

NBER WORKING PAPER SERIES

RECENT TRENDS IN INSURED AND UNINSURED UNEMPLOYMENT:  
IS THERE AN EXPLANATION?

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Working Paper No. 2871

NATIONAL BUREAU OF ECONOMIC RESEARCH  
1050 Massachusetts Avenue  
Cambridge, MA 02138  
March 1989

We are grateful to Thomas Cunniff and Richard McMasters for outstanding research assistance. We also thank Alan Krueger, Bruce Meyer, Wayne Vroman, and members of the NBER Labor Workshop, the Princeton Labor Seminar, and the MIT Industrial Relations Seminar for comments and suggestions. Partial research support for this project was provided by NSF grants SES-8606456 and RII-88-00091. This paper is part of NBER's research program in Labor Studies. Any opinions expressed are those of the authors not those of the National Bureau of Economic Research.

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ABSTRACT

This paper presents new evidence on the reasons for the recent decline in the fraction of unemployed workers who receive unemployment insurance benefits. Using samples of unemployed workers from the March Current Population Survey, we estimate the fraction of unemployed workers who are potentially eligible for benefits in each year and compare this to the fraction who actually receive unemployment compensation. Perhaps surprisingly, we find that the decline in the fraction of insured unemployment is due to a decline in the takeup rate for benefits. Our estimates indicate that takeup rates declined abruptly between 1980 and 1982, leading to a 6 percentage point decline in the fraction of the unemployed who receive benefits.

We go on to analyse the determinants of the takeup rate for unemployment benefits, using both aggregated state-level data and micro-data from the Panel Study of Income Dynamics. Changes in the regional distribution of unemployment account for roughly one-half of the decline in average takeup rates. The remainder of the change is largely unexplained.

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I. Introduction

Although over 90 percent of employed workers hold jobs that are covered by the unemployment insurance system, less than 30 percent of unemployed workers currently receive unemployment insurance (UI) benefits. This fraction has fallen over the postwar era, with notable declines in the early 1960s and the early 1980s. The decline in the past decade is especially puzzling since it has occurred at the same time that the fraction of women in the labor force has stabilized and the baby boom has matured.<sup>1</sup> In this paper we analyze recent changes in the fraction of insured unemployment and provide new evidence on the extent to which these changes can be attributed to changes in eligibility for benefits and changes in participation rates among the eligible. A major obstacle to this apparently simple task is the absence of individual data on unemployment insurance eligibility or receipt.<sup>2</sup> We sidestep this problem by using data from a sequence of March Current Population Surveys to estimate the fraction of unemployed workers who are eligible for benefits in each state and each year. We then compare changes over time in estimated eligibility to changes in the actual fraction of workers receiving benefits, as reported by state administrative records.

While far from perfect, this procedure allows us to decompose changes in the fraction of insured unemployment into three components: one due to changes in the state UI laws; a second component due to changes in the eligibility-

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<sup>1</sup> This fact was pointed out over 5 years ago by Burtless (1983).

<sup>2</sup> As far as we know, there are no major data sets that ask currently unemployed workers about their receipt of unemployment benefits, and no data at all on eligibility.

determining characteristics of unemployed workers; and a third due to changes in the takeup rate for benefits. Perhaps surprisingly, our results suggest that it is mainly changes in the takeup rate that account for the decline in insured unemployment during the past decade.<sup>3</sup> This finding is confirmed on a subset of eight larger states for which eligibility data can be estimated over the 1968-87 period. Data for these larger states suggest that takeup rates were relatively constant between 1968 and 1979. Takeup rates in the nation as a whole and in the subset of larger states showed an abrupt decline between 1980 and 1982. Since 1982, takeup rates have remained relatively stable.

We go on to analyze the determinants of takeup rates and characterize the extent to which changes in takeup rates can be explained by changes in the unemployment insurance system, changes in the geographic distribution of unemployment, and changes in the characteristics of unemployed workers. Takeup rates vary widely across states and changes in the regional distribution of unemployment have been an important component of declining takeup. But even after accounting for all factors, we find that about one-half of the decline in takeup rates remains unexplained.

Our analysis of regular UI benefits is followed by a similar analysis of extended benefits. The decline in receipts of extended benefits over the past decade is clearly due to changes in eligibility. Since 1981 there have been significant changes in the trigger system that links the availability of extended benefits to insured unemployment rates. In addition to these changes, the steady decline in the fraction of unemployed workers who collect regular

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<sup>3</sup> This result is consistent with recent work by Kane (1988) who identifies the major source of decline in UI receipt over the past decade as a decrease in applications by new job losers.

unemployment benefits has reduced the likelihood that state triggers will be met.

The final part of our paper is an analysis of takeup rates using micro-data from 1980 to 1982 collected by the Panel Study of Income Dynamics (PSID). Self-reported eligibility in the PSID provides a validity check on the eligibility calculations in our earlier analysis, and also allows us to compare the state-level takeup rates estimated from aggregate data to those estimated by summing micro-data. Unfortunately, the shortness of the sample period makes it impossible to confirm the secular trends identified in our aggregate analysis. Nevertheless, the micro-data provide a more detailed picture of individual behavior with respect to the UI program. A number of variables that we cannot measure in the aggregate analysis of state takeup rates appear to influence individual participation, and some demographic variables that are insignificant in the aggregate analysis have statistically significant effects in the micro analysis. It seems unlikely, however, that any of these variables can explain the abrupt decline in takeup rates in the early 1980's.

## II. Trends in Insured Unemployment: 1955-1987

A key indicator of the unemployment insurance system that we focus on throughout this paper is a ratio that we call the fraction of insured unemployment or FIU. FIU is defined as the fraction of unemployed workers who receive regular UI benefits and is calculated by dividing the annual average of weekly insured unemployment in regular state programs by the annual average (weekly)

number of unemployed workers.<sup>4</sup> The fraction of insured unemployment is plotted in Figure 1 for the period from 1955 to 1987. For comparison, we also plot the fraction of unemployed receiving income from all UI programs.<sup>5</sup> In addition to regular state UI benefits, this second fraction includes individuals receiving extended benefits (EB) and supplemental benefits<sup>6</sup>, as well as workers who are covered by special UI programs for federal workers, ex-servicepersons, and railway workers.<sup>7</sup> Finally, Figure 1 also presents the estimated fraction of the employed labor force covered by the unemployment insurance system in each year.<sup>8</sup>

The fraction of unemployed workers on the regular UI program is counter-cyclical and shows a decreasing trend, despite the steadily increasing coverage of the UI system among employed workers. Whereas roughly 40 percent of unemployed workers received regular state benefits during the 1950's, the frac-

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<sup>4</sup>We include in the count of insured unemployed only those workers who are actually receiving UI benefits. As conventionally defined, average weekly insured unemployment also includes workers who are serving out a waiting period for benefits.

<sup>5</sup>Sources for these and the other aggregate series used in this paper are reported in the Data Appendix. For an excellent discussion of the collection and reporting of UI data see Blaustein (1980).

<sup>6</sup>The extended benefit program is a permanent Federal program which provides additional UI payments to workers in high-unemployment states after their regular UI payments have been exhausted. Supplemental benefit programs are similar specially-authorized programs enacted during periods of high unemployment.

<sup>7</sup>These special programs are Unemployment Compensation for Federal Employees (UCFE), Unemployment Compensation for Ex-Servicemembers (UCX), and Railroad Unemployment Insurance (RRUI). Workers eligible for these programs are not eligible for regular UI.

<sup>8</sup>The number of employed workers covered by unemployment insurance is based on from payroll data from BLS establishment surveys whereas total employment is based on individual data from the CPS. If the coverage ratio is recalculated using total employment from establishment surveys as a denominator, it is approximately 6 to 10 percent higher than illustrated in Figure 1.

tion receiving benefits in the late 1980's had fallen to less than 30 percent. The fall in the fraction of unemployed workers covered by all UI programs has been even greater: from roughly 50 percent in the late 1950's to just over 30 percent in the past few years.

A frequently cited measure of the coverage of the UI system among unemployed workers is the ratio of the insured unemployment rate (IUR) to the total unemployment rate (UR).<sup>9</sup> The insured unemployment rate, which is reported weekly by the states, is the ratio of the number of weekly UI claims (CLAIMS)<sup>10</sup> to the number of employed workers covered by the UI system (COVEMP). The total unemployment rate is the ratio of the number of unemployed workers (UN) to the total labor force (LF). To see the relation between FIU and the ratio of the insured to the overall unemployment rate, write FIU as RECIP/UN, where RECIP is the weekly number of UI recipients, and UN is the number of unemployed. (UN = LF - EMP, where EMP is the number of employed workers). Note that the insured unemployment rate is defined in terms of the number of UI claimants, whereas we have defined the fraction of insured unemployment in terms of the number of recipients.<sup>11</sup> Simple algebra then shows that

$$(1) \quad \frac{IUR}{UR} = \frac{CLAIMS}{RECIP} \cdot \frac{1}{COVEMP/EMP} \cdot \frac{1}{1-UR} \cdot FIU$$

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<sup>9</sup> The widening gap between the IUR and total unemployment is the focus of Burtless' (1983) paper. The IUR is an important policy concern because extended benefit payments are triggered by state IUR rates.

<sup>10</sup> Individuals receiving extended or supplemental benefits are excluded from the count of UI claims.

<sup>11</sup> In contrast to actual reciprocity, claims include all UI applications (some of which will be denied), and all workers deemed eligible for UI, some of whom have not yet completed the state-specified "waiting period" which precedes the start of benefits.

In the past 35 years the ratio of the insured unemployment rate to the total unemployment rate has fallen much more rapidly than FIU, from an average of .75 in the early 1950's to an average of .35 in the late 1980's. This is largely attributable to the increase in the coverage rate of the UI system among employed workers (COVEMP/EMP). The ratio of active UI claims to UI recipients has also fallen, while the unemployment rate has risen. Thus, the decrease in the ratio of the insured to total unemployment rate significantly overstates the fall in the fraction of unemployed workers who receive UI benefits. For this reason, we focus in this paper on changes in the fraction of UI recipients among the unemployed.<sup>12</sup> Nevertheless, to the extent that government programs such as extended unemployment benefits are linked to the insured rather than to the total unemployment rate, the divergence of insured and total unemployment rates has had important effects. We return to this issue below in our analysis of extended benefit programs.

The failure of the fraction of insured unemployment to increase point-for-point with increases in the coverage of the UI system during the 1970's may at first seem puzzling. However, unless all unemployed workers are job losers, and unless the risks of unemployment are the same in the covered and uncovered sectors, increases in the UI system's coverage of employed workers will fail to generate proportional increases in its coverage of unemployed workers. In fact, many unemployed workers are new entrants to the labor force and are therefore ineligible for UI benefits regardless of the fraction of employed workers covered by the UI system. In addition, the expansion of the UI system in the 1970's occurred mainly through the addition of state and local govern-

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<sup>12</sup> Corson and Nicholson (1988) also use this ratio for much of their analysis.



ment employees to the insured rolls.<sup>13</sup> Since these workers have much lower risks of unemployment than private sector workers, their addition to the covered sector generated less than proportional increases in the share of unemployed workers originating from covered employment.<sup>14</sup>

In summary, the time series in Figure 1 suggests that there has been a steady downward trend in the fraction of unemployed workers collecting UI benefits. This trend was interrupted during the 1970's by the rapid expansion of coverage of the UI system among employed workers. During the 1960's and 1980's, however, coverage was relatively constant and the fraction of insured unemployment fell by 6-8 percent per decade.

The decline in the fraction of insured unemployment in the 1960's is often attributed to changes in the demographic structure of the labor force. In the past 10 years, however, there has been very little change in the composition of the labor force, and as we show below the eligibility characteristics of unemployed workers have actually improved slightly. Nevertheless, the fraction of insured unemployment has fallen significantly. In the next section we present a detailed analysis of the effects of recent changes in state UI laws and worker characteristics on the FIU, in an effort to uncover the sources of its decline between 1977 and 1987.

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<sup>13</sup> Employees of non-profit firms and employees in establishments with fewer than 8 workers were also added to the insured rolls in 1972. See U.S. Department of Labor, Employment and Training Administration (1986).

<sup>14</sup> For example, in the 1977-1987 March Current Population Surveys, government workers represent on average 16-17 percent of employed workers, but only 7-8 percent of unemployed workers.

### III. Changes in Eligibility and the Fraction of Insured Unemployment: 1977-1987

#### a. Estimating eligibility and its components

There are very few micro-data surveys that contain detailed information on the receipt of UI benefits by unemployed workers. For this and perhaps other reasons no previous study of UI recipiency has separately analyzed eligibility.<sup>15</sup> In an effort to fill this gap we have combined information on state-level UI laws with individual data on earnings and weeks worked in the previous year to make a rough imputation of eligibility for the sample of unemployed workers interviewed in the March Current Population Survey (CPS) between 1977 and 1987. Our choice of sample periods is dictated by the fact that the CPS did not disclose state-level identifiers for most states prior to 1977. We present a longer term analysis for eight states that are separately identified in the 1968-76 CPS in section IIIc. below.

To qualify for unemployment benefits an unemployed worker must satisfy three sets of eligibility requirements. First, she or he must have lost a job in the covered sector and be currently available for and actively searching for work. Individuals who are fired for cause and job quitters are disqualified for benefits in all but a handful of states. Second, the individual must have been unemployed for a period of time greater than a minimum waiting period (usually 1 week), and less than a maximum duration (usually 26 weeks, although individuals who have had a previous recent spell of unemployment may be eligi-

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<sup>15</sup> For example, Corson and Nicholson's (1988) recent analysis of changes in the fraction of insured unemployment makes no attempt to separately identify the effects of changes in eligibility and changes in takeup rates for benefits.

ble for less). In states that pay benefits to quitters, the waiting period is usually extended by 10-12 weeks for quitters. Finally, the individual must have earned a minimum level of earnings, and/or worked a minimum number of weeks or hours in the 12 month "base period" prior to the start of the spell of unemployment. In most states, the base period is the first four of the previous five completed calendar quarters prior to the quarter in which the unemployment spell occurs. Some states also require that the individual have earnings and/or weeks of employment in at least two quarters during the base period.

To determine eligibility for benefits, we use information from the CPS on the reason for the start of the unemployment spell, together with state-specific information on the eligibility of quitters, to determine whether or not an unemployed individual satisfies the first set of requirements. We use information on an individual's previous industry to check that they were employed in the covered sector.<sup>16</sup> We are unable to eliminate workers fired for cause, or to make any adjustment for those workers who are counted as unemployed by the CPS but are excluded from UI reciprocity for failure to actively search for work. We then use information on the duration of the spell in progress together with state-specific information on the waiting period and maximum duration of benefits to determine whether or not the individual satisfies the second set of eligibility requirements. Finally, we compare information on reported earnings, weeks worked, and hours per week in the previous calendar year to the base period earnings and hours requirements of the state to determine eligibility for benefits. Given the limited nature of the earnings and labor supply

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<sup>16</sup> After 1977, we exclude only postal workers, federal public administration workers, and ex-servicepersons from coverage. We are not able to separately identify federal workers in non-public administration industries (such as forestry service workers).

data in the CPS, we make no attempt to adjust for special provisions requiring earnings or hours in two or more quarters of the base period, or to account for individual variation in the maximum duration of benefits.<sup>17</sup>

The most serious limitation of our imputation procedure is the assumption that reported earnings for the previous calendar year represent base period earnings for the in-progress unemployment spell. There are two sources of error in this assumption. First, for workers who have had an earlier spell of unemployment, the base period may refer to the period of employment prior to the start of the previous spell. Second, even for unemployed workers in their first spell of unemployment, there is a significant lag in the definition of the base period. For the roughly one-half of spells in progress in March that began in the same calendar year, the true base period is the four quarter period ending in the previous September.<sup>18</sup> For longer spells, however, the base period may represent the four quarter period ending either in March or June of the previous calendar year. Reported earnings for the previous calendar year are therefore likely to understate base period earnings for workers in longer spells, leading us to underestimate the probability of eligibility for these spells.<sup>19</sup> On the other hand, by ignoring job search and extra earnings require-

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<sup>17</sup>Many states have reduced benefit durations for individuals with a concentration of base period earnings or weeks in a single quarter.

<sup>18</sup> The median duration of in-progress spells ranges from 8-11 weeks over the 1977-87 period. Of course, if a worker delays filing for UI or files after multiple spells of unemployment, the duration of the current unemployment spell will be an inaccurate indicator of the base period.

<sup>19</sup> An alternative to using last year's earnings as base period earnings is to calculate base period earnings as total earnings last year divided by number of weeks worked (a measure of weekly earnings while employed) multiplied by some fixed number of weeks. This assumes that no work occurs during the unemployment spell, and that weekly earnings prior to the start of the current unemployment spell were constant. We have duplicated our major results using this technique, and produced virtually identical eligibility and

ments, and individual variation in the maximum duration of benefits, we overstate the extent of eligibility for some individuals in some states.

Table 1 presents the fraction of insured unemployment in the years 1977-1987, together with our estimate of the fraction of workers eligible for unemployment benefits, which we will call FEU -- the fraction of eligible unemployment. Over the 1977-87 period we estimate that 42.9 percent of unemployed workers were eligible for UI. By comparison, only 30.4 percent of unemployed workers actually received benefits during this period. The third column of the table presents our estimate of the takeup rate for benefits, which is simply the ratio of the fraction of insured unemployment to the fraction of eligible unemployment. Finally, the reasons for disqualification from benefits among ineligible workers are presented in the right-hand columns of Table 1.

The fractions of insured and eligible unemployment are plotted in Figure 2. The two series have a similar cyclical pattern, although the gap between them diverges after 1981. This is reflected in a sharp drop in takeup rates from an average of 75 percent during the 1977-80 period to an average of 67 percent after 1982. The decline in takeup rates explains all of the decline in the fraction of insured unemployment over the past decade: our estimated eligibility rates for UI benefits are virtually unchanged between 1977 and 1987.

The reasons for disqualification from benefits have a predictable cyclical pattern, with disqualifications for long durations peaking in the year after a business cycle trough. On average over the 11 year period 12 percent of

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participation rates.

ineligible workers were disqualified for quitting, 10 percent for having a spell duration shorter than the waiting period, and 26 percent for having a spell duration longer than the maximum duration of benefits. The remainder were disqualified for insufficient earnings and/or weeks worked in the base period or for having been employed in the uncovered sector.

Although our estimate of the fraction of unemployed workers eligible for benefits is unchanged between 1977 and 1987, changes in state laws and changes in the composition of the unemployed labor force have actually had small but offsetting effects on eligibility. This is shown in Table 2, where we compare FEU based on the actual laws in each year (column 1) with the estimated fraction eligible for UI using the 1977 state laws to determine eligibility in each year (column 2.)<sup>20</sup> Had the 1977 state laws remained in effect, with full indexation of base period earnings requirements, the estimated fraction of workers eligible for benefits would have been 2 percentage points higher in 1987 than 1977. Thus, holding constant the state laws, the pool of unemployed workers was increasingly likely to be eligible for UI benefits. This trend was counteracted by tightening eligibility requirements in the state laws, however, which reduced the fraction of workers eligible for benefits by just enough to leave overall eligibility unchanged.

Further information on the changing composition of the unemployed labor force is presented in Table 3. This table summarizes the characteristics of unemployed workers at the beginning (1977) and end (1987) of our sample period. The comparison is particularly useful because aggregate unemployment conditions

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<sup>20</sup> To compensate for inflation over the past decade, we have inflated the nominal provisions of the 1977 state laws by the annual percent increase in average hourly earnings for nonagricultural production and nonsupervisory workers in private-sector employment.

were very similar in 1977 and 1987 (the civilian unemployment rate was 6.9 in 1977 and 6.1 in 1987). Between 1977 and 1987 the fraction of women in the unemployed labor force fell 2.8 percentage points, while the fraction of nonwhites increased by 5.6 points. Over the same period, the fraction of unemployed workers in the 16-24 year old range fell from 46 to 36 percent. In terms of previous employment history, the characteristics of unemployed workers at the beginning and end of our sample are very similar, although mean weeks worked in the previous year are slightly higher in 1987. The mean duration of in-progress spells of unemployment is identical in 1987 and 1977.<sup>21</sup>

One of the most significant changes among unemployed workers over the past decade is the change in their geographic distribution. Whereas unemployed workers were fairly evenly distributed over the 4 main Census divisions in 1977, unemployed workers in 1987 were less likely to live in the Northeast and more likely to live in the West. By comparison, the distribution of unemployed workers across industries and occupations has been relatively stable over the past 11 years.

#### b. Regional Differences in FIU and FEU

In light of the significant regional shifts that have occurred among unemployed workers over the past decade, it is useful to look more closely at

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<sup>21</sup> At first glance these results may seem to contradict the recent conclusions of Murphy and Topel (1987), who emphasize the shift toward longer spells of unemployment over the past decade. There are two differences between our analysis and their's, however. First, our analysis is based on the in-progress spells of unemployed workers, whereas their's is based on the weeks of unemployment experienced by all workers in the previous year. Second, Topel and Murphy end their analysis in 1985 while our sample ends in 1987. During the last two years of our sample period the duration of in-progress spells of unemployment dropped significantly.

regional differences in the use of UI. Table 4 provides information on the fraction of insured unemployment (FIU) in each of the nine Census regions in 1977 (column 1), the change in FIU between 1977 and 1987 (column 2), the fraction of eligible unemployment (FEU) in each region in 1977 (column 3), the change in FEU (column 4), and the change in FEU that would have occurred if the 1977 laws had remained in effect over the entire sample period (column 5). Columns 6 and 7 show the resulting takeup rates in each region in 1977 and 1987.

The most striking feature of Table 4 is the remarkable regional variation in reciprocity, eligibility and takeup rates for UI. The percentage of unemployed workers receiving UI benefits in 1977 varies from 40 percent in the Mid-Atlantic region to 21 percent in the West South Central region. Similarly, the percent of the unemployed workers eligible for UI in 1977 varies from 50 percent in New England to 36 percent in the East North Central region. The resulting takeup rates for benefits range from 51 percent in the Mountain region to 99 percent in the Mid-Atlantic region.

There is also significant regional variation in the changes in reciprocity and eligibility for UI. The New England and Pacific regions actually show increases in the fraction of insured unemployment over this period. In the East South Central region, by comparison, FIU dropped 8 percentage points: more than twice the national average decline. Similarly, although the fraction of eligible unemployment shows little change in the aggregate, it has increased in some regions and fallen in others. In most regions it is clear that changes in eligibility can provide only a partial explanation for changes in overall UI usage. Notable changes in takeup rates occurred in 7 of the 9 census regions.



A comparison of the numbers in columns 4 and 5 of the table shows that the changes in eligibility that have occurred within the regions are the result of changes in laws as well as changes in the eligibility characteristics of unemployed workers. Had UI laws remained unchanged, changes in the characteristics of unemployed workers would have had varying effects on UI eligibility, with some regions experiencing increases in FEU (the Middle Atlantic, East North Central, Mountain, and Pacific regions), and some regions experiencing decreases (the East South Central and West South Central regions). With the exception of the Pacific region, however, all regions show smaller increases (or larger decreases) than would have occurred without any changes in the laws. This indicates that legislative changes tightened UI eligibility in all but one region.

The evidence in Table 4 confirms the importance of regional differences in eligibility and usage of UI. Regional differences in the fraction of insured unemployment arise from differences in eligibility for UI and from differences in takeup rates. The dispersion in takeup rates is particularly large, ranging from 48 to 85 percent in 1987. This dispersion suggests one explanation for the nationwide decline in takeup rates over the past decade: as unemployment has shifted from Northeastern states, (with higher than average takeup rates), to Southern and Western states (with average or below average takeup rates), the aggregate takeup rate has declined. We explore this explanation more thoroughly in Section IV below.

c. Changes in UI Eligibility and Receipts Among the Larger States:

1968-1987

Our analysis of UI eligibility and receipts at the national level is limited by the availability of state-level micro-data prior to 1977. Individual state identifiers are actually available in the Current Population Survey starting in 1968 for eight of the larger states: New York, New Jersey, Pennsylvania, Ohio, Illinois, Florida, Texas, and California. Over the 20 year period from 1968 to 1987 these states accounted for an average of 48 percent of aggregate unemployment and an average of 51 percent of UI recipients. An examination of the longer-term trends in eligibility and UI reciprocity in these states therefore provides a check on our national results, and allows us to view recent changes in the fraction of insured unemployment within a longer time perspective.

Table 5 provides information similar to the data in Tables 1 and 2 for the eight larger states over the period from 1968 through 1987. The first and second columns show the fraction of insured unemployment and the estimated fraction of eligible unemployment in each year. The third column of the table presents the estimated fraction of eligible unemployment in each year under the assumption that the 1977 state laws were in effect. Finally, the fourth column shows the estimated takeup rate for UI benefits among eligible workers.

Between the late 1960's and the late 1970's the fraction of insured unemployment in the 8 larger states fell by one-half of a percentage point, from 35.8 percent in 1968-79 to 35.2 percent in 1978-79. This decline came about through a slight decline in takeup rates, from 88.7 percent in 1968-69 to 86.1 percent in 1978-79. The fraction of eligible unemployment, on the other hand, actually increased slightly. Comparisons of the second and third columns of Table 5 suggest that this small net increase in eligibility occurred as a

result of liberalized eligibility laws, offset by a decline in the eligibility characteristics of unemployed workers.

Between the late 1970's and 1987, however, there was a 5 percentage point drop in the fraction of insured unemployment in the 8 larger states. As in the nation as a whole, this decline occurred through a sharp drop in takeup rates in the early 1980's, from 86 percent in 1978-79 to 71 percent in the post-1982 period. The decline in takeup rates was partly offset by an increase in the fraction of eligible unemployment. This increase was due to an improvement in the eligibility-determining characteristics of unemployed workers, with little or no change in the UI laws.

The experiences of the 8 larger states suggest that the abrupt decline in takeup rates that occurred in the early 1980's was without precedent in the previous decade. Had earlier trends continued, in fact, takeup rates would have been 10 to 15 points higher and the fraction of insured unemployment in these states would have been 4 to 6 points higher during the 1983-87 period. This finding underscores the critical effects that changes in takeup rates have had on the unemployment insurance system.

#### IV. The Determinants of Takeup Rates: A State-level Analysis

The preceding analysis suggests that changes in takeup rates among eligible workers are responsible for virtually all of the recent decline in the nationwide fraction of insured unemployment. In this section we present a statistical analysis of the determinants of state-level takeup rates, using observations on the 8 larger states from 1968 to 1987 and on the remaining 42 states over the 11 year period from 1977 to 1987. Time-series variation across states in estimated eligibility and in the fraction of insured unemployment

allows us to identify the correlates of takeup rates and decompose changes in average takeup rates into changes in the characteristics of the unemployed labor force, changes in the UI system, changes in the geographic distribution of unemployment, and unexplained time trends.

The first set of correlates of the takeup rate that we consider are characteristics of the state-level UI system: the benefit replacement ratio (the average weekly benefit amount divided by the average weekly wage in covered employment); the fraction of employed workers in covered employment; the presence of eligibility requirements for two or more quarters of earnings in the base period; and the presence of other miscellaneous eligibility requirements. Changes in the coverage of the UI system and changes in eligibility requirements lead to changes in the fraction of eligible workers, but should not necessarily influence the takeup rate among eligible workers. Correlations between these variables and our estimated takeup rates therefore suggest systematic biases in our eligibility imputations. Changes in the benefit replacement rate, by comparison, should be uncorrelated with errors or omissions in our eligibility imputations. These correlations can be interpreted as evidence of behavioral responses to changes in the generosity of the UI program.

The next variable that we consider is the unionization rate of employed workers in the state. Unions may increase their members' awareness of UI eligibility or expedite the application process. Unionization rates by state for 1973-81 are taken from tabulations of the May CPS reported by Kokkelenberg and Sockell (1985). Rates for 1982-87 are taken from unpublished tabulations

of the May CPS provided to us by Alan Krueger<sup>22</sup>, while rates for 1968-72 are calculated from biannual counts published by the Bureau of Labor Statistics, based on administrative records of union membership.<sup>23</sup>

The third set of variables that we consider are characteristics of the unemployed workers in each state. These variables are meant to capture differences in takeup propensities across different groups of unemployed workers. We use samples from the March CPS to estimate the fractions of unemployed workers from 8 major industries<sup>24</sup> and 9 major occupations,<sup>25</sup> the fraction who were previously self-employed, as well as average weeks worked in the previous year and the average duration of the current in-progress unemployment spell. In addition, we tabulate several demographic characteristics of unemployed workers: the fraction aged 16-24, the fraction female, and the fraction non-white. For reference, overall means of the explanatory variables together with their means in 1977 and 1987 are presented in Appendix Table 1. The fractions of insured and eligible unemployment, and average takeup rates for 1977 and 1987 for the 50 states are presented in Appendix Table 2.

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<sup>22</sup> Krueger's tabulations for 1981 match those of Kokkelenberg and Sockell almost exactly. The May 1982 CPS does not report union status. We therefore used averages of 1981 and 1983 rates as estimates of the 1982 unionization rate.

<sup>23</sup> See the data appendix for a further description of these data.

<sup>24</sup> These industries are agriculture, mining, construction, manufacturing, transportation communications and public utilities, trade, services, and public administration. Only unemployed workers with previous work experience give industry and occupation information. Our distributions for unemployed workers are therefore computed over the set of workers with previous work experience.

<sup>25</sup> The occupation groups are professionals, managers, sales workers, clerical workers, craftsmen, operatives, laborers, service workers, and private household workers. Since the CPS occupation codes were changed in 1981, we matched the two coding systems.

Table 6 presents a series of estimated models for the logarithm of the takeup rate in a given state and year.<sup>26</sup> For sake of brevity, we do not present the individual coefficients of the industry and occupation shares, although these variables are included in all cases. The models in the first 2 columns of the table exclude state-specific effects, while those in the last 2 columns include an unrestricted set of state effects. The models in columns 2 and 4 also include unrestricted year effects.<sup>27</sup> The end-of-sample-period time effect for the latter models is summarized in the table by the value of the year effect for 1987, which is the unexplained component of takeup rates in 1987, relative to takeup rates in 1977.

In interpreting the results in Table 6 it is useful to keep in mind that the dependent variable,  $\log(\text{FIU}/\text{FEU})$ , is based on a noisy estimate of average eligibility in each state and year. Provided that the measurement error in FEU is uncorrelated with our explanatory variables, however, this will not lead to any systematic bias in our estimated coefficients.<sup>28</sup>

The estimates in the first two columns of Table 6 suggest that a significant fraction of the variation in estimated state takeup rates can be explained by the unionization rate of employed workers, characteristics of

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<sup>26</sup> The estimates in Table 6 are obtained by weighted least squares, where the weight for each state-year observation is the fraction of unemployed workers in that state and year.

<sup>27</sup> In other specifications we have included a linear time trend. The unrestricted year effects from the models in columns (2) and (4) of Table 6 do not follow a constant trend, however. Instead, the estimated year effects are roughly constant from 1977 to 1980, and then show a sharp drop in 1981.

<sup>28</sup> We experimented with some specifications using  $\log(\text{FIU})$  as the dependent variable, placing  $\log(\text{FEU})$  on the right hand side of the equation. The results did not support the proportionality hypothesis, suggesting that the measurement errors in FEU are large enough to create a serious downward bias in its coefficient.

unemployed workers, and by the characteristics of the state's UI laws. Nevertheless, there are important unexplained differences across states: the addition of state effects in columns 3 and 4 of the table increases the explanatory power of the regressions by some 20 percent. The addition of state effects also changes the estimated coefficients of some of the explanatory variables. Even with controls for permanent differences across states, however, there are negative trends in takeup rates. These trends account for roughly 50 percent of the overall 14 point decline in log takeup rates between 1977 and 1987.

With respect to the individual determinants of takeup rates, a number of conclusions emerge. First, estimated takeup rates are strongly positively correlated with the state's benefit replacement rate. This correlation is robust to the presence or absence of state effects and to the alternative treatment of time trends. Second, increases in the coverage of the UI system among employed workers lead to increases in estimated takeup rates. This finding suggests that we have not been entirely successful in measuring the coverage status of previous employment. By comparison, quarterly earnings requirements and other eligibility restrictions appear to have little effect on estimated takeup rates.

The fraction of unionized employees in the state has a strong positive effect on estimated takeup rates when state effects are excluded from the model, but a much smaller effect (approximately one-fourth as large) when state effects are added. The estimated effect of unionization is also slightly smaller when trends or year effects are included in the model. Thus, while the estimates in columns 1 and 2 suggest that reductions in unionization have been a major source of declining takeup rates, the estimates in columns 3 and 4

suggest this is coming largely from the cross-state variation in unionization rates and that the role of changing unionization over time is modest.

The race and sex composition of the unemployed labor force and the average duration of in-progress unemployment spells have small and statistically insignificant effects on estimated takeup rates throughout Table 6. The fraction of unemployed workers in the 16-24 year old age group is an insignificant determinant of takeup rates when state effects are included, but has a negative effect on takeup rates in columns 1 and 2. The fraction of unemployed workers who were previously self-employed shows a strong positive effect on takeup rates in columns 1 and 2, but the effect is smaller and only marginally significant when state effects are included. Finally, the average number of weeks worked in the previous year by unemployed workers has a significantly negative effect on estimated takeup rates in columns 3 and 4. We suspect that this effect is due to measurement error in the fraction of eligible unemployment. Since FEU is estimated from the sample of unemployed workers in March of each year, increases in the number of weeks worked in the previous year by this sample of workers will lead to increases in the estimated fraction of eligible unemployment. To the extent that these increases reflect sampling error, or otherwise overstate the work experience of unemployed workers over the entire year, these increases will therefore be negatively correlated with estimated takeup rates.

The industry and occupation shares of unemployed workers are only marginally significant determinants of estimated takeup rates.<sup>25</sup> The coefficients

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<sup>25</sup> For example, using the model in column 4 as a basis, the probability value of an exclusion test for the industry shares of unemployed workers is .057, and for the occupation shares of unemployed workers, .534.



of the industry share variables suggest that takeup rates are lower among workers from agriculture, construction and wholesale and retail trade. The coefficients of the occupation shares indicate lower takeup rates among managers, and relatively small differences among the remaining occupations.

The implications of the models in Table 6 for the change in average takeup rates over the past decade can be obtained by combining their estimated coefficients with the changes in the means of the explanatory variables over the period. The models express the log of the takeup rate in state  $i$  and year  $t$  ( $\mu_{it}$ ) as a function of state-specific constants ( $\alpha_i$ ), measured covariates ( $X_{it}$ ), and a residual ( $\epsilon_{it}$ ):

$$\log(\mu_{it}) = \alpha_i + X_{it}\beta + \epsilon_{it}.$$

The logarithm of the average takeup rate in year  $t$  ( $\mu_t$ ) is approximately a weighted average of the logs of the state-specific rates, where the weights are the relative fractions of unemployed workers in state  $i$  in year  $t$ :

$$\log(\mu_t) = \sum_i w_{it} \log(\mu_{it}),$$

where  $w_{it} = \frac{\text{Number unemployed in state } i, \text{ year } t}{\text{Total number unemployed in year } t}$ .

Thus the change in the log of the average takeup rate between year  $t$  and year  $s$  can be decomposed as:

$$\begin{aligned} \log(\mu_t) - \log(\mu_s) &= \sum_i (w_{it} - w_{is}) \alpha_i \\ &+ ( \sum_i w_{it} X_{it} - \sum_i w_{is} X_{is} ) \beta \\ &+ \text{residual terms.} \end{aligned}$$

The first of these terms represents the change in takeup rates attributable to changes in the distribution of unemployment between states with higher and lower fixed effects. If unemployment shifts from states with higher average takeup rates to states with lower rates (as it has over the past decade) than

the aggregate takeup rate will necessarily fall. The second term represents the change in takeup rates attributable to changes in the measured covariates both within and across states.

The individual terms in this decomposition are presented in Table 7 for the models from column (2) and column (4) of Table 6.<sup>30</sup> As noted earlier, the model without state effects attributes a large share (91 percent) of the overall decline in takeup rates to the decline in unionization. By comparison, the model with state effects indicates that one-half of the decline in takeup rates is explained by the shift in unemployment from higher to lower takeup states<sup>31</sup>, with only a relatively small share (20 percent) of the decline due to changes in unionization within states. Both models indicate that increases in coverage of the UI system and in the replacement rate contributed to an increase in takeup rates. Increases in the number of weeks worked by unemployed workers, on the other hand, contributed to a decline in measured takeup rates. The models differ somewhat in the effect they attribute to shifts in the occupation distribution of unemployed workers. The model with state effects indicates that changes in the occupational distribution have led to a 16 percent increase in takeup rates, while the model without state effects indicates that occupational changes lead to a decrease in takeup rates. In contrast, both models indicate that industry shifts have led to a decline in takeup rates.

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<sup>30</sup> Note that with year effects in the models, the mean for each year is fit exactly and so there is no residual term in the decomposition.

<sup>31</sup> Corson and Nicholson (1988) also find that population shifts between states affect aggregate UI reciprocity.

Whether or not state effects are included in the takeup model, unexplained year effects account for about half of the overall decline in takeup rates between 1977 and 1987. In fact, when both state and year effects are included, the net effect of the other explanatory variables is negligible, and the overall decline in takeup rates is attributed about equally to changes in the geographic distribution of unemployment, on one hand, and unexplained trends, on the other. By comparison, the model without state effects attributes a larger share of overall drop in takeup rates to the demographic and program variables. In either case, however, a significant share of the decline in takeup rates is left unexplained by the variables in our analysis.

#### V. INSURED UNEMPLOYMENT EXTENDED BENEFIT PROGRAMS

From our analysis of eligibility and participation in regular (state-financed) UI programs, we turn to a brief examination of extended benefit (EB) programs. The 1970 amendments to the Social Security Act established an automatic program of extended benefits, to be jointly financed by the State and Federal governments. This program offers an additional 13 weeks of unemployment compensation, up to a maximum of 39 weeks, to individuals in depressed labor markets. As originally conceived, a period of extended benefits could be triggered either nationally, when the average insured unemployment rate exceeded 4.5 percent, or on a state-specific basis, whenever the state's insured unemployment rate exceeded 5.0 percent, or 4.0 percent if the insured unemployment rate in the same period one year earlier was less than 3.3 percent.<sup>32</sup>

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<sup>32</sup> See U.S. Department of Labor, Employment and Training Administration (1988) for a further description of the program.

However, the national trigger was abolished in 1981, making it impossible for unemployed workers in states with relatively strong labor markets to collect extended benefits. In addition, revisions to the law in 1981 removed workers on extended benefits from the count of insured unemployment used in determining EB status<sup>33</sup> and raised the state trigger to 6.0 percent, or 5.0 percent if the average insured unemployment rate in the preceding 2 years was less than 4.1 percent.

When a period of extended benefits is triggered by either state or national conditions, unemployed workers who have exhausted their regular benefits become eligible for extended benefits.<sup>34</sup> Normally, workers who qualify for benefits under their state program are eligible for extended benefits at the same rate.<sup>35</sup>

Table 8 presents our estimates of participation and eligibility in EB programs over the past 11 years. As in the previous section, we have estimated eligibility for EB's in each year from 1977 to 1987 using the sample of unemployed workers in the March CPS, together with information on the EB status of each state. The final column of the table presents our estimates of eligibility for EB's under the assumption that the national trigger was in effect,

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<sup>33</sup> Unemployed workers on extended benefits have always been excluded from published insured unemployment rates.

<sup>34</sup> In those states in which regular benefits are payable for more than 26 weeks, when a period of EB is declared the Federal government reimburses the state for one-half of the costs of all benefits after 26 weeks. Technically, then, the maximum duration of regular benefits in those states drops to 26 weeks whenever an EB period is declared. We ignore this distinction in our analysis below.

<sup>35</sup> To be eligible for EB, a worker must have 20 weeks of work in the base period, or its equivalent in earnings (40 times the state minimum weekly benefit amount). This requirement is somewhat stricter than the minimum eligibility requirement in some states.

as it was during most of 1977. This is an estimate of the maximum fraction of unemployed persons eligible for EB's under the most generous potential EB laws.

Actual receipts of extended benefits among unemployed workers do not track our estimates of eligibility particularly well, as a comparison of columns (1) and (2) in Table 8 indicate, although both series show a sharply declining trend. In part the gaps between actual receipts and estimated eligibility are due to the imprecision of our eligibility imputations. The fraction of unemployed workers with durations between 27 and 39 weeks is small and varies from month to month within the year, so that our March samples of potentially eligible workers are small and not necessarily representative of the overall group of long-term unemployed workers in any year. In addition, many long-term unemployed workers may have had previous spells of unemployment which limit their eligibility for extended benefits.

Despite these difficulties, our estimates of eligibility for extended benefits under existing laws (column (2)) and under the assumption that a national trigger was in effect (column (3)) reveal two findings. First, even in periods of relatively high unemployment, only a small fraction of unemployed workers are potentially eligible for extended benefits. Second, had national and/or state triggers been in effect in the 1983-87 period, the fraction of workers eligible for extended benefits would have been much higher than the actual triggers allowed. Part of this discrepancy can be attributed to legislative changes in the trigger mechanism for extended benefits in the early 1980's, described above.

Perhaps equally importantly, however, the long-run decline in the fraction of unemployed workers collecting regular UI benefits, and the dramatic decline in the insured relative to the overall unemployment rate, implied that far

fewer states exceeded the state triggers in the post-1982 period. For example, in 1983 the unemployment rate for the country as a whole was 9.6 percent. Yet, only 8 states had average insured unemployment rates above 5 percent. More recently, the increase in the state trigger, together with the decline in the insured unemployment rate relative to the overall unemployment rate, has effectively shut down the extended benefit program in all but a few states.

To get some idea of the current impact of these effects, we calculated for each state the average ratio of the insured to total unemployment rate in 1977 and 1978. We then applied this ratio to the total unemployment rate for the state in 1987, providing an estimate the state's insured unemployment rate if there had been no divergence between insured and total unemployment over the past decade. Finally, we calculated the number of states with predicted annual average insured unemployment rates over 5 percent, and over 4 percent, and compared these to the actual numbers in 1987. The results were as follows:

number of states with actual IUR > 5 percent: 1 (Alaska)  
 number of states with actual IUR > 4 percent: 3  
 number of states with predicted IUR > 5 percent: 4  
 number of states with predicted IUR > 4 percent: 10 .

These simulations suggest that 10 states would have been on extended benefits in 1987 if there had been no change in either the state trigger or the ratio of insured to total unemployment. Six of these states were eliminated by the increase in the state trigger from 4 to 5 percent, while 3 were eliminated because of the increasing gap between insured and total unemployment.

## VI. A Micro Data Analysis of UI Takeup Rates

A major shortcoming of the preceding analysis is the absence of accurate information on whether or not a given individual actually receives unemployment

compensation. During the early 1980s, the Panel Study of Income Dynamics (PSID) included in its annual survey a series of questions on the receipt of UI among household heads who experienced at least one spell of unemployment in the previous year. In this section we analyze the responses to these questions, focusing on the issue of takeup among eligible workers. In the PSID sample over one-fifth of non-UI recipients claim to have been eligible for benefits. The behavior of this group provides further evidence on the variation in takeup rates, and complements our earlier aggregate analysis.

In the 1980, 1981, and 1982 surveys, the PSID asked each household head about the last spell of unemployment in the previous year. We have combined information from these questions in the three survey years into a sample of 2280 "last spells" of unemployment.<sup>36</sup> For each spell, we know when it started, when it ended (if before the 1983 interview)<sup>37</sup>, the characteristics of the unemployed worker, and a variety of information about the receipt of UI benefits during the spell.

Unemployment compensation was received in 52 percent of the spells, and UI payments were exhausted in 21 percent of these cases.<sup>38</sup> By comparison, aggregate statistics for the same period suggest that roughly one-third of unemployment spells generated a benefit claim, and that 30 percent of initial

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<sup>36</sup> We have taken precautions to avoid double counting spells that lasted over more than one survey year.

<sup>37</sup> A total of 24 percent of the spells in our sample are censored.

<sup>38</sup> Individuals were asked if they exhausted their unemployment insurance benefits with no distinction between regular and extended benefits.

claims for regular UI benefits were exhausted.<sup>39</sup> Thus, a spell in our sample was more likely to generate UI benefits than a representative spell from the same time period, but spells with UI benefits were less likely to exhaust them than in the aggregate data.

The PSID questionnaire asks non-UI recipients whether or not they thought they were eligible for UI, and if so, the reasons for non-receipt. One third of non-recipients reported that they thought they were eligible for benefits, or that they were unsure about their eligibility status. Among these, however, one third indicated that they had actually applied for benefits and been turned down. If UI recipients and nonrecipients who reported themselves as eligible (excluding those turned down for benefits) are counted as eligible, the estimated fraction of PSID spells eligible for UI compensation is 62 percent. The implied takeup rate for benefits among eligible spells is 83 percent. By comparison, aggregate data for the 1980-82 period show an eligibility rate of 47 percent and a takeup rate of 72 percent.

There are several possible explanations for the differences in eligibility and takeup rates between the PSID sample and the aggregate data. Perhaps most importantly, the unit of observation in the PSID sample is a spell, rather than a week of unemployment. In most cases the fraction of insured weeks in a spell of unemployment is less than unity. Thus, one might expect the fraction of

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<sup>39</sup> An estimate of the aggregate fraction of unemployment spells with UI payments can be obtained by dividing the number of first claims for UI benefits (in a year) by the number of unemployment spells in the year. Unfortunately, there is no accurate count of the number of unemployment spells in a year. An estimate can be obtained by multiplying the average number of unemployed workers per week by 52 and dividing by an estimate of the average completed duration of unemployment spells. The estimates in the text assume that the average duration of completed spells in this period was roughly 13 weeks.



spells eligible for or receiving benefits to exceed the fraction of weeks eligible for or receiving benefits. On the other hand, if most weeks of unemployment are generated by individuals in long spells of unemployment, and if individuals with longer spells are more likely to apply for benefits (as we find below), then the fraction of unemployment weeks with benefits may well exceed the fraction of unemployment spells with benefits.

Second, even granting the differences between weeks of unemployment and spells of unemployment, the PSID data set is a selective sample of unemployment spells. The PSID sample is based on the unemployment experiences of household heads, and therefore under-represents the spells of females and younger workers. By the same token, owing to the sampling frame of "last spells", the PSID sample over-represents longer spells, which may be associated with higher usage of unemployment benefits.

Finally, the estimated eligibility and takeup rates for the PSID sample are based on self-reported eligibility. Some potentially eligible non-recipients may have been unaware of their eligibility status and reported themselves as ineligible, leading to a lower estimate of eligibility and a higher estimate of takeup rates in the PSID sample.

In order to compare self-reported eligibility with estimated eligibility as constructed in our aggregate analysis of the CPS data, we have applied the same eligibility imputation methods to the PSID sample.<sup>40</sup> The results of a comparison between estimated eligibility and self-reported eligibility are

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<sup>40</sup> We can construct slightly better eligibility estimates from the PSID data because of its longitudinal nature. Thus, we define the base period as the calendar year prior to the year in which the unemployment spell began, rather than as the previous calendar year. This should improve the estimate of base period earnings for individuals in longer unemployment spells.

presented in Table 9. The upper panel of the table presents a cross-tabulation of estimated eligibility with reported receipt of UI benefits. The results are quite favorable: in 65 percent of cases, estimated eligibility agrees with the reported receipt of benefits. The discrepancies between estimated eligibility and benefit receipts are of two types. In 8 percent of cases we make a clear error in our eligibility calculations: these are cases where the individual reports UI reciprocity but is estimated to have been ineligible. In the remaining 27 percent of cases we estimate that the individual is eligible, but he/she does not report receiving UI. Disagreements in this cell, however, represent a combination of erroneous eligibility imputations and incomplete takeup rates for benefits.

The lower panel of the table presents a cross-tabulation of estimated and self-reported eligibility. Estimated eligibility is consistent with self-reported eligibility status in 69 percent of cases. In 11 percent of cases we estimate that individuals are ineligible, but they either report receiving UI or report themselves as eligible non-recipients. Lastly, in 20 percent of cases we estimate that individuals are eligible for benefits, but they report themselves as ineligible. Again, the latter group may include some individuals who were actually eligible for benefits, but who were unaware of their eligibility. On balance, these cross-tabulations suggest that our simple imputations of eligibility status are valid in a majority of cases.

Another useful test of our eligibility imputations can be obtained by comparing the average state takeup rates based on self-reported eligibility in the PSID with the average state takeup rates between 1980 and 1982 from our aggregate analysis. A regional breakdown of estimated takeup rates in the PSID sample shows remarkable similarity to the pattern of results in Table 4. Both

the aggregate and the PSID data show relatively higher takeup rates in the Northeast and North Central regions, and relatively lower rates in the South and West. To further illustrate the relation between average state takeup rates based on the PSID micro-data and our aggregated CPS data, we have plotted the two sets of estimated takeup rates against each other in Figure 3.<sup>41</sup> As the figure suggests, estimated state-level takeup rates from the two sources are highly correlated: their estimated correlation coefficient is .62, and the implied regression coefficient of the CPS-based takeup rate on the PSID-based rate is .77 (with a standard error of .18).<sup>42</sup> This finding lends strong support to our eligibility imputations in Section III, and suggests that much of the variation across states in our aggregate analysis of takeup rates represents a behavioral phenomenon, rather than a systematic measurement problem.

The micro-data from the PSID sample permit a direct examination of the individual-level determinants of takeup behavior. Before turning to such an analysis, it is perhaps worthwhile to briefly summarize the reasons that eligible non-recipients gave to the PSID surveyors when asked their reasons for not receiving benefits. A complete tabulation of the responses is presented in Appendix Table 3. Of the 225 eligible non-recipients, one third apparently wished to avoid contact with a government program, stating that they "didn't want to deal with the administrative hassles and red tape" or "didn't want to accept a government handout or charity". Another one-third of eligible non-recipients apparently failed to apply for benefits because they "didn't need

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<sup>41</sup> Figure 3 has only 32 observations because states with less than 10 individuals in the PSID sample were deleted.

<sup>42</sup> The correlation of estimated PSID state takeup rates (as opposed to self-reported) to estimated CPS rates is .68.

it", or "expected to return to work soon". The remaining respondents mention a variety of alternative reasons for non-recipientcy, including 10 percent who say they "just didn't apply". It is interesting to note, however, that less than 1 percent of eligible nonrecipients claim not to have received benefits because of physical access problems or lack of information.

Table 10 presents a logistic regression model for the probability of receiving UI benefits, estimated over the sample of 1418 individuals who reported either receiving UI or being eligible for UI in their last unemployment spell.<sup>43</sup> The dependent variable is dichotomous, indicating actual receipt of benefits. We have data on a wide variety of individual characteristics in the PSID sample, including age, race, sex, education, and union status in the previous survey. We also include in our analysis a series of dummy variables for the duration of the spell of unemployment, a series of dummy variables for household income in the year prior to the start of the spell, and indicator variables if the individual reported receiving other earnings or other non-earned income (excluding UI benefits) during the unemployment spell. Finally, we include regional dummy variables<sup>44</sup>, dummy variables for the individual's occupation and industry (reported in the previous survey), state-level data on the unemployment insurance program (similar to that used in Table 6), and two other state-level variables: the unemployment rate in the state; and the

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<sup>43</sup> The results reported in Table 11 are based on self-reported eligibility. We have also replicated these results using estimated eligibility. While the estimates of some of the coefficients vary slightly, the qualitative results and statistical inferences are similar using the two measures.

<sup>44</sup> We have also fitted the model with 9 regional dummies and with a complete set of state dummy variables. Except as noted below, the results with finer levels of regional control variables are qualitatively the same as those in Table 10.

aggregate takeup rate for UI benefits in the state, as estimated in Section III.

The means of the explanatory variables in the regression model are presented in the first column of the table, with their estimated coefficients and associated standard errors in the second and third columns, respectively. In contrast to the state-level takeup regressions in Table 6, virtually all of the demographic variables and household characteristics are statistically significant in the micro-level takeup regression. Both age and education increase the takeup probability, as does union membership. A previous unemployment spell in the same year also increases the likelihood that an eligible individual will use UI. Interestingly, eligible higher-income households are more likely to takeup UI benefits than eligible lower-income households.<sup>45</sup> Individuals with short unemployment spells are less likely to report receiving UI, while those with spells longer than 26 weeks are more likely to report receiving UI. Finally, eligible individuals who have other sources of earned or non-earned income are less likely to takeup UI benefits.

The regional patterns in Table 10 are similar to those described above. Even after controlling for individual characteristics, the Northeastern states have higher takeup rates, and the other states -- particularly the Southern and Western states -- have lower takeup rates. Eligible individuals in states with higher unemployment rates are more likely to receive UI. Finally, there is a positive partial correlation between individual takeup rates and the overall state-level takeup rate.

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<sup>45</sup>It is possible, of course, that this effect results from errors in self-reported eligibility that are correlated with income.

One puzzling set of findings in Table 10 concerns the estimated effects of the UI replacement rate and the UI coverage rate on takeup rates. Our state-level estimates (in Table 6) show a strong positive effect of replacement rates on takeup rates, while the micro-level estimates indicate that the effect is negative, although poorly determined. Similarly, while three of the four state-level takeup regressions in Table 6 show a positive effect of changes in coverage on takeup rates, the micro-level data show a significantly negative effect. When a complete set of state-level dummy variables is included in the micro-level takeup regression, however, the estimated effect of the coverage variable becomes statistically insignificant.

Another puzzling finding in Table 10 is the pattern of the estimated year effects. The aggregate data in Table 1 suggests that takeup rates fell between 1980 and 1982, from an average of 75 percent in the 1977-80 period to an average of 67 percent in the 1982-87 period. A similar pattern is revealed by the estimated year effects from the takeup models in Table 6: relative stability before 1980 and after 1982, with a sharp decline between 1980 and 1982. The year effects in the micro-level analysis in Table 10, by comparison, show a slight increase between 1980 and 1982. The raw takeup rates from the PSID sample actually show a steady increase from 82 percent in 1980 to 86 percent in 1981 to 89 percent in 1982.

We speculate that the differences between the aggregate and micro-level data over this period may be due to the composition of the PSID sample and to changes over time in the fraction of weeks with UI benefits in a typical unemployment spell. As a rough check on the latter hypothesis, we re-estimated takeup rates for the PSID spells data on a weeks-of-unemployment basis. For each eligible spell in the sample we estimated the weeks of unemployment

generated by the spell and the weeks of unemployment benefits received during the spell (if any). By this definition, we obtain estimated takeup rates of 84.1 percent, 89.1 percent, and 91.3 percent for 1980, 1981, and 1982, respectively. While these findings are based on crude imputations, they suggest that takeup rates on a weeks-of-unemployment basis also increased between 1980 and 1982 in the PSID sample. The discrepancy between the pattern of estimated takeup rates in the aggregate and PSID samples is therefore unresolved.<sup>46</sup>

In summary, our analysis of eligibility and receipts of UI benefits in the PSID sample leads to four conclusions. First, a comparison of self-reported eligibility with estimated eligibility using the methodology that we applied in our aggregate analysis suggests that our estimated eligibility calculations are reasonably accurate. Second, average state-level takeup rates from the PSID sample, based on self-reported eligibility, are strongly correlated with our estimated aggregate-level takeup rates. This reaffirms the validity of our eligibility calculations, and also underscores the importance of state-level variation in factors leading to differential takeup rates for UI benefits. Third, the micro-data analysis suggests that takeup behavior is strongly correlated with various individual characteristics, including age, sex, education, income, and union status. Some of these variables are unavailable or are poorly measured in our aggregate analysis. Nevertheless, it is unlikely that their omission can explain the abrupt drop in takeup rates between 1980 and 1982, since most of these characteristics change slowly over time, if at all.

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<sup>46</sup> At least one possible reason for this discrepancy, untestable with the data available, is that the decrease in take-up rates has occurred among non-household heads, a group not included in the PSID sample. While we can estimate eligibility among heads and non-heads in the CPS micro-data, the state-level data on actual UI recipiency cannot be broken down between these two groups, thus we cannot estimate separate takeup rates for the two groups.

Finally, the micro-data show no evidence of a decline in takeup rates in the 1980-82 period. Rather, the raw takeup rates from the PSID sample show an increase in takeup rates between 1980 and 1982.

## VI. Summary and Conclusions

In this paper we have presented and analyzed measures of the fraction of unemployed workers covered by unemployment insurance benefits. We find no evidence that recent declines in the fraction of workers who receive regular UI benefits are due to changes in eligibility. In fact, our estimates suggest that the same fraction of unemployed workers was eligible for benefits in 1987 as in 1977. This finding leads us to focus on the determinants of takeup rates for UI benefits among eligible workers. Nationwide, estimated takeup rates fell sharply between 1980 and 1981, from an average of 75 percent in the 1977-80 period to an average of 67 percent after 1982. The same pattern appears in a subset of 8 larger states for which takeup rates can be calculated from 1968 to 1987. Data for these states suggest that takeup rates were relatively constant between 1968 and 1979 before an abrupt decline in 1980-82.

Approximately one-half of the nationwide decline in average takeup rates for UI benefits appears to be due to a shift in unemployment from states with higher average takeup rates to states with lower takeup rates. States in the Northeast have significantly higher takeup rates for benefits than states in the South or West. These regional differences are confirmed by micro-data on benefit eligibility and receipts from the Panel Study of Income Dynamics. As the distribution of unemployment has shifted over the past decade from the Northeastern states to Southern and Western states, national takeup rates have fallen accordingly.



The large and systematic differences in takeup rates across states are partially explained by differences in the characteristics of employed and unemployed workers in the states. Our results suggest that higher takeup rates are associated with higher unionization rates, higher benefit replacement rates, and higher coverage rates of the UI system. Nonetheless, a substantial fraction of the interstate variation in takeup rates remains unexplained.

The balance of the nationwide decline in takeup rates is due to changes over time within states. Here, we have been largely unsuccessful in identifying the sources of the decline in takeup rates. In most states, the characteristics of unemployed workers and of the unemployment insurance system have changed relatively little over the past decade. While our findings leave open the possibility that changes in the certification and monitoring of UI claimants can explain changes in measured takeup rates within states, recent evidence presented by Kane (1988) suggests that such changes have not occurred.

Although changes in state laws have had only small effects on UI reciprocity over the past decade, changes in the federal law governing extended benefits have clearly reduced the number of unemployed workers eligible for extended unemployment benefits. Furthermore, since the availability of extended benefits is linked to the insured unemployment rate in each state, as takeup rates for regular UI programs have fallen and as the insured unemployment rate has fallen relative to the overall unemployment rate, extended benefit triggers have become more stringent. These two effects have all but shut down the extended benefit program in the past few years.

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Data Appendix  
Sources for Aggregate Data Used in Paper

Data on insured unemployment, coverage of the UI system, average replacement rates, and the duration of UI claims are taken from U.S. Department of Labor, Employment and Training Administration, "Unemployment Insurance Financial Data." 1938-82 data are available in a supplement to this series published in 1983 as Employment and Training Handbook 394. Data for 1983-86 are taken from annual updates to this handbook, circulated as Unemployment Insurance Program Letters. Preliminary data for 1987 was kindly provided to us by Mr. Philip Blue at the Employment and Training Administration.

Data on state laws pertaining to UI eligibility are taken from U.S. Department of Labor Employment and Training Administration "Comparison of State Unemployment Insurance Laws". This is a semiannual publication, issued in January and June of each year. For purposes of imputing eligibility in March, we used information on laws as of January of the same calendar year.

Data on the extended benefit status of individual states are taken from U.S. Department of Labor Employment and Training Administration "Unemployment Insurance Claims". This is a weekly publication that lists the extended benefit status of each state in each week. In our imputations, we combined information on the starting date of each spell together with information on the EB status of the state at the time that the spell would have exhausted regular benefits.

Data on state labor force and unemployment rates are taken from the following sources:

- 1968-73 - Bureau of Labor Statistics Handbook of Labor Statistics, (B.L.S. Bulletin Number 1865) 1975, Table 15.
- 1974-75 - Statistical Abstract of the United States, 1976 and 1977.
- 1976-79 - Bureau of Labor Statistics Handbook of Labor Statistics, (B.L.S. Bulletin Number 2070) December 1980. Tables 44,45.
- 1980-82 - Bureau of Labor Statistics Handbook of Labor Statistics, (B.L.S. Bulletin Number 2175) December 1983. Table 42.
- 1983-87 - Bureau of Labor Statistics Employment and Earnings (May issues 1984, 1986, 1987).

Data on state-level unionization rates are taken from three sources. Rates for 1973-81 are taken from Kokkelenberg and Sockell (1985, Table 5). Their data are based on tabulations of the May CPS. Rates for 1983-87 are based on unpublished tabulations of the May CPS provided to us by Alan Krueger. Unionization rates in 1982 are estimated by taking a simple average of the rates in 1981 and 1983. Unionization rates for 1968-76 for 8 larger states were obtained as follows. First, estimated unionization rates for these states based on administrative records of union membership were taken from tables in the Statistical Abstract of the United States. These rates are available for 1968 (1973 edition of the Statistical Abstract, Table 397), 1970 (1973 edition of the Statistical Abstract, Table 397), 1972 (1975 edition of the Statistical Abstract, Table 608), and 1974 (1977 edition of the Statistical Abstract, Table 418). Rates for 1969 and 1971 were obtained by averaging the rates for 1968-1970 and 1970-1972, respectively. Finally, the time series of 1968-72 rates

were indexed-linked to the time series of 1973-87 rates based on CPS data. The indexing factor for each state was obtained by dividing the average of the CPS estimates of union membership in 1973 and 1974 by the average of the administrative records estimate of union membership for 1972 and 1974.

Figure 1  
Characteristics of UI System: 1955-87

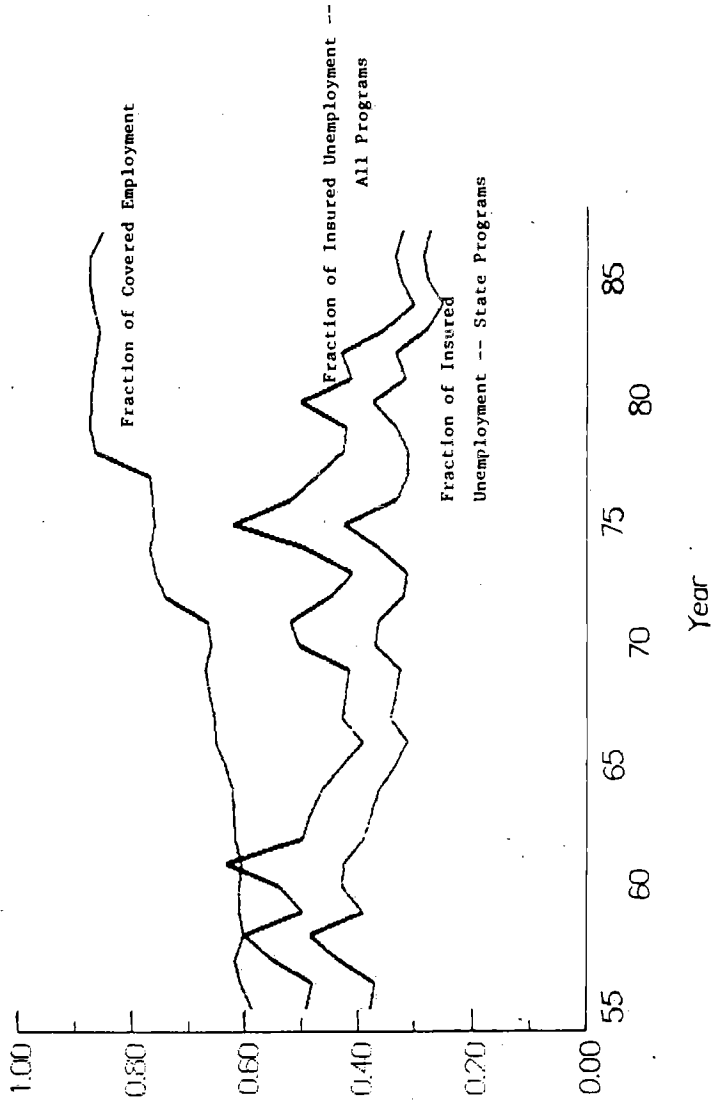


Figure 2  
Fraction Eligible vs. Fraction Insured

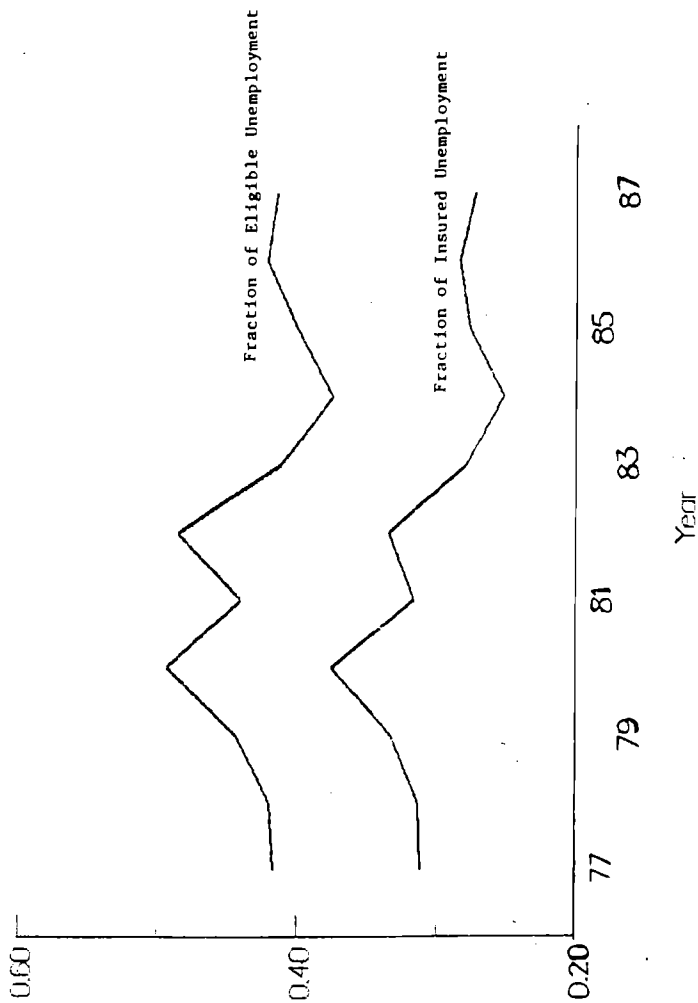


Figure 3

# CPS vs. PSID State Takeup Rates

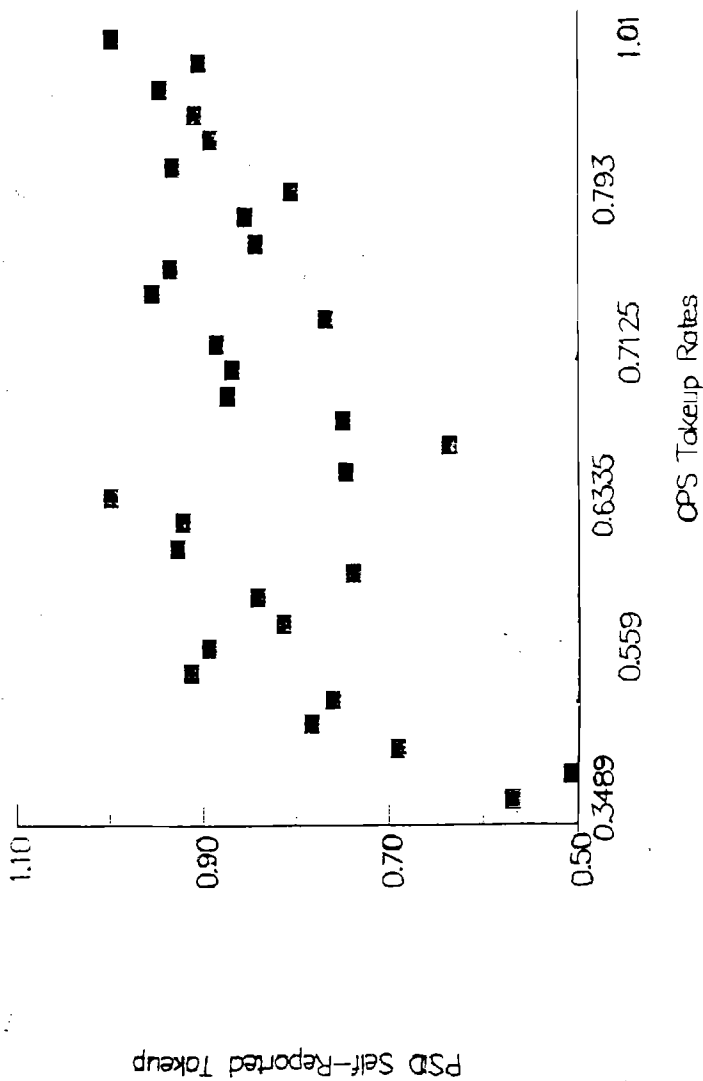




Table 1

Reasons for Ineligibility: 1977-87

Fraction of Insured Unemployment, Fraction of Eligible Unemployment, and

Year	Fraction of Insured Unemployment (x100)	Fraction of Eligible Unemployment (x100)	Estimated Takeup Rate (x100)	Reasons for Ineligibility (Percent of Ineligible)			Base Period Earnings or Weeks
				< Waiting Period	> Maximum Duration	Quit	
Average (1977-87)	30.4	42.9	70.7	9.5	26.1	11.7	52.1
1977	31.2	41.7	74.8	9.5	27.5	12.2	50.0
1978	31.3	42.0	74.5	11.2	19.0	13.5	55.4
1979	33.2	44.3	74.9	11.4	17.5	15.8	54.3
1980	37.5	49.3	76.1	12.6	17.9	14.8	53.9
1981	31.6	44.0	71.8	9.6	26.8	10.8	52.1
1982	33.4	48.6	68.7	9.2	27.1	10.4	52.2
1983	27.9	41.2	67.7	6.4	41.1	7.0	45.2
1984	25.1	37.4	67.1	7.4	33.2	7.7	51.5
1985	27.6	40.0	69.0	7.8	27.5	10.2	54.1
1986	28.4	42.2	67.3	9.6	24.5	13.0	52.7
1987	27.3	41.5	65.8	10.3	24.7	12.9	51.9

Note: The fraction of insured unemployment is estimated from administrative data on UI recipients and aggregate labor force statistics. The fraction of eligible unemployment and reasons for ineligibility are estimated from unemployed workers in the March CPS. The estimated takeup rate is the ratio of the fraction of insured unemployment to the fraction of eligible unemployment. The omitted category in the set of reasons for ineligibility is "previous employment not in covered sector," which is 1 percent or less in all years.

Table 2

Comparison of the Fraction of Eligible UnemploymentUnder Actual and 1977 Laws: 1977-87

Year	Fraction of Eligible Unemployment (x100):	
	Actual	Under 1977 Laws
Average (1977-87)	42.9	43.5
1977	41.7	41.7
1978	42.0	41.5
1979	44.3	44.0
1980	49.3	48.9
1981	44.0	44.3
1982	48.6	49.5
1983	41.2	42.3
1984	37.4	38.6
1985	40.0	41.3
1986	42.2	43.5
1987	41.5	43.0

Note: Estimated from unemployed workers in March CPS. In the third column eligibility is estimated in each year under 1977 laws with nominal provisions of the laws inflated at the rate of growth of average hourly earnings for private non-agricultural workers.

Table 3

Characteristics of Unemployed Workers: 1977-87

Variable	1977	1987
1. <b>Percent Female</b>	45.2	42.4
2. <b>Percent Nonwhite</b>	19.6	25.2
3. <b>Age</b>		
Mean	30.9	31.9
Percent 16-24	46.3	35.7
4. <b>Mean Education</b>	11.3	11.6
5. <b>Weeks Worked Last Year</b>		
Mean	21.7	23.4
Percent = 0	25.9	24.8
Percent 1-13 Weeks	18.0	15.6
Percent 14-26 Weeks	17.5	17.0
Percent > 26 Weeks	38.6	42.6
6. <b>Unemployment Spell</b>		
Mean	8.0	8.0
Percent ≤ 4 Weeks	35.0	37.5
Percent 5-13 Weeks	31.6	31.8
Percent 14-26 Weeks	16.8	16.1
Percent > 26 Weeks	16.7	14.6
7. <b>Region</b>		
Northeast	27.1	15.0
North Central	24.3	27.0
South	20.7	22.1
West	27.9	35.9
8. <b>Industry Shares of Unemployment</b>		
Agriculture & Mining	4.3	5.2
Construction	13.2	14.6
Manufacturing	25.8	22.0
Trans., Comm., Util.	4.6	4.7
Trade	24.1	24.8
Services	25.0	26.1
Public Administration	3.3	2.5
9. <b>Occupation Shares of Unemployment</b>		
Professional & Technical	5.7	5.5
Managers	4.7	6.0
Sales	4.8	9.4
Clerical	16.7	12.2
Craft	14.0	14.1
Operatives	23.9	18.3
Laborers	13.0	16.5
Service Workers	17.1	17.9

Note: Estimated from unemployed workers in March CPS, weighted by CPS sampling weights.

Table 4

## Regional Estimates of Fraction of Insured Unemployment, Fraction of Eligible Unemployment

Under Actual and 1977 Laws, and Takeup Rates: 1977-87

Region	Fraction of Insured Unemployment (x100):		Fraction of Eligible Unemployment (x100):		Takeup Rates		
	1977	1987-1977	1977	1987-1977	1977	1987	
	(1)	(2)	(3)	(4)	(6)	(7)	
Total	31.3	-4.4	41.8	-0.4	+1.2	.76	.65
New England	37.3	+2.6	50.3	-4.2	-3.3	.74	.85
Middle Atlantic	39.7	-0.8	40.2	+5.7	+7.6	.99	.85
East North Central	31.6	-6.1	36.0	-0.6	+2.3	.87	.73
West North Central	31.9	-5.9	50.0	-2.7	-1.6	.64	.56
South Atlantic	23.2	-3.9	40.2	-1.8	+1.4	.58	.52
East South Central	27.8	-8.0	47.9	-10.2	-7.3	.58	.53
West South Central	20.5	0.0	46.6	-4.5	-3.3	.44	.49
Mountain	22.6	-0.5	44.5	+2.1	+3.2	.51	.48
Pacific	33.9	+2.5	40.2	+4.0	+2.3	.85	.83

Note: All data are based on weighted sums of state variables, where the weights are the fractions of total unemployment in the state. Thus, column (6) does not equal column (1) by column (3), since the weighted sum of ratios is not the equal to the ratio of the weighted sums. The Census regions include the following states:

New England = ME, NH, VT, MA, RI, CT  
 Middle Atlantic = NY, NJ, PA  
 East North Central = OH, IN, IL, MI, WI  
 West North Central = MN, IA, MO, ND, SD, NE, KS  
 South Atlantic = DE, MD, DC, VA, WV, NC, SC, GA, FL  
 East South Central = KY, TN, AL, MI  
 West South Central = AR, LA, OK, TX  
 Mountain = MT, ID, WY, CO, NM, AZ, UT, NV  
 Pacific = WA, OR, CA, AL, HI

Table 5

Fraction of Insured Unemployment and Fraction of Eligible Unemployment  
Under Actual and 1977 Laws in Eight States: 1968-87

Year	Fraction of Insured Unemployment (x100)	Fraction of Eligible Unemployment (x100):		Estimated Takeup Rate (x100)
		Actual	Under 1977 Laws	
Average (1968-87)	33.7	42.2	42.8	81.2
1968	36.4	40.2	42.9	90.5
1969	35.2	40.5	42.5	86.9
1970	38.5	43.4	46.6	88.7
1971	37.4	47.6	49.2	78.6
1972	34.0	40.5	42.3	84.0
1973	33.4	40.1	41.1	83.3
1974	38.3	42.6	43.4	89.9
1975	42.6	50.0	50.6	85.2
1976	34.3	38.3	38.3	89.6
1977	33.2	39.2	39.2	84.7
1978	34.1	40.8	39.7	83.6
1979	36.3	41.0	40.1	88.5
1980	38.8	47.0	46.2	82.6
1981	32.8	42.5	42.6	77.2
1982	34.3	47.7	47.9	71.9
1983	29.7	40.1	40.4	74.1
1984	26.8	38.5	38.8	69.9
1985	28.7	38.6	39.5	74.4
1986	30.0	42.3	42.4	70.9
1987	29.2	42.4	42.5	68.9

Note: Eight states included in calculations are California, Florida, Illinois, New Jersey, New York, Ohio, Pennsylvania and Texas. See notes to Tables 1 and 2.

Table 6

Regression Analysis of State Takeup Rates

(standard errors in parentheses)

Variable	Dependent Variable:			
	Logarithm of State Takeup Rates			
	No State Effects		State Effects	
	(1)	(2)	(3)	(4)
1. Replacement Ratio	1.12 (.20)	1.32 (.20)	2.29 (.24)	2.36 (.24)
2. Coverage Ratio	.42 (.13)	.91 (.20)	-.07 (.12)	.61 (.26)
3. Earnings Required in Two Quarters	-.04 (.02)	-.06 (.02)	.02 (.04)	.01 (.03)
4. Other Eligibility Requirements	-.10 (.04)	-.06 (.04)	-.07 (.06)	-.06 (.06)
5. Unionization Rate Among Employed Workers	2.10 (.14)	1.79 (.16)	.60 (.23)	.39 (.25)
6. Fraction Aged 16-24	-.38 (.16)	-.47 (.17)	.16 (.13)	.02 (.13)
7. Fraction Nonwhite	-.01 (.09)	.02 (.09)	-.10 (.14)	-.10 (.14)
8. Fraction Female	.41 (.20)	.36 (.21)	.26 (.16)	.10 (.16)
9. Fraction Self-Employed	1.55 (.57)	1.87 (.57)	.92 (.43)	1.17 (.42)
10. Average Number of Weeks Worked in Previous Year (x10)	-.06 (.04)	-.09 (.04)	-.14 (.03)	-.22 (.04)
11. Average Duration of Current Unemployment Spell	-.02 (.03)	.02 (.03)	-.06 (.02)	-.03 (.03)
12. Unrestricted Year Effects	No	Yes	No	Yes
13. Value of Year Effect for 1987 (1977 = 0)	---	-.07 (.06)	---	-.08 (.05)
14. R <sup>2</sup>	.61	.64	.82	.84

Note: Sample consists of 622 observations, composed of observations from 1977-87 for 42 states and from 1968-87 for 8 states. Regression is based on weighted least squares, where the weights are the fractions of total unemployment in each state in each year. All regressions also include 7 variables for one-digit industry shares and 7 variables for one-digit occupation shares among unemployed workers. Variables 6-11 are averages among the set of unemployed workers in the state and year. The mean and standard deviation of the dependent variable are -.3537 and .3122, respectively.

Table 7

Implied Decomposition of the Change in Average Takeup Rates:1977 to 1987

Explanatory Variables	Percentage of the Overall Change in Log Takeup Rates Attributed to Explanatory Variables by Regression Model:	
	Without State Effects (1)	With State Effects (2)
State Effects	---	-51.2
Year Effects	-47.8	-54.1
Industry Variables	-27.0	-8.6
Occupation Variables	-16.4	15.9
All Other Variables	-8.8	-2.0
<b><u>Included in All Other Variables:</u></b>		
Replacement Rate	6.3	11.1
Coverage and Eligibility Restrictions	41.2	28.2
Unionization Rate	-91.2	-19.5
Demographic Variables (Fractions Aged 16-24, Nonwhite, Female)	27.8	-7.6
Fraction Self-Employed	17.7	10.9
Weeks Worked in Previous Year	-10.5	-25.2
Duration of Unemployment Spell	-.1	.1

Note: See text for method of decomposition. Estimates in columns (1) and (2) are derived from the results in columns (2) and (4) of Table 6, respectively. Columns sum to -100%, to indicate that takeup rates have on average declined.

Table 8

Fraction of Unemployed Receiving Extended Benefits, and  
Fraction of Unemployed Eligible for Extended Benefits Under  
Actual and 1977 Laws

Year	Fraction of Unemployment Receiving EB (x100)	Fraction of Unemployment Eligible for EB (x100)	
		Actual	All States on EB
1977	6.7	3.5	3.5
1978	2.8	1.7	2.4
1979	.9	.1	1.8
1980	4.4	.6	2.2
1981	2.9	2.8	3.3
1982	3.6	1.5	3.4
1983	2.4	2.5	5.3
1984	.1	.1	2.7
1985	.2	.1	2.5
1986	.3	.0	2.5
1987	.1	.3	2.7

Note: Average weekly EB receipts estimated by multiplying number of first claims by average duration of claims. Number of unemployed eligible for EB estimated from March CPS. In 1977, all states were eligible for EB under the national trigger.



Table 9

Cross Tabulations of Estimated Eligibility for UI  
with Actual Receipt of Benefits and Self-Reported Eligibility:

PSID Unemployment Spells, 1980-82

	<u>Estimated Eligibility</u>		<u>Total</u>
	<u>Eligible</u>	<u>Ineligible</u>	
<b>I. Cross Tabulation with UI Receipt</b>			
(percent of cases)			
1. Recipient	44.0	7.8	51.8
2. Nonrecipient	26.7	21.5	48.2
3. Total	70.7	29.3	100.0
<b>II. Cross Tabulation with Self-Reported Eligibility</b>			
(percent of cases)			
1. Eligible	50.6	11.5	62.2
and Receiving UI	44.0	7.8	51.9
and Not Receiving UI	6.6	3.7	10.3
2. Ineligible	20.0	17.8	37.8
3. Total	70.7	29.3	100.0

Note: Sample consists of 2280 unemployment spells reported as "last spells last year" in the PSID survey, 1980-82. Estimated eligibility constructed by authors using state of residence UI laws and employment income data for the year before the spell began.

Table 10

Logistic Regression Model for UI Reciprocity:PSID Unemployment Spells 1980-82

Variable	Mean	Estimated Coefficient	Estimated Standard Error
1. Age	34.2	.025	.009
2. Female	.19	-.12	.23
3. Nonwhite	.47	-.33	.22
4. Years of Education	11.5	.14	.04
5. Union Member (Previous Survey)	.37	.65	.25
6. Previous Unemployment Spell in Same Year	.23	.47	.22
7. Duration of Unemployment Spell			
≤ 4 Weeks	.32	-1.37	.21
5-26 Weeks (omitted)	.43	---	---
> 26 Weeks	.26	.33	.24
8. Household Income in Year Prior to Start of Spell			
≤ \$5000 (omitted)	.15	---	---
\$5000 - \$10,000	.28	.62	.23
\$10,000-\$20,000	.40	1.06	.26
> \$20,000	.17	.78	.36
9. Other Household Income During Spell			
Earnings	.13	-.83	.21
Nonearned Income Except UI	.18	-.50	.26
10. Region			
Northeast (omitted)	.14	---	---
North Central	.43	-.35	.40
South	.27	-1.00	.40
West	.16	-.76	.39
11. State Characteristics			
Average Replacement Rate	.36	-1.48	2.16
UI Coverage Rate	.86	-3.87	1.06
Earnings Required in Two Quarters	.66	.04	.25
Other Eligibility Requirements	.10	.83	.44
Unemployment Rate	8.6	.15	.06
Average Takeup Rate for UI	.33	5.39	1.48
12. Year Effects of Start of Spell			
1980	.32	-.29	.27
1981	.31	.54	.25
1982 (omitted)	.35	---	---

Note: Model includes 6 industry and 7 occupation dummies for previous job, as well as dummy variables for spells starting in 1977, 1978, and 1979. The sample consists of 1390 individuals who either received UI benefits or reported themselves as eligible. A total of 28 cases have been deleted due to missing values of the explanatory variables. The mean of the dependent variable is .836.

Appendix Table 1

Means of Variables Used in Takeup Analysis

	Overall Mean 1977-87	1977 Mean	1987 Mean
Replacement Rate	.36	.36	.36
Coverage Rate	.84	.78	.85
Earnings Requirements (2 Quarters)	.63	.64	.67
Other Eligibility Requirements	.06	.07	.04
Unionization Rate	.22	.24	.17
Fraction 16-24	.41	.46	.36
Fraction Nonwhite	.22	.20	.25
Fraction Female	.42	.45	.42
Fraction Self-Employed	.02	.02	.03
Average Weeks Worked Last Year	23.17	21.66	23.39
Average Duration Unemployment	15.36	15.67	15.60
<b><u>Industry:</u></b>			
Agriculture	.04	.03	.04
Mining	.01	.01	.01
Construction	.14	.13	.15
Manufacturing	.26	.26	.22
Trans., Comm., Util.	.05	.05	.05
Trade	.23	.24	.25
Services	.24	.25	.26
<b><u>Occupation:</u></b>			
Professional & Technical	.06	.06	.06
Managers	.05	.05	.06
Sales	.06	.05	.09
Clerical	.14	.17	.12
Craft	.15	.14	.14
Operatives	.23	.24	.18
Service Workers	.17	.17	.18

Note: Means are based on state-year observations and are weighted by the number of unemployed workers in the state and year.

## Appendix Table 2

Fraction of Insured Unemployment, Fraction of EligibleUnemployment and Takeup Rates by State, 1977-87

State	Average 1977-87			Percent Change 1977-87		
	Fraction of Insured Unemployment	Fraction of Eligible Unemployment	Takeup Rate	Fraction of Insured Unemployment	Fraction of Eligible Unemployment	Takeup Rate
Alabama	.25	.48	0.52	-21.1	6.5	-26.0
Alaska	.63	.58	1.09	-36.4	-19.4	-29.0
Arizona	.19	.44	0.43	22.4	-14.3	42.8
Arkansas	.27	.42	0.66	-9.1	-23.2	18.4
California	.37	.46	0.80	11.8	17.1	-4.5
Colorado	.20	.47	0.44	6.0	24.4	-14.8
Connecticut	.36	.52	0.71	-27.0	-10.8	-18.2
D.C.	.36	.42	0.87	-5.4	35.8	-30.4
Delaware	.33	.52	0.65	0.9	33.5	-24.4
Florida	.15	.33	0.47	-25.6	19.2	-37.6
Georgia	.25	.38	0.66	7.9	-11.6	22.1
Hawaii	.34	.33	1.09	-12.1	52.9	-42.5
Idaho	.32	.52	0.62	-6.5	-16.2	11.5
Illinois	.34	.41	0.83	-40.4	-13.0	-31.5
Indiana	.21	.41	0.52	-13.4	0.2	-13.6
Iowa	.30	.48	0.64	-32.4	-14.7	-20.8
Kansas	.34	.47	0.73	12.6	-11.1	26.6
Kentucky	.29	.47	0.61	-51.4	-32.5	-27.9
Louisiana	.29	.52	0.56	-27.7	-2.1	-26.1
Maine	.36	.50	0.73	-18.7	6.1	-23.4
Maryland	.27	.50	0.55	-8.5	0.4	-8.9
Massachusetts	.41	.45	0.92	43.2	-3.3	48.1
Michigan	.28	.37	0.77	4.9	-13.3	21.0
Minnesota	.33	.44	0.76	-23.1	-8.8	-15.6
Mississippi	.22	.40	0.56	-2.2	-23.9	28.5
Missouri	.29	.48	0.60	-16.3	2.9	-18.6
Montana	.31	.45	0.71	-25.0	-32.3	10.9
Nebraska	.27	.52	0.53	-8.0	16.7	-21.2
Nevada	.34	.54	0.66	-28.6	-3.8	-25.8
New Hampshire	.24	.49	0.49	-31.6	-50.6	38.5
New Jersey	.44	.45	0.98	10.7	18.7	-6.8
New Mexico	.20	.45	0.46	8.7	43.4	-24.2
New York	.36	.38	0.94	6.7	18.0	-9.6
North Carolina	.26	.40	0.70	-17.6	-22.3	6.0
North Dakota	.37	.52	0.74	-21.6	-40.1	30.8
Ohio	.27	.36	0.75	-10.7	5.0	-14.9
Oklahoma	.22	.41	0.55	-24.9	-21.3	-4.5
Oregon	.33	.40	0.85	12.7	-30.4	62.0
Pennsylvania	.41	.47	0.89	-20.0	3.7	-22.8
Rhode Island	.49	.46	1.08	11.4	-6.8	19.5
South Carolina	.25	.45	0.57	-13.7	-20.4	8.5
South Dakota	.19	.50	0.38	-51.1	-5.8	-48.1
Tennessee	.27	.45	0.59	-24.5	-31.5	10.2
Texas	.17	.45	0.39	34.3	-6.4	43.4
Utah	.30	.43	0.70	-27.3	25.9	-42.3
Vermont	.40	.49	0.83	5.1	-10.0	16.8
Virginia	.19	.36	0.53	-17.7	10.5	-25.5
Washington	.32	.43	0.75	-6.6	-7.1	0.4
West Virginia	.32	.41	0.76	-39.8	-33.7	-9.1
Wisconsin	.36	.48	0.77	-23.0	43.2	-46.3
Wyoming	.29	.50	0.59	36.4	4.5	30.6

Appendix Table 3

Reported Reasons for Non-Receipt of UI Benefits

Among Those Who Report Themselves Eligible

Reported Reason	Percent of Respondents
1. Red Tape/Administrative Access Problems	20.9
2. Physical Access/ Transportation Problems	3.1
3. Information Access/Didn't Know How to Apply	.9
4. Attitude/Don't Like Charity	8.9
5. Receiving Other Income or Assistance	5.8
6. Saving It to Use Later	1.8
7. Expected Short Spell of Unemployment	25.8
8. Don't Need It	6.7
9. Other Reasons	16.0
10. No Reason/Never Thought About It	10.2
11. Total	100.0

Note: Sample consists of 225 individuals who reported a spell of unemployment last year for which they claimed to be eligible for UI benefits, but did not receive benefits. The responses represent the first reason given for non-recipientcy to the PSID surveyors.