labour force extended phase (LFE), which provides an additional week of benefits for every two weeks of insurable employment above 25 to a maximum of 13 weeks of benefits. Third, there is the regional extended (RE) benefit phase, governed since September of 1977 by the discrepancy between the unemployment rate in the UI benefit region and the figure of 4 percent, with each positive 1/2 percentage point of this difference yielding an additional 2 weeks of potential eligibility, up to a maximum of 32 weeks at a regional unemployment rate above 11.5 percent.

Table 1 presents the annual averages of the weekly counts of the number of claimants receiving benefits under each of the benefit phases and not reporting any earnings. In each year, IBP recipients are the dominant group, with a small fraction of total beneficiaries being in the LFE phase. The majority of UI claimants never reach the regionally extended benefit phase. The proportion of total beneficiaries who are regional extended UI recipients starts at 18.5 percent in 1978 and rises to a peak of just over 28 percent in 1984, falling back to 23-24 percent by the end of the decade. As might be expected, given the three month average used to calculate unemployment in each benefit region, this percentage tends to lag the overall (LFS) unemployment rate, although the effect is not pronounced in annual data. All components of the overall UI total are naturally strongly seasonal. Figure 1 graphs these three series for Canada as a whole: both the seasonality and the relatively modest rise in the number of regional extended beneficiaries are evident.

Table 2 juxtaposes these developments with the dynamics of the unemployment rate. The first column presents the average monthly unemployment rate. The persistence of unemployment is clearly evident in these annual averages. The unemployment rate rose sharply in 1982 and did not return to its 1981 level until 1989. The second column presents the average monthly labour force and is used to derive the contents of the third column which is labelled the "unemployment gap," and defined as $(UR_t-UR_{1981})*LF_t$. That is, given the prevailing labour force, it presents the number of unemployed above the level that would yield an unemployment rate equal to that of 1981. In a simple accounting sense, this gap represents the number of unemployed "responsible" for the persistence in the unemployment rate. This number is much higher than the increase in the number of regionally extended benefit recipients over the 1981 level, which is presented in column four. It does not appear that the number of regionally extended benefit recipients is great enough to support a major direct role in determining the dynamics of the unemployment rate. Finally, we examine a measure of the "adjusted unemployment rate," defined as $UR_t-(RE_t-RE_{1981})/LF_t$, that is as the unemployment rate that would prevail if the number of claimants in receipt of regionally extended benefits remained at the 1981 level.[4] This adjusted unemployment rate continues to display persistence, falling below its 1981 level only in 1988. Thus the exclusion of all regionally extended benefit recipients above that prevailing during 1981 does not dramatically change the level or dynamics of the aggregate unemployment rate. There are several reasons to believe that this formulation may overstate the direct influence of regionally extended benefits; these are discussed below.

III. Unemployment Insurance Claimants and the Level of Unemployment

In an assessment of any analysis that links the rate of unemployment to unemployment insurance policies, it is important to understand that unemployment as measured by the Labour Force Survey (LFS) is a distinct concept from UI recipiency as measured in administrative sources. Lévesque (1987, 1989) valuably outlines the sources of the differences in the two series; here, we sketch the main points of his account.

First, to move towards comparability of the two series, the administrative data are restricted to regular UI beneficiaries without declared earnings. Those claimants declaring earnings would count as employed in the LFS, while those receiving benefits for reasons of sickness, accidents or maternity would likely be classified as outside of the labour force. Second, it is noted that some regular beneficiaries may fail the job search requirement in the usual LFS definition of unemployment, especially for seasonal workers in slack periods. Third, from the LFS, Lévesque constructs a "potential beneficiaries" series, removing some of the unemployed and adding in some people classified as not in the labour force (NLF). Specifically, unemployed persons are excluded if they are over 65, if they are full-time students, if they have never worked, if they last worked more than twelve months ago, if they were self-employed (or unpaid in a family business) prior to the unemployment spell, or if they are (probably) in the two week UI waiting period. Against this, NLF persons are added if they are between 15 and 64, lost a paid job in the last twelve months, looked for work in the past six months (though not in the past four weeks), and are interested in and available for work.

Overall, the resulting potential beneficiary series marginally exceeds the actual beneficiary series in Ontario, although in provinces with above

average unemployment, the potential series falls short of the actual administrative figures. For Newfoundland, Lévesque suggests modification of the potential beneficiary group to include persons who lost a paid job in the past year but who have not looked for a job in the past six months. In that province in 1988, for example, this amounted to the inclusion of 24,000 persons and resulted in a total of 60,000 potential beneficiaries, as against 58,000 actual beneficiaries; in contrast, the number of LFS unemployed was 38,000. Nationally, the main lessons that can be drawn from this work are that the count of UI beneficiaries is typically well below the count of the LFS unemployed, but that the two series display roughly similar seasonal properties. At least for the 1977-1986 period covered in Lévesque (1987), there is little sign of the emergence of any significant secular differences in the two concepts.

IV. The 1977 Legislative Amendments and the Appropriate Counterfactual

According to the 1971 UI legislation, the maximum duration of benefits depended on both the national and the regional unemployment rate. The national component of extended benefits amounted to four weeks additional eligibility for each percentage point that the national unemployment rate exceeded four percent, to a maximum of eight additional weeks. The regional component was defined in relative terms, and amounted to six weeks of additional eligibility for each percentage point that the regional unemployment rate exceeded the national figure, to a maximum of eighteen additional weeks. In practice, the national figure was in excess of the 5 percent threshold for national extended benefits for almost all of the period and hence provided little source of variation in the length of eligibility.

The 1977 amendments dropped the national extended benefit component altogether but made the regional extended benefit component operate in absolute terms, rather than relative to the national average. Specifically, for each percentage point that a region's unemployment rate exceeded four percent, an additional four weeks of eligibility were warranted, to a maximum of 32 such additional weeks (i.e. at a regional unemployment rate of 12 percent).[5] As calculations by MPS show (e.g. their Figure 4, p.817), given the realizations of provincial unemployment rates in the 1980s, this regional extended rule contained the potential for a dramatic shift in the length of UI eligibility.

The question naturally arises, given these changes, of the appropriate definition of the counterfactual in an evaluation of the effect of regional extended benefits. Although one choice might be the alternative of no extended benefits at all, which implicitly is the basis for the adjusted unemployment rate series presented in Table 2, a more interesting scenario from a policy perspective would be to consider the pre-1977 UI system applied to the post-1977 years. If we adopt this as the benchmark, then it is reasonable to think that the total of extended benefit recipients, on the pre-1977 legislation, would have risen in the 1980s. As for almost all of the 1971-77 period, the national extended benefit would have been in full force. In addition, growing regional disparities in the 1980s (see, e.g., Burns 1991) mean that, applying the relative regional extended benefit criterion of the pre-1977 legislation, the numbers on regional extended benefits would have further increased. Thus, while it is undoubtedly problematic to quantify the magnitude of the effect, there is little doubt that the number of UI recipients on some sort of extended phase would have risen, even in the absence of the 1977 legislative changes.

A second issue that arises in the evaluation of the role of regional extended benefits is the extent to which changes in the maximum potential duration of UI eligibility affect incidence and duration of spells of UI recipiency even when the maximum itself is not approached. In some earlier research using a small sample from earlier administrative data, Ham & Rea (1987) have suggested that the number of remaining weeks of eligibility does influence the hazard out of UI recipiency, although assessing the extent of this effect is again difficult. What is clear is that mean duration of actual spells is consistently well below these potential maximum values. For example, the average duration of UI claims reached an annual peak at 21.2 weeks in 1983 (see Card & Riddell 1991, Table 11, e.g.), at which time the MPS estimate of maximum benefit weeks approached 40, although this degree of proportionality did not hold up later in the decade (Card & Riddell 1991, Figure 13). To the extent that extended benefit recipiency would have risen in the 1980s even under the pre-1977 legislation, these possible effects on other benefit phases would also have been operative, of course, although there is little doubt that these indirect effects were stronger when governed by the absolute nature of regional extended formula in the post-1977 legislation.

V. Persistence of Measures of Unemployment Insurance Beneficiaries

Given the preceding qualifications about the appropriate counterfactual, it is instructive to consider the behaviour of the various components of total UI claims over the period governed by the post-1977 legislation. We focus on the time series properties of three series: RE, the number of beneficiaries in a regional extended phase; OTHER, the number in an initial benefit phase or a labour force extended phase; and TOTAL, the sum of these two series, which is the number of all UI beneficiaries. In each case, as in the annual means in

Table 1, the data are derived from the number of regular UI and Fishing claimants for the weeks in which no earnings are reported.

We follow MPS in examining monthly data for the period 1978:6 to 1988:3.[6] In addition to comparability with their results, this period avoids the start-up nature of the counts under the 1977 legislation that is apparent at the beginning of Figure 1. At the outset, however, it should be stressed that this is not a large sample; moreover, the 118 data points are monthly, so the overall temporal span of the data is also quite short. We doubt that too much weight should be placed on exact parameter values – particularly on whether an autoregressive parameter is close to unity – given these inherent limitations in the data.

The specification we study closely follows that of MPS and has an intercept and one lagged dependent variable, together with a measure of shocks to output following that used in MPS.[7] We study the degree of persistence for the logarithm of the numbers of recipients in Table 3 and for the numbers of recipients as a proportion of the (seasonally unadjusted) labour force in Table 4; these latter figures are more directly comparable to results using the LFS unemployment rate, although the many differences sketched in Section III above should be underscored.

The log-levels results in Table 3 display a high degree of persistence in all cases. With no allowance for seasonality, the RE series has a higher autoregressive parameter than the OTHER series, but this result reverses when a set of deterministic monthly seasonals are included in the regression. Dickey-Fuller test statistics for the null hypothesis of a unit root do not reject in the model of the OTHER series when the seasonals are included. Further, a t-test for the null of serially uncorrelated errors against the alternative of an AR(1) leads to a rejection of the null in all cases. The

proportional results in Table 4 repeat this pattern, with the simplest model having a larger persistence parameter for the RE series and the seasonal model having the RE proportion with a lower autoregressive parameter than the proportional series for other claimants. Indeed, in this last case, the point estimate for the proportion of the OTHER series is unity, while the RE estimate is 0.923. Dickey-Fuller tests do not lead to the rejection of the null hypothesis of a unit root in the former case, but do in all others. As noted above, we are inclined not to make too much of such differences given the short span of data. But these results do undermine any idea that the number of regional extended beneficiaries is unusually persistent and that this is an important direct source of increased persistence in the overall number of claimants or in the rate of unemployment.

VI. Conclusion

This paper has sought to supplement the literature on unemployment persistence and UI in Canada by using direct evidence on the number of recipients of various types of UI. We have documented that a major shift in the proportion of UI recipients who were receiving regional extended UI benefits did not occur in the 1980s. Further, we note that the evidence does not favour the view that the number of regional extended beneficiaries tended to be more persistent than the number of other UI beneficiaries. Therefore, we argue that there is no evident direct mechanism from regional extended UI benefits, as generated by the 1977 legislative changes, that could account for the increased persistence of Canadian unemployment in the 1980s. The remaining open question is the strength of the indirect mechanism from an increase in potential length of regional extended UI eligibility to the incidence of UI claims and duration of time spent in other phases of the

benefit structure. Our results suggest that such indirect means would have to be strong for regional extended benefits to be quantitatively important for the behaviour of unemployment in the 1980s.

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Table 1

Annual Averages of Number of UI Claimants by Benefit Phase

Year	Initial Benefit Phase	Labour Force Extended	Regional Extended	Total	Per Cent Regional Extended
1978	581980	26440	138130	746550	18.5
1979	587500	37120	176160	800780	22.0
1980	624940	39960	139920	804820	17.4
1981	640210	39390	150350	829950	18.1
1982	947710	75840	243000	1266550	19.2
1983	890860	94530	339490	1324880	25.6
1984	699950	67930	300710	1068590	28.1
1985	645310	62990	270550	978850	27.6
1986	642480	57860	246760	947100	26.1
1987	599370	52790	224200	876360	25.6
1988	627940	51990	206050	885980	23.3
1989	606740	58840	210840	876420	24.1

Source: UI administrative data,
Business and Labour Market Analysis, Statistics Canada.

Table 2

Dynamics of Unemployment and Regional Extended Beneficiaries

Year	Unemployment Rate	Labour Force ('000s)	Unemployment Gap	Change in Regional Extended Recipients	Adjusted Unemployment Rate
1978	8.3	10,895	87,160	-12,220	8.4
1979	7.4	11,231	-11,231	25,810	7.2
1980	7.5	11,573	0	-10,430	7.6
1981	7.5	11,899	0	0	7.5
1982	11.0	11,926	417,410	92,650	10.2
1983	11.8	12,109	520,687	189,140	10.2
1984	11.2	12,316	455,692	150,360	10.0
1985	10.6	12,532	388,492	120,200	9.6
1986	9.5	12,746	254,920	96,410	8.7
1987	8.8	13,011	169,143	73,850	8.2
1988	7.8	13,275	39,825	55,700	7.4
1989	7.5	13,503	0	60,490	7.0

Unemployment Gap = $(UR_t - UR_{1981}) * LF_t$, where UR refers to the unemployment rate and LF refers to the labour force.

Change in Regional Extended Recipients = $RE_t - RE_{1981}$, where RE refers to the number of UI claimants receiving regionally extended benefits.

Adjusted Unemployment Rate = $UR_t - (RE_t - RE_{1981}) / LF_t$.

Source: Statistics Canada and Table 1.

Table 3

Persistence of Levels of Unemployment Insurance Beneficiaries

	No seasonals			Seasonals included		
	Regional Extended	Other	Total	Regional Extended	Other	Total
Lagged Dep Var	.933 (.028)	.884 (.044)	.899 (.038)	.938 (.014)	.991 (.030)	.951 (.022)
Output residuals	-1.091 (.504)	-.725 (.504)	-.792 (.439)	-1.284 (.232)	.108 (.278)	-.423 (.216)
Constant	.521 (.216)	1.031 (.387)	.932 (.347)	.576 (.110)	.115 (.271)	.539 (.203)
N	118	118	118	118	118	118
R^2	.925	.855	.893	.985	.975	.983
AR(1)	10.0	9.34	8.84	3.97	4.32	5.24
D-F	-2.39	-2.66	-2.68	-4.32	-0.297*	-2.25

( ) indicates standard error
AR(1) is distributed as a t distribution
D-F indicates Dickey-Fuller test statistic
* indicates that the null of a unit root cannot be rejected at 10 per cent.

Source: Statistics Canada. Monthly data 1978:6-1988:3 on UI beneficiaries.

Table 4

Persistence of Proportions of Unemployment Insurance Beneficiaries

	No seasonals			Seasonals included		
	Regional Extended	Other	Total	Regional Extended	Other	Total
Lagged Dep Var	.914 (.031)	.897 (.041)	.896 (.038)	.923 (.015)	1.007 (.025)	.957 (.022)
Output residuals	-2.065 (.982)	-4.709 (3.251)	-7.615 (3.749)	-2.907 (.418)	1.152 (1.596)	-3.761 (1.790)
Constant	.170 (.061)	.641 (.262)	.851 (.313)	.329 (.035)	.546 (.193)	1.180 (.207)
N	118	118	118	118	118	118
R^2	.910	.871	.896	.986	.982	.985
AR(1)	9.49	11.7	10.7	3.97	5.05	5.69
D-F	-2.79	-2.49	-2.74	-5.13	0.283*	-1.99

( ) indicates standard error
AR(1) is distributed as a t distribution
D-F indicates Dickey-Fuller test statistic
* indicates that the null of a unit root cannot be rejected at 10 per cent.

Source: Statistics Canada. Monthly data 1978:6-1988:3 on UI beneficiaries as proportion of seasonally unadjusted labour force.

Endnotes

1. See, e.g., Ashenfelter & Card (1986), Kaliski (1987), McCallum (1987), Moorthy (1990), Keil & Symons (1990), Gera (1991), Fortin (1991), Corak (1991a, 1991b), Osberg (1991) and Card & Riddell (1992).

2. In place of direct evidence, MPS constructed a provincial-based analog of the number of maximum benefit weeks, based on provincial unemployment rates, and used this variable as an additional regressor in an aggregate time series equation assessing the level of persistence in the overall Canadian unemployment rate; see their Table 2 (p.821).

3. We do not here explicitly address the microeconomic model proposed by MPS, however, since their empirical proposition has considerably more generality than the specific account of voluntary unemployment they detail, and since their own empirical work makes essentially no use of this microeconomics. On the issue of repeat use of unemployment insurance, which does arise as an issue in their more detailed model, however, see Corak (1992).

4. Note that we are here assuming that all regional extended UI recipients would count as unemployed, according to the LFS; this is a simplification. We discuss the relationships between the two sets of data below in Section III.

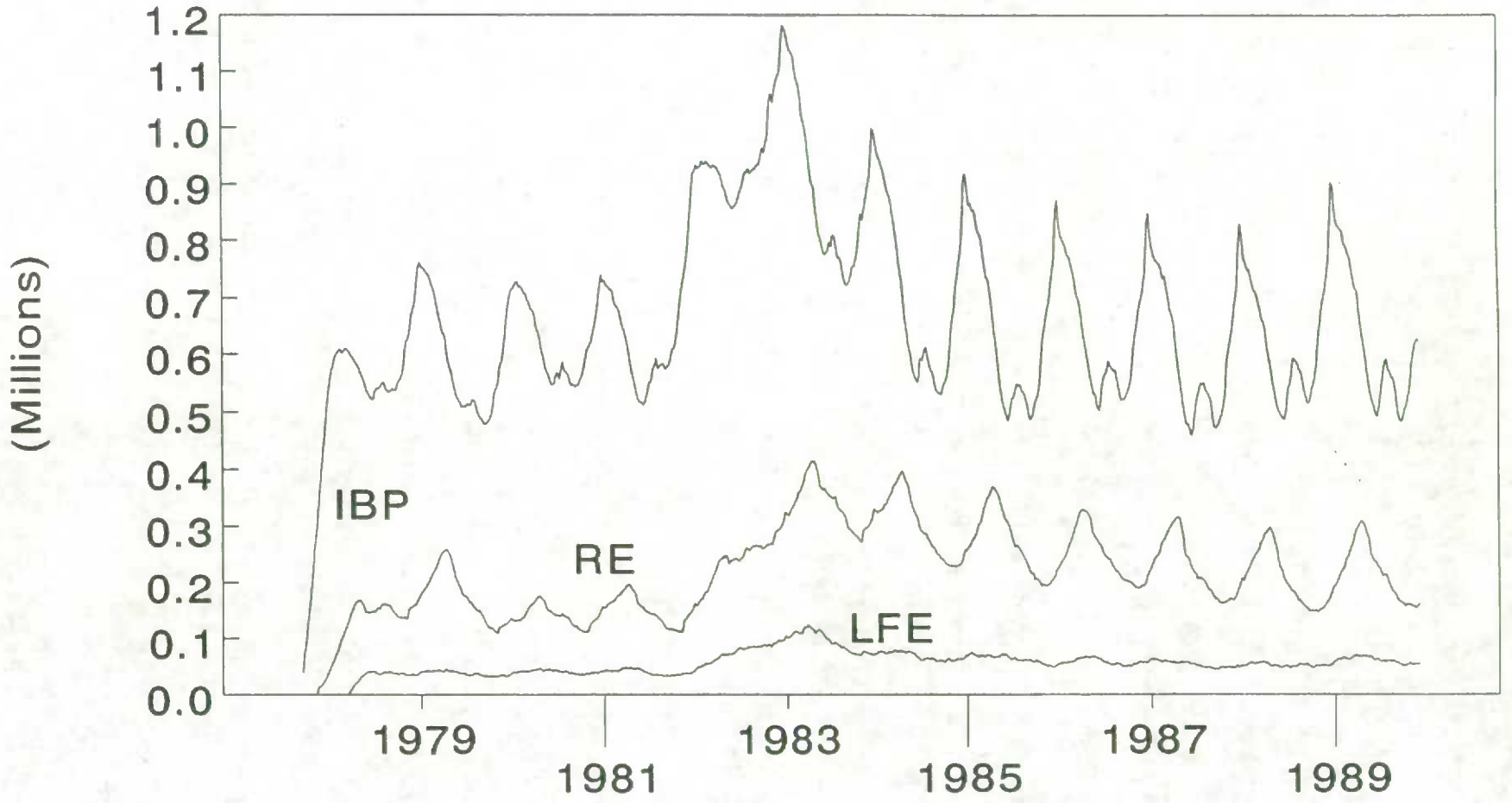
5. For the period September 1977 to November 1978, the regional extended benefits were based on unemployment rates in 16 regions. After November 1978, the number of benefit regions was increased to 48. Furthermore, there were some changes in the definitions of these regions in the early 1980s.

6. The data we employ are weekly but we chose only those observations

corresponding to the Labour Force Survey reference week, roughly the week containing the 15th of each month.

7. Specifically, we employ the residuals of a regression of the natural logarithm of the monthly GDP series (generated by Kozicki 1989) on an intercept, a time trend and its square, and monthly dummy variables (excluding January).

Figure 1: Number of U.I. Claimants
by Benefit Phase, Sept 1977 – Nov 1989



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