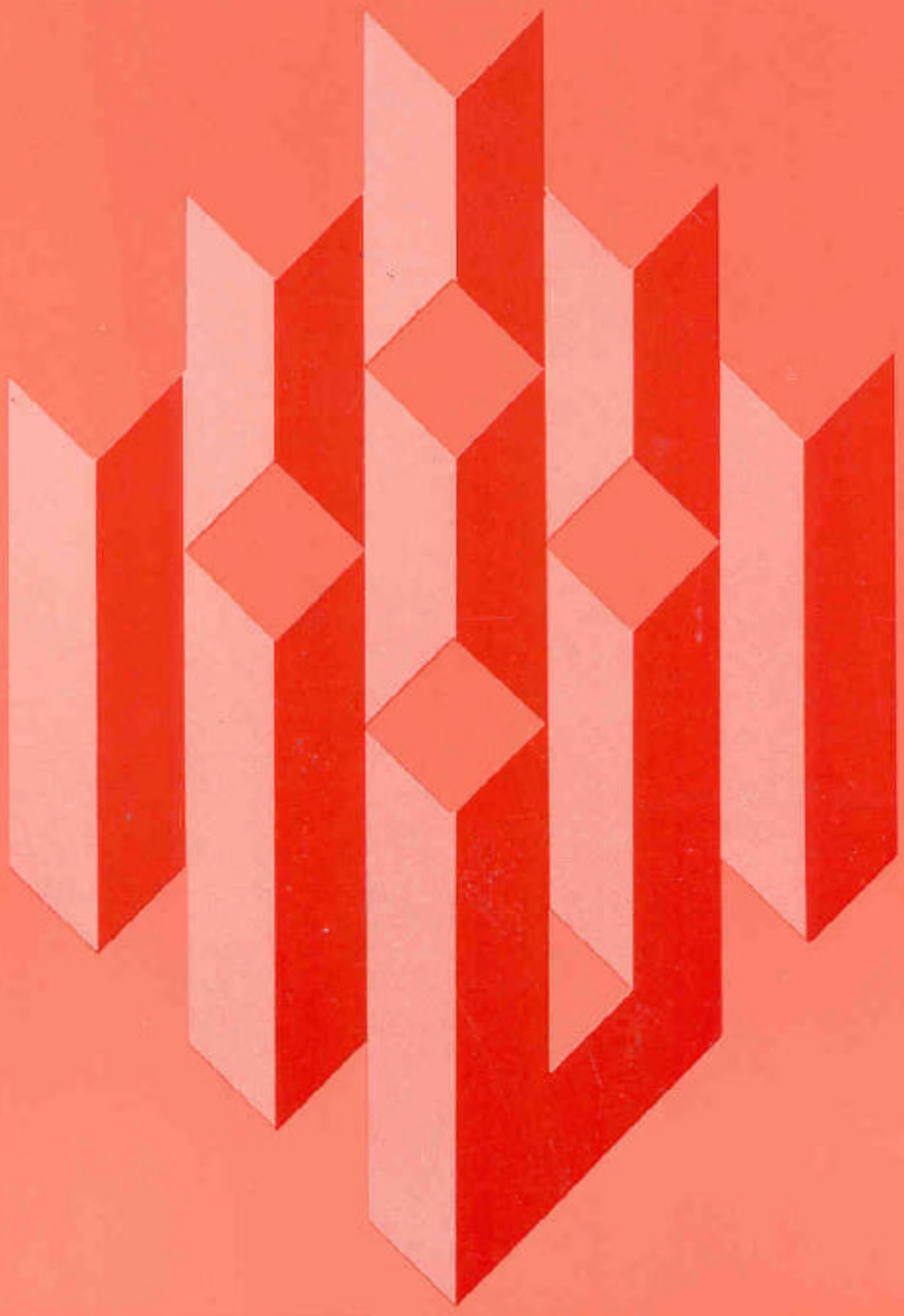
A Study of Unemployment Insurance Recipients and Exhaustees: Findings from a National Survey

Unemployment Insurance
Occasional Paper 90-3

U.S. Department of Labor
Employment and Training Administration



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U.S. Department of Labor
Elizabeth Dole, Secretary

Employment and Training Administration
Roberts T. Jones
Assistant Secretary of Labor

Unemployment Insurance Service
Mary Ann Wyrsch, Director

1990

This report was prepared for the Unemployment Insurance Service, U.S. Department of Labor under Contract Number 99-8-0805-75-071-01 with Mathematica Policy Research, Inc. The authors of this report are Walter Corson and Mark Dynarski. Since contractors conducting research and evaluation projects under government sponsorship are encouraged to express their own judgment freely, this report does not necessarily represent the official opinion or policy of the U.S. Department of Labor.

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Contract No.: 99-8-0805-75-071-01
MPR Reference No.: 7805

A STUDY OF UNEMPLOYMENT INSURANCE RECIPIENTS AND EXHAUSTEES: FINDINGS FROM A NATIONAL SURVEY

September 1990

Authors:

Walter Corson
Mark Dynarski

Submitted to:

U.S. Department of Labor
Employment and Training Administration
Unemployment Insurance Service
200 Constitution Ave., N.W.
Washington, D.C. 20210

Project Officer:

Wayne Zajac

Submitted by:

Mathematica Policy Research, Inc.
P.O. Box 2393
Princeton, NJ 08543-2393
(609) 799-3535

Project Director:

Walter Corson

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ACKNOWLEDGMENTS

A number of individuals contributed to this project and deserve our thanks. At the U.S. Department of Labor, Wayne Zajac, the project officer, provided guidance and assistance throughout the project. Most importantly, he helped us engender the participation of the states in the study, and he provided useful comments on the design and the final report. Several other staff at USDOL provided helpful comments on the study design and the report--Steven Wandner, Joseph Hight, John Robinson, and Daniel Ryan. Ralph Smith and Bruce Vavrichek at the Congressional Budget Office and James Storey at the Congressional Research Service also provided helpful comments.

We are indebted to the state staff who provided the data necessary for selecting the samples of exhaustees and nonexhaustees who were interviewed for this study. All 20 states that were contacted for the study agreed to participate, and all states provided sufficient data for us to conduct the interviews. We appreciate the help that state staff gave us both in providing the data initially and in answering all of our questions.

We received assistance at Mathematica Policy Research (MPR) from many individuals. Charles Metcalf was responsible for the sample design, and his design memos formed the basis of Appendix A. Anne Ciemnecki developed the survey instrument and managed the telephone interviewing, which was conducted both by MPR staff and staff from our subcontractor, Phase III. Deborah Garvey performed the necessary programming and was responsible for writing Appendix B on the survey results and nonresponse analysis. Walter Nicholson reviewed the report and provided many helpful comments. Cindy Castro ably oversaw the production of the final report, which was edited by Thomas Good.

Walter Corson
Mark Dynarski

CONTENTS

CONTENTS (continued)

TABLES

TABLES (continued)

TABLES (continued)

FIGURES

EXECUTIVE SUMMARY

The primary purpose of the unemployment insurance (UI) system is to provide temporary income support to workers who have lost their jobs through no fault of their own. Ideally, this income support should be available until unemployed workers find suitable reemployment. However, because the availability of income support may create a disincentive to search for and accept reemployment, state UI programs limit the duration of UI benefit receipt. In most states, the limit is 26 weeks for the regular state program.

Due to the limited duration of UI benefits, some individuals exhaust their benefits. For the regular state programs, 1.8 million individuals exhausted their benefits in calendar year 1989--a number which implies a benefit exhaustion rate of about 28 percent among claimants who began receiving UI in the year ending in mid-1989. While this exhaustion rate is similar to the rates experienced in previous periods of economic expansion, it is sufficiently large to ask whether policy responses are necessary either to reduce the exhaustion rate or to ameliorate the financial hardships caused by the cessation of UI benefits. In addition, the decline in the 1980s in the proportion of the unemployed who receive UI benefits has focused greater policy attention on UI exhaustees, since exhaustees constitute a component of the group of unemployed workers who are not receiving UI benefits.

Policy responses to reduce the exhaustion rate or to alleviate the financial hardships associated with exhaustion might entail (1) strengthening the work-search monitoring of claimants as their unemployment spells lengthen, to encourage them to find and accept jobs; (2) providing expanded reemployment services (e.g., job-search workshops, job referrals, or job training) to exhaustees or to potential exhaustees if they can be identified early in their unemployment spells; and (3) extending the duration of benefits. Determining the appropriate mix of policies and how they might be directed toward different types of exhaustees depends on the reasons for benefit exhaustion and how these reasons differ by type of exhaustee. If some individuals exhaust their benefits due to the disincentive effects of UI, the policy response might be to encourage work search through administrative actions. If, instead, exhaustions stem from a mismatch between the skills of some recipients and the requirements of available jobs, job training and job-search counseling might be appropriate for these individuals. If exhaustions occur because sufficient job openings are not available to reemploy all recipients, benefit extensions might be appropriate.

The purpose of this study is to examine the characteristics and behavior of UI exhaustees and nonexhaustees, and to explore the implications of this information for policy formulation.

STUDY DESIGN AND IMPLEMENTATION

The UI exhaustee study was designed to provide nationally representative estimates of the characteristics of UI exhaustees and nonexhaustees. Sample selection was a two-stage process in which 20 states were selected randomly in the first stage with a probability proportional to their number of UI exhaustees. Simple random samples of recipients were then selected in the second stage, and subsamples of exhaustees and nonexhaustees were interviewed in each state. The sizes of these subsamples were adjusted to obtain nationally representative samples of exhaustees and nonexhaustees.

The exhaustee and nonexhaustee samples were chosen from individuals who began collecting UI benefits during a one-year period, October 1987 through September 1988. Overall, 1,920 exhaustees and 1,009 nonexhaustees were interviewed in fall 1989. This schedule provided an average 20-month labor-market history beginning with the date of the pre-UI job loss.

Four elements of the study enhance its usefulness relative to previous studies: (1) the sample is nationally representative, (2) the availability of the nonexhaustee sample in conjunction with the exhaustee sample makes a thorough analysis of the factors underlying exhaustion possible, (3) few exhaustees in the study sample were eligible for extended benefits, a situation which had complicated previous analyses of exhaustees, and (4) the sample time frame provides an up-to-date look at exhaustees.

While these advantages of the present study are important, a further characteristic of the study should be noted. The study was conducted in a period of economic expansion, although policy interest in exhaustees is generally greatest during recessionary periods. Because the nonrecessionary population studied here is likely to differ from the population of exhaustees during a recession (the analysis suggests that the population is likely to contain a lower percentage of job-attached individuals), caution must be exercised in extrapolating the results to recessionary periods.

THE FACTORS UNDERLYING EXHAUSTION AND THE CHARACTERISTICS OF EXHAUSTEES

An analysis of the factors underlying exhaustion indicated that:

- A major distinction between exhaustees and nonexhaustees pertained to their expectation about and ultimate likelihood of recall by their pre-UI employer. Individuals who expected to be recalled and had a definite date of recall were largely nonexhaustees, since they were generally on temporary layoffs; individuals with no recall expectations (that is, those on permanent layoffs or who were otherwise permanently separated from their pre-UI job) were more likely to be exhaustees. Individuals who expected to be recalled but had no recall date (that is, those generally on indefinite layoffs) were more likely to be exhaustees than were individuals with definite recall dates, but were less likely to be exhaustees than were individuals with no recall expectations.

- Differences in recall probabilities accounted for many of the differences in pre-UI job characteristics that were observed between exhaustees and nonexhaustees, such as the fact that exhaustees were less likely to come from manufacturing industries.

- Among workers who did not expect to be recalled, older, female, and minority workers were more likely to exhaust their UI benefits. Female workers who had working spouses were also significantly more likely to exhaust their UI benefits. These factors had no significant effects on the likelihood of exhaustion for workers who expected to be recalled.

- Higher local unemployment rates were associated with a higher probability of exhaustion.

- Higher UI wage replacement rates increased the probability of exhaustion for workers who did not expect to be recalled. Wage replacement rates did not significantly affect the probability of exhaustion for workers who expected to be recalled.

- Longer potential durations lowered the probability of exhaustion. The effect of longer potential durations on reducing the probability of exhaustion was greater for workers who expected to be recalled.

An analysis of the factors underlying exhaustion and of the characteristics of exhaustees suggested that it may be useful to think of the exhaustee population as comprising a number of important and possibly overlapping subgroups of individuals. Important subgroups appear to be dislocated workers, workers in seasonal industries, workers with short potential UI benefit durations, workers with low skill levels who have difficulty in the labor market, and workers with high skill levels who take some time to find an appropriate match in the job market.

THE LENGTH OF UNEMPLOYMENT SPELLS

An analysis of the lengths of unemployment spells by UI recipients (the period between the date of the loss of the pre-UI job and subsequent reemployment) indicated that:

- The average completed spell of unemployment for UI recipients was 20 weeks.

- The average completed spell of unemployment was 26 weeks for UI recipients who did not expect to be recalled to their pre-UI jobs, 19 weeks for UI recipients who expected to be recalled but were not given definite recall dates, and 12 weeks for UI recipients who were given definite recall dates.

- Recall expectations were generally accurate. Ninety-two percent of UI recipients who were given definite recall dates returned to work for their pre-UI employers. Seventy-one percent of workers who expected to be recalled but were not given definite recall dates returned to work for their pre-UI employers.

- Workers who expected to be recalled but were not recalled experienced much longer unemployment spells than did workers who expected to be recalled and were recalled. The average completed spell of unemployment was 10 weeks for UI recipients who had definite recall dates when they were laid off and who were recalled, and 26 weeks for UI recipients who had definite recall dates when they were laid off but who found new employment.

- Twenty-five percent of workers who exhausted their UI benefits were reemployed within 4 weeks after exhaustion, and 40 percent were reemployed within 10 weeks after exhaustion.

- Among workers who did not expect to be recalled, older workers, female workers with working spouses, workers with greater pre-UI job seniority, union members, and workers in areas that exhibit high unemployment had longer unemployment spells. These factors generally did not have significant effects on the lengths of

unemployment spells for workers who expected to be recalled. Workers whose pre-UI jobs were in manufacturing industries and who expected to be recalled had shorter unemployment spells.

LABOR-MARKET AND PUBLIC ASSISTANCE PROGRAM EXPERIENCES

A wide range of labor-market and assistance program experiences of exhaustees and nonexhaustees were investigated. The most important findings of this analysis were as follows:

- Exhaustees were more likely than nonexhaustees to look for work at the start of the UI claim. This difference was due primarily to the difference in recall expectations. Among individuals with no recall expectations, the proportions of exhaustees and nonexhaustees who looked for work was identical (84 percent). Among individuals who looked for work, the intensity of job search was as high for exhaustees as it was for nonexhaustees, or higher.

- A sizeable proportion of exhaustees (18 percent) reported not looking for work at the start of the UI claim. Some of these individuals were job-attached--they were waiting for a new job to start, they expected to be recalled, or they expected their union to find them a job. However, the job-attached group was not the majority. Fully 60 percent (11 percent of all exhaustees) gave reasons for not looking for work that would classify them as being out of the labor force.

- Ninety percent of UI recipients and 70 percent of exhaustees had at least one post-UI job during the 20-month period after their initial job loss.

- A substantial proportion of exhaustees (37 percent) and nonexhaustees (14 percent) suffered a reduction of 25 percent or more in weekly wages on the first post-UI job relative to the pre-UI job. Overall, the mean weekly wages of exhaustees declined by 16 percent, from $415 to $347. The mean weekly wages of nonexhaustees remained stable at just over $400 per week.

- Many UI recipients suffered a decline in weekly wages because their weekly hours were reduced. Overall, the reduction in hours worked per week by exhaustees (from 44 to 39 hours) explained about two-thirds of the reduction in mean weekly wages.

- Data on the industry and occupation of pre-UI jobs and post-UI jobs show a substantial shift in industry and occupation between pre-UI jobs and post-UI jobs, particularly among exhaustees. The main industrial shift was from manufacturing to retail trade and services. Occupational shifts reflected the industry shifts.

- At the start of the UI claim, 64 percent of exhaustees received reemployment services (other than training) from the Job Service, and 8 percent received services from JTPA or another source. Rates of reemployment service receipt were lower for nonexhaustees, due primarily to their greater job attachment. The rates of service receipt from the Job Service were similar for exhaustees and nonexhaustees who had no recall expectations.

- Sixteen percent of exhaustees and 10 percent of nonexhaustees reported having participated in one or more training or education programs between the date of their initial layoff and the interview. The majority of these programs (75 to 80 percent) involved occupational skills training. Some of the training and, to a larger degree, the education appears to have been a continuation of training and education that claimants had begun prior to layoff. Claimants also appear to have begun a substantial proportion of the education and training after the start date of the first post-UI job, suggesting that much of the training and education was related to reemployment.

- Few exhaustees and nonexhaustees received pensions or social security benefits. Even fewer received cash or in-kind public assistance. However, the rate of public assistance receipt was higher for exhaustees than for nonexhaustees. The rate of public assistance receipt also increased following the exhaustion of benefits.

POLICY ANALYSIS

The implications of the results for policy development were explored. In the process, the usefulness of a nationally representative database of UI recipients for developing UI policy was evident. The specific policy-related results were as follows:

- Policies that impose minimal or no work search or Job Service registration requirements on UI recipients who expect to be recalled are appropriate, since such individuals have shorter unemployment spells than other recipients, and since they typically do return to their pre-UI employer. The findings did not suggest any other factors which could be used to target administrative work incentives toward individuals who are unlikely to look for work.

- As defined according to criteria specified by the Bureau of Labor Statistics (BLS), dislocated workers are more likely to exhaust UI, less likely to become reemployed, and have lower average wages if they do become reemployed. Modifying the BLS definition to incorporate recall expectations rather than recall outcomes is a feasible way to identify dislocated workers who are likely to have reemployment difficulties and who might benefit from receiving expanded reemployment services early in their unemployment spells.

- Low-skill workers (defined as workers who have not completed high school or who earn less than $5 per hour on their pre-UI jobs) who do not expect to be recalled also face serious reemployment difficulties. These individuals have lower reemployment rates, higher exhaustion rates, longer unemployment spells, and greater reductions in hours worked on their post-UI jobs than do other recipients. Moreover, a substantial portion of these individuals do not receive reemployment services. Targeting reemployment services toward low-skill workers who do not expect to be recalled may be appropriate.

- When viewed from a state-level perspective, UI recipients in states whose exhaustion rates in 1988 were high and states whose exhaustion rates in 1988 were low differ along a number of dimensions, including UI program parameters and industrial/occupational distributions. Although local unemployment rates were also

higher in high-exhaustion states, using state exhaustion rates as a trigger for extended benefits would mean that benefits might be extended to workers who exhaust regular UI benefits for reasons other than a sluggish economy.

- Substate extended benefits programs have been proposed to direct benefits to local areas that suffer from structural unemployment. If local unemployment rates were used as substate triggers for extended benefits, 22 percent of exhaustees would be eligible for extended benefits at a 9 percent trigger rate. However, the reemployment characteristics of exhaustees in high local unemployment-rate areas (9 percent or higher) were similar to those of exhaustees in other areas, and more exhaustees were recalled in high-unemployment areas relative to other areas. If substate extended benefits were paid to exhaustees in areas with high local unemployment rates, a substantial proportion of recipients of substate extended benefits (38 percent) would be unemployed due to seasonal layoffs. Only a small proportion of dislocated workers (18 percent) would live in these areas. There is no evidence to suggest that substate unemployment rate triggers would direct extended benefits to areas with high structural unemployment.

- An alternative way to direct benefits to individuals whose unemployment is structural in nature would be to target extended benefits toward dislocated workers, since such workers appear to have greater difficulty in becoming reemployed than do other UI exhaustees. If this policy were implemented by making extended benefits available to exhaustees with three or more years of tenure with the pre-UI employer, 41 percent of exhaustees would be eligible for extended benefits. This eligible group has a lower rate of reemployment and a longer average unemployment spell, and experiences a greater reduction in reemployment earnings relative to the pre-UI job, than do other exhaustees. These relatively poor reemployment outcomes occur despite the fact that a larger percentage of the eligible group than of the noneligible group were ultimately recalled by the pre-UI employer. These findings suggest that adding a tenure requirement for extended benefits may have some merit if the purpose is to direct benefits to individuals who have difficulty in becoming reemployed.

I. INTRODUCTION

The primary purpose of the unemployment insurance (UI) system is to provide temporary income support to workers who have lost their jobs through no fault of their own. Ideally, this income support should be available until unemployed workers find suitable reemployment. However, because the availability of income support may create a disincentive to search for and accept reemployment, state UI programs limit the duration of UI benefit receipt. In most states, the limit is 26 weeks for the regular state program, a limit which has been in place since the early 1950s. During periods of high unemployment, extended benefits programs have generally provided longer potential durations, although the degree to which extended coverage has been provided has varied substantially over the last two decades.

Due to the limited duration of UI benefits, some individuals exhaust their benefits. For the regular state programs, 1.8 million individuals exhausted their benefits in calendar year 1989--a number which implies a benefit exhaustion rate of about 28 percent among claimants who began receiving UI in the year ending in mid-1989. While this exhaustion rate is similar to the rates experienced in previous periods of economic expansion, it is sufficiently large that one may ask whether policy responses are necessary either to reduce exhaustion rates or to ameliorate the financial hardships that may be caused by the cessation of UI benefits. In addition, recent analyses of the decline in the 1980s in the proportion of the unemployed who receive UI benefits (Burtless, 1983; Burtless and Saks, 1984; and Corson and Nicholson, 1988) have focused greater policy attention on UI exhaustees, since exhaustees are a component of the group of unemployed workers who are not receiving UI benefits.

Policy responses to reduce the exhaustion rate or to alleviate the financial hardships associated with exhaustion might entail (1) strengthening the work-search monitoring of claimants as their unemployment spells lengthen, to encourage them to find and accept jobs; (2) providing expanded

reemployment services (e.g., job-search workshops, job referrals, or job training) to exhaustees or to potential exhaustees if they can be identified early in their unemployment spells; and (3) extending the duration of benefits. Determining the appropriate mix of policies and how they might be directed toward different types of exhaustees depends on the reasons for benefit exhaustion and how these reasons may differ by type of exhaustee. If some individuals exhaust their benefits due to the disincentive effects of UI, the policy response might be to encourage work search through administrative actions. If, instead, exhaustions stem from a mismatch between the skills of some recipients and the requirements of available jobs, job training and job-search counseling might be appropriate for these individuals. If exhaustions occur because sufficient job openings are not available to reemploy all recipients, benefit extensions might be appropriate.

The purpose of this study is to examine the characteristics and behavior of UI exhaustees and nonexhaustees, and to explore the implications of this information for policy formulation. The data collected as part of this study do not enable us to determine the specific reasons that some workers exhaust their UI benefits while others do not. However, a detailed analysis of the data has yielded consistent patterns that we believe provide useful knowledge about the general factors underlying exhaustion.

In the remainder of this chapter, we briefly review the more specific objectives and approach of this study, discuss the study design, and provide a guide to the remainder of the report.

A. STUDY OBJECTIVES AND APPROACH

The problem of benefit exhaustion and policies for addressing the problem have been examined throughout the life of the UI program. Typically, the exhaustion rate has been used as a measure of the adequacy of benefit durations, and increases in rates of UI exhaustion have frequently led to the introduction of extended benefits programs. Numerous studies of exhaustees and their postexhaustion experiences have also been undertaken to examine the factors underlying

exhaustion, reemployment rates, and other labor-market outcomes.[1] The studies have generally found that exhaustees are likely to be older, and to comprise a higher proportion of female, black, and Hispanic workers than is true of UI recipients who do not exhaust their benefits. Some analyses have also emphasized the importance of temporary layoffs at explaining the duration of unemployment and hence the probability of exhaustion (that is, individuals on temporary layoffs are less likely to be exhaustees than individuals who are permanently separated from their pre-UI employer).

The present study builds on previous studies of benefit exhaustion, but differs from them in four ways:

1. The study is based on data from a nationally representative probability sample of exhaustees and nonexhaustees. None of the previous studies was based on data from a national probability sample.

2. The availability of a sample that contains both nonexhaustees and exhaustees makes a thorough analysis of the reasons for exhaustion possible. Most previous studies of exhaustees have had to rely on comparisons with aggregate data on the UI population to analyze the reasons for exhaustion.

3. The data for the present study were collected during a period of economic expansion, a period in which few individuals were eligible for extended benefits. The major previous studies of this population were conducted during economic downturns in which most regular UI exhaustees collected extended benefits. The presence of extended benefits made it difficult to interpret findings on the duration of unemployment following exhaustion.

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[1]Studies of UI exhaustion undertaken in the 1970s include a study of exhaustees in four cities (Nicholson and Corson, 1976; and Corson, Nicholson, and Skidmore, 1976) and a study of recipients under the permanent Extended Benefits (EB) program and the Federal Supplemental Benefits (FSB) program (Corson et al., 1977; Brewster et al., 1978; and Corson and Nicholson, 1982). Relevant studies in the 1980s include studies of the EB program (Corson and Nicholson, 1985) and the Federal Supplemental Compensation (FSC) program (Corson et al., 1986), a study of the linkages between long-term UI recipients and local employment and training programs (Richardson et al., 1989), and a study of the family incomes of long-term UI recipients (Smith and Vavrichek, 1990). The findings of studies of the duration of unemployment among UI recipients are also relevant to the current study. They include Moffitt and Nicholson (1982), Corson and Nicholson (1983), Moffitt (1985), Katz (1986), Katz and Meyer (1988), and Meyer (1990).

4. Most previous studies of benefit exhaustion were conducted before 1980. Both state UI programs and programs that provide reemployment services to UI recipients have changed significantly since that time. The current study provides an up-to-date examination of exhaustees.

This study has four main objectives. The first is to examine the role of demographic, economic, and UI program factors in explaining UI exhaustion. The demographic factors of interest include age, gender, race/ethnicity, education, and marital status. The economic factors that may be related to labor-market success include pre-UI job characteristics (such as industry and occupation), job separation characteristics (such as recall expectations), and local economic conditions. UI program factors that have previously been found to have significant effects on the lengths of unemployment spells and exhaustion rates include the UI wage replacement rate and the potential duration of UI benefits.

A second objective of the study is to examine the duration of unemployment and the factors that influence unemployment duration. The duration of unemployment following UI benefit exhaustion is of particular interest as a measure of the reemployment problems faced by UI exhaustees.

A third objective is to examine the UI and post-UI experiences of exhaustees and nonexhaustees--their other labor-market activities (such as job search and the nature of post-UI employment); their use of job search, job placement, education, and training services; and their use of public assistance. The final objective of the study is to examine the policy implications of its findings. In particular, the goal is to use the findings to assess the potential need for employment and training programs for exhaustees and to examine the implications of alternative extended benefits programs.

While the advantages of the present study enhance its usefulness relative to previous studies of UI exhaustion, one important characteristic of the study should be re-emphasized. The study is being conducted in a period of economic expansion, but policy interest in exhaustees is generally

greatest during recessionary periods. Because the nonrecessionary population of exhaustees studied here is likely to differ substantially from the population of exhaustees during a recession, caution must be exercised in extrapolating the results to policy questions that arise during recessionary periods.

B. STUDY DESIGN

The study design called for selecting a nationally representative sample of exhaustees and a comparison sample of nonexhaustees, and collecting UI program and telephone interview data for these samples. In this section, we briefly describe the sample design and its implementation. Further details on the sample design and the results of the telephone survey can be found in Appendixes A and B, respectively.

1. The Sample Design

The sample for the UI exhaustee study was designed to be representative of the national population of exhaustees and the comparison group of nonexhaustees, and to provide precise statistical estimates of their characteristics to address the descriptive and analytic objectives of the study. With these objectives in mind, a two-stage sampling process was devised in which 20 states were selected in the first stage to provide the sample of UI recipients, and individual UI recipients (2,000 exhaustees and 1,000 nonexhaustees) were selected in the second stage.[2] These samples were drawn from among individuals who began collecting UI during a 12-month period beginning in October 1987 and extending through September 1988. A twelve-month sampling frame was chosen to reduce the influence of seasonal factors on the characteristics of sample members.

In the first stage, states were selected randomly with probabilities of selection proportional to their number of exhaustees during 1987. Six states (California, Texas, New York, Illinois, Michigan

[2]An analysis of the effects of clustering the sample by state on the variance of the estimates suggested that substantial gains in precision could be achieved by drawing the sample from 20 as opposed to 10 or 15 states. The gains in precision from using more than 20 states were not as large.

and Pennsylvania), each with more than 1/20th of the nation's exhaustees, were sampled with certainty, and were allocated proportions of the sample equal to the proportions of exhaustees that each state contained relative to the national total. For example, California, which contained 15.5 percent of exhaustees in the nation, was allocated 15.5 percent of the exhaustee sample (310 exhaustees). Two states (Louisiana and New Jersey), whose probabilities of selection were greater than 90 percent, were also sampled with certainty and were allocated a proportional sample of exhaustees. One state (New Hampshire) was excluded from the sample frame, since its unique use of uniform calendar-year base periods and benefit periods mean that most claimants do not have a chance to "exhaust" their benefits.[3] The remaining states were categorized into three roughly equal-size groups according to their exhaustion rates, and four states were selected randomly from each group. States that were selected were allocated equal samples of exhaustees within each group. (See Table I.1 for the states and their target sample sizes.)

As noted earlier, a sample of nonexhaustees was also to be selected to permit direct comparisons between the characteristics of exhaustees and nonexhaustees, and to facilitate estimating models of the reasons for exhaustion and the determinants of the lengths of unemployment spells. The sample of 1,000 nonexhaustees was to be selected from the same 20 states selected for the exhaustee sample. It was to include individuals who began collecting UI during the same 12-month period, but who did not subsequently exhaust their benefits. A nationally representative, self-weighting sample of nonexhaustees was then selected by allocating larger numbers of nonexhaustees to states with lower exhaustion rates--a procedure that was required because the selection probabilities of states were proportional to the exhaustee population, rather than to nonexhaustees or to claimants in general.

[3]New Hampshire had only 500 final payments in 1987.

TABLE I.1

UI EXHAUSTEE STUDY SAMPLE SIZE BY STATE

	Exhaustees				Nonexhaustees			
	Number		Distribution (percent)		Number		Distribution (percent)	
	Target Sample	Actual Sample	Target Sample	Actual Sample	Target Sample	Actual Sample	Target Sample	Actual Sample
Alaska	76	73	3.8	3.8	15	18	1.5	1.8
California	311	292	15.5	15.2	131	129	13.1	12.8
Connecticut	75	65	3.7	3.4	89	85	8.9	8.4
Georgia	80	60	4.0	3.1	50	49	5.0	4.9
Illinois	110	109	5.5	5.7	40	44	4.0	4.4
Louisiana	75	76	3.7	4.0	14	14	1.4	1.4
Michigan	95	94	4.7	4.9	53	53	5.3	5.3
Minnesota	76	77	3.8	4.0	32	34	3.2	3.4
Mississippi	81	82	4.0	4.3	45	43	4.5	4.3
Missouri	81	81	4.0	4.2	47	46	4.7	4.6
Montana	77	82	3.8	4.3	24	28	2.4	2.8
New Jersey	74	68	3.7	3.5	31	31	3.1	3.1
New York	148	129	7.4	6.7	64	66	6.4	6.5
North Carolina	75	74	3.7	3.9	72	71	7.2	7.0
Ohio	81	80	4.0	4.2	51	50	5.1	5.0
Oklahoma	76	75	3.8	3.9	31	33	3.1	3.3
Oregon	75	73	3.7	3.8	51	50	5.1	5.0
Pennsylvania	89	94	4.4	4.9	64	66	6.4	6.5
Texas	171	158	8.5	8.2	49	48	4.9	4.8
Wisconsin	75	78	3.7	4.1	48	51	4.8	5.1
Total	2,001	1,920	100.0	100.0	1,001	1,009	100.0	100.0

2. Implementing the Sample Design

All 20 states selected in the first stage agreed to participate in the study. Each state selected a simple random sample of UI claimants who met three requirements: (1) the claimants had established a benefit year between October 1, 1987 and September 30, 1988, (2) the claimants had received at least one UI payment, and (3) the claimants had collected benefits under the regular state UI program or the Unemployment Compensation for Federal Civilian Employees (UCFE) program. Thus, the samples provided by the states and used in the study represent all UI recipients over a twelve-month period, except for individuals who received benefits under the Unemployment Compensation for Ex-service members (UCX) program.[4] This latter group was excluded because the structure of the UCX program differs substantially from the structure of the regular UI programs.

Recipients in the individual state samples were assigned to the exhaustee sample if they had a zero remaining balance in their claim, indicating that they had collected all available benefits during the benefit year (the states provided each individual's UI entitlement, weekly benefit amount, and remaining balance at the time the sample was selected).[5] The remaining recipients were assigned to the nonexhaustee sample.[6]

Since the state samples were constructed between June and October 1989, and since all individuals who had established benefit years in the June to September 1988 period had not reached the end of their benefit year, it is possible that some individuals assigned to the

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[4]It should be noted that the sample frame included special groups of claimants, such as interstate claimants and individuals with combined wage claims.

[5]A few individuals whose administrative records showed a zero UI entitlement and a zero weekly benefit amount were excluded from the sample frame. Previous experience based on UI records data indicates that these individuals are those who initially established a claim and began receiving benefits, but who were subsequently found not to be eligible.

[6]Before assigning all individuals with non-zero remaining balances to the nonexhaustee sample, we checked to determine whether there were substantial numbers of individuals with very small remaining balances who might be considered "exhaustees" even though they had not collected all available benefits. We found very few such cases.

nonexhaustee sample might have ultimately exhausted their benefits. In the study interview (see below), respondents were asked why they had stopped collecting UI. Thirty-three individuals in the nonexhaustee sample said that they had exhausted their benefits. However, program data on these individuals indicated that most of them had completed their benefit years prior to being selected for the sample, and had a remaining balance in their UI entitlement. For this reason, we did not reassign any of these individuals to the exhaustee sample.

After recipients were assigned to the exhaustee or nonexhaustee samples, random subsamples for each state were selected for telephone interviews. Interviewing was conducted from September 1989 to February 1990. The elapsed time between the beginning of benefit receipt for the average respondent and the time of the interview provided an opportunity to gather a 20-month labor-market history. The response rate to the survey was 60 percent for exhaustees and 64 percent for nonexhaustees (see further discussion in Appendix B). Overall, 1,920 exhaustee interviews and 1,009 nonexhaustee interviews were conducted.

Both the exhaustee and the nonexhaustee samples were designed to be nationally representative self-weighting samples, and they have been used this way in the analysis, since the distribution of each sample by state is similar to the distribution called for in the sample design (see Table I.1).[7] However, for some analyses, the two samples were combined to form a nationally representative sample of the UI recipient population. Since exhaustees were oversampled relative to nonexhaustees, we assigned weights to the two sample groups to make the weighted sample proportion of exhaustees equal to the proportion of exhaustees in the population. Because the exhaustion rate for recipients who received a first UI payment during the period from October

[7]State sample sizes were calculated on the basis of 1987 data, but samples were drawn of UI recipients whose benefit years generally began in 1988. This discrepancy meant that state sample sizes might have differed from the most efficient allocation. However, a comparison of state sample sizes that would have been efficient on the basis of 1988 data with the actual sample sizes that were used indicated only small differences. Texas and Louisiana would have received smaller sample sizes (20 and 24 fewer exhaustee interviews, respectively). New York and Michigan would have received larger sample sizes (14 and 12 more exhaustee interviews, respectively). Differences in sample sizes for other states were smaller.

1987 through September 1988 was 27.5 percent, we assigned the nonexhaustees a weight (2.11) that was roughly five times larger than the sample weight for exhaustees (.42).

C. OUTLINE OF THE REPORT

The remainder of this report consists of four chapters. Chapter II analyzes the factors underlying exhaustion. It compares the demographic characteristics, pre-UI job and job separation characteristics, and UI program characteristics of exhaustees with those of nonexhaustees, and then examines the reasons for exhaustion, based on a set of multivariate models. It also compares the exhaustee and nonexhaustee samples with other samples of the unemployed, including samples of UI exhaustees in recessionary periods.

Chapter III analyzes the duration of unemployment. It provides descriptive information on average lengths of unemployment spells, illustrates differences in average lengths of unemployment spells for workers with different recall expectations, and describes the relationship between benefit exhaustion and continued unemployment. It also presents several multivariate models of the length of unemployment spells.

Chapter IV examines the labor-market activities and public assistance program experiences of exhaustees and nonexhaustees. It focuses on their job-search activities, characteristics of post-UI jobs (especially relative to pre-UI jobs), use of reemployment services, participation in training and education programs, and receipt of social security, pension, and public assistance benefits.

Chapter V examines the policy implications of the findings. It discusses evidence from the study about policies for strengthening work incentives, policies for directing reemployment services to dislocated or low-skill workers, and changes in extended benefit policies that would use state exhaustion rates or substate unemployment rates to trigger the start of extended benefits or would direct extended benefits to dislocated workers.

Two appendixes provide a detailed description of the sample design (Appendix A) and a discussion of the survey results and an assessment of potential nonresponse bias (Appendix B).

II. AN ANALYSIS OF THE PROBABILITY OF EXHAUSTION

The central question of this study is why some individuals exhaust their available UI benefits when others do not. We are interested in the specific factors underlying exhaustion because they are likely to indicate different policy responses. Specifically, we are interested in the effect of a wide range of individual and pre-UI job characteristics, UI program characteristics, and local economic characteristics on the probability of exhaustion.

Our analysis of the determinants of UI exhaustion encompasses three components. In Section A, we present simple tabulations of the survey data on the characteristics of exhaustees, and compare these characteristics with those of nonexhaustees. Specifically, we examine (1) demographic characteristics, (2) labor-market characteristics, and (3) UI program characteristics. As in previous studies, we found that exhaustees were more likely than nonexhaustees to be female, older, and black or Hispanic, and that, as expected, exhaustees were concentrated more heavily in weak labor markets. Most importantly, we found that a major distinction between exhaustees and nonexhaustees was their expectation and ultimate likelihood of recall by their pre-UI employer. Individuals who expected to be recalled and had a definite date of recall were largely nonexhaustees, since they were generally on temporary layoffs; individuals with no recall expectations (that is, those on permanent layoffs or who were otherwise permanently separated from their pre-UI job) were more likely to be exhaustees. Individuals who expected to be recalled but had no recall date (that is, those generally on indefinite layoffs) were more likely to be exhaustees than were individuals with definite recall dates, but less likely to be exhaustees than individuals with no recall expectations.

Differences in recall expectations clearly accounted for most of the differences that were observed in the industry and occupational and other pre-UI job characteristics of exhaustees and nonexhaustees. Since they may also account for some of the other differences between exhaustees

and nonexhaustees (for example, demographic differences), much of our subsequent analysis in the chapter controls for recall expectations. Our analysis of descriptive data also points out that it may be useful to think of the exhaustee population as comprising a number of important and possibly overlapping subgroups of individuals. Important subgroups of exhaustees appear to be dislocated workers, workers in seasonal industries, workers with short potential UI benefit durations, workers with weak skills who have difficulty in the labor market, and workers with strong skills who take some time to find an appropriate job match in the labor market.

Section B applies multivariate techniques to analyze the determinants of exhaustion, so as to control simultaneously for the effect of many factors, including recall expectations. The analysis encompasses four subsections that describe the models that are used, discuss econometric issues, present the basic results, and present results by subgroups defined by recall expectation.

The results confirm the importance of recall expectations and temporary layoffs. The probability of exhaustion was very low for individuals with a definite date of recall, higher for those who expected to be recalled but who did not have a recall date, and still higher for those with no recall expectations. We also found that most individual and program characteristics had little effect on the probability of exhaustion for individuals with a definite date of recall (that is, those likely to be on temporary layoff), but that such factors did matter for those in the other two groups.

The multivariate analysis also showed that higher UI wage replacement rates increased the probability of exhaustion, and that longer potential durations lowered the probability of exhaustion. The first of these findings provides evidence of the disincentive effects of the UI program; the second is expected, since longer potential durations provide UI coverage for longer unemployment spells. A number of individual characteristics were also found to be correlated with exhaustion. Perhaps most interesting was that females did not appear to have a higher exhaustion rate, as suggested by the simple comparisons of exhaustees and nonexhaustees in Section A. Instead, females who had working spouses had high exhaustion rates.

Section C compares the characteristics of the exhaustees and nonexhaustees in the sample with the characteristics of UI claimants in recessionary periods, the characteristics of the unemployed population in general, and the characteristics of dislocated workers. These comparisons, particularly those with claimants in recessionary periods, are important, since the results of this study may be used to develop policies for exhaustees during recessionary periods. This latter comparison shows that the current sample of exhaustees, which was selected during a period in which the economy was strong, differs from previous exhaustee populations during recessionary periods. The primary difference is that a greater proportion of the exhaustees during a recessionary period are likely to be from manufacturing and to be job-attached than is the case with those during nonrecessionary periods.

A. THE CHARACTERISTICS OF EXHAUSTEES AND NONEXHAUSTEES

This section presents simple comparisons of (1) the demographic characteristics, (2) the labor-market characteristics, and (3) the UI program characteristics of exhaustees and nonexhaustees.

1. Demographic Characteristics

Table II.1 presents data on the demographic and family economic characteristics of exhaustees and nonexhaustees. An examination of the data indicates that exhaustees were more likely to be female (45 percent) than were nonexhaustees (40 percent), a difference which was statistically significant.[1] Exhaustees were also older and more likely to be black or Hispanic than were nonexhaustees, differences which were also statistically significant. These differences in sex, age, and ethnicity have been found in previous studies that have compared individuals with long spells

[1]Unless otherwise noted, we have termed differences as "statistically significant" based on a two-tail test at the 95 percent confidence level.

TABLE II.1

THE DEMOGRAPHIC AND ECONOMIC CHARACTERISTICS OF EXHAUSTEES AND NONEXHAUSTEES

	Exhaustees	Nonexhaustees
Gender (Percent)		
Male	55.1	60.4
Female	44.9	39.6
Age (Percent)		
Younger Than 25	9.1	13.4
25 to 34	31.4	34.2
35 to 44	25.3	25.0
45 to 54	19.3	16.7
55 to 64	13.5	9.2
65 and Older	1.5	1.6
Race/Ethnicity (Percent)		
White	69.2	76.9
Black	14.8	10.9
Hispanic	11.2	8.9
Other	4.7	3.3
Highest Diploma or Degree Received (Percent)		
Less Than High School	22.6	20.9
High School/GED	51.2	55.9
Vocational/Technical/Associate's	13.4	13.5
Bachelor's	10.1	7.9
Post-Bachelor's	2.6	1.8
Other	0.1	0.0
Married/Living Together at Layoff	58.7	62.4
Married/Living Together at Interview	59.8	65.8

TABLE II.1 (continued)

	Exhaustees	Nonexhaustees
Have Dependents	48.2	51.6
Have Dependent Children Under Age 18	42.2	47.4
Spouse Worked at Layoff	39.8	41.8
Spouse Worked at Interview	42.1	46.9
Household Income 1987		
Under $10,000	21.2	14.5
$10,000 to $20,000	32.0	32.9
$20,001 to $30,000	21.6	24.5
$30,001 to $40,000	10.9	15.4
$40,001 to $50,000	7.5	7.5
$50,001 or More	6.9	5.3
Sample Size	1,920	1,009

SOURCE: Mathematica Policy Research (1990).

[a]These percentages are computed over the entire sample. The percent of married couples with a working spouse can be computed by dividing the percent of the sample with a working spouse by the percent of the sample who were married. For example, at layoff, 67.8 percent of the married exhaustees had a working spouse.

of unemployment, such as UI exhaustees, with individuals with relatively short spells of unemployment.[2]

Other statistically significant differences in the table indicate that exhaustees were both more likely to have less than a high school diploma and more likely to have a bachelor's degree or more. These bimodal differences in educational attainment were echoed by the household income data, which show that exhaustees were more likely than nonexhaustees to report household incomes of less than $10,000. Exhaustees were also more likely than nonexhaustees to have household incomes of $50,000 or greater, although the difference was not statistically significant. These differences in educational attainment and household income suggest that exhaustees may constitute two types of individuals--those with low skills and low incomes who have difficulty competing in the labor market, and those at the opposite end of the spectrum who take some time to find an appropriate job match in the labor market.

A final point is that exhaustees were less likely to be married and less likely to have dependents, differences which were also statistically significant. Exhaustees were also less likely to have a working spouse, but this difference is due to the fact that they were less likely to be married. These differences suggest that the presence of a spouse or dependents may prompt greater job-search efforts, thereby lowering the probability of UI exhaustion. However, as we noted in the introduction to the chapter, the multivariate analysis suggests that the explanation is more complicated. The presence of a spouse led to a lower probability of exhaustion for men but not for women.

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[2]See, for example, Nicholson and Corson (1976), Corson et al. (1977), Corson et al. (1986), and Richardson et al. (1989). Nicholson and Corson (1976) review studies of exhaustees undertaken in the 1950s and 1960s which generally found similar demographic differences.

2. Labor-Market Characteristics

Table II.2 presents data on the characteristics of the pre-UI jobs of UI recipients. The data on weekly wages provide further support for the notion that exhaustees may constitute two types of individuals--those with low skills and low wages, and those with high skills and high wages. Specifically, the wage data show that exhaustees were more likely than nonexhaustees to have received wages of less than $200 per week, a difference that was statistically significant. Exhaustees were also more likely than nonexhaustees to have wages of greater than $800 a week. The low weekly wages received by some exhaustees do not appear to be due to a greater prevalence of part-time work. Exhaustees were more likely than nonexhaustees to work 46 or more hours per week.

The statistically significant differences in job tenure (exhaustees had shorter job tenures), temporary layoff experience (exhaustees were less likely to have previously been laid-off regularly or at all on the pre-UI job), and union status (exhaustees were less likely to have been a union member) are due primarily to differences in the industry and occupation of exhaustees and nonexhaustees. As the data in the table show, exhaustees were concentrated less heavily in manufacturing, an industry characterized by temporary layoffs (see further below), and were concentrated more heavily in services and retail trade. These industry differences are also reflected in the occupational distribution. Exhaustees were more likely to be in administrative support occupations and less likely to be machine operators.

Since layoffs in construction are often short term, we might also expect to find a smaller proportion of exhaustees in the construction industry. The data in the table show such a difference, but, interestingly, it was small and not statistically significant. A substantial number of construction workers appear to have collected enough UI to exhaust their benefits.[3]

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[3]UI administrative data indicate that many of the construction industry recipients collected benefits over a period that was considerably longer than the number of weeks of benefits collected. This finding suggests that these individuals had at least two spells of UI collection.

TABLE II.2

PRE-UI JOB CHARACTERISTICS
(Percent)

	Exhaustees	Nonexhaustees
Weekly Wage		
$200 or Less	21.0	16.7
$201 to $300	23.9	26.4
$301 to $400	18.8	20.3
$401 to $500	12.5	9.8
$501 to $800	16.8	21.4
$801 or More	6.9	5.5
Hours per Week		
34 and Under	7.6	6.7
35 to 39	6.5	4.7
40	46.2	51.7
41 to 45	10.2	11.5
46 or More	29.5	25.4
Job Tenure		
Less Than 6 Months	15.0	12.1
6 to 12 Months	15.3	15.3
13 to 24 Months	16.0	14.3
25 to 36 Months	10.8	9.9
More Than 36 Months	42.8	48.5
Had Previous Layoff from Pre-UI Job	25.5	36.2
Had Layoff on a Regular Basis	13.4	21.1
Union Member	24.2	30.5

TABLE II.2 (continued)

	Exhaustees	Nonexhaustees
Industry		
Agriculture/Forestry/Fishing	4.0	3.2
Mining	1.9	1.7
Construction	14.3	16.8
Durable Manufacturing	16.9	24.7
Nondurable Manufacturing	14.0	18.0
Transportation/Public Utilities	5.0	4.3
Wholesale Trade	3.9	3.2
Retail Trade	11.6	8.6
Finance/Insurance/Real Estate	5.6	3.3
Services	19.0	13.8
Public Administration	3.8	2.6
Seasonal Industry	25.2	24.6
Occupation		
Managerial/Professional	11.6	8.3
Technical and Related Support	1.8	2.0
Sales	6.8	6.0
Administrative Support	19.4	12.2
Service Occupations	9.6	6.4
Mechanics and Repairers	3.9	5.5
Construction and Extractive	8.9	11.4
Precision Production	2.3	2.8
Machine Operators	16.2	25.9
Transportation and Material Moving	6.2	7.3
Handlers	8.6	8.2
Farming, Forestry, and Fishing	4.7	4.2
Sample Size	1,920	1,009

SOURCE: Mathematica Policy Research (1990).

This finding highlights the fact that an important group of UI exhaustees are individuals who work in seasonal industries such as construction. If we define an industry as seasonal when it shows a change in total employment of 15 percent or greater from the first to third calendar quarters,[4] we find that 25 percent of exhaustees worked in seasonal industries. Twenty-five percent of nonexhaustees also worked in seasonal industries according to this definition.

Table II.3 shows further statistically significant differences between exhaustees and nonexhaustees for job separation characteristics. Almost 70 percent of the nonexhaustees reported that they were laid-off due to a lack of work. Layoffs for lack of work were also important for exhaustees (48 percent reported that they were laid-off for lack of work), but considerable proportions of exhaustees also reported that their company closed or moved (16 percent), or that their job or shift was eliminated (9 percent). Interestingly, differences in the probability of reporting having quit or been fired were also statistically significant. In both cases, exhaustees were more likely than nonexhaustees to have quit or been fired.

The fact that a quarter of exhaustees lost their jobs because their company closed or moved or their job or shift was eliminated suggests that an important subset of exhaustees are individuals who can be classified as dislocated workers. Using the Bureau of Labor Statistics (BLS) definition of dislocated workers (Flaim and Sehgal, 1985a and 1985b)--which considers dislocated workers as those who lose their jobs because their plant closed or their employers went out of business, or were laid off without a possibility of recall, and which counts only workers with at least three years

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[4]Specifically, we used data from Employment and Earnings to compare the level of nonagricultural employment by industry for February and August for two years, 1987 and 1988. We found seven nonagricultural 2-digit SIC industries whose employment shifts exceeded 15 percent in both years. We termed these industries "seasonal" industries for this analysis. The industries were SIC code 14, nonmetallic minerals, except fuels (for example, stone and gravel); SIC codes 15, 16, and 17, construction; SIC code 70, hotels and other lodging places; SIC code 79, amusement and recreational services; and SIC code 82, educational services. In addition, we added one 3-digit industry to the seasonal definition--SIC code 203, preserved fruits and vegetables (that is, canning and freezing)--since it exhibited a very high shift in total employment (close to 50 percent). We also added agriculture, forestry, and fishing (SIC codes 01, 02, 08, and 09) to the seasonal definition.

TABLE II.3

PRE-UI JOB SEPARATION CHARACTERISTICS
(Percent)

	Exhaustees	Nonexhaustees
Reason for Job Loss		
Laid-Off	76.1	83.8
Plant or facility closed/company moved	16.2	9.1
Job or shift eliminated	8.9	4.4
Lack of work	48.0	68.0
Other	3.0	2.3
Quit	10.0	6.6
Fired	13.2	8.8
Other	0.7	0.8
Dislocated Worker[a]	20.7	9.0
Expected Recall	33.4	54.3
Had Definite Recall Date	6.2	25.2
Was Recalled	21.4	51.3
Sample Size	1,920	1,009

SOURCE: Mathematica Policy Research (1990).

[a]Dislocated workers were classified according to the Bureau of Labor Statistics definition (Flaim and Sehgal, 1985b). Individuals who were laid-off because a plant or facility closed or moved, because a job or shift was eliminated, or for lack of work were counted as dislocated workers if they had at least three years of job tenure and they were not recalled.

of tenure on the jobs they lost--we find that 21 percent of the exhaustees and 9 percent of the nonexhaustees were dislocated workers.

As highlighted in the introduction, a major difference which accounts for the industry and occupational differences discussed earlier is that exhaustees were less likely than nonexhaustees to be on or to expect that they were on temporary layoffs. The data in Table II.3 indicate that 33 percent of exhaustees expected to be recalled when they left their pre-UI job, compared with 54 percent of nonexhaustees. Furthermore, only 6 percent of exhaustees had a definite recall date, compared with 25 percent of nonexhaustees. Ultimately, 21 percent of exhaustees were recalled, compared with 51 percent of nonexhaustees.

Table II.4 reports data on the local (county) unemployment rate at the start of the UI claim. The data show the expected pattern. In particular, 16 percent of exhaustees were in strong labor markets (an unemployment rate of 4 percent or less), compared with 24 percent of nonexhaustees; 29 percent of exhaustees were in weak labor markets (an unemployment rate over 8 percent), compared with 26 percent of nonexhaustees. Mean local unemployment rates also differed--7.1 percent for exhaustees and 6.5 percent for nonexhaustees. These differences were statistically significant at the 95 percent confidence level in a one-tail test.

3. UI Program Characteristics

Table II.5 reports data on the UI program characteristics of exhaustees and nonexhaustees. Exhaustees collected 23 weeks of UI benefits on average, whereas nonexhaustees collected 9 weeks of UI benefits on average. The data yield two other interesting and statistically significant differences. First, the UI weekly benefit amounts of exhaustees were lower than those of nonexhaustees. That is, a greater proportion of exhaustees received weekly benefits of less than $100, while a lower proportion received weekly benefits of over $200. This difference in the

TABLE II.4

LOCAL UNEMPLOYMENT RATES OF EXHAUSTEES AND NONEXHAUSTEES

	Exhaustees	Nonexhaustees
Local Unemployment Rate		
0 to 4.0	16.0	23.7
4.1 to 6.0	31.4	28.9
6.1 to 8.0	23.2	21.1
8.1 to 10.0	13.8	12.5
10.1 or More	15.6	13.8
Mean	7.1	6.5
Sample Size	1,916	1,008

SOURCE: Mathematica Policy Research (1990).

TABLE II.5

UI PROGRAM CHARACTERISTICS OF EXHAUSTEES AND NONEXHAUSTEES
(Percent)

	Exhaustees	Nonexhaustees
Mean Weeks of UI Collected	23.0	9.0
Weekly Benefit Amount (WBA)		
Less Than or Equal to $100	24.8	20.3
$101 to $150	26.5	28.3
$151 to $200	31.5	30.2
$201 or More	17.3	21.1
WBA/Pre-UI Weekly Wage		
0.0 to 0.4	42.3	41.2
0.5 to 0.6	43.6	46.4
0.7 to 0.8	10.3	9.3
0.9 to 1.0	2.0	2.0
1.0 or More	1.8	1.2
Potential Duration[a]		
Under 15 Weeks	7.6	1.9
15 to 20 Weeks	18.6	10.3
21 to 25 Weeks	13.6	13.8
26 Weeks	60.2	74.0
Multiple Spells of UI Collection[b]	27.2	47.2
Sample Size	1,920	1,009

SOURCE: Mathematica Policy Research (1990).

[a]Because data on potential duration were unavailable for Michigan, a value for potential duration was imputed, whereby the number of weeks from the benefit year beginning date to the last claim week ending date were added to the number of weeks remaining in the claim. The maximum of this value, or 26, was used for potential duration.

[b]The administrative data did not permit us to observe multiple spells of UI collection directly. Instead, individuals were assumed to have multiple spells of UI collection if the time between their benefit year beginning date and the last week of UI collection exceeded the number of weeks of benefits collected by 6 or more weeks.

distribution of UI weekly benefit amounts was not reflected in the data on the gross wage replacement ratio (the weekly benefit amount divided by the pre-UI weekly wage). Instead, the distribution of this variable was quite similar for both exhaustees and nonexhaustees.

Second, and more interesting, is the difference in potential duration. Twenty-six percent of exhaustees had potential UI durations of less than 20 weeks, compared with 12 percent for nonexhaustees. Almost 8 percent of exhaustees had potential durations of less than 15 weeks. This finding indicates that an important group of exhaustees are individuals who qualify for relatively short potential UI durations.

A final point of interest pertains to the prevalence of multiple spells of UI collection within a benefit year. The administrative data that we collected enabled us to compare the elapsed time between the initial UI claim and the last week for which a payment was made with the number of weeks of benefits that were collected. Individuals whose elapsed time exceeded the number of weeks collected by 6 or more weeks were assumed to have collected benefits during two or more periods during the benefit year. As shown in Table II.5, 27 percent of the exhaustees had multiple spells of UI collection according to this definition, compared with 47 percent of the nonexhaustees. This result suggests that many exhaustees (three-quarters) were individuals who experienced a single long spell of unemployment. Other data not reported in the table indicate that the individuals with multiple spells were found more frequently in agriculture, mining, construction, nondurable manufacturing, and public administration than in other industries.

B. A MULTIVARIATE ANALYSIS OF UI EXHAUSTION

In this section, we specify and estimate several multivariate models of UI exhaustion. We use econometric techniques for discrete choice models to derive estimates of the effects of various factors on UI exhaustion, after controlling for a wide variety of worker and program characteristics. The discussion consists of four sections on (1) models of UI exhaustion, (2) econometric issues, (3) basic results, and (4) subgroup results.

1. Multivariate Models of UI Exhaustion

The variable analyzed in this section is whether UI recipients exhaust their benefits, where exhaustion is defined as occurring if a UI recipient receives a final payment. As discussed in Chapter I, the interview sample consists of 1,920 exhaustees and 1,001 nonexhaustees, selected so that the two groups are nationally representative, self-weighting samples of exhaustees and nonexhaustees. Combined, the two groups form a nationally representative sample of the UI recipient population in 1988 if individual respondents are weighted so that the weighted sample proportion of exhaustees equals the proportion of exhaustees in the national population. In 1988, the aggregate ratio of final UI payments to first UI payments (the exhaustion rate) was 27.5 percent. This exhaustion rate, in conjunction with the oversampling of exhaustees in our design, implies that nonexhaustees in our sample should receive a weight that is roughly five times larger than the sample weight for exhaustees.[5]

The variables used to explain UI exhaustion are divided into three groups: (1) worker and pre-UI job characteristics, (2) job separation characteristics and search intensity, and (3) UI program characteristics and whether workers received job training or services from the Job Service.[6] In category (1) we included variables for age, sex, race, education, marital status, pre-UI wage levels, the duration of the pre-UI job, whether the pre-UI job was unionized, had regular layoffs, and was in a manufacturing industry, and whether workers were machinists or construction workers. We also created interaction variables for whether UI recipients were (1) female and married or (2) female with a working spouse at the time of layoff. Solon (1985) found in his study of UI recipients that these interaction variables affected the length of unemployment spells. We

[5]If we impose the condition that the average sample weight equals one, so that the weighted sample size equals the actual sample size, the weights for nonexhaustees and exhaustees in our sample are 2.11 and .42, respectively.

[6]Our choice of explanatory variables was guided by previous work that analyzed the determinants of the length of unemployment spells, UI spells, and UI exhaustion (Moffitt and Nicholson, 1982; Corson and Nicholson, 1983; Moffitt, 1985; Solon, 1985; Katz, 1986; Katz and Meyer, 1988; and Meyer, 1990).

included the local unemployment rate in a worker's county of residence for the month in which he or she filed for benefits, as an index of local economic conditions.

In category (2), we included variables for whether workers reported that they expected to be recalled to their pre-UI job at the time they were laid off, whether they expected recall and had a definite recall date, whether they quit or were fired from their pre-UI job, and the amount of time that workers searched for work per week (zero hours, 1 to 10 hours, and 11 to 20 hours). In category (3) we included the gross UI wage replacement rate and weeks of potential duration on UI, and whether workers received job training or services from the Job Service.

Table II.6 presents the descriptive statistics for the variables used in the analysis. Because the exhaustee and nonexhaustee samples were combined on the basis of appropriate weights, the statistics shown in Table II.6 are estimates of the characteristics of the population of UI recipients in 1988. For example, according to Table II.6, 41 percent of UI recipients in 1988 were female, 12 percent were black, 21 percent did not complete high school, and 29 percent were union members on their pre-UI jobs. Fifty percent of UI recipients expected to be recalled to their pre-UI jobs, and 21 percent were given a definite recall date at the time they were laid off. The average UI wage replacement rate was 44 percent of gross pre-UI wages, and the average potential duration of benefits was 24 weeks.

2. Econometric Issues

Several econometric models can be used for discrete events, such as the exhaustion of UI benefits. The simplest model is a linear probability model, which is a standard linear regression model in which benefit exhaustion is a (0,1) dependent variable. In equation terms, a linear probability model is written as:

$$(1) \quad Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \ldots + \beta_n X_n + u,$$

TABLE II.6

DESCRIPTIVE STATISTICS FOR LINEAR PROBABILITY MODELS
OF UI EXHAUSTION: FULL SAMPLE

	Mean	Standard Deviation
Exhaustion Rate	.275	.446
Age	38.1	12.0
Female	.411	.492
Black	.122	.327
Hispanic	.096	.295
Married	.621	.485
Female and Married	.240	.427
Spouse Worked	.412	.493
Female and Spouse Worked	.194	.396
High School Dropout	.214	.410
College Graduate	.105	.307
Months Worked on Pre-UI Job	5.7	6.8
Union Member on Pre-UI Job	.287	.453
Had Regular Layoffs on Pre-UI Job	.192	.394
Construction Worker	.107	.309
Machinist	.116	.320
Manufacturing Industry	.394	.489
Local Unemployment Rate (Percent)	6.67	3.39
Expected Recall	.504	.500
Expected Recall, Definite Date	.207	.406
Quit Pre-UI Job	.075	.263
Fired from Pre-UI Job	.100	.301
Did Not Look for Work	.332	.471
Looked for Work 1-10 Hours Weekly	.334	.472
Looked for Work 11-20 Hours Weekly	.221	.415
UI Replacement Rate	.440	.496
UI Potential Duration (Weeks)	24.1	3.6
Received Services from Job Service	.543	.498
Received Training	.112	.316
Sample Size	2,929	

SOURCE: Mathematica Policy Research (1990).

NOTE: All statistics were calculated based on weights described in the text.

where Y equals "1" for exhaustees and "0" for nonexhaustees, the X variables are factors that affect exhaustion, the α and β coefficients are parameters to be estimated, and u is a random error term representing unobserved factors that affect exhaustion.

Linear probability models have two recognized drawbacks for analyzing discrete events. The first is that the variance of the random error term differs for different individuals, which causes ordinary least-squares estimates of the model parameters to be inefficient and biases estimates of the *t*-statistics of the parameters upward.[7] The second drawback is they can generate predicted probabilities of exhaustion that are less than zero or greater than one, which are meaningless values. On the other hand, the estimated coefficients of linear probability models have a natural interpretation in terms of the effect of a factor on the probability of exhaustion.

The leading alternatives to linear probability models are logit and probit models (Maddala, 1983). In these models, the probability that a worker exhausts benefits is assumed to be drawn from a logistic distribution (for logit models) or a normal distribution (for probit models), and the parameters of these distributions are assumed to be functions of the explanatory variables. Parameter estimates are obtained through maximum likelihood estimation.

Logit and probit models do not suffer from the two drawbacks of linear probability models: the models are estimated with statistically efficient techniques, and the estimated models generate predicted probabilities of exhaustion that are between zero and one by construction. However, the estimated coefficients from these models do not have a natural interpretation in terms of the probability of exhaustion.

Given these considerations, our estimation strategy was to compare the results from the more advanced econometric models (we chose a logit model) with the results of the linear probability models, to determine whether the advanced models yielded different conclusions about the signs and statistical significance of the coefficients of the variables. As other researchers have found,

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[7]Because benefit exhaustion (Y) is a binomial random variable, its variance is Y(1-Y). The variance is larger for respondents whose probability of exhaustion is close to one-half, and smaller for respondents whose probability of exhaustion is close to zero or one.

we found that the estimation results from the linear probability models were quite similar to the estimation results from the logit models, with significant coefficients from one type of model generally also showing significance in the other type of model. For this reason, we report only the results from the linear probability models.

3. Estimation Results and Discussion

We specified and estimated three models of the probability of exhaustion. The models contained (1) the worker and pre-UI job characteristic variables, (2) these variables plus the job separation and search-intensity variables, and (3) all of these variables plus the UI and service receipt variables. We estimated models in this sequence to provide some insight into the effects of adding the new group of variables on the estimation results from the previous model, and to allow for comparisons with the results from earlier studies that were based on more limited datasets.

The results for model 1 indicate that demographic characteristics and pre-UI job characteristics are correlated with the probability of exhausting UI (as shown in Table II.7, column 1). Older workers and minority workers were more likely to be exhaustees, and construction workers, machinists, workers in manufacturing industries, and workers who experienced regular layoffs were less likely to be exhaustees. Married women were more likely than unmarried women to be exhaustees, and were more likely to be exhaustees if their spouses worked. The local unemployment rate had a significant positive effect on the probability of exhaustion. For model 1, educational levels, years worked on the pre-UI job, and union status had no statistically significant effects on the probability of exhaustion.

When we added recall expectations, job separation characteristics, and search intensities to model 1, we found that recall expectations were strongly associated with UI exhaustion, but being fired from the pre-UI job or quitting the pre-UI job did not affect the exhaustion probability

TABLE II.7

ESTIMATION RESULTS FOR LINEAR PROBABILITY MODELS OF UI EXHAUSTION
(Standard Errors in Parentheses)

Dependent Variable: Exhausted UI = 1	(1)	(2)	(3)
Age	.005	.005	.005
	(.001)	(.001)	(.001)
Female	-.048	.041	.038
	(.029)	(.030)	(.030)
Black	.095	.093	.080
	(.027)	(.027)	(.027)
Hispanic	.062	.040	.046
	(.032)	(.032)	(.031)
Married	-.101	-.090	-.089
	(.030)	(.030)	(.029)
Female and Married	.074	.056	.058
	(.054)	(.055)	(.055)
Spouse Worked	.000	-.008	-.006
	(.029)	(.029)	(.029)
Female and Spouse Worked	.066	.096	.087
	(.053)	(.054)	(.054)
High School Dropout	.009	.023	.027
	(.023)	(.023)	(.023)
College Graduate	.037	.006	.008
	(.030)	(.030)	(.031)
Years Worked on Pre-UI Job	-.003	-.001	-.000
	(.002)	(.002)	(.002)
Union Member on Pre-UI Job	-.006	.028	.035
	(.021)	(.021)	(.021)
Had Regular Layoffs on Pre-UI Job	-.092	-.025	-.041
	(.023)	(.024)	(.024)
Construction Worker	-.056	-.059	-.053
	(.037)	(.037)	(.037)
Machinist	-.098	-.051	-.052
	(.029)	(.030)	(.029)
Manufacturing Industry	-.093	-.048	-.047
	(.021)	(.022)	(.022)
Local Unemployment Rate	.012	.012	.009
	(.003)	(.003)	(.003)
Expected Recall	____	-.084	-.088
		(.025)	(.024)
Expected Recall, Definite Date	____	-.148	-.135
		(.026)	(.026)
Quit Pre-UI Job	____	.015	.007
		(.036)	(.035)

TABLE II.7 (continued)

Dependent Variable: Exhausted UI = 1	(1)	(2)	(3)
Fired from Pre-UI Job	———	-.023 (.031)	-.020 (.030)
Did Not Look for Work	———	-.093 (.034)	-.060 (.035)
Looked for Work 1-10 Hours Weekly	———	.002 (.031)	.001 (.031)
Looked for Work 11-20 Hours Weekly	———	.005 (.032)	.003 (.032)
UI Replacement Rate	———	———	-.003 (.048)
UI Potential Duration	———	———	-.017 (.002)
Received Services from Job Service	———	———	.048 (.019)
Received Training	———	———	.066 (.078)
Constant	.186 (.045)	.197 (.051)	.580 (.081)
$\bar{R}^2$	.052	.105	.128
Sample Size	2,579	2,439	2,439

SOURCE: Mathematica Policy Research (1990).

NOTE: All estimates were calculated based on weighted least squares. Weights are defined in the text.

significantly (Table II.7, column 2). Several results from model 1 were also affected by the addition of the new variables. The negative effects of experiencing regular layoffs and being a machinist or working in the manufacturing industry on exhaustion were reduced noticeably. It appears that these effects are due partly to the greater propensity of workers with these characteristics to expect to be recalled to their pre-UI job.

The estimated coefficient for the "did not look for work" variable indicated that workers who did not look for work were less likely to be exhaustees than workers who did look for work. This result may be due to the fact that workers who did not look for work may have had more information about their likelihood of recall. Unemployed workers who spent more time looking for work may have been aware that they would have a difficult time returning to work if they did not search extensively. We analyze this issue in subsection B.4, in which we estimate separate models for respondents according to their recall status.

The estimated negative effect of having a definite recall date on exhaustion is large. According to the estimated coefficients in Table II.7, column 2, a worker with average characteristics[8] who did not expect to be recalled had a probability of exhaustion of .35. However, a worker with average characteristics who expected to be recalled and who had a definite recall date had a probability of exhaustion of .12.[9] Having a definite recall date thus reduces the probability of exhaustion by approximately 65 percent, after other differences among workers are controlled for.

When we added program variables to model 2, we found that the potential duration of UI benefits had a strong effect on the probability of exhaustion (Table II.7, column 3), as one would expect, since longer potential durations provide UI coverage for longer unemployment spells. The estimated coefficient for potential duration indicates that an "average worker" with a potential

[8]By "average characteristics," we mean that the values of the explanatory variables are set equal to the sample mean values shown in Table II.6.

[9]The difference is the sum of the coefficients on the expected recall and the expected recall with a definite date variables.

benefit duration of 15 weeks had a predicted probability of exhaustion of .43, whereas an average worker with a potential benefit duration of 26 weeks had a predicted probability of exhaustion of .24. The implied elasticity of the exhaustion probability in terms of potential duration--the percentage change in the exhaustion probability due to a percentage change in potential duration--is -1.5, according to sample mean values for the exhaustion rate and potential duration.[10]

Some observers of the UI system (see, for example, Corson and Nicholson, 1982) have argued that one objective of extending benefits during recessionary periods could be to hold overall exhaustion rates constant. If this criterion were applied, model 3 would suggest that it would be necessary to extend potential duration by a half week to hold the exhaustion rate constant if local unemployment rates rose by one point. This estimate is lower than the approximately 3-week estimate provided by Corson and Nicholson (1982). However, this previous estimate was based on the state insured unemployment rate (IUR), rather than on the local unemployment rate. To compute a comparable number, we re-estimated our model by substituting the state IUR for the local unemployment rate. This change in specification did not affect the estimates for potential duration (the potential duration coefficient was -.019) or the other independent variables, but it did provide a larger estimate for the unemployment rate (the IUR coefficient was .040). These estimates imply that if the IUR rose by one point it would be necessary to extend potential duration by approximately 2 weeks to hold the exhaustion rate constant, an estimate which is roughly comparable to the 3-week estimate.

The results in column 3 of Table II.7 also indicate that higher UI replacement rates are correlated with a lower probability of exhaustion, which is opposite from the expected effect, but the estimated coefficient is small and statistically insignificant (see further discussion in the following section). The results show that the receipt of training and the receipt of services from the Job Service were positively correlated with exhaustion. These results are not informative about the effectiveness of training or Job Service services. Rather, they are probably due to the fact that

[10]The elasticity is computed as the estimated potential duration coefficient multiplied by the ratio of the average potential duration to the average exhaustion rate of the sample.

workers who are unemployed longer are more likely to take advantage of training and reemployment services.

4. Subgroup Analysis of UI Exhaustion

Unemployed workers who expected to be recalled are likely to exhibit different job-search behavior than workers who do not expect to be recalled (Katz, 1986; and Katz and Meyer, 1988). In conceptual terms, the possibility of being recalled to their pre-UI jobs prompts workers to invest less time and money in searching for new jobs. As shown in Table II.8, our sample contains clear evidence of these behavioral differences: 70 percent of the workers in our sample who had a definite recall date did not look for work, and 34 percent of the workers who expected to be recalled but did not have a definite date did not look for work. In contrast, only 17 percent of the workers who did not expect to be recalled did not look for work.

However, the linear probability models estimated in the previous section impose uniformity on the relationship between the explanatory variables and the probability of exhaustion for workers who did not expect to be recalled and for workers who did expect to be recalled. To determine whether separate models were appropriate for workers with different recall expectations, we estimated separate models for workers who did not expect to be recalled, workers who expected to be recalled but did not have a definite recall date, and workers who expected to be recalled and did have a definite recall date. Table II.8 contains descriptive statistics on the three subgroups. Compared with workers who did not expect to be recalled, workers who expected to be recalled were less likely to be exhaustees, and were generally less educated, had worked more years for their pre-UI employers, were more likely to be union members, were more likely to have experienced regular layoffs in the past, and were more likely to be machinists or to work in manufacturing industries.

TABLE II.8

DESCRIPTIVE STATISTICS BY RECALL STATUS
(Means and Standard Deviations)

	(1) Did Not Expect Recall	(2) Expected Recall, No Definite Date	(3) Expected Recall, Definite Date
Exhausted UI	.360	.263	.084
	(.445)	(.446)	(.349)
Age	37.0	38.5	39.6
	(10.8)	(12.4)	(15.4)
Female	.409	.332	.521
	(.457)	(.477)	(.499)
Black	.114	.116	.155
	(.295)	(.325)	(.361)
Hispanic	.089	.129	.070
	(.264)	(.340)	(.255)
Married	.581	.649	.681
	(.493)	(.477)	(.466)
Female and Married	.220	.211	.332
	(.414)	(.413)	(.471)
Spouse Worked	.395	.416	.458
	(.488)	(.493)	(.498)
Female and Spouse Worked	.181	.168	.269
	(.385)	(.378)	(.443)
High School Dropout	.141	.297	.287
	(.324)	(.462)	(.452)
College Graduate	.165	.039	.037
	(.371)	(.194)	(.188)
Years Worked on Pre-UI Job	4.17	6.22	8.38
	(5.46)	(7.07)	(9.50)
Union Member on Pre-UI Job	.191	.364	.419
	(.365)	(.487)	(.493)
Had Regular Layoffs on Pre-UI Job	.048	.338	.358
	(.197)	(.473)	(.479)
Construction Worker	.103	.165	.042
	(.283)	(.377)	(.200)
Machinist	.053	.134	.236
	(.208)	(.346)	(.425)

TABLE II.8 (continued)

	(1) Did Not Expect Recall	(2) Expected Recall, No Definite Date	(3) Expected Recall, Definite Date
Manufacturing/Industry	.286 (.420)	.414 (.499)	.643 (.479)
Local Unemployment Rate	6.35 (2.92)	7.31 (3.91)	6.62 (4.00)
Did Not Look for Work	.166 (.345)	.342 (.480)	.702 (.457)
Looked for Work 1-10 Hours Weekly	.362 (.447)	.394 (.495)	.191 (.155)
Looked for Work 11-20 Hours Weekly	.298 (.425)	.187 (.396)	.08 (.271)
UI Replacement Rate	.423 (.177)	.442 (.184)	.465 (.226)
UI Potential Duration (Weeks)	24.2 (0.34)	23.7 (0.39)	24.5 (0.39)
Received Services from Job Service	.655 (.441)	.543 (.498)	.277 (.448)
Received Training	.155 (.336)	.076 (.267)	.054 (.226)
Sample Size	1,625	810	371

SOURCE: Mathematica Policy Research (1990).

NOTE: All statistics were calculated based on weights described in the text.

As shown in Table II.9, a comparison of subgroup estimation results for the full linear probability model of exhaustion (model 3) reveals sharp differences in the effects of some factors on the probability of exhaustion, depending on recall status.[11] Workers who did not expect to be recalled were more likely to be exhaustees if they were older, black, less educated, and union members. These factors generally had little effect on the probability of exhaustion for workers who expected to be recalled, regardless of whether they had recall dates. The effects of industry and occupation on exhaustion were not evident for workers who did not expect to be recalled, suggesting that the effects of these factors observed earlier for the full sample did in fact reflect their correlation with recall status. On the other hand, workers who were on indefinite recall (they expected to be recalled but were not given definite recall dates) were much less likely to be exhaustees if they were construction workers, machinists, or working in manufacturing industries.

The subgroup results also show that, as expected, longer UI potential durations reduced the probability of exhaustion among all subgroups. Moreover, the estimated parameters suggest that this effect was larger for workers who expected to be recalled than for workers who did not. Interestingly, the UI replacement rate, which had a negative and statistically insignificant coefficient in the pooled regressions, now has a positive sign and a statistically significant coefficient for the subgroup who did not expect to be recalled, suggesting that higher replacement rates increase the probability of exhaustion for this group.

These subgroup differences are reasonable if one believes that workers who expect to be recalled do not search for new jobs or search only moderately, as suggested by the evidence in

[11]We formally tested for differences in the parameters of the subgroup models using the Chow test (Maddala, 1977). We first tested the hypothesis that the coefficients for the subgroup who expected to be recalled (regardless of whether workers had definite recall dates) were the same as the coefficients for the subgroup who did not. The computed test statistic of 3.3 is statistically significant at any reasonable confidence level, which implies that we can reject the hypothesis of equal coefficients for the two groups. We then tested the hypothesis that the coefficients for the subgroup who expected to be recalled but had a definite recall date were the same as the coefficients for the subgroup who expected to be recalled and did not have a definite recall date. The computed test statistic of 1.6 was significant at the 95 percent confidence level.

TABLE II.9

ESTIMATION RESULTS FOR LINEAR PROBABILITY MODELS OF UI EXHAUSTION, BY RECALL STATUS
(Standard Errors in Parentheses)

Dependent Variable: Exhausted UI = 1	(1) Did Not Expect Recall	(2) Expected Recall, No Definite Date	(3) Expected Recall, Definite Date
Age	.008	.003	.001
	(.001)	(.002)	(.001)
Female	-.051	.050	.018
	(.040)	(.063)	(.055)
Black	.138	.030	.044
	(.040)	(.055)	(.042)
Hispanic	.020	.048	.073
	(.046)	(.055)	(.060)
Married	-.143	-.061	-.013
	(.044)	(.053)	(.056)
Female and Married	-.027	-.004	.012
	(.084)	(.110)	(.086)
Spouse Worked	.017	-.029	-.001
	(.043)	(.051)	(.049)
Female and Spouse Worked	.244	.074	-.006
	(.084)	(.107)	(.080)
High School Dropout	.057	.019	.017
	(.039)	(.041)	(.033)
College Graduate	.013	.023	-.017
	(.035)	(.085)	(.079)
Years Worked on Pre-UI Job	.008	-.004	.002
	(.002)	(.003)	(.002)
Union Member on Pre-UI Job	.068	-.002	.032
	(.036)	(.035)	(.031)
Had Regular Layoffs on Pre-UI Job	-.033	-.093	.026
	(.066)	(.037)	(.031)
Construction Worker	-.014	-.103	.023
	(.058)	(.053)	(.092)
Machinist	.008	-.077	-.035
	(.057)	(.054)	(.038)

TABLE II.9 (continued)

Dependent Variable: Exhausted UI = 1	(1) Did Not Expect Recall	(2) Expected Recall, No Definite Date	(3) Expected Recall, Definite Date
Manufacturing Industry	-.045	-.115	.022
	(.030)	(.043)	(.042)
Local Unemployment Rate	.015	-.000	.010
	(.004)	(.005)	(.005)
Did Not Look for Work	-.025	-.073	-.096
	(.047)	(.071)	(.107)
Looked for Work 1-10 Hours Weekly	-.032	.033	-.022
	(.038)	(.067)	(.107)
Looked for Work 11-20 Hours Weekly	-.048	.085	-.031
	(.038)	(.071)	(.113)
UI Replacement Rate	.131	-.142	-.053
	(.068)	(.094)	(.084)
UI Potential Duration	-.012	-.017	-.030
	(.004)	(.004)	(.005)
Received Services from Job Service	.029	.042	.065
	(.027)	(.037)	(.036)
Received Training	.055	.070	.082
	(.034)	(.062)	(.064)
Constant	.244	.773	.746
	(.116)	(.149)	(.172)
$\bar{R}^2$	.089	.104	.274
Sample Size	1,407	696	336

SOURCE: Mathematica Policy Research (1990).

NOTES: All estimates were calculated based on weighted least squares. Weights are defined in the text.

Table II.8. In this case, whether workers who expect to be recalled exhaust their UI benefits will be determined almost entirely by whether workers are recalled before their benefits end. For workers who expect to be recalled, personal characteristics and job-related characteristics will affect the probability of exhaustion only to the extent that these factors are correlated with workers' having a job that experiences temporary layoffs or their being at an early or late point in the recall queue. UI wage replacement rates would have little effect on exhaustion, because any disincentive effects that replacement rates have on search behavior is moot for workers who are not likely to search in the first place. And because search is not taking place or is limited, workers who expect to be recalled and have short potential benefit durations are more likely to be exhaustees in the mechanical sense that recall is more likely to occur after exhaustion for such workers.

On the other hand, for workers who do not expect to be recalled, such factors as age, race, and education may play an important role in determining whether the search for new jobs is fruitful and, consequently, whether UI benefits are exhausted. Given the limitations of our data, we cannot trace with certainty the causal links between our explanatory factors and the probability of exhausting UI benefits. For example, the estimated result that older workers are more likely to be exhaustees may be due to the fact that employers are averse to hiring older workers, or that older workers do not search for new jobs effectively. Workers with low UI replacement rates may find new jobs more quickly because lower UI benefits give them a greater incentive to return to work, or they may be in high-wage occupations that are in demand.[12] A lack of education may signify inadequate job skills in an increasingly technological society, or it may mean that less-educated workers have greater difficulty in reading and responding to help-wanted advertisements.

[12]Because maximum weekly UI benefits are in place, UI recipients who receive the maximum benefit will have low replacement rates if they earned high wages on their pre-UI job.

TABLE II.10

DEMOGRAPHIC CHARACTERISTICS OF SELECTED GROUPS OF UI RECIPIENTS IN RECESSIONARY PERIODS
(Percent)

		1981 - 1983		
	1974 - 1975 FSB Recipients	FSC Recipients	UI-Only Recipients	1988 UI Exhaustees
Gender				
Male	52.6	63.3	61.8	55.1
Female	47.4	36.7	38.2	44.9
Age				
Younger Than 25	21.3	17.2	20.9	9.1
25 to 54	56.9	70.4	66.3	75.9
55 to 64	13.5	11.0	11.5	13.5
65 and Older	8.2	1.3	1.3	1.5
Race/Ethnicity				
White	84.7	77.6	81.7	69.2
Black	15.2	15.9	13.1	14.8
Hispanic	-- [a]	6.5	5.2	11.2
Other	--	--	--	4.7
Married	61.2	54.7	59.0	58.7
Had Dependents	n.a.	52.6	53.2	48.2
Spouse Worked at Layoff	n.a.	33.9	38.8	39.8

SOURCE: Corson et al. (1986). The FSB data that are reported in this study come from Brewster et al. (1977). The 1988 data come from the Survey of UI Recipients and Exhaustees, Mathematica Policy Resarch (1990).

NOTE: The FSC and UI-only recipients are individuals who began collecting UI benefits during the period from June 1, 1981 to December 31, 1983. The samples are simple random samples of claimants from the 13 states that participated in the Continuous Wage and Benefit History project. The samples are representative of these 13 states but not the United State as a whole. The FSB recipients began collecting FSB in the first six months of 1975. The sample was drawn from 12 states. The data were weighted to be representative of the national FSB population.

[a]Hispanics were not broken down separately in the FSB study.

n.a. = not available.

TABLE II.11

PRE-UI JOB AND JOB SEPARATION CHARACTERISTICS OF SELECTED GROUPS OF UI RECIPIENTS IN RECESSIONARY PERIODS
(Percent)

		1981 - 1983		
	1974 - 1975 FSB Recipients	FSC Recipients	UI-Only Recipients	1988 UI Exhaustees
Industry				
Agriculture, Forestry, and Fishing	0.7	1.4	1.6	4.0
Mining	0.3	1.7	1.1	1.9
Construction	10.6	12.7	12.5	14.3
Durable Manufacturing	24.0	25.5	22.7	16.9
Nondurable Manufacturing	20.1	14.1	25.7	14.0
Transportation/Public Utilities	4.7	3.9	3.9	5.0
Wholesale Trade	2.6	5.7	4.3	3.9
Retail Trade	15.5	12.3	9.7	11.6
Finance and Service Industries	17.1	20.0	16.0	24.6
Public Administration	4.4	2.8	2.6	3.8
Expected Recall	n.a.	43.6	65.8	33.4
Had Definite Recall Date	n.a.	8.1	32.0	6.2
Recalled	17.4	34.2	62.2	21.4

SOURCE: Corson et al. (1986). The FSB data that are reported in this study come from Brewster et al. (1977). The 1988 data come from the Survey of UI Recipients and Exhaustees, Mathematica Policy Research (1990).

NOTE: The FSC and UI-only recipients are individuals who began collecting UI benefits during the period from June 1, 1981 to December 31, 1983. The samples are simple random samples of claimants from the 13 states that participated in the Continuous Wage and Benefit History project. The samples are representative of these 13 states but not the United States as a whole. The FSB recipients began collecting FSB in the first six months of 1975. The sample was drawn from 12 states. The data were weighted to be representative of the national FSB population.

n.a. = not available.

A comparison of the 1988 exhaustees with FSB recipients from the 1974-75 recession also indicates that the nonrecessionary exhaustees in our sample were concentrated less in durable manufacturing. However, unlike the 1981-83 recession, the 1974-75 recession was characterized by unemployment in nondurable manufacturing. Thus, the proportion of FSB recipients from both durable and nondurable manufacturing (44 percent) far exceeded the proportion found for the 1988 exhaustees (31 percent). Because unemployment in 1974-75 was high in both durable and nondurable manufacturing and because nondurable manufacturing contains a sizeable female workforce,[14] the high proportion of males found among FSC recipients relative to the 1988 exhaustees was not found for the FSB recipients.[15]

These comparisons suggest that the sample of exhaustees surveyed for this study will differ from the population of exhaustees in future recessions. Based on the comparisons with the 1974-75 and 1981-83 periods, the primary difference is likely to pertain to the degree to which exhaustees come from manufacturing and the degree to which they are ultimately recalled by their pre-UI employers. More specifically, the proportion of exhaustees who are job-attached is likely to rise during recessionary periods. This likely outcome should be considered when alternative policies for exhaustees are assessed in the future.

Another useful set of comparisons is between the characteristics of the UI recipients surveyed for this report and the characteristics of the general population of unemployed individuals. About 30 percent of unemployed individuals are UI claimants, and the remainder are individuals who are

[14]Data for 1988 (Employment and Earnings, January 1989) show that 27 percent of the employed population in durable manufacturing were female, and 42 percent of the employed population in nondurable manufacturing were female. Overall, 45 percent of the employed population were female.

[15]The FSB population contained more recipients age 65 or older than did either the FSC or 1988 exhaustee populations. This difference can be explained by the 1978 change in UI law that made recipients of social security ineligible for UI.

either not eligible for UI or who choose not to file.[16] Data on the demographic characteristics of the unemployed population in 1988 are reported in Tables II.12 and II.13, broken down by the duration of unemployment.[17] A comparison of these data with those for the exhaustee and nonexhaustee samples shows that age is the primary demographic difference between the general population of unemployed individuals and UI recipients. Both samples of UI recipients are older than the unemployed population in general. This difference is also reflected by the higher proportion of married individuals among UI recipients than is found among the unemployed in general. The only other demographic difference of note is that males represent a larger proportion of the population unemployed for 27 weeks or more than they do the population unemployed for less than 27 weeks. The reverse finding applies to the UI population: the exhaustee population contains a lower proportion of males than does the nonexhaustee population.

Table II.13 presents data on industry and occupation. The primary difference between the UI population and the general population of unemployed individuals is that the UI population is concentrated more heavily in manufacturing than the general unemployed population. Conversely, the proportion of the unemployed population in wholesale and retail trade and the service industries exceeds the proportion of the UI population in these industries. These differences are also reflected in the occupational distributions, in which the proportion of UI recipients in service occupations is lower than the proportion found for the general unemployed population. The reverse situation applies to the operator, fabricator, and laborer category. These industry and occupational differences are most pronounced when we compare nonexhaustees with individuals

[16]Unemployed individuals who are not eligible to receive UI include new labor-market entrants and reentrants, and individuals with insufficient wage credits or voluntary separations. At any point in time, unemployed individuals who have exhausted UI will largely also be ineligible for further benefits.

[17]The data reported in the table are derived from the Current Population Survey and Employment and Earnings. The duration of unemployment is the duration at the point that the survey is conducted.

TABLE II.12

DEMOGRAPHIC CHARACTERISTICS OF SELECTED GROUPS OF UNEMPLOYED PERSONS
(Percent)

	1988 CPS				
	Unemployed Less Than 27 Weeks	Unemployed 27 or More Weeks	1983-1987 Dislocated Workers	UI Recipients	
				Nonexhaustees	Exhaustees
Gender					
Male	52.9	66.4	63.5	60.4	55.1
Female	47.1	33.6	36.5	39.6	44.9
Age					
Younger Than 25	39.7	18.1	3.2	13.4	9.1
25 to 34	28.6	30.4		34.2	31.4
35 to 44	16.5	23.7	77.9	25.0	25.3
45 to 54	9.1	15.0		16.7	19.3
55 to 64	4.9	11.0	14.8	9.2	3.5
65 and Older	1.2	1.7	4.1	1.6	1.5
Married	36.7	44.9	n.a.	62.4	58.7

SOURCE: The CPS estimates for 1988 were computed from data in Employment and Earnings, U.S. Department of Labor, Bureau of Labor Statistics, January 1989, Household Data, Annual Averages, Table 15. The displaced workers survey data were computed from data in Herz (1990). The UI recipient come from the Survey of UI Recipients and Exhaustees, Mathematica Policy Research (1990).

NOTE: The CPS estimates are 1988 annual averages for unemployed persons 16 years old or older.

n.a. = not available.

TABLE II.13

INDUSTRY AND OCCUPATION OF SELECTED GROUPS OF UNEMPLOYED PERSONS
(Percent)

	1988 CPS		1983-1987 Dislocated Workers	UI Recipients	
	Unemployed Less Than 27 Weeks	Unemployed 27 or More Weeks		Nonexhaustees	Exhaustees
Industry					
Agriculture, Mining	3.6	2.3	5.6	4.7	5.9
Construction	12.4	11.0	8.4	16.8	14.3
Durable Manufacturing	10.7	18.1	26.6	24.7	16.9
Nondurable Manufacturing	8.9	9.3	12.1	18.0	14.0
Transportation/ Public Utilities	4.8	6.5	6.3	4.3	5.0
Wholesale and Retail Trade	26.0	21.8	20.2	11.8	15.5
Finance and Service Industries	30.6	27.0	17.8	17.1	24.6
Public Adminis-tration	3.1	4.0	2.9	2.6	3.8
Occupation					
Managerial, Professional	9.9	9.8	17.6	8.3	11.6
Technical, Sales, and Administrative Support	25.8	21.8	28.5	20.2	28.0

TABLE II.13 (continued)

	1988 CPS				
	Unemployed Less Than 27 Weeks	Unemployed 27 or More Weeks	1983-1987 Dislocated Workers	UI Recipients	
				Nonexhaustees	Exhaustees
Service Occupations	19.8	16.8	6.7	6.4	9.6
Precision Production, Craft, and Repair	13.0	14.5	18.0	19.7	15.1
Operators, Fabricators, and Laborers	26.9	33.2	28.1	41.4	31.0
Farming, Forestry, and Fishing	4.5	3.9	1.1	4.2	4.7

SOURCE: The CPS estimates for 1988 were computed from data in Employment and Earnings, U.S. Department of Labor, Bureau of Labor Statistics, January 1989, Household Data, Annual Averages, Table 16. The displaced workers survey data were computed from data in Herz (1990). The UI recipient data come from the Survey of UI Recipients and Exhaustees, Mathematica Policy Research (1990).

NOTE: The CPS estimates are 1988 annual averages obtained for unemployed persons 16 years old or older. Individuals with no previous work experience are excluded from the distributions.

who were unemployed less than 27 weeks. They are less pronounced when we compare exhaustees with individuals unemployed 27 or more weeks, suggesting that UI exhaustees comprise a larger proportion of such individuals than do UI claimants in the overall unemployed population.

A final set of comparisons can be made with the population of dislocated workers identified by the Bureau of Labor Statistics (BLS). These comparisons are also reported in Tables II.12 and II.13 for the latest group of dislocated workers surveyed by the BLS--dislocated workers in 1983-87. Dislocated workers were more likely to be male and to be older than exhaustees. They were also more likely than exhaustees to have come from durable manufacturing and wholesale and retail trade. Somewhat surprisingly, the most pronounced occupational difference is that dislocated workers were more likely than exhaustees to be in managerial and professional occupations.[18] These differences may be due in part to the fact that UI exhaustees became unemployed in 1988, while dislocated workers became unemployed in 1983-87. However, the differences are also due to the fact that dislocated workers represent only about 20 percent of the UI exhaustee population.

[18]The BLS study (Herz, 1990) noted that the occupational distribution of the dislocated workers in this latest survey differed from that found in the previous surveys. Operators, fabricators, and laborers were a predominant group in the previous surveys, but their prominence declined in the latest period.

III. ANALYSIS OF THE LENGTH OF UNEMPLOYMENT SPELLS

The length of unemployment differs considerably among UI recipients. These differences in lengths of spells can be attributed to a number of factors, including the intensity of job-search activities, the availability of new job opportunities, the timing of recalls, the prevailing wage levels offered by employers, and the parameters of state UI programs.

In this chapter we analyze the length of unemployment spells from both a descriptive and a multivariate perspective.[1] The descriptive analysis confirms the powerful influence of the reason for job separation (temporary layoffs versus permanent layoffs or other separations) on the amount of time spent unemployed. Unemployed workers who expected to be recalled returned to work more quickly than unemployed workers who did not expect to be recalled. Recall expectations were generally accurate. Most workers who expected to be recalled were in fact recalled, and most workers who did not expect to be recalled were not. Workers who expected to be recalled but who instead found new employers generally experienced much longer unemployment spells than workers who were recalled.

In the multivariate analysis, we specify and estimate models of the duration of unemployment. Several factors emerge as important determinants of unemployment duration, including recall status, demographic and educational characteristics, occupation and industry type, and local unemployment rates. The effects of UI program variables on the duration of unemployment are found to vary considerably according to recall status, whether unemployment spells or spells on the UI program are analyzed, and whether workers are likely to have multiple spells of benefit receipt.

[1]More precisely, we analyze the length of periods in which respondents did not work. During these periods, respondents could have been unemployed or out of the labor force, as defined in the Current Population Survey.

The analysis is presented in three sections. Section A discusses conceptual models of lengths of unemployment spell, and Sections B and C present descriptive and multivariate analyses of lengths of unemployment spells, respectively.

A. CONCEPTUAL MODELS OF LENGTHS OF UNEMPLOYMENT SPELLS

A large body of theoretical and empirical literature on the underlying determinants of the length of unemployment spells (specifically, search activity and economic conditions) has emerged in the previous two decades (Mortensen, 1986). In the initial search models of unemployment, workers were assumed to be unemployed and searching for new jobs. More recent models have incorporated the possibility that unemployed workers can be recalled to their previous jobs (Katz, 1986; and Katz and Meyer, 1988). These models determine the length of unemployment spells as a function of such factors as the intensity of search activity, the rate at which new job offers are received, the prevailing distribution of wages offered by employers, and the prevailing distribution of workers' reservation wages (the wages at which workers are indifferent toward returning to work or remaining unemployed).

When unemployment insurance is introduced in these models, increases in the two key parameters of an unemployment insurance program--the rate at which UI benefits replace wages (the replacement rate) and the potential duration of UI benefits--are found analytically to increase the expected length of unemployment spells. The intuition behind these effects is that increases in the replacement rate or the potential duration of UI benefits increase the well-being (or income) of workers while they are unemployed. The increase in well-being while unemployed increases the length of unemployment spells, because workers can be more selective about waiting to be recalled or accepting better job offers. The empirical evidence on the effects of the UI

program on unemployment spells is consistent with the predictions of search models (Solon, 1985; Katz and Meyer, 1988; and Meyer, 1990).[2]

B. DESCRIPTIVE ANALYSIS OF THE LENGTHS OF UNEMPLOYMENT SPELLS

In this section we present and discuss several useful tabulations of the lengths and outcomes of unemployment spells. We focus particularly on the time spent out of work, defined as the interval between the date on which respondents reportedly stopped working for their pre-UI employers and the date they reportedly went back to work, either for their pre-UI employers or new employers. Other duration variables, such as the length of time from UI exhaustion to reemployment, are discussed in more detail in subsection C.3.

The characteristics of economic quantities are frequently described in terms of their average values and the degree of dispersion around the average values. For example, if the income distribution were being described, we would typically note the value of the mean (or median) of the distribution and its variance, or average distance from the mean. However, for quantities that are in units of time, such as unemployment spells, it is frequently not possible to observe both the starting and ending points for all spells. When starting points are unobserved, the resulting spells are termed "left-censored." When ending points are unobserved, the resulting spells are referred to as "interrupted," "incomplete," or "right-censored." When censoring is present, observed spell lengths will generally be less than true spell lengths, which biases measures of mean or median lengths downwards. By design, the questions asked in our survey of UI recipients enabled us to

[2]Another important prediction from search models is that the rate of job finding should increase in the time interval around the point of exhaustion. We discuss this issue in more detail in Section III.B.

establish the starting points of unemployment spells, which eliminated the left-censoring problem.[3] However, about 16 percent of the unemployment spells in our survey were right-censored, with respondents not yet having returned to work at the time they were interviewed for the survey.[4]

An alternative method for describing unemployment spell distributions that takes into account incomplete spells is to examine the proportion of the population whose spells end within a specified interval. Table III.1 shows the proportion of survey respondents who had returned to work within a specified number of weeks, for the full sample and for subgroups based on recall status. Sample observations were weighted so that the resulting estimates can be viewed as characteristics of the aggregate population of UI recipients.[5]

As shown in Table III.1, 14 percent of UI recipients had returned to work after five weeks, 46 percent had returned to work after 15 weeks, and 63 percent had returned to work after 25 weeks. The pace of reemployment drops off noticeably as weeks of unemployment increase. The average weekly reemployment rate is roughly 4 percent up to 15 weeks, and thereafter

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[3]The dating of the beginning of unemployment spells may be somewhat inaccurate due to the retrospective nature of the survey. For example, some respondents did not recall the exact starting date of their unemployment spells, but stated that their spells began in a particular month. In these cases we assigned starting values of the fifteenth of the month for the unemployment spells, which may be inexact by roughly two weeks in either direction. If respondents remembered only that their spells began in the beginning or end of the month, we assigned the date corresponding to the end of the first or last week of that month.

[4]We found that 177 respondents reported not looking for work after they became unemployed because they did not want to work, they retired or were about to retire, they were in ill health, disabled, or pregnant, or they had family or child care responsibilities. Of these cases, 67 had not returned to work at the time of the interview. It may be more appropriate to characterize these individuals as having dropped out of the labor force, rather than as being long-term unemployed. However, deleting these individuals from the sample had virtually no effect on the estimated coefficients in the multivariate analysis.

[5]The method for computing the weights was described in Section II.B.

TABLE III.1

PROPORTION OF UI RECIPIENTS REEMPLOYED, BY LENGTH OF UNEMPLOYMENT SPELL AND RECALL EXPECTATIONS

Weeks of Unemployment	Proportion Reemployed			
	Full Sample	No Recall Expectations	Expected Recall, No Definite Date	Expected Recall, Definite Date
5	14.0	4.3	9.1	43.2
15	45.8	31.6	48.4	75.9
25	62.8	49.2	69.4	85.8
39	76.1	65.9	82.7	91.1
51	81.4	73.8	86.2	92.9
91	91.2	85.4	93.9	99.1
Sample Size	2,786	1,611	807	366

SOURCE: Mathematica Policy Research (1990).

declines to roughly 3 percent between 16 and 39 weeks, 2 percent per week between 40 and 65 weeks, and 1.6 percent per week between 66 and 105 weeks.[6]

The decline in the probability of reemployment as the lengths of unemployment spells increase is commonly noted in studies of unemployment (Salant, 1977; Clark and Summers, 1979; Heckman and Borjas, 1980; Heckman and Singer, 1984; Darby, Haltiwanger, and Plant, 1985; and Dynarski and Sheffrin, 1987). Two hypotheses have been advanced to explain the decline. The first is that the unemployed population sorts itself into workers whose reemployment probabilities are high and who leave unemployment soon, and workers whose reemployment probabilities are low and who take longer to leave unemployment (Salant, 1977). The second hypothesis is that the reemployment prospects of individual workers may diminish as unemployment spells lengthen (Heckman and Borjas, 1980). Reemployment prospects may diminish either because employers may view the length of unemployment spells as an indication about the quality of the worker, and be less inclined to make offers to workers who have been unemployed for long periods, or because unemployed workers may become discouraged and search less intensively.

Both hypotheses are credible in our context. On the one hand, the reemployment probabilities of workers who expect to be recalled, or who have skills that are in demand, are probably larger than those of other workers at the start of their unemployment spells. On the other hand, workers who have been unemployed for very long periods may find that employers view long periods of unemployment negatively in making hiring decisions.

Table III.1 also shows the proportion of workers who are reemployed at various weeks according to whether they expected to be recalled when they became unemployed and whether

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[6]The reemployment probability in each interval is defined as the number of workers who become employed during the interval, divided by the number of workers who were unemployed at the beginning of the interval. A correction for incomplete spells is used, which involves subtracting one-half the number of workers censored during the week from the number of workers unemployed at the beginning of the week. The remainder is then divided into the number of workers who become reemployed during the week to arrive at the reemployment probability for that week. This correction corresponds to the assumption that incomplete spells are distributed uniformly across the week.

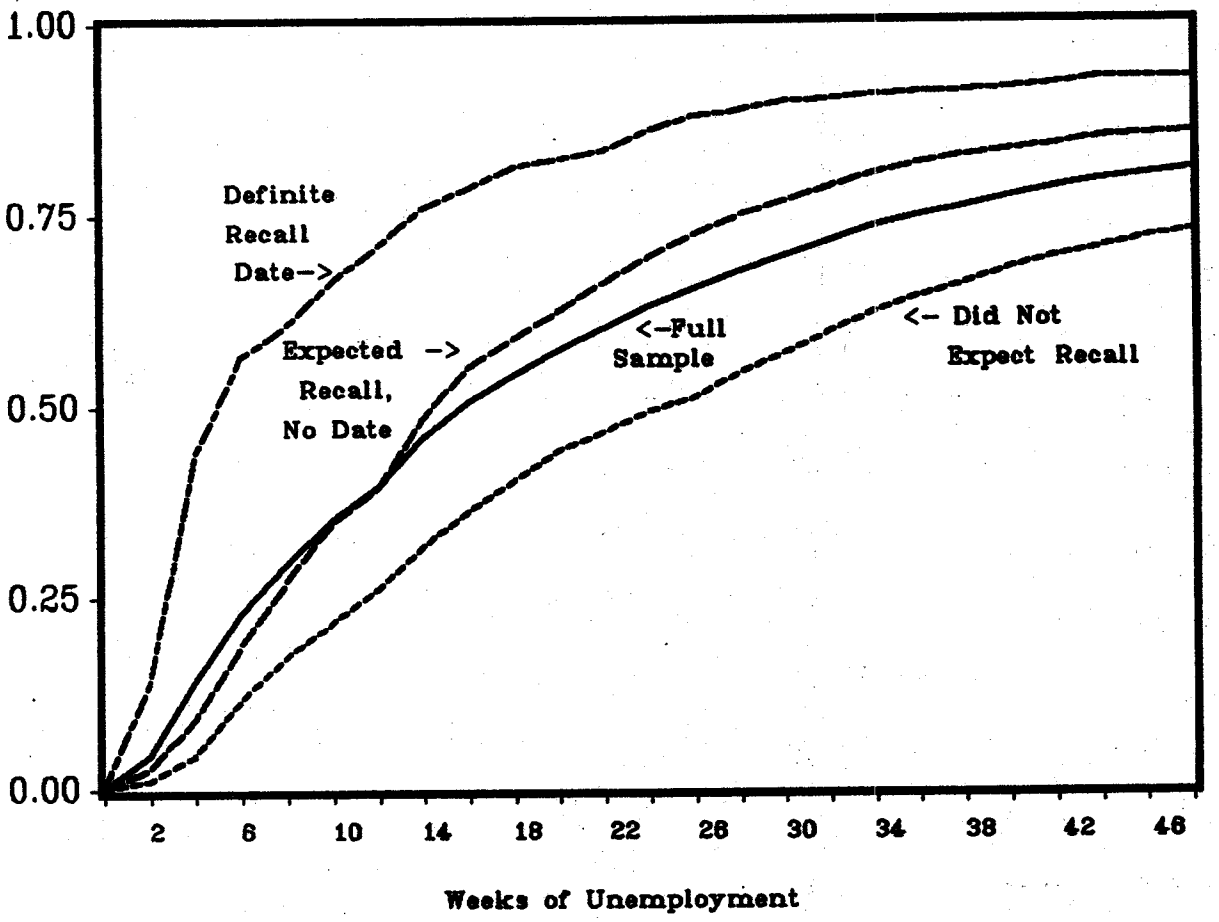
they had a definite recall date. The same data are plotted in Figure III.1 for the various subgroups and the full sample. Table III.1 and Figure III.1 clearly show that recall expectations are strongly associated with the length of unemployment spells. For example, 43 percent of workers who had a definite recall date when they became unemployed had returned to work within 5 weeks, whereas only 4 percent of workers who did not expect to be recalled when they became unemployed had returned to work within 5 weeks. Slightly less than half of the no-recall subgroup had returned to work within 25 weeks, by which time almost 86 percent of the definite-recall subgroup and 70 percent of the indefinite-recall subgroup had returned to work.

We classified workers into subgroups according to the perceptions of workers about whether they expected to be recalled, rather than whether they were actually recalled. Table III.2 provides estimates of the proportion of workers who expected to be recalled and were in fact recalled, and the average unemployment spells experienced by workers according to their reemployment outcomes. In general, it is evident that recall expectations were accurate predictions of recall outcomes.[7] For workers who did not expect to be recalled, only 9 percent were working for their pre-UI employers by the date of the interview. The majority of workers who had not been recalled had found new employers, though 15 percent had not yet returned to work. For workers who had definite recall dates when they were laid off, 92 percent returned to work for their pre-UI employers. Of workers who expected to be recalled when they were laid off but did not have definite recall dates, 71 percent returned to work for their pre-UI employers.

It is possible that some workers waiting to be recalled find new employers because they use the recall waiting period to search for better jobs and are successful. In this case we would expect that the average unemployment spells of these workers would be shorter than the spells of workers who are recalled. However, Table III.2 indicates that did workers who expected to be recalled but

[7]Because recall expectations were determined retrospectively, it is possible that workers may have responded that they expected to be recalled if they were in fact recalled, and conversely. This reporting pattern imparts an upward bias to estimates of the accuracy of recall expectations as indicators of recall outcomes.

FIGURE III.1
PROPORTION OF UI RECIPIENTS REEMPLOYED, BY LENGTH OF UNEMPLOYMENT SPELL AND RECALL STATUS



SOURCE: Mathematica Policy Research (1990)

TABLE III.2

CHARACTERISTICS OF UNEMPLOYMENT SPELLS

	Recall Status			
	Did Not Expect Recall	Expected Recall, No Definite Date	Expected Recall, Definite Date	Other Separations[a]
Spell Outcome (percent)				
Recalled	9.2	71.2	92.3	7.9
New Job	76.2	22.6	6.8	79.0
Not Completed	14.6	6.2	0.9	13.0
Total	100.0	100.0	100.0	100.0
Mean Length of Unemployment Spell, by Spell Outcome (in Weeks)				
Recalled	20.2	15.6	10.2	26.0
New Job	25.5	27.2	26.3	26.0
Not Completed	83.3	87.1	88.5	81.9
Overall Mean	33.7	22.8	12.0	33.5
Total Weeks of Unemployment by Spell Outcome (percent)				
Recalled	5.8	48.3	78.4	6.0
New Job	56.9	27.4	14.6	61.4
Not Completed	37.3	24.4	7.0	32.7
Total	100.0	100.0	100.0	100.0

SOURCE: Mathematica Policy Research (1990).

[a]This category includes respondents who quit or were fired from their pre-UI job.

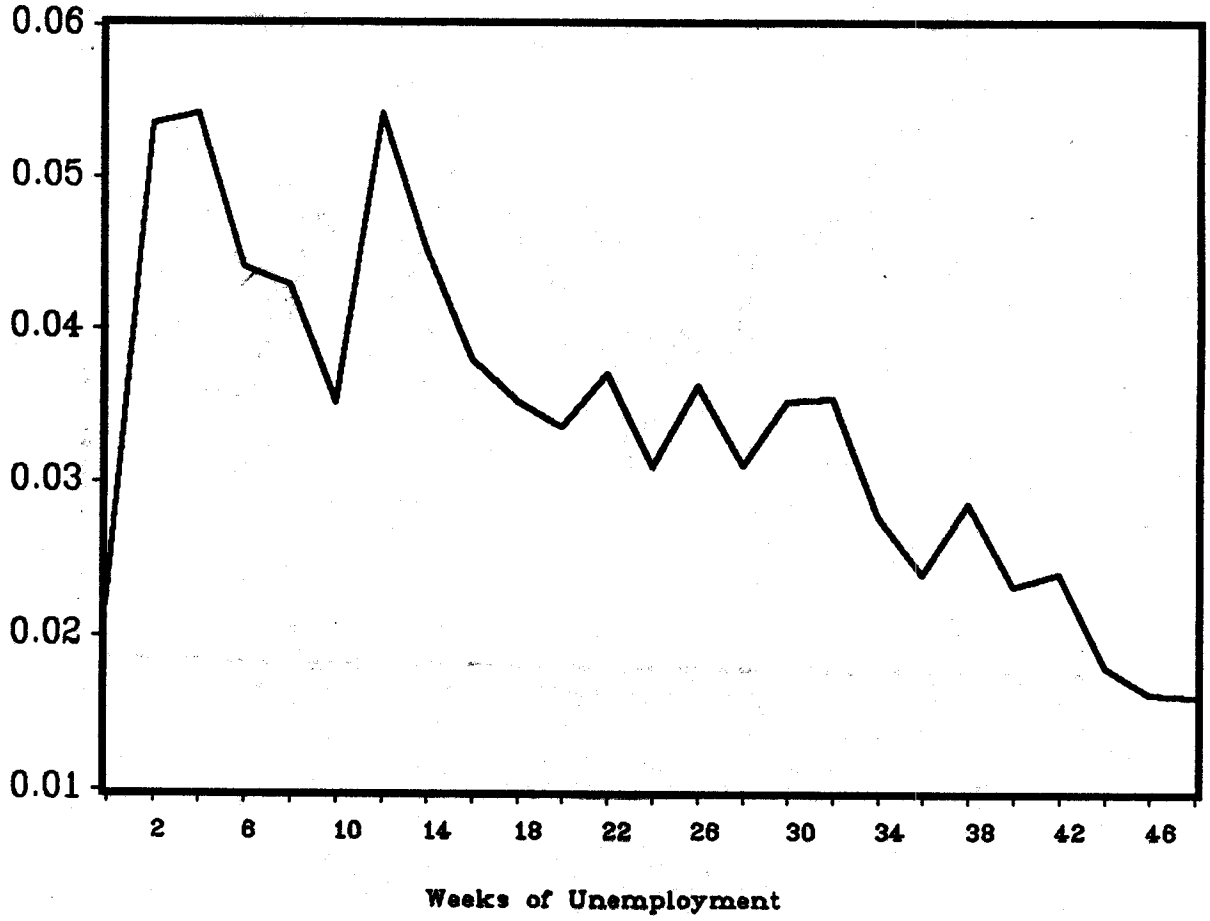
who found new employers generally experienced much longer unemployment spells than workers who were recalled. For example, of workers who had definite recall dates, the average unemployment spell was 10 weeks for those who were actually recalled, but 26 weeks for those who found new employers. Due to this large difference in average lengths of spells, workers with a definite recall date who found new employment accounted only for 7 percent of the group but 15 percent of the total unemployment experienced by the group. Of workers who expected to be recalled but did not have a definite recall date, the average unemployment spell was 16 weeks for those actually recalled and 27 weeks for those who found new employers. The evidence thus indicates that workers who expected to be recalled did not find better jobs to replace their pre-UI jobs. In Chapter IV, we compare post-UI jobs and pre-UI jobs along other dimensions, and we also find that new post-UI jobs generally compare unfavorably with pre-UI jobs.

In the context of theoretical models of job search, it has been noted that the reemployment probability should be greater in the time interval shortly before or after UI benefits are exhausted (Mortensen, 1977). One reason for the expected increase is that the exhaustion of UI benefits gives rise to a sharp reduction in well-being while unemployed, which induces workers to return to work more quickly by searching more actively or by accepting job offers that may have been unacceptable while they were still receiving benefits. Another reason for the increased reemployment probability around the point of exhaustion is that firms who have laid off workers temporarily have an incentive to recall them while the laid-off workers are receiving UI benefits (Mortensen, 1987). After benefits are exhausted, some portion of those laid off will accept other jobs, which is expensive to the firm and the workers if these workers embody firm-specific skills and training. Empirical analyses of lengths of unemployment spells have found evidence that reemployment probabilities increase before the point of UI exhaustion (Moffitt, 1985; Katz and Meyer, 1988; and Meyer, 1990).

To explore the relationship between UI exhaustion and reemployment in more detail, we display in Figures III.2 to III.5 weekly reemployment probabilities for the full sample and for the

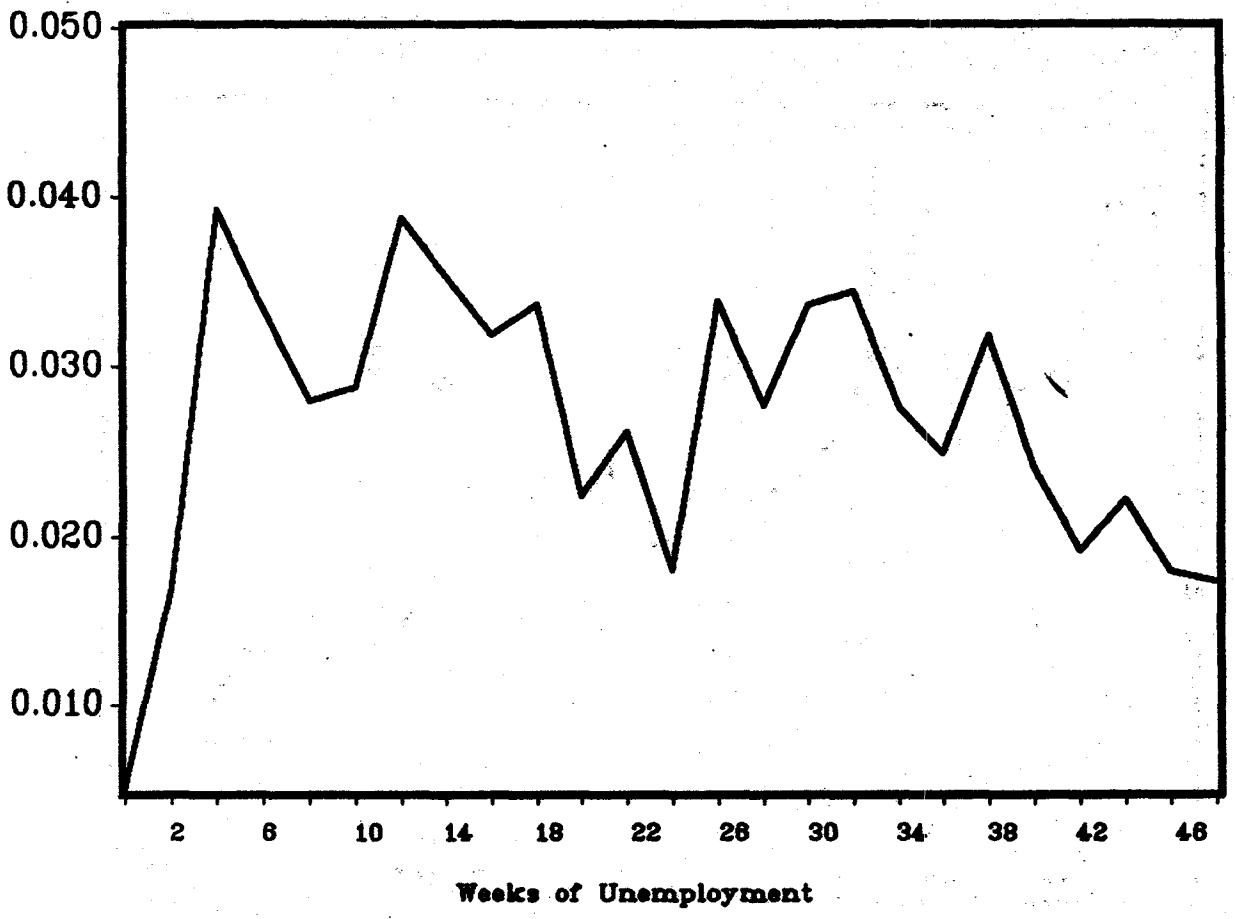
FIGURE III.2

REEMPLOYMENT PROBABILITY BY LENGTH OF UNEMPLOYMENT SPELL: FULL SAMPLE



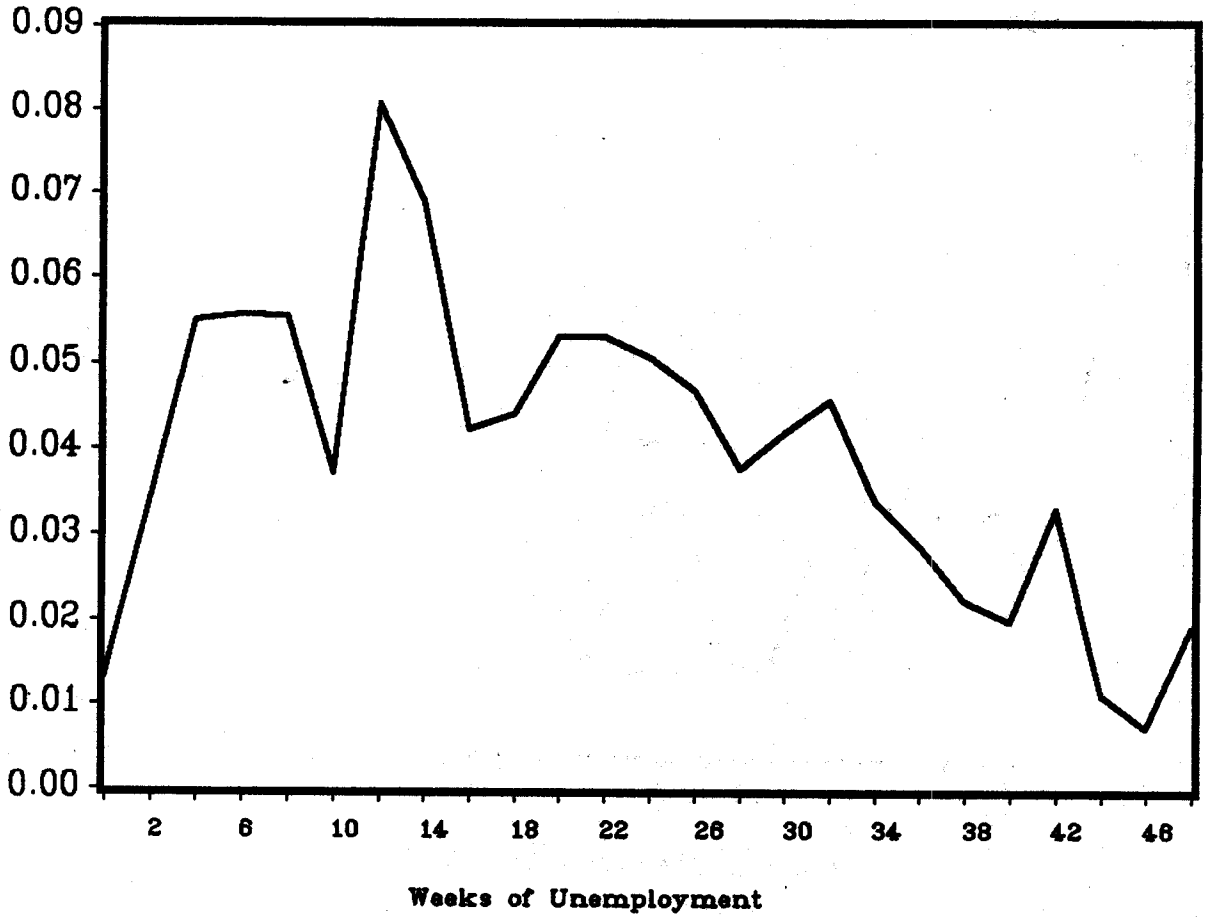
SOURCE: Mathematica Policy Research (1990)

FIGURE III.3
REEMPLOYMENT PROBABILITY BY LENGTH OF UNEMPLOYMENT SPELL:
DID NOT EXPECT RECALL



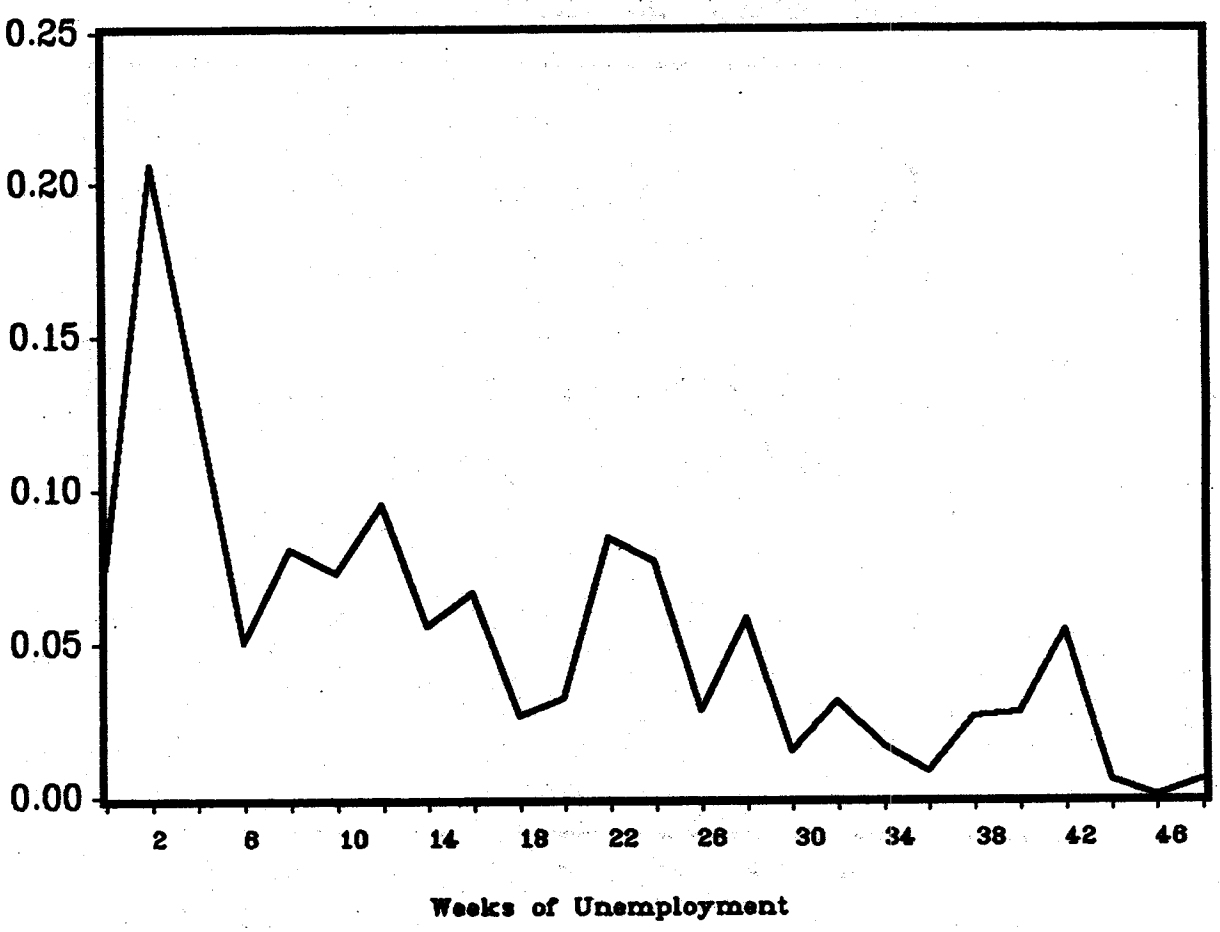
SOURCE: Mathematica Policy Research (1990)

FIGURE III.4
REEMPLOYMENT PROBABILITY BY LENGTH OF UNEMPLOYMENT SPELL:
EXPECTED RECALL, NO DEFINITE DATE



SOURCE: Mathematica Policy Research (1990)

FIGURE III.5
REEMPLOYMENT PROBABILITY BY LENGTH OF UNEMPLOYMENT SPELL:
EXPECT RECALL, DEFINITE DATE



SOURCE: Mathematica Policy Research (1990)

subgroups defined by recall expectations. The exhaustion effect is visible in Figures III.2 to III.5, but the magnitude of the effect is modest. It should be recalled that theoretical models predict that reemployment probabilities should rise as UI exhaustion approaches and should fall thereafter. Most workers in the sample had potential durations of 24 to 26 weeks, began receiving their benefits 2 to 4 weeks after their unemployment spells began, and were subject to a waiting week before their benefits began. If present, the exhaustion effect should appear in roughly the 25th to 31st weeks of unemployment.[8]

In Figure III.2, an increase in the reemployment probability is visible in weeks 26 to 32, and the reemployment probability falls sharply after week 34. Jumps in the reemployment probability are also evident in weeks 12, 22, and 38. The exhaustion effect varies with recall expectations. For workers who do not expect to be recalled (Figure III.3), the reemployment probability moves erratically, but there is a discernible increase in the reemployment probability in the 28th to 32nd weeks, after which the probability generally declines. For workers on indefinite recall (Figure III.4), the exhaustion effect is visible but noticeably smaller in magnitude than the spike at week 12. For workers on definite recall (Figure III.5), the exhaustion effect is evident at week 28, though the increase in reemployment probabilities around week 22 may also reflect recall activity timed so as to avoid benefit exhaustion.[9]

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[8]Workers who apply for benefits immediately after job loss, satisfy the waiting-week requirement, and receive 24 weeks of benefits would exhaust their benefits in the 25th week after their job loss. Workers who wait 4 weeks before applying for benefits, satisfy the waiting-week requirement, and receive 26 weeks of benefits would exhaust their benefits in the 31st week after their job loss.

[9]The statistical precision of the estimated reemployment probabilities in weeks 26 to 32 do not allow us to reject the hypothesis that the increase in the reemployment probabilities during these weeks was due to chance. For example, the 95 percent confidence interval estimate for the reemployment probability for the full sample in the 30th week of unemployment is 3.5 percent, plus or minus 1 percentage point. Figure III.3 reveals that this confidence interval encompasses the estimated values of reemployment probabilities in neighboring weeks. The confidence intervals for the indefinite and definite recall subgroups were roughly plus or minus 2 percentage points, which also encompassed neighboring reemployment probabilities.

The modest exhaustion effects visible in Figures III.2 to III.5 may arise because workers begin receiving UI benefits at different points in their unemployment spells, and some workers receive UI benefits at various points during their benefit year. Thus, UI exhaustion may fall at different points during the unemployment spells experienced by workers in our sample, which would tend to obscure the exhaustion effect.

To explore this issue in more detail, we analyzed the length of time between the last claim week ending date as indicated by UI program records, and the first reemployment date following the last claim week ending date.[10] We performed this analysis only for exhaustees, so that the last claim week ending date was unambiguously the point at which UI benefits ran out. By examining the reemployment date closest to the point of exhaustion, we avoid the problem that arises if workers enter and exit UI at various points. It is important to note that the date of reemployment used here to analyze the exhaustion effect is not necessarily the same as the first reemployment date after the benefit year beginning date. The two dates are the same only for workers who became reemployed for the first time after their last claim week ending date.[11]

Figure III.6 shows the proportion of exhaustees who had returned to work at various weeks after exhaustion. Roughly 25 percent of exhaustees had returned to work within 4 weeks after the last claim week ending date, and about 40 percent had returned to work within 10 weeks after the last claim week. However, fully 40 percent of exhaustees had <u>not</u> returned to work within 26 weeks after exhaustion.

Figure III.7 shows the post-exhaustion reemployment probability by week of unemployment. The exhaustion effect is clearly evident in the much larger value of the reemployment probability

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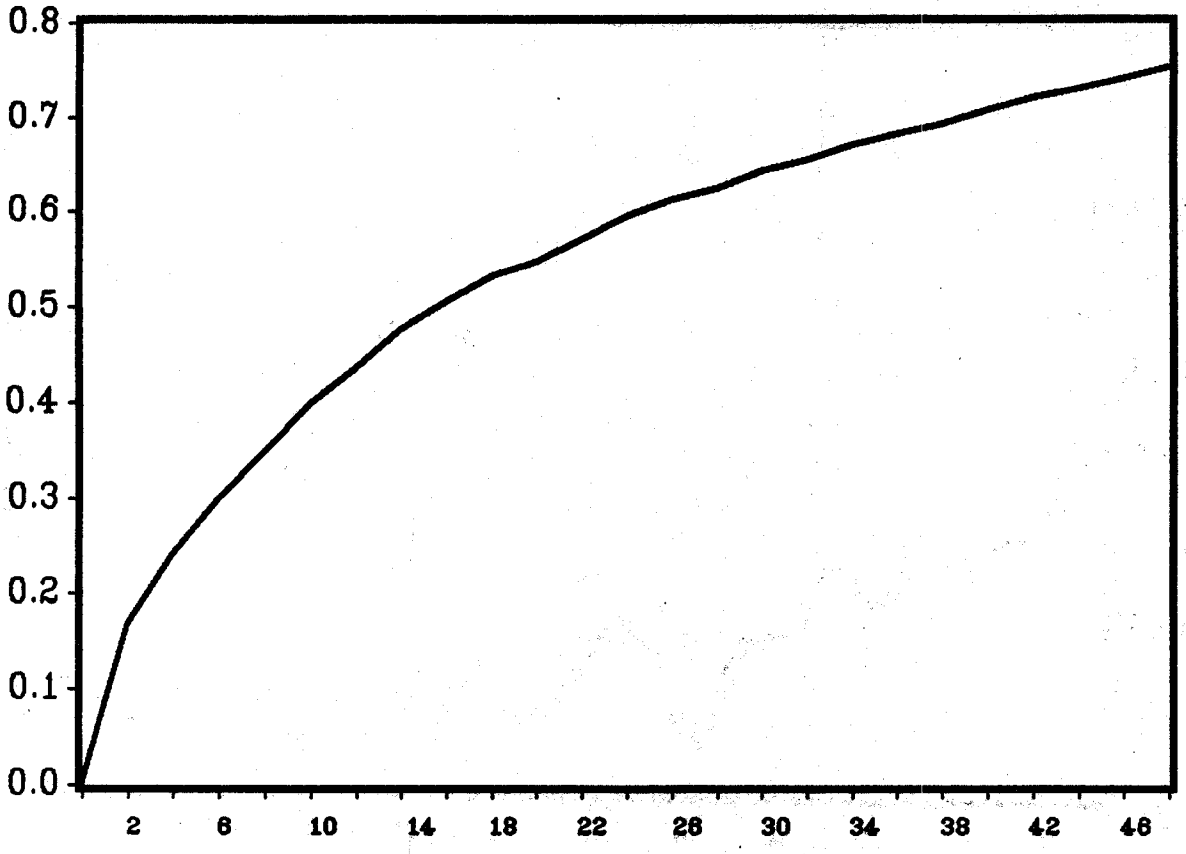
[10]Information on the last claim week ending date was not available for workers from New York.

[11]In examining the data, we found 67 exhaustees who reported that they had a post-UI job, gave reemployment dates that were within 31 days <u>prior</u> to the last claim week ending date, and had no subsequent jobs. It is possible but unlikely that workers became reemployed and subsequently unemployed with only a few weeks of UI remaining. A more likely explanation is that the reemployment dates fell after the last claim week ending date, but were reported inaccurately. For these cases, we assigned a value of zero to the time between exhaustion and reemployment.

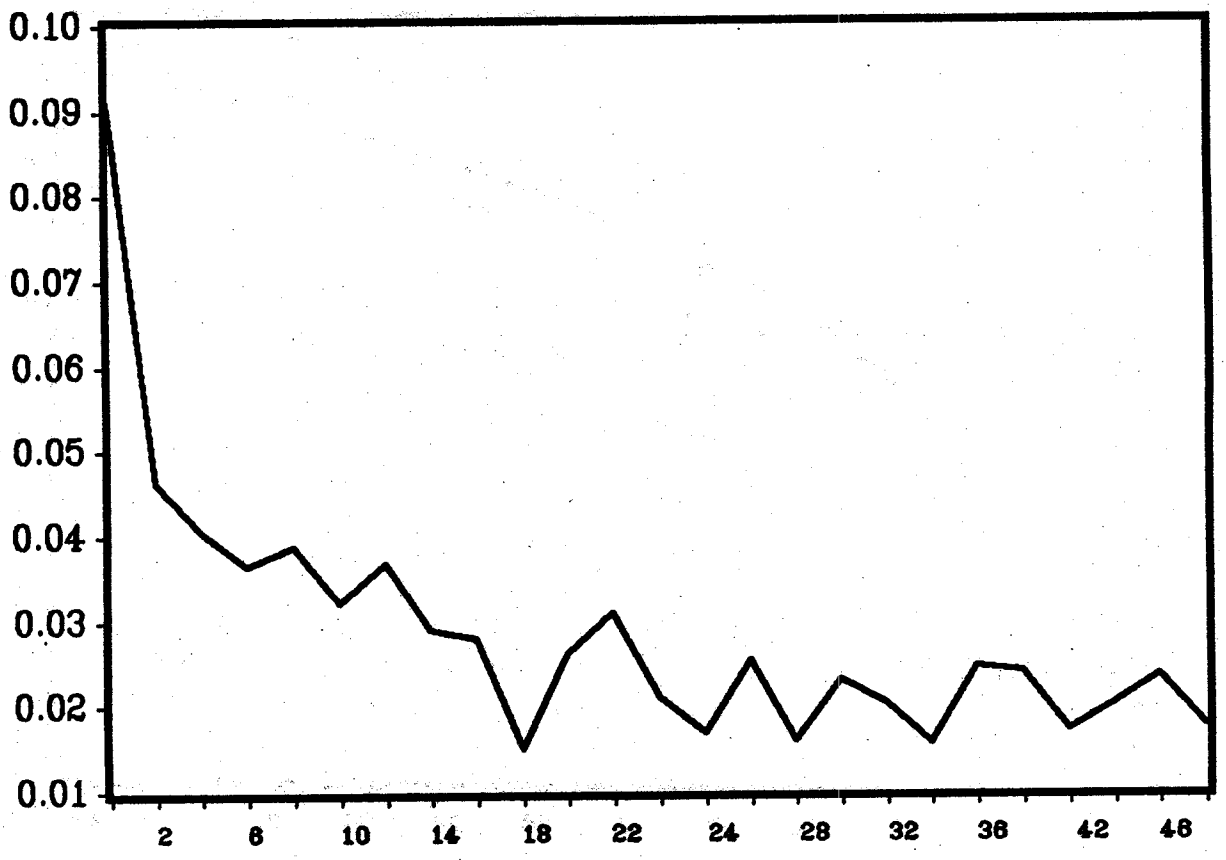
FIGURE III.6
PROPORTION OF UI EXHAUSTEES REEMPLOYED, BY LENGTH OF UNEMPLOYMENT SPELL AFTER EXHAUSTION



SOURCE: Mathematica Policy Research (1990)

FIGURE III.7

REEMPLOYMENT PROBABILITY BY LENGTH OF UNEMPLOYMENT SPELL AFTER EXHAUSTION: EXHAUSTEE SAMPLE



SOURCE: Mathematica Policy Research (1990)

(5 to 9 percent) up to 4 weeks after exhaustion. The reemployment probability declines sharply after that point (to between 2 to 3 percent), as theoretical models predict.

C. MULTIVARIATE ANALYSIS OF THE LENGTHS OF UNEMPLOYMENT SPELLS

Multivariate analysis is a useful tool for describing the underlying factors that determine lengths of spells. In this section we discuss the particular methods used to model lengths of unemployment spells empirically, and we present the estimation results for these models.

A commonly used statistical method for multivariate analysis is linear regression. In the previous section on the descriptive analysis, we noted that spell lengths must be analyzed carefully when some spells are incomplete, and a similar caution applies for regression models of spell lengths. Analyzing incomplete spells as if they were complete spells may generate biased estimates of regression coefficients, because the influence of factors in the model that led to incomplete spells in the first place will be underestimated.

Our dependent variable is the logarithm of the number of weeks from the job loss that initiated the benefit year to the first date of reemployment. The calendar date of the pre-UI job loss and the date of reemployment were reported by respondents and converted into weeks for the analysis.[12] We use explanatory variables in the multivariate analysis of spell lengths that are similar to those used in Chapter II to analyze UI exhaustion. However, we do not report the results of entering groups of variables sequentially, but focus instead on the estimated results of a full model specification for the entire sample and for subgroups defined by recall expectations. Descriptive statistics for the variables used in the estimation are found in Table II.8 in Chapter II.

It should be noted that, because we analyze the logarithm of spell lengths, the bias due to incomplete spells is likely to be small in our context. Respondents in our sample whose spells were incomplete when they were interviewed had experienced at least 52 weeks of unemployment, and

[12]As we discuss in subsection C.3, reemployment after the initial job loss within a benefit year may be followed by other spells of unemployment within the benefit year. Thus, our duration measure differs from total unemployment within the benefit year and total UI weeks collected within the benefit year.

had been unemployed for an average of 82 weeks when they were interviewed (see Table III.2). Treating these cases as if the spells had ended at 82 weeks is likely to create a relatively small error in logarithmic terms.[13]

Table III.3 reports estimation results for the regression models. Column 1 presents the results for the full sample. The estimates indicate that older workers, unmarried workers, male workers, Hispanic workers, and workers who live in areas that exhibit high unemployment have longer unemployment spells. Workers in the construction and manufacturing industries, machinists, and workers who expect to be recalled have shorter unemployment spells. Workers with higher UI replacement rates or longer potential durations on average have shorter unemployment spells, which conflicts with the predictions of conceptual models about the disincentive effects of UI receipt. Because the effects of the UI program are important in this analysis, we explore these results in more detail below.

1. Subgroup Results

Due to the very large estimated effects of recall status on lengths of unemployment spells, we divided the sample into subgroups and estimated separate models for each. The results in columns 2 to 4 of Table III.3 pertain to workers who did not expect to be recalled, workers who expected to be recalled but were not given a definite recall date, and workers who were given a definite recall date.[14] As we found in our analysis of UI exhaustion, the estimated coefficients differ considerably across subgroups.

For workers who did not expect to be recalled, age, race, and local unemployment conditions were correlated more strongly with longer unemployment spells than they were for the full sample model (though the effect of race was not statistically significant). The elasticity of unemployment

[13]For example, suppose that a respondent whose spell is incomplete at 82 weeks had returned to work in 102 weeks. In logarithmic units, treating the 82-week incomplete spell as if it were completed understates the true spell length only by 5 percent.

[14]Two respondents did not report whether or not they expected to be recalled, and were dropped from the subgroup models.

TABLE III.3

ESTIMATION RESULTS FOR REGRESSION MODELS OF DURATION FROM JOB LOSS TO REEMPLOYMENT, BY RECALL STATUS
(Standard Errors in Parentheses)

Dependent Variable: Log of Weeks from Job Loss to Reemployment	(1) Full Sample	(2) Did Not Expect Recall	(3) Expected Recall, No Definite Date	(4) Expected Recall, Definite Date
Age	.013	.018	-.001	.018
	(.002)	(.003)	(.004)	(.006)
Female	-.157	-.296	.359	-.151
	(.073)	(.082)	(.151)	(.224)
Black	-.001	.097	.041	-.273
	(.067)	(.083)	(.127)	(.174)
Hispanic	.166	.041	.266	.105
	(.078)	(.095)	(.131)	(.259)
Married	-.335	-.328	-.119	-.596
	(.074)	(.093)	(.126)	(.234)
Female and Married	.396	.395	-.312	.719
	(.133)	(.173)	(.245)	(.357)
Spouse Worked	.033	-.011	.040	.031
	(.072)	(.090)	(.123)	(.209)
Female and Spouse Worked	-.007	.244	.072	-.458
	(.131)	(.173)	(.240)	(.331)
High School Dropout	.035	.087	.210	-.277
	(.057)	(.082)	(.095)	(.139)
College Graduate	.077	.034	.412	-.166
	(.073)	(.073)	(.200)	(.327)
Years Worked on Pre-UI Job	-.004	.012	-.005	-.025
	(.004)	(.005)	(.005)	(.010)
Union Member on Pre-UI Job	.086	.244	-.025	.245
	(.052)	(.076)	(.085)	(.132)
Had Regular Layoffs on Pre-UI Job	-.011	.111	-.117	.008
	(.060)	(.135)	(.088)	(.130)
Construction Industry	-.289	-.417	-.305	.165
	(.082)	(.110)	(.121)	(.363)

TABLE III.3 (continued)

Dependent Variable: Log of Weeks from Job Loss to Reemployment	(1) Full Sample	(2) Did Not Expect Recall	(3) Expected Recall, No Definite Date	(4) Expected Recall, Definite Date
Construction/Extractive Worker	.037 (.091)	.183 (.123)	.052 (.129)	-.890 (.386)
Machinist	-.128 (.072)	-.013 (.116)	.035 (.128)	-.170 (.160)
Manufacturing Industry	-.284 (.053)	.023 (.063)	-.321 (.103)	-1.049 (.157)
Local Unemployment Rate	.024 (.007)	.036 (.009)	.002 (.011)	.034 (.020)
UI Replacement Rate	-.327 (.120)	-.019 (.142)	-.903 (.224)	-.013 (.349)
UI Potential Duration	-.024 (.006)	-.013 (.007)	-.018 (.010)	-.042 (.020)
Expected Recall, No Definite Date	-.419 (.055)	--	--	--
Expected Recall, Definite Date	-.875 (.062)	--	--	--
Constant	3.42 (.186)	2.59 (.226)	3.62 (.329)	3.07 (.592)
$\bar{R}^2$	.251	.098	.075	.277
Sample Size	2,416	1,395	693	326

NOTES: All estimates were generated by weighted least squares. Weights are defined in Chapter II.

duration with respect to age at the sample mean age is calculated as .70. If an average worker who is 38 years old is compared with a worker who is otherwise identical but 48 years old, the estimated coefficient for age implies an unemployment spell that is 18 percent longer for the older worker, which is an increase of about 4 weeks. The elasticity of unemployment duration with respect to the local unemployment rate is calculated as .23. If an average worker who lives in a county with an unemployment rate of 6.4 percent (the subgroup average) is compared with an otherwise identical worker who lives in a county with a 12 percent unemployment rate, the estimated coefficient for the local unemployment rate implies an unemployment spell which is roughly 20 percent longer than the average spell, which is an increase of 4.2 weeks.

The length of the pre-UI job, which was not a significant factor for the full sample, is positively correlated with longer unemployment spells for workers who did not expect to be recalled. This result, coupled with the positive effect of union membership on the length of unemployment spells for the no-recall subgroup, suggests that losses of firm-specific skills, seniority, or union wage differentials are associated with longer unemployment spells. Union members who did not expect to be recalled experienced unemployment spells that were 24 percent longer than the spells of nonunion workers. The elasticity of unemployment duration with respect to years on the pre-UI job is relatively small, equal to .05 at the subgroup average. A worker who had the same pre-UI job for 20 years is likely to experience an unemployment spell that is 5 weeks longer than the spell of an otherwise identical worker who had worked the subgroup average of 4.2 years on the pre-UI job.

The coefficients for the indefinite- and definite-recall subgroups (columns 3 and 4 in Table III.3) display different patterns relative to the estimated coefficients for the permanent layoff subgroup. The estimated coefficients also differ according to whether workers had a definite recall date. For example, age had no effect on the length of spell for the indefinite-recall subgroup, but had a substantial effect on the definite-recall subgroup, with older workers having longer unemployment spells. Years worked on the pre-UI job had no effect on lengths of spells for the

indefinite-recall subgroup but did have a significant effect on the definite-recall subgroup, as would be expected if recalls were based on seniority. Workers who did not complete high school experienced longer spells in the indefinite-recall subgroup, but shorter spells in the definite-recall subgroup. The effect of working in a manufacturing industry on the length of spell was negligible for the indefinite-recall subgroup, but very large for the definite-recall subgroup. The same pattern is evident for construction workers.[15] However, for both recall subgroups, higher UI replacement rates and longer potential durations are correlated with shorter spell lengths.

2. Demographic Effects

Several direct and interactive variables were entered for gender, marital status, and whether the individual had a working spouse at the time of job loss, in order to account for differences in lengths of spell between primary and secondary workers. Table III.4 displays the net coefficients for workers who fall into various categories according to these variables. We determined the net coefficients by summing the estimated coefficients for all variables whose values are unity for different types of workers.[16] The benchmark category, which is implicitly contained in the model by way of the constant term, is unmarried males. The net coefficient for unmarried females is the same as the estimated coefficient for the female dummy variable. The net coefficient for married females is the sum of the estimated coefficients for the female variable, the married variable, and the female/married interactive variable. The effect of having a working spouse is determined similarly.

[15]It should be noted that coefficients were estimated for working in a construction industry and for having construction as an occupation. The net effect of being a construction worker in a construction industry on the length of spell is the sum of the two coefficients. Of course, not all workers in the construction industry give construction as their occupation, which would include clerical and administrative support persons.

[16]It should be noted that these comparisons between demographic groups are net of other factors in the regression models. That is, the effects of differences in age, race, education, industrial and occupational factors, UI program parameters, and local unemployment conditions on lengths of spells have been controlled for in the demographic group comparisons.

TABLE III.4

NET COEFFICIENTS FOR DEMOGRAPHIC CATEGORIES,
BY RECALL STATUS
(Standard Errors in Parentheses)

Category	(1) Full Sample	(2) Did Not Expect Recall	(3) Expected Recall, No Date	(4) Expected Recall, Definite Date
Unmarried Males	--	--	--	--
Married Males	-.335	-.328	-.119	-.596
	(.074)	(.093)	(.126)	(.234)
Married Males, Spouse Working	-.302	-.339	-.079	-.465
	(.067)	(.077)	(1.67)	(.229)
Unmarried Females	-.157	-.296	.359	-.151
	(.073)	(.082)	(.151)	(.224)
Married Females	-.096	-.229	-.072	-.028
	(.024)	(.054)	(.067)	(.015)
Married Females, Spouse Working	-.070	-.016	.040	-.355
	(.018)	(.004)	(.031)	(.209)

SOURCE: The net coefficients were computed from the estimated regression coefficients in Table III.3. The standard errors for the net coefficients were computed on the basis of standard formulas and variance-covariance matrix of the estimated coefficients (Maddala, 1977).

Three patterns are evident across demographic groups. First, married males have shorter unemployment spells than unmarried males, regardless of recall status. For example, the estimated coefficients for the full sample indicate that the predicted unemployment spell for a married male with otherwise average characteristics is 34 percent shorter than for an unmarried male with average characteristics. Married males with working spouses tend to have longer spells than married males without working spouses, except for the permanent-layoff subgroup. Second, unmarried females generally have shorter spells than unmarried males (except in the indefinite-recall subgroup), but married females have longer unemployment spells than married males. Married females with working spouses also have longer spells than married females without working spouses, except for the definite-recall subgroup.

For the no-recall subgroup, the net coefficients are consistent with the view that the presence of working spouses allows workers to remain unemployed for longer periods, to search more extensively for jobs, or to wait for better job offers. Married females may experience longer spells of unemployment than married males because the reduction in household income due to their unemployment is likely to be relatively smaller, which creates less incentive to return to work quickly.

However, for the recall subgroups, the forces that determine the observed demographic effects are less clear. If demographic effects were due solely to the influence of household composition on search behavior, it would be reasonable to find negligible demographic effects in the recall subgroups, in which extensive search is less likely to occur. Instead, clear differences are evident among demographic categories in the recall subgroups. These differences may be due to industrial and occupational differences not captured in the regression model.

3. UI Program Effects

The estimated coefficients for UI wage replacement rates and potential duration are negative in sign for the full sample and the three recall subgroups, indicating that workers with greater wage

replacement rates or potential durations on average had shorter unemployment spells, after other factors were controlled for. The direction of these results conflicts both with theoretical models, which predict that the disincentive effects of greater wage replacement rates or potential durations should lead to longer spells, and with the results of previous empirical research on the effects of UI on unemployment spells.

One possible explanation for these results is that workers with lower replacement rates and potential durations may be unemployed longer before they begin collecting UI benefits. The dependent variable in the preceding models is the time between job loss and reemployment for the unemployment spell that initiated the UI benefit year. However, workers are more likely to delay receiving UI benefits if they have low replacement rates, since, by definition, UI benefits for these workers are relatively smaller. Alternatively, workers with low UI wage replacement rates, who generally also have higher pre-UI wages, may believe that they will be reemployed quickly, and will apply for benefits only when they do not become reemployed quickly.

To evaluate this explanation, we modified the specification of the basic duration model by entering as the dependent variable the log of the number of weeks from the benefit year beginning date to reemployment. The estimated program coefficients generated by the change are displayed in Table III.5, below the basic coefficients reproduced from Table III.3.[17] As shown in Table III.5, the estimated replacement rate coefficients for the full sample and for each recall subgroup were less negative relative to the estimates based on weeks from job loss to reemployment, and were positive for the permanent layoff subgroup. This result suggests that workers with higher replacement rates do begin to receive UI benefits more quickly. However, the estimated coefficients for potential duration are generally larger with the modified dependent variable.

[17]Though we report only the estimated coefficients for UI replacement rates and potential durations, each model contains all explanatory variables specified earlier. The estimated coefficients for other variables were generally close in magnitude to the values shown in Table III.3, and hence are not reported here.

TABLE III.5

REGRESSION COEFFICIENTS FOR UI PROGRAM VARIABLES, BY RECALL STATUS
(Standard Error in Parentheses)

	Full Sample	No Recall Expectations	Expected Recall, No Date	Expected Recall, Definite Date
Dependent Variable: Log (Weeks from Job Loss to Reemployment)				
UI Replacement Rate	-.327	-.019	-.903	-.013
	(.120)	(.142)	(.224)	(.349)
Potential Duration	-.024	-.013	-.018	-.042
	(.006)	(.007)	(.010)	(.020)
Dependent Variable: Log (Weeks from Benefit-Year Beginning to Reemployment)				
UI Replacement Rate	-.202	.163	-.724	-.054
	(.131)	(.157)	(.241)	(.380)
Potential Duration	-.026	-.010	-.022	-.050
	(.007)	(.008)	(.011)	(.021)
Dependent Variable: Log (Weeks of UI Collected)				
UI Replacement Rate	-.186	.430	-.684	-.889
	(.124)	(.145)	(.235)	(.383)
Potential Duration	.010	.014	.012	-.004
	(.006)	(.007)	(.010)	(.022)

TABLE III.5 (continued)

	Full Sample	No Recall Expectations	Expected Recall, No Date	Expected Recall, Definite Date
Dependent Variable: Log (Weeks from Job Loss to Reemployment)				
Sample: Gaps in UI Collection of <6 Weeks				
UI Replacement Rate	-.217	.068	-.486	-.042
	(.139)	(.157)	(.265)	(.595)
Potential Duration	-.029	-.009	-.035	-.065
	(.007)	(.008)	(.012)	(.026)
Sample Size	1,748	1,103	466	177
Sample: Gaps in UI Collection $\geq$ 6 Weeks				
UI Replacement Rate	-.459	-.297	-1.395	.164
	(.230)	(.328)	(.417)	(.473)
Potential Duration	-.020	-.026	-.019	-.016
	(.011)	(.015)	(.018)	(.031)
Sample Size	667	291	226	148

SOURCE: Mathematica Policy Research (1990).

Another possible explanation for the observed program effects is that workers with lower replacement rates or potential durations may be less likely to have several spells of unemployment within a benefit year. Some workers may become reemployed quickly but experience unemployment again within the benefit year. In fact, for some workers, numerous short spells of unemployment might occur within the same benefit year. If the incidence of multiple spells is higher among workers with higher replacement rates or potential durations, and if multiple spells are associated with shorter initial spells in the benefit year, it might lead to estimated regression coefficients with the observed signs.

We evaluated this explanation by entering as the dependent variable the log of the number of weeks of UI collected within the benefit year. If we interpret disincentive effects to apply only to time on the UI program, we would expect that workers with higher replacement rates would collect more weeks of benefits within a benefit year. We would also expect that potential duration would enter with a positive sign, simply because workers with longer potential durations can collect more weeks of benefits. The estimated coefficients for replacement rates in Table III.5 are less negative than for the basic specification (except for the definite-recall subgroup), and the estimated coefficient for the permanent-layoff subgroup is positive. Interestingly, the replacement rate coefficient for the definite-recall subgroup is more negative when weeks of UI collected is the dependent variable, which may be due to the prevalence of short layoffs with definite recall dates among several manufacturing industries (such as the automobile industry) that also have relatively high wages and hence low replacement rates. The estimated coefficients for potential duration are positive, except for the definite-recall subgroup.

Another possible test for the multiple spells effect is to break the sample into two groups, consisting of workers whose spells of UI receipt were broken only for short periods (shorter than 6 weeks) and workers whose spells of UI receipt were broken for longer periods (longer than or equal to 6 weeks). The purpose of this breakdown is to identify workers who had relatively long spells when they did not receive UI within the benefit period. These workers may have returned

to work briefly and then became unemployed at a later time, though we do not in fact have much information about the experiences of workers when they were not receiving UI. To determine the breakdown, we calculated the difference between the number of weeks from the benefit year beginning date to the last claim week ending date, and the number of weeks of benefits collected within the benefit year.[18]

For workers with less than a 6-week gap in UI collection, the estimated coefficients in Table III.5 were generally less negative than for the basic specification, which suggests that the multiple spells problem is partly driving the basic results. For workers with more than a 6-week gap in UI collection, the estimated coefficients are considerably more negative than for the basic specification. It should also be noted that workers whose gaps exceed 6 weeks are concentrated disproportionately among the temporary-layoff subgroups: 46 percent of workers with a definite recall date had collection gaps that exceeded 6 weeks, whereas only 21 percent of the permanent-layoff subgroup had gaps that exceeded 6 weeks.

The results of our tests indicate that the estimated effects of the UI program are sensitive to the particular definition of unemployment used, and to the existence of multiple spells of unemployment within the benefit year. However, comparisons of the estimated effects of the UI program for the various subgroups suggests that the disincentive effect of higher gross UI wage replacement rates is most evident for workers who do not expect to be recalled. This result conforms with the argument made in Chapter II that predictions about the effects of the program from conceptual models are more valid for workers who are likely to be searching for new jobs.

[18]We calculated the number of weeks of benefits collected from program records as the maximum benefit amount minus the remaining benefit amount, divided by the weekly benefit amount.

IV. LABOR MARKET AND ASSISTANCE PROGRAM EXPERIENCES

In Chapters II and III, we examined the two main questions of interest to this study: (1) the determinants of UI exhaustion and (2) the determinants of the duration of unemployment among UI recipients. This chapter addresses a number of subsidiary questions about the labor-market and assistance program experiences of exhaustees and nonexhaustees.

The discussion consists of five sections. Sections A and B examine two particular aspects of labor-market experiences--job-search activities and the characteristics of post-UI jobs. Sections C and D then examine the use of reemployment services--job-search services and training/education programs--by exhaustees and nonexhaustees. Section E discusses their receipt of retirement and public assistance benefits.

In these sections, we examine, where appropriate, the behavior of UI exhaustees both at the beginning of their UI spell and after they exhausted UI benefits. However, not all members of the exhaustee sample were asked questions about their job search and other behavior following benefit exhaustion. These questions were asked only of individuals who indicated in the interview that they had exhausted their UI benefits. About 22 percent of the exhaustee sample (as defined by UI administrative records) gave another reason why their UI spell ended; most indicated that they ended their UI spell because they became reemployed. Thus, the findings in this chapter on post-exhaustion behavior apply only to a subset of the full exhaustee population.[1]

[1]This caveat applies only to the questions in the interview that explicitly addressed behavior following exhaustion. Other results, such as those on rates of reemployment following exhaustion, apply to the full exhaustee sample.

A. JOB-SEARCH ACTIVITIES

This section examines the frequency and intensity of job search among exhaustees and nonexhaustees. This issue is an important area of interest, since, if a reduced level of job search were found to be associated with a higher probability of exhaustion, one policy prescription would be to encourage greater job-search activity among individuals likely to exhaust UI benefits. An increased level of job-search activity could be encouraged either by imposing administrative job-search requirements or by providing job-search services.

In order to examine job-search activity, respondents to the interview were asked about their job search at two points in time--all respondents were asked about their search activities at the start of the period of UI collection, and individuals who identified themselves as exhaustees were asked about their search activities following exhaustion. These two points in time were chosen both because they are likely points for any policy intervention and because focusing on specific points in time made it easier for respondents to answer the questions.[2]

Table IV.1 shows that, overall, exhaustees were significantly more likely than nonexhaustees to look for work when they began collecting UI. This difference was due in part to the different recall expectations for the two groups. Among individuals with no recall expectations, the proportions of exhaustees and nonexhaustees who looked for work were identical; 84 percent indicated that they searched for work at the start of UI. However, among individuals with recall expectations (with or without a definite recall date), exhaustees were more likely than nonexhaustees to look for work, and these differences were statistically significant.[3]

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[2]In some previous studies, interview respondents were asked about their job-search activity while they were unemployed. Some respondents who were unemployed for some time indicated to interviewers that their level of search activity had changed substantially over time and that it was difficult to answer the questions.

[3]These differences may be due to the fact that exhaustees were less certain than nonexhaustees about their chances of recall. Alternatively, the differences may reflect a reporting problem, since respondents were asked to report past job-search behavior. By the time of the interview, individuals who expected to be recalled but had exhausted their benefits may have been more likely to report searching for work than individuals who expected to be recalled and did not exhaust UI.

TABLE IV.1

JOB-SEARCH ACTIVITIES OF EXHAUSTEES AND NONEXHAUSTEES
(Percent)

	Exhaustees		Nonexhaustees
	At UI Start	After Exhaustion	At UI Start
Looked for Work			
Full Sample	82.3	74.0	61.7
No Recall Expectations	83.5	75.2	84.0
Expected Recall, No Definite Date	82.7	71.5	60.7
Expected Recall, Definite Date	68.4	57.4	26.8
Looked for Work			
Hours Looked Per Week			
0 to 5	21.4	26.1	26.8
6 to 10	27.2	26.9	24.1
11 to 20	34.6	29.8	32.6
21 or more	16.9	17.2	16.5
Mean	14.3	13.8	13.7
Number of Employers Visited In-Person			
0	5.2	5.7	8.3
1 to 2	19.9	26.1	23.2
3 to 5	45.0	41.0	41.7
6 or more	29.9	27.1	26.8
Number of Employers Contacted by Mail			
0	56.2	59.8	61.3
1 to 2	11.8	11.8	10.7
3 to 5	14.7	13.8	11.8
6 or more	17.3	14.6	16.2
Number of Employers Contacted by Telephone			
0	30.5	34.9	31.3
1 to 2	15.8	16.4	18.6
3 to 5	26.3	23.2	28.0
6 or more	27.4	25.4	22.2
Sample Size	1,581	1,114	623

TABLE IV.1 (continued)

	Exhaustees		Nonexhaustees
	At UI Start	After Exhaustion	At UI Start
Did Not Look for Work			
Reason for Not Looking for Work			
New job to start	4.5	37.1	7.1
Expected to be recalled	26.1	14.4	74.7
In school or other training	4.8	6.7	1.8
Did not want to look	20.5	8.9	3.9
Retired	4.8	8.3	1.3
Believed that no work was available	7.1	2.0	2.4
Ill health/disability	16.0	10.3	1.6
Family responsibility	3.9	6.2	0.5
Expected union to provide job	11.3	5.9	6.3
Other	1.2	0.3	0.5
Sample Size	337	388	383

NOTE: The sample of exhaustees who were asked about job search following exhaustion includes only those exhaustees who indicated that they had stopped collecting UI benefits because they exhausted their benefits. Exhaustees who said that they stopped collecting for other reasons (for example, they found a job) are not included in these distributions.

The data on the intensity of job search among individuals who looked for work at the start of UI show a similar story. Exhaustees looked for work as intensively as or more intensively than nonexhaustees, as opposed to less intensively. Both groups looked for work an average of 14 hours per week. Moreover, 95 percent of the exhaustees reported that they contacted one or more employers in person, compared with 92 percent of the nonexhaustees. Slightly higher proportions of exhaustees than nonexhaustees also reported contacting employers by mail or telephone.

These data on the probability of looking for work and on the intensity of job search when looking suggest that a reduced level of job-search activity among exhaustees relative to nonexhaustees was not the primary reason that one group of claimants exhausted benefits and the other did not. Nevertheless, the data also indicate that a sizeable group of exhaustees (18 percent) reported not looking for work at the start of UI. While some of these individuals were job-attached--they were waiting for a new job to start, they expected to be recalled, or they expected their union to find them a job--this group did not constitute the majority of those who did not look for work. Fully 60 percent gave other reasons for not looking for work that would classify them as out of the labor force. For example, 21 percent reported that they did not want to work, and 16 percent reported that they had ill health or a disability that prevented them from working. Only 7 percent could be classified as discouraged workers who believed that no work was available. In contrast, most of the nonexhaustees (88 percent) who did not look for work were job-attached. Translating these estimates into the full populations of exhaustees and nonexhaustees indicates that approximately 11 percent of all exhaustees (60 percent of 18 percent) appear to have been out of the labor force at the start of their UI claim, compared with 5 percent of nonexhaustees.[4]

[4]We examined the characteristics of the out-of-labor-force group by estimating a linear probability model with "out of the labor force" as the dependent variable. We used the independent variables from the analysis of the probability of exhaustion, excluding the variables on service receipt and the level of job search. We found that recall expectation, the local unemployment rate, and being a machine operator were negatively correlated with being out of the labor force, and that duration on the pre-UI job, being a married female, and quitting the pre-UI job were positively correlated with being out of the labor force.

Table IV.1 also reports measures of job search among exhaustees following exhaustion, for those who indicated that they exhausted UI. These data suggest that the likelihood of looking for work was lower following exhaustion than it was at the start of the UI claim period. However, a greater proportion of the individuals not looking for work were in the labor force (interestingly, most reported that they were waiting for a new job to start) than was the case for those not looking for work at the start of UI. Overall, the proportion out of the labor force was the same as we found at the start of UI.[5] However, the data on the intensity of job search show that the number of hours of search declined after exhaustion relative to the intensity of job search at the start of UI, as did the likelihood of contacting employers.

Individuals who looked for work either at the beginning of UI or following exhaustion were asked a series of questions to ascertain their perceptions of the barriers they faced in becoming reemployed. Table IV.2 reports the answers to these questions. The three reemployment barriers cited most often by exhaustees and nonexhaustees were (1) the lack of jobs in their occupation, (2) the lack of jobs in the local area, and (3) low pay. Substantial proportions also reported that they needed more education or experience or that they needed to obtain special degrees, licenses, or certifications.[6] In general, fewer individuals cited age, sex, or racial discrimination as barriers.[7]

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[5]In making this comparison, we ignored the individuals who were classified as exhaustees according to administrative records data but who did not report that they had exhausted benefits. This procedure seems appropriate, since most of these individuals appear to have stopped collecting UI to become reemployed.

[6]Respondents cited a wide range of required degrees, licenses, or certifications, including accounting degrees, driver's licenses for cars, trucks, and other vehicles, and medical technician or nursing certificates.

[7]A larger proportion of exhaustees than nonexhaustees cited age discrimination as a barrier to reemployment. This finding is consistent with the results of our exhaustion rate modeling, in which we found that age was positively correlated with exhaustion.

TABLE IV.2

PERCEIVED BARRIERS TO REEMPLOYMENT:
UI RECIPIENTS WHO LOOKED FOR WORK
(Percent)

	Exhaustees	Nonexhaustees
No Jobs Available in Occupation	69.4	66.7
Needed More Education or Job Experience	45.0	39.8
Needed to Obtain Special Degree, License, or Certification	18.9	14.3
Employers Felt That Respondent Was Too Old	21.3	12.4
Employers Felt That Respondent Was Too Young	6.1	6.6
Pay Was Too Low	56.1	55.9
Jobs Unavailable in Area	62.7	52.0
Sample Size	1,665	613

NOTE: The exhaustee sample includes individuals who looked for work either at layoff or after they exhausted their benefits.

Not surprisingly, greater proportions of exhaustees than nonexhaustees tended to perceive that they faced reemployment barriers.

B. CHARACTERISTICS OF POST-UI JOBS

An important area of investigation pertains to the nature of the jobs obtained by UI recipients and how those jobs compared with the jobs held prior to UI receipt. This comparison is important, since individuals who lose a job and become UI recipients not only experience a loss of income while unemployed, but may also continue to suffer income losses if their new jobs pay less than their pre-UI jobs. Losses in income, if they occur, may be due to a reduction in the number of hours worked or in hourly pay.

In this analysis of post-UI jobs, we report the results for both exhaustees and nonexhaustees, since the experience of both groups is of interest. However, we are careful not to make causal statements about the experiences of these two groups of UI recipients, since such statements could be misleading. For example, UI recipients in the sample tended to exhaust UI because they had not become reemployed. Consequently, UI exhaustees had lower rates of reemployment than nonexhaustees, but we cannot conclude that the exhaustion of UI precipitated the lower reemployment rate.

Table IV.3 presents data on the number of post-UI jobs held by UI recipients during the 20-month average period from the initial layoff to the interview date. The data show that 90 percent of the UI recipients held at least one job during this period. The data show further that approximately 40 percent of the individuals who became reemployed held more than one job during this period. As noted earlier, the reemployment rate for exhaustees (79 percent) was lower than the rate for nonexhaustees (95 percent).

Table IV.4 presents data on weekly wages. They show that a substantial number of exhaustees who became reemployed, and some nonexhaustees as well, suffered a reduction in weekly wages on their first post-UI job relative to the weekly wages they received on the pre-UI job. Thirty-

TABLE IV.3

POST-UI EMPLOYMENT
(Percent)

	Exhaustees	Nonexhaustees	Total[a]
Number of Post-UI Jobs			
0	21.3	5.2	9.6
1	45.4	58.2	54.7
2	22.9	23.7	23.5
3	8.8	10.6	10.1
4	1.3	1.2	1.2
5 or more	0.5	1.2	1.0
Sample Size	1,920	1,009	2,929

[a]The figures in this column take into account the oversampling of exhaustees relative to nonexhaustees.

TABLE IV.4

COMPARISON OF WAGES AND HOURS OF PRE- AND POST-UI JOBS FOR INDIVIDUALS WITH A POST-UI JOB
(Percent)

	Exhaustees		Nonexhaustees	
	Pre-UI Job	First Post-UI Job	Pre-UI Job	First Post-UI Job
Weekly Wages				
$200 or less	19.7	35.7	16.6	19.1
$201 to $300	23.6	22.0	26.2	23.6
$301 to $400	19.6	15.5	20.6	20.4
$401 to $500	12.5	9.5	10.1	10.7
$501 to $800	17.4	10.8	21.0	20.5
$801 or more	7.3	6.4	5.4	5.7
Mean	$415	$347	$406	$403
Ratio of Post-UI to Pre-UI Weekly Wages				
Less than .5		19.4		5.9
.5 to .75		17.1		8.3
.76 to 1.0		16.8		17.2
1.1 to 1.25		31.9		50.7
1.26 or more		14.7		17.9
Weekly Hours				
34 and under	6.7	23.4	6.5	11.0
35 to 39	6.3	6.4	4.5	5.8
40	45.2	41.1	51.8	52.7
41 to 45	10.3	6.8	11.5	10.9
46 or more	31.5	22.3	25.7	19.6
Mean	44.3	39.3	43.4	41.4

TABLE IV.4 (continued)

	Exhaustees		Nonexhaustees	
	Pre-UI Job	First Post-UI Job	Pre-UI Job	First Post-UI Job
Ratio of Post-UI to Pre-UI Weekly Hours				
Less than .5		9.1		3.3
.5 to .75		13.6		6.6
.76 to 1.0		20.6		17.1
1.1 to 1.25		46.8		66.1
1.26 or more		9.9		7.0
Sample Size		1,513		963

seven percent of the exhaustees and 14 percent of the nonexhaustees who became reemployed earned weekly wages that were 75 percent or less than the amount they received on their pre-UI jobs. Conversely, some individuals experienced gains in weekly wages; 15 percent of the exhaustees and 18 percent of the nonexhaustees received weekly wages that were more than 25 percent greater than the wages they received on their pre-UI job. Overall, however, mean weekly wages declined for exhaustees from $415 to $347 per week, a 16 percent decline. Mean weekly wages remained stable for nonexhaustees at just over $400 per week.

The data in Table IV.4 on hours worked per week suggest that, for many individuals, weekly wages were lower because the number of hours worked per week were lower. For example, the number of hours worked per week declined by 25 percent or more for 23 percent of the exhaustees and 10 percent of the nonexhaustees. Looked at another way, the prevalence of part-time work increased. Among exhaustees, 7 percent worked 34 or fewer hours per week on the pre-UI job, while 23 percent worked 34 or fewer hours per week on the first post-UI job. The comparable numbers for nonexhaustees were 7 and 11 percent. For exhaustees, the reduction in the number of mean hours worked per week from 44 to 39 hours explained about two-thirds of the reduction in mean weekly wages. The other third was due to a reduction in mean hourly wages.

Table IV.5 reports additional data on the first post-UI job. The data show that the four main job sources for both exhaustees and nonexhaustees were recall by pre-UI employers, friends and relatives, want ads, and direct application with employers. As has been noted throughout the report, recalls were particularly important for nonexhaustees (54 percent obtained their first post-UI job via recalls). However, almost one-quarter of the exhaustees were also recalled by their former employer.

Table IV.5 also shows that employment in the first post-UI job obtained by UI recipients was often unstable. These jobs were terminated before the date of the interview for 55 percent of the exhaustees and 46 percent of the nonexhaustees. For both groups of recipients, the two primary reasons given for job-endings were layoffs (55 percent) and quits (almost 40 percent).

TABLE IV.5

SELECTED CHARACTERISTICS OF THE FIRST POST-UI JOB
FOR INDIVIDUALS WITH A POST-UI JOB
(Percent)

	Exhaustees	Nonexhaustees
Source of Job		
Recall	24.1	53.5
Employment Service/Job Service	4.2	3.4
Private employment agency	2.3	1.7
Friends, relatives	25.5	13.2
Want ads	14.3	10.0
Directly with employer	20.2	12.7
Union	3.9	3.1
Self-employed	5.5	2.4
On-the-Job Training Job	0.9	0.9
Reason for Job End		
Job did not end as of interview	44.7	54.5
Laid off	31.2	25.0
Quit	20.4	17.7
Fired	3.1	1.8
Retired	0.3	0.5
Other	0.3	0.5
Sample Size	1,513	963

The fact that some individuals quit their first post-UI job suggests that some individuals may have initially accepted a lower-paying job offer than they desired and then were able to find a better-paying job. To investigate this possibility, we compared weekly wages and hours worked on the pre-UI job with weekly wages and hours worked on the post-UI job with the highest weekly wages. These comparisons showed that 28 percent of the exhaustees and 8 percent of the nonexhaustees had weekly wages on the highest paying post-UI job that were 75 percent or less than the amount received on their pre-UI job. The comparable figures for the first post-UI job were 37 and 14 percent. The data on hours worked on the highest-paying post-UI job suggest that fewer of these jobs were part-time than was the case with the first post-UI job. Among exhaustees, 18 percent worked less than 35 hours per week on the highest-paying post-UI job, compared with 23 percent on the first post-UI job. The comparable numbers for nonexhaustees were 8 versus 11 percent. These findings indicate that some individuals were able to obtain better-paying jobs than their first post-UI job. Nevertheless, a substantial number of individuals still suffered a reduction in weekly wages and hours worked relative to their pre-UI job.

Table IV.6 presents data on the industry of the pre-UI and first post-UI jobs. The data show clearly that a substantial shift in industries occurred between the pre-UI and post-UI jobs, particularly among exhaustees.[8] As has been observed in other studies (see, for example, Herz, 1990), the main shift was from manufacturing to retail trade and services. For example, 31 percent of the exhaustees who became reemployed held pre-UI jobs in manufacturing, while only 21 percent of this group held a manufacturing job for their first post-UI job. In contrast, the percentage with a job in retail trade rose from 11 to 16 percent and in services from 18 to 24 percent. Overall, 58 percent of the exhaustees and 32 percent of the nonexhaustees changed industries, as defined at the 2-digit SIC level.

[8]Comparisons of the industry and occupation of the highest-paying post-UI job with the pre-UI job are quite similar to the comparisons reported here between the first post-UI job and the pre-UI job.

TABLE IV.6

COMPARISON OF INDUSTRY AND OCCUPATION OF PRE- AND POST-UI JOBS FOR INDIVIDUALS WITH A POST-UI JOB
(Percent)

	Exhaustees		Nonexhaustees	
	Pre-UI Job	First Post-UI Job	Pre-UI Job	First Post-UI Job
Industry				
Agriculture/Forestry/Fishing	4.2	4.6	3.2	2.8
Mining	2.1	1.4	1.7	1.8
Construction	15.3	15.8	16.8	16.4
Durable Manufacturing	16.2	9.8	25.0	22.5
Nondurable Manufacturing	14.3	11.3	18.3	16.7
Transportation/Public Utilities	5.3	5.0	4.4	4.3
Wholesale Trade	3.8	2.9	3.1	2.8
Retail Trade	10.8	16.0	8.2	9.9
Finance/Insurance/Real Estate	5.4	4.6	3.1	3.4
Services	18.2	24.1	13.8	16.3
Public Administration	4.2	4.7	2.5	3.3
Change in 2-Digit Industry Code		58.2		31.6
Occupation				
Managerial/Professional	12.3	11.0	8.0	8.1
Technical and Related Support	1.8	2.0	2.0	2.3
Sales	6.4	10.2	5.7	5.9
Administrative Support	18.8	15.8	12.3	12.8
Service Occupations	8.5	13.4	6.1	7.3
Mechanics and Repairers	4.0	3.6	5.6	5.5
Construction and Extractive	9.4	9.0	11.4	10.6
Precision Production	2.4	1.4	2.9	2.5
Machine Operators	15.8	11.1	26.1	24.8

TABLE IV.6 (continued)

	Exhaustees		Nonexhaustees	
	Pre-UI Job	First Post-UI Job	Pre-UI Job	First Post-UI Job
Transportation and Material Moving	6.9	7.3	7.6	8.7
Handlers	8.6	10.1	8.3	8.3
Farming/Forestry/Fishing	5.1	5.1	4.1	3.2
Change in 2-Digit Occupation Code		52.6		31.6
Sample Size		1,513		963

Similar changes were reflected in the occupational distribution. The percentage of exhaustees with a sales or service job rose substantially, while the percentage with a machine operator job declined. Overall, 53 percent of the exhaustees and 32 percent of the nonexhaustees changed occupations, as defined at the 2-digit SOC level.

C. THE USE OF REEMPLOYMENT SERVICES

Job search, job placement, and other reemployment services are made available to UI recipients through each state's Employment or Job Service (JS). In most states, UI recipients who are not job-attached are generally referred to the JS by UI staff, although the timing of referrals and the degree to which compliance is monitored and enforced vary considerably among states. In addition, some UI recipients may qualify for and receive reemployment services, including education and training, through the Job Training Partnership Act (JTPA) program.[9] JS staff may refer UI recipients to JTPA, or UI recipients may go directly to the JTPA system.

While reemployment services are available to UI recipients, it is important that we examine the degree to which UI recipients actually received such services, particularly the degree to which individuals who exhausted UI benefits received services. Table IV.7 reports data on services other than training and education. (Participation in training and education is examined in the next section.)

The data show that, overall, 64 percent of the exhaustees received reemployment services (other than training) from the Job Service, and 8 percent received services from JTPA or another source at the start of the UI period.[10] As one would expect, the rates of receipt for nonexhaustees were lower. However, this lower rate of service receipt for nonexhaustees was due

[9]UI recipients would be eligible for services from the JTPA program if they qualified as disadvantaged individuals or as dislocated workers.

[10]These rates of service receipt are very similar to the rates reported in Richardson et al. (1989) for long-term UI claimants.

TABLE IV.7

USE OF REEMPLOYMENT SERVICES OTHER THAN TRAINING
(Percent)

	Exhaustees		Nonexhaustees
	At UI Start	After Exhaustion	At UI Start
Received Services from Job Service	64.1	29.2	50.0
No recall expectations	65.8	30.0	64.2
Expected recall, no definite date	62.5	26.0	51.2
Expected recall, definite date	54.7	27.4	25.2
Received Services from JTPA or other Source	8.4	4.9	3.7
No recall expectations	9.6	5.5	6.4
Expected recall, no definite date	6.4	3.5	1.7
Expected recall, definite date	1.7	1.6	2.0
Sample Size	1,920	1,506	1,009
Services Received from Job Service			
Taught how to apply for jobs	34.2	15.0	27.8
Assistance in applying for jobs	37.4	20.0	32.3
Information on occupations	24.2	13.5	18.8
Testing	21.2	13.3	19.4
Information about job training programs	35.8	18.5	31.9
Information about education programs	26.2	15.0	22.2
Referrals to other agencies	17.8	13.5	13.9
Received job referral(s)	37.3	33.3	32.7
Received job offer(s)	5.8	7.9	10.3
Accepted a job	2.8	6.5	6.3
Sample Size	1,234	480	505

primarily to the fact that a greater proportion of nonexhaustees were job-attached. Exhaustees and nonexhaustees who had no recall expectations exhibited similar rates of service receipt from the Job Service.

A further point to be noted about these data is that, while about 65 percent of the individuals without recall expectations received services from the Job Service, the remaining 35 percent did not receive any services. This finding suggests that it may be possible to increase the extent to which reemployment services are provided to UI recipients. Moreover, such increases might be beneficial at reducing the duration of unemployment among UI recipients.[11]

Other tabulations reported in the table show the services received by individuals who went to the Job Service. Several observations are worth noting:

- Exhaustees reported greater rates of service receipt at the start of UI than did nonexhaustees, suggesting that, among individuals who went to the Job Service, reemployment services were targeted toward individuals who experienced long spells of unemployment.

- Roughly one-third of the exhaustees and nonexhaustees received services whose purpose was to promote their own job search. For example, 34 percent of the exhaustees and 28 percent of the nonexhaustees who went to the Job Service reported being taught how to apply for jobs. Thirty-seven percent of exhaustees and 32 percent of nonexhaustees reported receiving assistance in applying for jobs.

- Thirty-seven percent of the exhaustees and 33 percent of the nonexhaustees received referrals to jobs. However, more nonexhaustees than exhaustees both received job offers and accepted jobs that stemmed from these referrals. Of course, this exhaustee-nonexhaustee difference in the likelihood of obtaining a job through the Job Service cannot be interpreted as evidence that the Job Service served the one group more than the other. Rather, the greater likelihood of nonexhaustees' obtaining a job more effectively is tautological; nonexhaustees became nonexhaustees because they obtained jobs.

The final set of data in Table IV.7 focuses on the receipt of reemployment services by exhaustees following exhaustion. Not surprisingly, fewer exhaustees received services following exhaustion than at the start of UI (e.g., 29 percent received Job Service services following

[11]The results of the New Jersey UI Reemployment Demonstration Project (Corson et al., 1989) suggest that the provision of job-search services to UI claimants can hasten reemployment.

exhaustion, compared with 64 percent at the start of UI). Moreover, the likelihood of receiving any one specific service was lower after exhaustion than it was at the start of UI. However, the relative importance of job referrals was more important. There is also some indication that these referrals were more likely to lead to job offers and the acceptance of jobs than was the case at the start of UI.

D. PARTICIPATION IN TRAINING AND EDUCATION PROGRAMS

There are several reasons for examining the participation of UI recipients in training and education programs. First, it has been argued that some individuals who become unemployed may require retraining or further education to become reemployed in a changing labor market. Second, some individuals who could find jobs may find that training and education are useful for enhancing their skills and their job prospects. Finally, some observers of the UI system (see the discussion in Kerachsky and Corson, 1989) have argued that it would be productive to promote a greater degree of training and other reemployment services for UI recipients. It can also be argued that, while job-search and job placement services are generally provided to UI recipients through referrals to the Job Service, referrals to training and education programs, such as those provided through the JTPA program, are much less routinized and hence less likely to occur.[12]

Data for examining the use of training and education programs by current UI recipients were collected in the interview by asking respondents to describe their participation in any training and education programs between the loss of their pre-UI job and the interview date. Table IV.8 shows that 16 percent of the exhaustees and 10 percent of the nonexhaustees reported having participated in one or more training or education programs. Most of these individuals participated in one such program. Further, 76 to 80 percent of these programs or courses involved skill/occupational training as opposed to general education.

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[12]For a discussion of the linkages among the UI, Job Service, and JTPA systems, see Richardson et al. (1989).

TABLE IV.8

CHARACTERISTICS OF EDUCATION OR TRAINING
RECEIVED BY UI RECIPIENTS
(Percent)

	Exhaustees	Nonexhaustees
Received Training or Education between Layoff and Interview Date (Number of Programs)		
1	13.4	8.1
2	1.6	1.4
3 or more	0.5	0.1
Total	15.5	9.6
Type of Training or Education (First Program)		
Skill/occupation training	76.4	80.2
General education	23.6	19.8

Tables IV.9 and IV.10 provide further information on the nature of occupational training and the education programs. The first fact that stands out in the tables is that not all of the training and education began during the period of unemployment. Some of the training (7 to 9 percent) and, to a larger degree, the education (13 to 20 percent) appears to have been a continuation of training or education programs that had been begun prior to the layoff. A larger proportion of the training and education that was reported (about 30 percent for exhaustees and 60 percent for nonexhaustees) appears to have begun after the start date of the first post-UI job. Hence, much of the training and education was probably related to reemployment, although we did not ask explicitly whether this was the case.

Table IV.9 provides data on occupational training. They show that the three most popular types of training were in (1) computer programming and other data processing occupations, (2) nursing and other medical occupations, and (3) secretarial and word processing occupations. A wide range of other occupations were listed by the respondents. About half the training was provided by vocational training centers and community colleges. Business schools and private companies provided another 30 to 40 percent of the training. Table IV.10 provides data on education. They show that the primary type of education was college or graduate education (59 percent for exhaustees and 75 percent for nonexhaustees). Smaller proportions of the educational courses were high school/GED or adult education courses.

Relatively little of the training and education appears to have been provided directly through government programs such as JTPA. For example, 21 percent of the exhaustees and 14 percent of the nonexhaustees reported receiving training through a government program. Similar percentages were reported for the education programs.

Other data in the tables show that most individuals had either completed the training or education programs prior to the interview or were still engaged in the programs. Relatively few of the individuals had dropped out of the programs (8 to 10 percent from training and 14 to 15

TABLE IV.9

CHARACTERISTICS OF OCCUPATIONAL TRAINING
(Percent)

	Exhaustees	Nonexhaustees
Start of Training		
Before layoff	9.3	6.5
Layoff to the end of UI or job start	43.8	23.4
After job start	30.4	58.4
After the end of UI (no job)	14.1	11.7
Type of Training		
Computer programming, data processing	11.0	20.8
Nursing, therapist, medical	11.9	6.5
Secretarial, word processing	10.6	7.8
Real estate sales	6.2	6.5
Cosmetology, beautician	2.2	7.8
Teaching certification	4.0	1.3
Air conditioning, refrigeration, heating	3.1	1.3
Engineering, design	2.6	2.6
Other	48.4	54.6
Source of Training		
Vocational training center	25.7	17.6
Community college	28.8	29.7
Business school	16.7	18.9
Company	12.2	18.9
Adult education	8.6	6.8
Other	8.1	8.1
Government Program	21.2	14.3

TABLE IV.9 (continued)

	Exhaustees	Nonexhaustees
Duration of Program		
Less than 1 month	11.5	13.3
1 or 2 months	15.7	18.7
3 to 5 months	26.7	32.0
6 to 11 months	19.4	9.3
12 to 23 months	18.9	18.7
24 or more months	7.8	8.0
Completed Program	63.4	63.6
Dropped Out of Program	9.8	7.8
No Specified Completion	0.4	1.3
Still in Program	26.4	27.3
Was Program Useful in Obtaining a Job?		
Yes	63.8	69.6
No	26.4	26.8
Don't know	9.8	3.6
Sample Size	227	77

TABLE IV.10

CHARACTERISTICS OF GENERAL EDUCATION COURSES
(Percent)

	Exhaustees	Nonexhaustees
Start of Education		
Before layoff	12.9	20.0
Layoff to the end of UI or job start	37.1	20.0
After job start	28.6	60.0
After the end of UI (no job)	21.4	0.0
Type of General Education		
High school	1.4	0.0
GED	18.6	5.0
Non-credit adult education	18.6	15.0
Two-year college	12.9	25.0
Four-year college	34.3	40.0
Graduate or professional program	11.4	10.0
Other	2.9	5.0
Government Program	21.4	10.0
Duration of program		
Less than 1 month	3.0	5.3
1 or 2 months	14.9	10.5
3 to 5 months	25.4	15.8
6 to 11 months	20.9	15.8
12 to 23 months	22.4	26.3
24 or more months	13.4	26.3
Completed Program	30.0	15.0
Dropped Out of Program	14.3	15.0
No Specified Completion	4.3	0.0
Still in Program	51.4	70.0

TABLE IV.10 (continued)

	Exhaustees	Nonexhaustees
Was Program Useful in Obtaining a Job?		
Yes	54.5	33.3
No	33.3	50.0
Don't know	12.1	16.7
Sample Size	70	20

percent from education programs). Data not reported in the table indicate that one of the primary reasons for dropping out of a program was to become reemployed. Finally, the data in the tables show that 64 to 70 percent of the individuals who attended training programs reported that the programs helped them obtain a job. Smaller percentages of the individuals in education programs reported that the programs helped them obtain a job.

Finally, we examined the characteristics of individuals who received training or education, by estimating a linear probability model to explain participation. This model showed that age, being Hispanic, having less than a high school diploma, expecting recall, being a married female, and having an extractive industry occupation were negatively correlated with participation in an occupational training or education program. Being an unmarried female, having a college education, and being a union member were positively correlated. Similar results were found when we estimated separate models for training and education.

E. THE RECEIPT OF RETIREMENT AND PUBLIC ASSISTANCE BENEFITS

Table IV.11 reports the receipt of retirement and public assistance benefits by exhaustees and nonexhaustees. Twelve percent of the exhaustees or their spouses and 9 percent of the nonexhaustees or their spouses received pensions or social security benefits at some time during the period covered by the questionnaire (that is, from the beginning of UI to the interview date), a difference which was statistically significant.[13] These rates of retirement benefit receipt by exhaustees are slightly lower than those reported by Smith and Vavrichek (1990) in their study of long-term UI recipients. That study, which was based on data from the Survey of Income and Program Participation (SIPP), reported that approximately 16 percent of the families of long-term

[13]It should be noted that the receipt of social security or pension income does not imply that the exhaustee or nonexhaustee retired. The recipient could have been the respondent's spouse, or the respondent could have been looking for work or, in some cases, working. In fact, in response to questions about the reason that the pre-UI or post-UI job(s) ended or about the reasons for not looking for work, only 2.5 percent of the exhaustees and 1.5 percent of the nonexhaustees said that they retired.

TABLE IV.11

RECEIPT OF RETIREMENT AND PUBLIC ASSISTANCE BENEFITS
(Percent)

	Exhaustees	Nonexhaustees
Received Social Security or Railroad Retirement Since Start of UI	7.6	5.6
Received Pension Since Start of UI	7.3	5.1
Received Social Security, Railroad Retirement, or Pension Since Start of UI	11.9	8.5
Received AFDC, SSI, or Other Welfare		
At UI start	4.3	2.1
After exhaustion	7.0	n.a.
Received Food Stamps		
At UI start	7.5	3.1
After exhaustion	10.4	n.a.

NOTE: The sample contained 1,920 exhaustees and 1,009 nonexhaustees; 1,506 exhaustees were asked about their post-UI receipt of public assistance benefits. The social security and pension questions apply to the UI recipient and his or her spouse.

n.a. = not applicable

UI recipients were receiving some pension or social security income three months after the end of the UI spell.

Other data in Table IV.11 show that relatively few individuals received either cash (AFDC, SSI, or other welfare) or in-kind (food stamps) means-tested public assistance. While low, the rates of receipt were significantly higher for exhaustees than for nonexhaustees (by a factor of 2). The rates of benefit receipt also increased following the exhaustion of benefits, from 4 to 7 percent for cash benefits and 8 to 10 percent for food stamps. The low rates of public assistance receipt found in this study are quite similar to those found in studies based on tabulations from SIPP (Smith and Vavrichek, 1990; and Corson and Nicholson, 1989). Similar results were also found for FSB recipients in the mid-1970s (Corson et al., 1977).

V. POLICY ANALYSIS

In this chapter, we use the nationally representative database of UI recipients collected for this study and the analyses of those data presented earlier to examine a number of important UI policy questions. The discussion encompasses three sections that correspond to the three types of policies listed in Chapter I. Section A examines the implications of our findings for policies that are designed to counter the work disincentive effects of UI benefits. In general, these policies entail providing administrative incentives for recipients to seek work. Section B examines the targeting of training or other reemployment services by addressing whether groups of UI recipients who might benefit from such services can be identified. We examine two such groups--dislocated workers and low-skill workers. However, the data and analysis for this study do not enable us to examine the efficacy of such services at enhancing reemployment.

Section C examines the policy implications of the study for extended benefits--the implications of using state exhaustion rates for defining triggers for instituting extended benefits, of directing extended benefits to individuals in areas that exhibit high local unemployment rates, and of targeting extended benefits to dislocated workers.

As noted previously, the sample used for these analyses was drawn during a non-recessionary period. Since the characteristics of the sample and our results would likely differ during a recessionary period, the results reported here apply only to non-recessionary periods. However, this focus is appropriate for many of the policies that are examined. For example, the purpose of extending benefits to areas with high local unemployment rates or to dislocated workers is in part to provide extended benefits to some individuals when overall unemployment rates are relatively low.

A. STRENGTHENING WORK INCENTIVES

The purpose of UI benefits is to alleviate the financial hardships of unemployed workers while they search for and find suitable jobs. However, since the availability of UI benefits may create a disincentive to search for and accept reemployment, the UI system encourages recipients to seek work by imposing various administrative requirements. All recipients are required to be able and available for work; in most states, recipients who are not job-attached are expected to look actively for work, and they are often required to list job-search contacts when claiming UI benefits.[1] UI recipients who are not job-attached are usually referred to the Job Service for services which ma. themselves promote rapid reemployment.

Since some recipients exhaust UI benefits despite the imposition of these job-search requirements, one policy response to UI benefit exhaustion would be to strengthen the incentives for UI recipients to become reemployed prior to exhaustion. Strengthening work incentives might entail imposing stricter job-search requirements and monitoring compliance with those requirements, or strengthening mechanisms for referring recipients to the Job Service or other providers of reemployment services. Job-search requirements or referral policies for reemployment services that become increasingly stricter as UI spells lengthen might also strengthen work incentives.

While our findings on the disincentive effects of the availability of UI benefits were mixed, they do provide some guidance about targeting administrative work incentives. Our findings that (1) recall expectations--especially the existence of a definite date for recall at the time of layoff--had large negative effects on the duration of unemployment and the probability of exhaustion, and that (2) most individuals who expected to be recalled were in fact recalled, suggest that polices that impose minimal or no work search or Job Service registration requirements on job-attached claimants are appropriate. Most states pursue such polices.

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[1]In some states, all workers who expect to be recalled are exempt from search requirements; in others, only those who have definite recall dates are exempt.

We also found that 16 percent of UI recipients who did not expect to be recalled did not look for work at the start of the UI period, and that the majority of this group gave reasons for not looking for work that would classify them as being out of the labor force. Moreover, the fact that during the survey period 62 percent of the individuals who were classified as out of the labor force became reemployed suggests that some of these individuals dropped out of the labor force temporarily. These findings suggest that some strengthening of search requirements for non-job-attached UI recipients may be appropriate.

Ideally, targeting any additional search requirements towards individuals who are not job-attached and not looking for work would be sensible. However, it is unlikely that such individuals would report to UI administrators that they were not looking for work. Further, our analysis did not identify any characteristics of this group that could be used operationally.

The characteristics of exhaustees by the duration of their unemployment following exhaustion could potentially be used to target work search requirements if individuals who exhaust benefits and then become reemployed quickly could be identified. However, an analysis of the characteristics of exhaustees by the duration of unemployment following exhaustion (Table V.1) shows that individuals who became reemployed within 4 weeks and those who became reemployed within 4 to 10 weeks differed slightly. What is clear, however, is that exhaustees who were unemployed more than 10 weeks after exhaustion experienced substantial difficulty in becoming reemployed. Almost 40 percent of the exhaustees in this group remained unemployed as of the interview date. Further, exhaustees who were unemployed more than 10 weeks after exhaustion and who became reemployed had lower post-UI weekly wages relative to pre-UI weekly wages than did exhaustees who became reemployed more quickly.

In summary, our findings indicate that policies that impose few or no work search or Job Service registration requirements on UI recipients who expect to be recalled are appropriate, since

TABLE V.1

THE CHARACTERISTICS OF UI EXHAUSTEES
BY THE TIMING OF REEMPLOYMENT

	Reemployment Following Exhaustion		
	Less Than or Equal to 4 Weeks	4 to 10 Weeks	10 or More Weeks
Percent Female	37.0	44.9	46.5
Percent White	73.5	71.6	66.7
Mean Age	38.0	37.0	40.9
Percent Married	58.1	39.8	58.7
Pre-UI Industry			
Agriculture/Mining	6.5	4.2	6.7
Construction	15.7	13.1	14.0
Durable Manufacturing	20.3	13.6	17.4
Nondurable Manufacturing	14.1	15.3	12.9
Transportation, Public Utilities	5.4	5.5	4.5
Wholesale and Retail Trade	11.6	16.9	17.4
Finance and Service Industries	22.1	25.4	23.5
Public Administration	4.3	5.9	3.7
Seasonal Industry	26.2	24.6	25.4
Pre-UI Occupation			
Managerial, Professional	11.9	11.9	11.6
Technical, Sales, and Administrative Support	24.6	28.8	27.9
Service Occupations	5.1	8.1	11.6
Precision Production, Craft, and Repair	16.0	15.6	14.1
Operators, Fabricators, and Laborers	36.8	31.4	29.3
Farming, Forestry, and Fishing	5.7	4.2	5.4

TABLE V.1 (continued)

	Reemployment Following Exhaustion		
	Less Than or Equal to 4 Weeks	4 to 10 Weeks	10 or More Weeks
UI Program			
Mean Replacement Rate	0.43	0.48	0.43
Mean Potential Duration	22.7	22.2	22.7
Labor-Market Outcomes			
Reemployed (Percent)	100.0	100.0	61.5
Recalled (Percent)	26.2	25.8	16.5
Mean Initial Unemployment Spell	27.9	33.3	48.1
Mean Ratio of Post-UI to Pre-UI Weekly Wages	0.94	1.00	0.89
Mean Ratio of Post-UI to Pre-UI Hours Worked	0.93	0.97	0.91
Sample Size	370	236	920

NOTE: Individuals were categorized on the basis of the first job held following the last claim week ending date. Individuals in New York were excluded from the table because their last claim week ending date was not available. Individuals in the 10 or more weeks category did not necessarily find a job before the interview date.

these individuals have shorter unemployment spells than other recipients and since these individuals typically do return to their pre-UI employer. Our findings did not suggest any other factors which could be used to target work incentives.

B. ENHANCING REEMPLOYMENT SERVICES

The Unemployment Insurance system provides reemployment services to UI recipients by referring them to the Job Service and through the Job Service to the JTPA system. However, in a study of the UI system, Richardson (1989) has argued that these linkages are often weak and could be improved, particularly for individuals who experience long spells of UI collection. Studies of programs for dislocated workers (Kulik et al., 1984; and Corson et al., 1985) and UI recipients (Corson et al., 1989) have also indicated that providing reemployment services to unemployed individuals can improve reemployment outcomes.

While we did not specifically examine referral mechanisms to the Job Service and JTPA systems, and though we were unable to examine the effect of service receipt on reemployment, the current study can be used to identify groups of individuals who experience difficulty in becoming reemployed and who may thus benefit from enhanced reemployment services. Our study can also be used to examine the extent to which individuals in these groups currently receive reemployment services.[2] We investigate these issues for two groups of individuals who are expected to experience reemployment difficulties--dislocated workers and low-skill workers.

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[2]Although we did not directly examine linkages among UI, the Job Service, and JTPA, we did examine the rates of reemployment service receipt among exhaustees. We found that 65 percent of the UI exhaustees received some services from the Job Service, and that approximately 15 percent received training or educational services (about 20 percent of the training and educational services were provided by a government program). These estimates were quite similar to those obtained in the Richardson study.

1. Dislocated Workers

Dislocated workers are generally considered to be workers who are permanently separated from their employers and who are expected to have difficulty in becoming reemployed because they have not had recent job-search experience or because their job skills are no longer in demand. In several surveys of dislocated workers (e.g., Flaim and Sehgal, 1985; and Herz, 1990), the Bureau of Labor Statistics (BLS) has defined these workers as individuals who lose their jobs because their plants closed, their employer went out of business, or they were laid off and were not recalled. The BLS has added the further restriction that a dislocated worker must have worked three or more years on the job that he or she lost. By this definition, 21 percent of the exhaustee sample and 9 percent of the nonexhaustee sample are classified as dislocated.

Table V.2 presents data on the characteristics of these workers and their labor-market outcomes. The data show that the dislocated workers were older and more likely to be married than were other UI recipients, and they were more likely to have worked in durable manufacturing. These differences were more pronounced for exhaustees, suggesting that older workers who were dislocated from manufacturing jobs found it particularly difficult to become reemployed. The table also shows that a significant proportion of dislocated workers were employed in white-collar occupations. Eleven percent were employed in managerial and professional occupations, and 29 percent were employed in technical, sales, and administrative support occupations.

Other data in the table show that, as defined by the BLS, dislocated workers did appear to face greater reemployment barriers than did other workers. Only 81 percent had become reemployed during the 20-month period covered by the survey, compared with 92 percent of the non-dislocated workers. The UI exhaustion rate was 47 percent for the dislocated workers, compared with 25 percent for non-dislocated workers. Dislocated workers also suffered a larger decline in average weekly earnings. Not surprisingly, the data on exhaustees and nonexhaustees suggest that most of the wage losses were suffered by dislocated workers who were exhaustees.

TABLE V.2

SELECTED CHARACTERISTICS AND LABOR-MARKET OUTCOMES:
DISLOCATED WORKERS, BLS DEFINITION

	Exhaustees		Nonexhaustees		Total	
	Dislocated Workers	Others	Dislocated Workers	Others	Dislocated Workers	Others
Percent Female	44.8	44.2	39.6	39.8	42.0	40.9
Percent White	72.9	68.3	79.1	76.7	76.2	74.6
Mean Age	44.6	38.3	38.9	37.3	41.6	37.6
Percent Married	67.6	56.3	74.7	61.2	71.4	60.0
Pre-UI Industry						
Agriculture/Mining	4.0	6.4	3.5	4.8	4.8	5.2
Construction	9.6	15.6	14.3	17.0	12.1	16.7
Durable Manufacturing	30.4	13.4	23.1	24.8	26.5	22.0
Nondurable Manufacturing	13.6	14.1	19.8	17.9	16.9	16.9
Transportation, Public Utilities	6.5	4.6	4.4	4.3	5.4	4.3
Wholesale and Retail Trade	15.3	15.4	12.1	11.8	13.6	12.7
Finance and Service Industries	17.8	26.4	17.6	17.0	17.7	19.3
Public Administration	2.8	4.1	3.3	2.5	3.1	2.9
Seasonal Industry	16.6	27.4	19.8	25.1	18.3	25.7
Pre-UI Occupation						
Managerial, Professional	14.1	10.9	8.8	8.3	11.3	8.9
Technical, Sales, and Administrative Support	27.9	28.1	29.7	19.2	28.8	21.4
Service Occupations	6.3	10.5	4.4	6.6	5.3	7.6
Precision Production, Craft, and Repair	14.8	15.1	23.1	19.3	19.2	18.3
Operators, Fabricators, and Laborers	34.2	30.1	31.9	42.3	32.9	39.3
Farming, Forestry, and Fishing	2.8	5.3	2.2	4.4	2.5	4.6
UI Program						
Mean Replacement Rate	.43	.44	.42	.44	.42	.43
Mean Potential Duration	24.3	22.6	25.0	24.5	24.7	24.0

TABLE V.2 (continued)

	Exhaustees		Nonexhaustees		Total	
	Dislocated Workers	Others	Dislocated Workers	Others	Dislocated Workers	Others
Labor-Market Outcomes						
Reemployed (Percent)	68.6	81.5	91.2	95.9	80.7	92.3
Recalled (Percent)	0.0	27.0	0.0	56.4	0.0	49.1
Exhausted UI (Percent)	100.0	100.0	0.0	0.0	46.5	24.8
Mean Initial Unemployment Spell	39.5	35.5	16.7	14.6	25.9	19.2
Mean Ratio of Post-UI to Pre-UI Weekly Wages	.78	.96	1.05	1.05	.94	1.03
Mean Ratio of Post-UI to Pre-UI Hours Worked	.89	.93	.95	.98	.93	.97
Services						
Received Services from Job Service	63.8	64.1	60.4	48.8	62.0	52.6
Received Other Reemployment Services	10.3	7.9	5.5	3.5	7.7	4.6
Received Occupational Training	14.1	11.2	6.6	7.7	10.1	8.6
Received Education	4.5	3.4	0.0	2.1	2.1	2.4
Sample Size	398	1,522	91	918	489	2,440

The final set of data in the table show that, while dislocated workers received a greater level of reemployment services than did non-dislocated workers, the differences were small, and many dislocated workers did not receive any services.

These findings suggest that dislocated workers might benefit from enhanced reemployment services. However, since the BLS definition of dislocation is based in part on a reemployment outcome (i.e., not being recalled), it does not provide operational guidance to program operators about the types of workers toward whom services should be directed. For this reason, we examined two additional definitions of dislocation. The first, which we term the "modified BLS definition," is identical to the BLS definition, with the exception that it encompasses recall expectation, rather than recall outcome. That is, we defined dislocated workers as all individuals with three or more years of experience on the pre-UI job who lost their pre-UI job because their plant closed, they were laid off, etc., and they did not expect to be recalled. The second modified definition (termed the "plant closing" definition) defined dislocated workers as those who reported that they lost their job because their plant closed, their company moved, or their job or shift was eliminated. We excluded individuals who were laid off due to a lack of work, and we did not impose any tenure or recall requirements.

Tables V.3 and V.4 examine the implications of these definitions. The modified BLS definition identified 10 percent of UI recipients as dislocated, compared with 12 percent based on the BLS definition. The plant closing definition encompassed more individuals, identifying 17 percent as dislocated. If we compare the data on labor-market outcomes in Table V.4 for the three definitions, it is apparent that both the BLS definition and the modified BLS definition seem to identify a group of UI recipients who face some difficulty in becoming reemployed. The plant closing definition appears to be inferior to the modified BLS definition at identifying workers who face reemployment problems (e.g., 13 percent of the workers in this group were recalled, compared

TABLE V.3

DISLOCATED WORKERS UNDER ALTERNATIVE DEFINITIONS OF DISLOCATED WORKERS

	Exhaustees	Nonexhaustees	Total
BLS Definition	20.7	9.0	12.2
Modified BLS Definition	16.9	7.8	10.3
Plant Closing Definition	25.0	13.4	16.6
Sample Size	1,920	1,009	2,929

TABLE V.4

LABOR-MARKET OUTCOMES UNDER ALTERNATIVE DEFINITIONS OF DISLOCATED WORKERS

	BLS Definition	Modified BLS Definition	Plant Closing Definition
Reemployed (Percent)	80.7	83.3	85.0
Recalled (Percent)	0.0	5.6	13.3
Exhausted UI (Percent)	46.5	45.0	41.4
Mean Initial Unemployment Spell	25.9	25.8	25.2
Mean Ratio of Post-UI to Pre-UI Wages	.94	.92	0.99
Mean Ratio of Post-UI to Pre-UI Hours Worked	.93	.93	0.93
Sample Size	489	403	615

with 6 percent in the modified BLS definition group).[3] This analysis suggests that individuals' expectations about recall are generally accurate (see the discussion of this point in Chapter III), and that recall expectations can be used to identify workers who may face reemployment problems.

2. Low-Skill Workers

Another group of UI recipients to whom it might be useful to direct employment and training services are individuals with few job skills who may have difficulty in becoming employed or finding good jobs. To investigate this issue, we first defined "low-skill" individuals as those who had less than a high school education or who earned less than $5.00 per hour on their pre-UI job. While this definition is arbitrary, these two variables do provide a reasonable indication of skill level.

Using this definition, we found some evidence that low-skill individuals had reemployment difficulties--that is, they had a slightly higher exhaustion rate (30 percent) than other UI recipients (27 percent), and they had a lower reemployment rate (73 percent) than other exhaustees (82 percent). However, we also found that many individuals in this low-skill group were job-attached. Fifty-two percent were recalled, compared with 39 percent of other UI recipients.[4] For this reason, we focused our attention on low-skill workers who did not expect to be recalled. This group accounted for 19 percent of the exhaustees and 10 percent of the nonexhaustees.[5]

Table V.5 shows that low-skill workers who did not expect to be recalled were more likely to be female, black, or Hispanic, to work in farming or wholesale or retail trade, and to be employed in farming or service occupations. In most cases, this pattern of demographic and pre-UI job characteristics was also apparent among exhaustees.

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[3]While the plant closing definition was inferior to the modified BLS definition at identifying workers who face reemployment problems, it did identify a group who had more difficulty in becoming reemployed than did the general population of UI recipients.

[4]Many of these job-attached individuals were older individuals who were counted as low-skill because they did not have a high school diploma. They tended to hold nondurable manufacturing jobs as operators, fabricators, and laborers.

[5]Fifty-six percent of this low-skill group had less than a high school education.

TABLE V.5

SELECTED CHARACTERISTICS AND LABOR-MARKET OUTCOMES:
LOW-SKILL WORKERS NOT EXPECTING RECALL

	Exhaustees		Nonexhaustees		Total	
	Low Skill Level	Other	Low Skill Level	Other	Low Skill Level	Other
Percent Female	49.7	43.0	43.1	39.4	45.9	40.3
Percent White	56.6	72.2	70.6	77.6	64.8	76.3
Mean Age	41.4	39.2	34.1	37.8	37.2	38.2
Percent Married	57.5	58.9	53.9	63.4	55.4	62.3
Pre-UI Industry						
Agriculture/Mining	4.9	6.1	10.8	4.2	8.3	4.7
Construction	13.3	14.6	9.8	17.5	11.3	16.8
Durable Manufacturing	12.5	18.0	12.8	26.0	12.6	24.0
Nondurable Manufacturing	16.0	13.5	12.8	18.6	14.1	17.3
Transportation, Public Utilities	3.8	5.3	5.9	4.1	5.0	4.4
Wholesale and Retail Trade	23.0	13.6	30.4	9.7	27.3	10.7
Finance and Service Industries	24.4	24.7	14.7	17.3	18.8	19.2
Public Administration	2.2	4.2	2.9	2.5	2.6	3.0
Seasonal Industry	23.6	25.5	22.6	24.8	23.0	25.0
Pre-UI Occupation						
Managerial, Professional	5.2	13.1	6.9	8.5	6.2	9.7
Technical, Sales, and Administrative Support	23.9	29.0	21.2	19.6	24.2	22.0
Service Occupations	18.7	7.5	14.7	5.5	16.4	6.0
Precision Production, Craft, and Repair	15.7	14.9	28.4	20.1	15.7	18.8
Operators, Fabricators, and Laborers	32.0	30.7	15.7	42.8	29.9	39.7
Farming, Forestry, and Fishing	4.6	4.8	9.8	3.5	7.6	3.9
UI Program						
Mean Replacement Rate	0.53	0.42	0.50	0.43	0.51	0.43
Mean Potential Duration	22.9	23.0	23.9	24.6	23.5	24.2

TABLE V.5 (continued)

	Exhaustees		Nonexhaustees		Total	
	Low Skill Level	Other	Low Skill Level	Other	Low Skill Level	Other
Labor-Market Outcomes						
Reemployment (Percent)	67.5	81.5	91.2	95.9	81.3	92.3
Recalled (Percent)	4.6	25.4	4.9	56.6	4.8	48.7
Exhausted UI (Percent)	100.0	100.0	0.0	0.0	41.9	25.4
Mean Initial Unemployment Spell	39.5	35.6	19.2	14.3	26.4	19.2
Mean Ratio of Post-UI to Pre-UI Weekly Wages	1.05	0.91	1.18	1.04	1.13	1.01
Mean Ratio of Post-UI to Pre-UI Hours Worked	0.91	0.93	0.93	0.99	.93	.98
Services						
Received Services from the Job Service	62.9	64.3	66.7	48.0	65.1	52.1
Received Other Reemployment Services	4.9	9.2	2.0	3.9	3.2	5.2
Received Occupational Training	9.2	12.4	8.8	7.5	9.0	8.8
Received Education	3.5	3.7	3.9	1.7	3.8	2.2
Sample Size	369	1,551	102	907	471	2,458

NOTE: Low-skill workers are defined as workers with less than a high school education or workers who earned less than $5.00 per hour on their pre-UI job. The low-skill category was restricted further to individuals who did not expect to be recalled.

Data on labor-market outcomes indicate that this low-skill group did experience greater reemployment problems than did other UI recipients. Eighty-one percent became reemployed, compared with 92 percent of other recipients; only 5 percent were recalled, compared with 49 percent of other recipients; 42 percent exhausted UI, compared with 25 percent of other recipients; and the average initial unemployment spell was 26 weeks, compared with 19 weeks for other recipients. In addition, the low-skill group not who did not expect to be recalled had a lower ratio of weekly hours to pre-UI weekly hours than did other recipients.[6]

These findings suggest that the definition of low-skill used here does identify a group of UI recipients who face reemployment problems, if such individuals do not expect to be recalled by their pre-UI employer. Moreover, the data on service receipt show that a substantial portion of these individuals do not receive reemployment services (e.g., the rates of service receipt by low-skill exhaustees who did not expect to be recalled were equal to or slightly lower than the rates for other exhaustees). These findings suggest that directing services to low-skilled individuals who do not expect to be recalled may be appropriate.

C. UI BENEFIT EXTENSIONS

Under most regular state programs, the UI system provides UI-eligible individuals with a maximum of 26 weeks of benefits. Since 1970, the permanent Extended Benefits (EB) program has provided 13 weeks of additional benefits during periods of high unemployment. During severe recessionary periods, additional extensions of benefits have also been provided. The EB program is "triggered on" when a state's insured unemployment rate (IUR) exceeds specified levels (currently 5 percent, or 6 percent if the requirement that the IUR also exceed 120 percent of the corresponding average in the previous two years is waived).

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[6]Among those who became reemployed, weekly wages relative to pre-UI weekly wages were higher on average than for other recipients, since, by definition, many individuals in the low-skill group earned wages of less than $5.00 per hour.

Numerous proposals have been made to modify this "trigger" mechanism. Alternatively, these proposals have called for using a different IUR level, using the total unemployment rate as a trigger, using the exhaustion rate as a trigger, and using substate triggers that would direct extended benefits to local geographic areas. The first three options maintain the current focus of the EB program on alleviating financial hardships associated with cyclical downturns. The substate option expands this focus. It is intended in part to alleviate financial hardships associated with structural unemployment.

The exhaustee study provides an opportunity to examine the implications of two of these proposals--using state exhaustion rates and using substate triggers.[7] It also provides an opportunity to examine an alternative policy option--extending benefits to dislocated workers. As with the substate trigger option, the purpose of this policy option is to direct benefits to individuals whose unemployment is structural in nature.

1. Using State Exhaustion Rates To Trigger Extended Benefits

Dissatisfaction with the insured unemployment rate as a trigger for extended benefits has led to recommendations to use state exhaustion rates. However, using state exhaustion rates as extended benefits triggers could mean that benefits for workers will be extended in states whose UI programs and industrial/occupational structures create higher exhaustion rates even during periods of economic stability or expansion.

To examine this issue, we analyzed the data collected for the study from a state-level perspective.[8] First, we separated the 20 sample states into three groups according to whether

[7]The other potential trigger changes could also be examined. However, since the exhaustee study was conducted during a period of economic expansion and since the sample contains a limited number of states, such an analysis would not be very fruitful.

[8]Previous research that has analyzed the factors underlying state-level exhaustion rates has been limited by the availability of data on the characteristics of individual UI claimants (Corson and Nicholson, 1978). The present study generated data on a variety of characteristics of UI claimants, though the nature of the sample design precludes analyzing the effects of changes over time in the structure of state programs and the levels of economic activity on UI recipients.

their aggregate exhaustion rates were high, average, or low relative to the national average exhaustion rate during the period in which our sample was drawn. We then compared the characteristics of sample respondents in the three groups. The characteristics included simple demographic indicators, as well as the characteristics of pre-UI jobs, job separations, state UI programs, and local economic conditions.

a. Grouping States by 1988 Exhaustion Rates

Table V.6 shows the 20 sample states and their 1988 exhaustion rates and insured unemployment rates (IURs), grouped according to whether state exhaustion rates were high (above 31 percent), average (between 27 and 31 percent), or low (less than 27 percent).[9] The values for determining the groupings were chosen so that the resulting groups contained roughly the same number of states; otherwise, the values were arbitrary. The average state exhaustion rates among the high, average, and low exhaustion-rate groups were 36 percent, 29 percent, and 20 percent, respectively.

If we compare the state exhaustion rates and the IURs shown in Table V.6, we find that an extended benefits program that was triggered on with the exhaustion rate would probably pay benefits in different states than would a program that used the IUR as a trigger. In our sample of 20 states, two states--Texas and Oregon--rank very differently by the exhaustion rate and IUR measures. Texas ranks in the high exhaustion-rate category, yet its IUR would place it in the lowest category if states were ranked by the IUR. The opposite situation applies to Oregon.

[9]We defined state aggregate exhaustion rates as the total number of final payments from the second quarter of 1988 to the first quarter of 1989, divided by the number of first payments from the fourth quarter of 1987 to the third quarter of 1988. We chose the time periods in this manner to reflect the two-quarter lag between first payments and final payments for UI exhaustees who receive roughly 24 to 26 weeks of benefits. According to this definition, the 1988 aggregate U.S. exhaustion rate was 27.5 percent. The state IUR that is reported is the average of the IURs in the last week of each calendar quarter.

TABLE V.6

1988 UI EXHAUSTION RATES AND IURs OF SAMPLE STATES

High Exhaustion-Rate States			Average Exhaustion-Rate States			Low Exhaustion-Rate States		
State	UI Exhaustion Rate	IUR	State	UI Exhaustion Rate	IUR	State	UI Exhaustion Rate	IUR
Alaska	46.0	5.7	California	30.9	2.7	Connecticut	17.4	1.3
Illinois	33.6	2.2	Michigan	28.7	3.3	Georgia	20.0	1.4
Louisiana	38.1	3.0	Minnesota	29.1	1.9	North Carolina	12.5	2.0
Montana	32.4	3.0	Mississippi	29.3	2.7	Ohio	23.3	3.0
New Jersey	33.2	2.1	Missouri	27.7	2.2	Oregon	21.8	2.6
New York	32.4	2.1	Oklahoma	29.8	1.8	Pennsylvania	21.8	2.2
Texas	38.7	1.8				Wisconsin	22.0	

NOTE: The exhaustion rate is defined as the sum of final payments from the second quarter of 1988 through the first quarter of 1989, divided by the sum of first payments from the fourth quarter of 1987 through the third quarter of 1988. The IUR is the average of the IURs in the last week of each calendar quarter.

b. The Characteristics of UI Recipients by State Group

Tables V.7 to V.9 provide descriptive information on UI recipients in each of the three state groups. The data in the first table show that, as expected, local economic conditions are clearly related to aggregate exhaustion rates. The average local unemployment rate was 2 percentage points higher in high-exhaustion states than in low-exhaustion states (7.6 percent versus 5.6 percent).

However, the data also show that UI program characteristics differ across the three groups in ways that in some cases are clearly unrelated to economic conditions. In particular, the potential duration of benefits was shorter by one and a half weeks in high-exhaustion states than in low-exhaustion states. Average weekly UI benefit amounts were roughly equal, but, because average pre-UI weekly wages were higher in high-exhaustion states, gross UI wage replacement rates were 8 percent lower in high-exhaustion states than in low-exhaustion states. UI recipients in high-exhaustion states were more likely to receive the maximum weekly benefit amount, which was 8 percent lower in high-exhaustion states than in low-exhaustion states.

Table V.8 reports pre-UI job separation characteristics for the three state groups. The importance of temporary versus permanent layoffs is evident. In low-exhaustion states, UI recipients were more likely to lose their pre-UI jobs through layoffs, and were more likely to expect that their layoffs were temporary. In high-exhaustion states, UI recipients who were laid off were more likely to report being laid off because their plants closed, their companies moved, or their jobs or shifts were eliminated, and less likely to report that their layoffs were due to a lack of work. The proportion of UI recipients with definite recall dates was much smaller in high-exhaustion states than in low-exhaustion states (9 percent versus 30 percent). Ultimately, 32 percent of UI recipients in high-exhaustion states were recalled, compared with 51 percent of UI recipients in low-exhaustion states.

TABLE V.7

CHARACTERISTICS OF UI RECIPIENTS BY STATE GROUP

	High Exhaustion-Rate States[a]	Average Exhaustion-Rate States[b]	Low Exhaustion-Rate States[c]
Demographic Characteristics			
Age (Years)	39.6	36.5	38.0
Female (Percent)	39.9	38.9	43.1
Black (Percent)	13.3	10.9	11.9
Hispanic (Percent)	12.7	16.4	1.6
Did Not Complete High School (Percent)	21.2	22.2	20.2
Pre-UI Weekly Wage	$431.0	$427.4	$381.7
1988 Household Income	$25,432	$24,495	$24,198
Local Unemployment Rate (Percent)	7.6	7.4	5.6
UI Program Characteristics			
Potential Duration (Weeks)	23.3	24.0	24.7
Gross UI Wage Replacement Rate (Percent)	42.6	41.5	46.4
Weekly Benefit Amount	$150.6	$144.5	$155.4
1988 Maximum Weekly Benefit Amount	$194.7	$181.9	$209.5
Received Maximum Benefit Amount (Percent)	39.4	41.6	33.7
Sample Size	944	1,039	946

NOTE: The exhaustion rate is defined as the sum of final payments from the second quarter of 1988 through the first quarter of 1989, divided by the sum of first payments from the fourth quarter of 1987 through the third quarter of 1988.

[a] The high exhaustion-rate states in the sample were Alaska, Illinois, Louisiana, Montana, New Jersey, New York, and Texas.

[b] The average exhaustion-rate states in the sample were California, Michigan, Minnesota, Mississippi, Missouri, and Oklahoma.

[c] The low exhaustion-rate states in the sample were Connecticut, Georgia, North Carolina, Ohio, Oregon, Pennsylvania, and Wisconsin.

TABLE V.8

THE PRE-UI JOB SEPARATION CHARACTERISTICS
OF UI RECIPIENTS BY STATE GROUP
(Percent)

	High Exhaustion-Rate States[a]	Average Exhaustion-Rate States[b]	Low Exhaustion-Rate States[c]
Reason for Job Loss			
Laid-Off	78.9	81.0	83.6
Plant or facility closed/ company moved	13.2	9.2	10.9
Job or shift eliminated	7.5	4.9	4.8
Lack of work	55.2	62.8	66.2
Other	2.2	4.0	1.3
Quit	9.3	7.1	7.1
Fired	9.9	11.2	8.9
Other	1.5	0.5	0.3
Expected Recall	37.1	50.1	55.2
Had Definite Recall Date	8.7	17.1	29.8
Recalled	32.1	43.7	50.6
Sample Size	944	1,039	946

NOTE: The exhaustion rate is defined as the sum of final payments from the second quarter of 1988 through the first quarter of 1989, divided by the sum of first payments from the fourth quarter of 1987 through the third quarter of 1988.

[a] The high exhaustion-rate states in the sample were Alaska, Illinois, Louisiana, Montana, New Jersey, New York, and Texas.

[b] The average exhaustion-rate states in the sample were California, Michigan, Minnesota, Mississippi, Missouri, and Oklahoma.

[c] The low exhaustion-rate states in the sample were Connecticut, Georgia, North Carolina, Ohio, Oregon, Pennsylvania, and Wisconsin.

Table V.9 shows the industrial and occupational distributions of UI recipients for the three state groups. A comparison of the industrial composition of pre-UI jobs in high-exhaustion states and low-exhaustion states reveals a bimodal pattern; pre-UI jobs in high-exhaustion states were more likely to be in industries that exhibit strong seasonal fluctuations, such as agriculture, forestry, fishing, mining, and construction, as well as in service-oriented industries, including wholesale and retail trade, finance and services, and public administration.[10] A comparison of the occupational composition of UI recipients indicates that pre-UI jobs in high-exhaustion states were more likely to be in managerial, technical, and service occupations, and less likely to be in machine operator, transportation, and handler occupations.

These findings suggest that using state exhaustion rates as triggers for extended benefits would be problematic. Relative to states with low exhaustion rates, states with high exhaustion rates display a variety of differences in UI program and industrial/occupational characteristics that may be unrelated to economic conditions. Moreover, the local unemployment rates of high-exhaustion states and low-exhaustion states appear to differ moderately.

2. Extending Benefits in Areas of High Unemployment

The exhaustee study provides an opportunity to examine the implications of using substate triggers to direct extended benefits to local areas that exhibit high unemployment.[11] To perform this analysis, we first examined the distribution of exhaustees by local unemployment rates. Table V.10 shows that 31 percent of the exhaustees would have been eligible for extended benefits if substate benefits were triggered on when county unemployment rates exceeded 8 percent.[12] With

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[10]Chapter II noted the greater incidence of employment in seasonal industries among exhaustees. The implications of this pattern for extended benefits programs are discussed in the next subsection of this chapter.

[11]See Czajka et al. (1989) for a further analysis of substate extended benefits.

[12]For this analysis, we used the county unemployment rates computed monthly by the BLS. The rate assigned to each sample member and used to identify those who resided in areas with high unemployment rates was the rate in the month of the UI benefit year beginning date.

TABLE V.9

THE INDUSTRIAL AND OCCUPATIONAL CHARACTERISTICS OF UI RECIPIENTS, BY STATE GROUP

	High Exhaustion-Rate States[a]	Average Exhaustion-Rate States[b]	Low Exhaustion-Rate States[c]
Industry			
Agriculture/Forestry/Fishing/ Mining	6.0	9.3	1.6
Construction	18.7	14.7	15.1
Durable Manufacturing	11.8	14.2	22.9
Nondurable Manufacturing	14.1	24.2	27.1
Transportation/Public Utilities	4.9	4.6	3.9
Wholesale and Retail Trade	16.3	12.7	10.1
Finance and Services	23.6	17.1	17.6
Public Administration	4.8	3.2	1.5
Occupation			
Managerial/Professional	9.1	10.6	7.9
Technical/Sales/Administrative Support	29.0	21.0	18.6
Service Occupations	10.1	6.3	6.1
Mechanics/Construction/ Precision Production	20.5	22.1	18.4
Machinists/Transportation/ Handlers	27.6	37.2	46.6
Farming/Forestry/Fishing	3.8	7.4	2.5
Sample Size	944	1,039	946

NOTE: Totals may not add to 100 percent due to rounding. The exhaustion rate is defined as the sum of final payments from the second quarter of 1988 through the first quarter of 1989, divided by the sum of first payments from the fourth quarter of 1987 through the third quarter of 1988.

[a] The high exhaustion-rate states in the sample were Alaska, Illinois, Louisiana, Montana, New Jersey, New York, and Texas.

[b] The average exhaustion-rate states in the sample were California, Michigan, Minnesota, Mississippi, Missouri, and Oklahoma.

[c] The low exhaustion-rate states in the sample were Connecticut, Georgia, North Carolina, Ohio, Oregon, Pennsylvania, and Wisconsin.

TABLE V.10

EXHAUSTEES BY LOCAL UNEMPLOYMENT RATE

	Percent of Exhaustees
Local Unemployment Rate ≥ 8 Percent	30.6
Local Unemployment Rate ≥ 9 Percent	22.2
Sample Size	1,920

a 9 percent county unemployment-rate trigger, 22 percent of the exhaustees would have been eligible for extended benefits.

Table V.11 provides data to compare exhaustees in high-unemployment areas (an unemployment rate of 9 percent or higher) with those in lower-unemployment areas. The data show that exhaustees in high-unemployment areas had longer spells of unemployment than did other exhaustees, as we would expect. However, other labor-market indicators show that exhaustees in high unemployment areas and exhaustees in other areas exhibited few differences. For example, the reemployment rates, the ratio of post-UI to pre-UI weekly wages, and hours worked did not differ between the two groups. Moreover, the rate at which exhaustees were recalled by the pre-UI employer was higher in high-unemployment areas than in lower-unemployment areas (33 versus 18 percent).

The data in the remainder of the table indicate that an important reason for the high recall rate was that exhaustees in high-unemployment areas were more likely to have worked in agriculture and in other seasonal industries than were their counterparts in lower unemployment rate areas. These findings clearly point out that a substantial proportion of recipients of substate extended benefits (38 percent) would be on seasonal layoffs if substate triggers were based on county unemployment rates, which themselves are not seasonally adjusted. Furthermore, there is little evidence to suggest that substate triggers would direct extended benefits to areas that exhibit high structural unemployment. Data in the table also show that a higher proportion of the dislocated workers identified according to the BLS definition were found in areas whose local unemployment rates were less than 9 percent than were found in areas whose local unemployment rates were 9 percent or greater. In fact, only 18 percent of the dislocated workers identified according to the BLS definition resided in areas whose local unemployment rates were 9 percent or greater.

TABLE V.11

SELECTED CHARACTERISTICS OF EXHAUSTEES
BY LOCAL UNEMPLOYMENT RATE

	Unemployment Rate	
	Less Than 9.0 Percent	9.0 Percent or Greater
Percent Female	44.3	44.4
Percent White	72.4	58.0
Mean Age	39.7	39.4
Percent Married	57.1	64.1
Pre-UI Industry		
Agriculture/Mining	3.4	14.6
Construction	13.7	16.7
Durable Manufacturing	18.1	12.9
Nondurable Manufacturing	13.9	14.3
Transportation, Public Utilities	5.3	4.0
Wholesale and Retail Trade	15.5	15.0
Finance and Service Industries	26.8	17.1
Public Administration	3.4	5.4
Seasonal Industry	21.5	37.5
Pre-UI Occupation		
Managerial, Professional	13.4	5.2
Technical, Sales, and Administrative Support	30.4	19.7
Service Occupations	8.8	12.7
Precision Production, Craft, and Repair	14.3	17.8
Operators, Fabricators, and Laborers	30.4	32.9
Farming, Forestry, and Fishing	2.8	11.7

TABLE V.11 (continued)

	Unemployment Rate	
	Less Than 9.0 Percent	9.0 Percent or Greater
Dislocated Worker (BLS Definition)	22.0	16.4
UI Program		
Mean Replacement Rate	.44	.43
Mean Potential Duration	23.5	21.4
Labor-Market Outcomes		
Reemployed (Percent)	78.5	79.8
Recalled (Percent)	18.0	33.3
Mean Initial Unemployment Spell	35.7	38.3
Mean Ratio of Post-UI to Pre-UI Weekly Wages	.93	.94
Mean Ratio of Post-UI to Pre-UI Hours Worked	.92	.93
Services		
Received Services from the Job Service	65.2	59.9
Received Other Reemployment Services	9.4	4.9
Received Occupational Training	13.0	7.8
Received Education	3.8	3.3
Sample Size	1,494	426

3. Extending Benefits to Dislocated Workers

In the previous section we showed that using local unemployment rates to trigger extended benefits was an inefficient way to direct benefits to individuals whose unemployment was structural in nature. An alternative way to achieve this objective would be to direct extended benefits to dislocated workers who, as we showed above, appear to have greater difficulty in becoming reemployed than do other UI exhaustees.

The modified BLS definition that we used to identify dislocated workers consisted of three components: (1) the pre-UI job ended due to a layoff, plant closing, or other similar reason, (2) the individual was employed for three or more years with the pre-UI employer, and (3) the individual did not expect to be recalled. Of these components, only the tenure requirement could be used to establish eligibility for extended benefits. Individuals' expectations about recall clearly could not be used. It also seems unlikely that additional job termination requirements could be imposed for extended benefits, since regular UI eligibility already entails some job termination requirements.

Given this situation, we examined the implications of providing extended benefits to workers with three or more years of tenure on the pre-UI job. Under this policy, 41 percent of the exhaustees in our sample would be eligible for extended benefits.[13] As shown in Table V.12, the members of the eligible group would be older, more likely to be married, and more likely to work in manufacturing on average than members of the noneligible group. They would also be more likely to hold a job as an operator, fabricator, or laborer.

Examining labor-market outcomes, we found that the eligible group had a lower rate of reemployment, a longer average unemployment spell, and a greater reduction in earnings relative to the pre-UI job than did other exhaustees. These relatively poor reemployment outcomes

[13]The analysis in Chapter II suggests that this percentage would rise during a recessionary period.

TABLE V.12

THE CHARACTERISTICS OF EXHAUSTEES WITH 3 OR MORE YEARS OF JOB TENURE RELATIVE TO OTHER EXHAUSTEES

	Exhaustees with 3 or More Years of Job Tenure	Other Exhaustees
Percent Female	46.6	42.7
Percent White	70.3	68.4
Mean Age	43.4	36.9
Percent Married	64.9	54.3
Pre-UI Industry		
Agriculture/Mining	6.7	5.3
Construction	10.0	17.4
Durable Manufacturing	21.8	13.5
Nondurable Manufacturing	17.0	11.9
Transportation, Public Utilities	5.1	5.0
Wholesale and Retail Trade	14.7	15.9
Finance and Service Industries	20.2	27.8
Public Administration	4.6	3.3
Seasonal Industry	22.7	26.8
Pre-UI Occupation		
Managerial, Professional	11.7	11.5
Technical, Sales, and Administrative Support	26.7	8.9
Service Occupations	8.4	10.5
Precision Production, Craft, and Repair	12.7	16.7
Operators, Fabricators, and Laborers	34.7	28.3
Farming, Forestry, and Fishing	5.8	4.1

TABLE V.12 (continued)

	Exhaustees with 3 or More Years of Job Tenure	Other Exhaustees
UI Program		
Mean Replacement Rate	0.43	0.44
Mean Potential Duration	23.6	22.6
Labor-Market Outcomes		
Reemployed (Percent)	76.1	80.7
Recalled (Percent)	26.1	18.1
Mean Initial Unemployment Spell	38.3	34.8
Mean Ratio of Post-UI to Pre-UI Weekly Wages	0.88	0.97
Mean Ratio of Post-UI to Pre-UI Hours Worked	0.93	0.92
Services		
Received Services from Job Service	62.1	65.3
Received Other Reemployment Services	8.0	8.7
Received Occupational Training	12.1	11.4
Received Education	3.5	3.8
Sample Size	789	1,131

occurred despite the fact that a larger percentage of the eligible group than the noneligible group were ultimately recalled by the pre-UI employer. These findings suggest that adding a tenure requirement for extended benefits may have some merit if the purpose is to target benefits toward individuals who have difficulty in becoming reemployed.

A final policy that we considered was to restrict extended benefits to exhaustees with three or more years of tenure with the pre-UI employer who lived in areas with a high local unemployment rate. We used a local unemployment rate of 8 percent or greater. Thirteen percent of the exhaustees would qualify for extended benefits under these requirements. Compared with exhaustees with 3 or more years of job tenure who lived in areas with a lower unemployment rate, those in the high unemployment rate areas had longer durations of unemployment (39.5 weeks, compared with 37.8 weeks). However, as we indicated in the substate trigger discussion, a relatively large percentage of the unemployment in areas with high local unemployment rates is seasonal in nature, making substate targeting problematic. This situation also arises when we restrict benefits to individuals with substantial job tenure: 32 percent of the individuals with substantial tenure worked in seasonal industries in areas whose unemployment rates were 8 percent or over, compared with 19 percent in areas whose unemployment rates were under 8 percent.

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APPENDIX A

SAMPLE DESIGN

The sample design for the UI exhaustee study had two critical objectives. First, it was designed to produce a sample which is representative of the national population of exhaustees, in the formal sense that it was to provide natioonalestimates of the characteristics of exhaustees with a known degree of statistical precision. Second, it was designed to provide sufficient statistical precision for the descriptive and analytic objectives of the study.

To guide the design, we defined a sampling criterion which governed the selection of both states and exhaustees in a two-stage sampling process. Special emphasis on the formal statistical role of states as "primary sampling units" played an integral role in defining the statistical properties of the sample. The sample frame and structure were also defined in terms of a time span and criteria for inclusion.

From an initial national sample frame of individuals who received a first payment during a one-year time span, our sample design called for a basic final sample of 2,000 exhaustees to be drawn from a first-stage sample of 20 states. The "effective" sample size, after accounting for the loss of precision due to restricting the sample to 20 states, was judged to be approximately 1,700, sufficient for measuring attributes of the national exhaustee population with a 95 percent confidence interval of (+/-) 2.5 percent.

States were selected randomly with probabilities of selection proportional to their number of exhaustees during 1987, the latest year of data available at the time of sample selection. States with more than 1/20 of the nation's exhaustees were sampled with certainty and allocated a self-weighting sample of individual exhaustees. Certain outlier states whose probabilities of selection were less than one were also sampled with certainty and allocated a self-weighting sample of exhaustees. Remaining states with probabilities of selection of less than one were stratified by

their 1987 exhaustion rates; those selected were allocated equal exhaustee samples within each stratum.[1]

In addition to the basic sample, the sample design included a supplemental sample of 1,000 nonexhaustees drawn from the same 20 states, with probabilities of selection determined so as to provide a nationally representative sample of nonexhaustees. We included this supplemental sample in the design so that the labor market characteristics of exhaustees could readily be compared with those of a comparable group of nonexhaustees.

A. EXHAUSTEE SAMPLE DESIGN: DISCUSSION

In this section, we discuss the principles and issues which underlie the sample design for the exhaustee study--(1) the sample frame, (2) multistage sampling, (3) design effects, and (4) methods for increasing the precision of multistage samples.

1. Sample Frame

Given a generic definition of the universe to be represented by the sample--the nation's UI exhaustees--we provided an operational specification of the frame from which the sample was to be drawn. We defined the target universe as all individuals in the 51 states[2] who received a first UI payment[3] over a one-year interval and who subsequently exhausted their benefit entitlement.

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[1]Overall sample sizes across strata differed to reflect the sample weights of the states in the strata.

[2]We included in our universe the 50 states plus the District of Columbia, which for convenience we label the "51 states."

[3]We included in the sample frame all claimants under the regular state programs, including such special groups as combined wage claim and interstate claimants, and Unemployment Compensation for Federal Civilian Employees (UCFE) but not Unemployment Compensation for Ex-Servicemembers (UCX) claimants. UCFE claimants were included because they are treated

By including all individuals who entered the UI system over an entire year, we eliminated the potential seasonality problems associated with sample frames specified over a shorter time span.[4]

To draw the sample without monitoring an extensive intake and UI receipt period, we expected to obtain from each (included) state a random sample of individuals who, approximately eight months after the one-year time span, had either exhausted or were still receiving their benefits.[5]

In principle, the above sample frame was to be defined over all 51 states. To obtain a self-weighting, nationally representative sample, classical sampling procedures required that all exhaustees in the sample be drawn independently from the frame with an equal probability of selection. This equal probability of selection principle was the basis for the two-stage sample design used in this study.

2. Multistage Sampling: States as Primary Sampling Units

State selection is a classical sampling problem in the same manner as the drawing of samples of individual exhaustees. The problem can conventionally be thought of as a two-stage cluster sample, with states as the primary sampling unit and with individual exhaustees as the secondary

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just like regular state claimants in terms of their eligibility and benefits. UCX claimants were excluded due to the special nature of their previous employment and the special nature of their program (i.e., the four-week waiting period).

[4]An indication that the characteristics of the exhaustee population probably vary by season is the variation in the exhaustion rate itself, which is substantially lower in the third quarter than in the rest of the year.

[5]A few individuals who received first payments near the end of the one-year time span were expected to be receiving benefits after eight months if they experienced multiple spells of unemployment. As noted in the main body of the report, we found very few such individuals, in part, because most state samples were drawn ten or more months rather than eight months after the one-year sampling span.

sampling unit. For the final sample of exhaustees to be statistically representative of the nation, principles of random selection must be applied at all stages of the sampling process.

Conventional sampling theory for multistage samples is derived from the principle that each exhaustee in the eligible sample must have an equal probability of selection, after accounting for the combined effects of the probability of state selection and the within-state sampling rate. Thus, the method for selecting states and the method for selecting exhaustees within each state are related.

A commonly accepted method of two-stage sampling is to choose each state with a probability of selection proportional to size, and then to draw an equal-size exhaustee sample from each state. With this procedure, large states have a higher probability of being selected than do small states. To compensate, a smaller proportion of exhaustees are taken from the large states which are selected. The largest states (i.e., when the probability of selection with the above procedure exceeds one) are chosen with certainty and allocated self-weighting rather than equal-size samples.

Table A.1 provides a list of states with their 1987 exhaustion rates, their 1987 final UI payments, and their associated sampling weights using 1987 final payments as the criterion for sample selection. In a sample of 15 states, California, Texas, and New York would be selected with certainty, with the three states together being allocated 31.5 percent of the total sample. In a larger sample of 20 states, six states with a total of 46.2 percent of the nation's exhaustees would be chosen with certainty: California, Texas, New York, Illinois, Pennsylvania, and Michigan.

3. Design Effects: Cross-State Variability

Two-stage samples (usually) produce larger sampling errors than do single-stage, simple random samples. The loss in statistical precision due to clustering the sample into a limited number of states is termed the "design effect."

TABLE A.1

UNEMPLOYMENT EXPERIENCE, BY STATE, 1987

State	First Payments 1987	Exhaustion Rate 1987 (Percent)	Implied Final Payments	Sample Weight
Alabama	148,894	25.0	37,224	0.882
Alaska	45,345	51.7	23,443	0.555
Arizona	72,001	30.6	22,004	0.521
Arkansas	87,981	25.3	22,250	0.527
California	986,330	33.9	334,563	7.925
Colorado	96,982	34.2	33,148	0.785
Connecticut	93,272	15.4	14,373	0.340
Delaware	16,747	15.7	2,624	0.062
District of Columbia	20,672	50.7	10,477	0.248
Florida	159,418	36.1	57,582	1.364
Georgia	198,908	25.9	51,517	1.220
Hawaii	23,792	19.8	4,699	0.111
Idaho	41,160	34.0	14,011	0.332
Illinois	320,639	37.1	118,957	2.818
Indiana	123,811	27.9	34,506	0.817
Iowa	66,865	29.2	19,538	0.463
Kansas	72,801	31.5	22,940	0.543
Kentucky	100,618	22.8	22,891	0.542
Louisiana	150,417	53.4	80,308	1.902
Maine	37,814	20.7	7,827	0.185
Maryland	96,098	22.9	21,958	0.520
Massachusetts	178,056	25.0	44,445	1.053
Michigan	365,489	27.9	102,008	2.416
Minnesota	121,873	34.0	41,461	0.982
Mississippi	75,419	28.3	21,306	0.505
Missouri	153,103	27.2	41,583	0.985
Montana	25,910	40.4	10,478	0.248
Nebraska	36,747	28.8	10,594	0.251
Nevada	37,005	23.8	8,789	0.208
New Hampshire	18,614	2.7	503	0.012
New Jersey	234,381	33.9	79,549	1.884
New Mexico	33,647	38.7	13,015	0.308
New York	478,011	33.3	159,369	3.775

Table A.1 (continued)

State	First Payments 1987	Exhaustion Rate 1987 (Percent)	Implied Final Payments	Sample Weight
North Carolina	184,608	18.4	33,986	0.805
North Dakota	17,991	37.1	6,680	0.158
Ohio	302,265	25.6	77,440	1.834
Oklahoma	68,614	34.2	23,432	0.555
Oregon	112,695	24.1	27,193	0.644
Pennsylvania	418,392	23.1	96,439	2.284
Rhode Island	40,593	24.7	10,010	0.237
South Carolina	82,160	20.8	17,097	0.405
South Dakota	10,143	11.4	1,154	0.027
Tennessee	148,369	25.8	38,339	0.908
Texas	428,250	42.8	183,462	4.346
Utah	42,197	34.5	14,550	0.345
Vermont	15,826	12.4	1,964	0.047
Virginia	118,136	17.3	20,461	0.485
Washington	169,385	26.7	45,243	1.072
West Virginia	59,234	25.4	15,063	0.357
Wisconsin	180,216	25.1	45,234	1.071
Wyoming	15,713	33.9	5,330	0.126
Total	7,133,617	30.2	2,153,018	51

To illustrate the importance of design effects, we considered the degree to which UI exhaustion rates vary across states. In 1987, the average UI exhaustion rate nationwide was 30.18 percent (.3018); the exhaustion rate had a standard deviation of 45.9 percent [or a variance of .3018 x (1 - .3018) = .2107]. An examination of exhaustion rates by state reveals important systematic variation. Exhaustion rates exceeded 40 percent in five states, many dominated by the oil industry. At the other extreme, fifteen states had exhaustion rates of less than 25 percent.

Statistically, the variance of exhaustion rates in 1987 can be allocated between individuals and states as follows:

Variance Component	Variance	Percent	Std. Dev.
Individual Claimant	.2049	97.24%	.4527
State	.0058	2.75%	.0761
Total	.2107	100.00%	.4590

These data suggest that 2.75 percent of the variability in exhaustion rates is attributable to state-specific factors, while the remaining 97.24 percent is attributable to claimant-specific factors. While 2.75 percent seems small at first glance, it is a major component of variability for a sample of claimants drawn from a small subset of states.

Consider, for example, a sample of 2,000 UI claimants--drawn first as a random national sample and then drawn within a random sample of 15 states. For a random national sample, we have the following traditional calculation of the variance of a sample mean:

Variance Component	Variance of Mean	Std. Dev.
Individual = Total	.2107/1999 = .000105	.010267

When the sample is drawn only from 15 states, we must account for the fact that we have a sample of 2,000 for measuring the individual component of variance, but only 15 for measuring state variance. Based on this consideration, the properly measured variance of the sample mean increases by the design effect:

Variance Component	Variance of Mean	Std. Dev.
Individual Claimant	.2049/1999 = .000103	
State	.0058/14 = .000414	
Total	.000517	.022744
Percent Increase over Simple Random Sample ("Design Effect")		121.5%

While finite sample corrections reduce the above design effect measurably (from 121.5 percent to 93.1 percent), the basic point is that the true variance of a two-stage sample can be much larger than the measure calculated with the formula applicable to simple random samples. Indeed, in this example, the sample of 2,000 claimants drawn from 15 randomly selected states provides the same statistical precision as a simple random sample of only 536 claimants drawn from all 51 states. Increasing the size of the claimant sample does little to improve precision in examples which are this extreme, since the source of the high variance is state-specific, not claimant-specific: increasing the sample to 5,000 drawn from the same 15 states increases the effective sample size only from 536 to 637.

4. Increasing the Precision of Multistage Samples

The degree to which design effects pose a critical problem varies from sample to sample and, more importantly, across variables of interest for the same sample. For example, the percentage of exhaustees who are female would not vary as much across states as would the percentage who are Hispanic. For the above discussion, we examined the cross-state variation in the percentage

of UI claimants who exhaust their benefits and observed a considerable design effect if claimants were chosen from 15 randomly selected states.

While our primary sample will consist of exhaustees, not claimants, we believe that the exhaustion rate is a useful proxy for variations in the characteristics of exhaustees and the employment conditions facing them. Thus, we must take steps to control for cross-state variability, particularly in the exhaustion rate.

Several strategies are employed for increasing the precision obtainable from an exhaustee sample of a given size:

- Increasing the number of states in the sample
- Treating outlier states in a special statistical sense
- Stratifying the states into subgroups, particularly by the exhaustion rate

Increasing the size of the exhaustee sample also improves precision, but does nothing to alleviate problems caused by large cross-state variability in the indicator of interest.

Increasing the Number of States in the Sample. Increasing the number of states improves precision in two respects: by increasing the sample size applicable to the state-specific component of variance, and by increasing the finite sampling correction associated with the proportion of the nation's exhaustees who reside in the included sample states.[6] By using the cross-variability in UI exhaustion rates to allocate variances among states and individuals, by including the finite sampling correction, and by selecting states with probability proportional to the number of final payments,

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[6]The general formula for the variance of an estimate provided by a sample of size N is $D = (1 - F)[s^2/(N - 1]$, where F is the fraction of the universe included in the sample. A sample of 15 states drawn at random would contain 29 percent (15/51) of exhaustees on average, making F = .29; for 20 states, F = .39. If all states were included, the state-specific variance component is zero (F = 1.00).

we obtained the following estimates of design effects for a sample of exhaustees drawn from varying numbers of states:

CONVENTIONAL RANDOM SAMPLE

Design Effect		Effective Sample		
States	at N = 2,000	N = 2,000	N = 3,000	N = 5,000
10	110.1%	453	487	517
15	46.2%	936	1,092	1,260
20	18.2%	1,432	1,833	2,360

Increasing the number of states clearly reduces the design effect and increases the size of the effective sample, but design effects remain significant for samples of fifteen states or less. A sample of 2,000 exhaustees drawn from a sample of 15 states has an effective sample size of only 936, and further increases in the size of the exhaustee sample do very little to improve the situation. In view of the observed design effects, we considered a 20-state sample to be a desirable first-stage sample size.

The Special Treatment of Outlier States. Outliers can be used to reduce design effects if care is taken to proceed in a manner consistent with classical sampling principles. By "outliers" we mean observations with sufficiently extreme values that their probabilistic inclusion in the sample is a consequential source of the cross-state variance--that is, the presence or absence of a single observation in the sample is capable of making a measurable difference in mean values of sample characteristics. Three states in particular were outliers in terms of their probabilities of selection for a sample of 20 states:

State	Exhaustion Rate	Probability of Selection (20)
Louisiana	.533	.970
New Jersey	.339	.962
New Hampshire	.027	.006

Louisiana had the highest exhaustion rate in the nation in 1987 and, in a sample of 20 states, would have a 97 percent probability of selection. As a large state at the extreme of the exhaustion rate distribution, it contributes over 33 percent of the total measured variance of state exhaustion rates. It is possible to eliminate this source of variance without violating principles of randomization, by selecting Louisiana with certainty and assigning it a self-weighting sample of exhaustees. An analogous argument applies to New Jersey.

New Hampshire poses a different problem: it had roughly 500 final payments in 1987, and a program structure in which the exhaustion of UI benefits is perhaps a questionable concept.[7] In this case, we recommended that it be excluded from the sample frame on operational grounds.

Stratifying States by the Exhaustion Rate. Stratifying by the exhaustion rate or by other major sources of cross-state variation can reduce design effects considerably, if care is taken to ensure that these gains are not offset by corresponding reductions in available degrees of freedom caused by breaking the sample into several strata.[8]

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[7]New Hampshire's uniform calendar-year base period and uniform benefit year (beginning on April 1) mean that many claimants do not have a chance to "exhaust" their benefits. They start a new benefit year instead.

[8]For example, without stratification, a sample of 15 states has 14 degrees of freedom for obtaining a variance estimate. If, instead, 5 states are drawn from each of three strata, it would yield a total of 4 x 3 = 12 degrees of freedom. This equivalent of "losing" two states must be more than compensated for by the gains from stratification.

By sampling outlier states with certainty and stratifying by the exhaustion rate, the design effect for a sample of twenty states was reduced from 18.2 percent to 8.7 percent. The effective sample size increased from 1,432 to 1,692.

B. SAMPLE SIZE AND PRECISION

The data obtained in this study are used to describe important attributes of the exhaustee population. Because the sample design is in accord with classical sampling principles, the relationship between sample size and the 95 percent confidence interval for measuring the incidence of a population attribute (P) is approximately as follows:

		Incidence of Attribute:	
Sample Size		P = .5	P = .1
400	(+/-)	5.00%	3.00%
1,600	(+/-)	2.50%	1.50%
6,400	(+/-)	1.25%	0.75%

A simple random sample of 400 would enable us to measure an attribute that occurs in the population half the time with a 95 percent confidence interval of (+/-) 5 percent. Attributes with an incidence of 10 percent would be measured with a confidence interval of (+/-) 3 percent. Each quadrupling of the sample size would reduce the confidence interval by half; this relationship holds until the sample becomes a large proportion of the population, when the finite sampling correction provides further precision gains.

The precision with which attributes can be measured for subgroups of exhaustees can be determined in a similar manner. For example, a sample of 1,600 exhaustees would enable us to measure attributes with a confidence interval of (+/-) 2.5 percent, while the attributes of a 25

percent subset of the exhaustee population--represented by a subsample of 400--could be measured with a confidence interval of (+/-) 5 percent.

A reasonable precision standard for the descriptive purposes of the UI Exhaustee Study would be to describe attributes of the national exhaustee population with a 95 percent confidence interval of (+/-) 2.5 percent, permitting at the same time descriptions of a 25 percent subset of the population within a 5.0 percent margin. As the above table shows, this objective requires an effective sample size of 1,600.

From the previous sample design discussion, it was evident that this effective sample size could be achieved by (1) selecting a total of 20 states, (2) sampling two outlier states with certainty, (3) stratifying states not selected with certainty by their 1987 exhaustion rate, and (4) completing 2,000 exhaustee interviews in the 20 selected states. These four criteria were the basis for the exhaustee sample design.

C. A SUPPLEMENTAL SAMPLE OF NONEXHAUSTEES

The above sample design met most of the stated objectives of the UI Exhaustee Study. However, as noted above, a supplemental sample of nonexhaustees was also, in our judgment, needed for the analysis. There were two reasons for this conclusion.

First, a nonexhaustee sample permits a direct comparison of exhaustee characteristics and labor-market experiences with those of a general population of claimants. One could use external data on claimants for this comparison, but much of the analytic effort would be devoted to adjusting for inconsistencies across data sets. A stronger strategy was to collect comparable data for a sample of nonexhaustees as well as exhaustees--comparable in terms of the timing of the first claim, sampling criteria, and data elements.

Second, most analytic models designed to interpret problems of continuing unemployment require discriminating among those who do and do not exhaust benefits, rather than attempting

to examine exhaustees alone. Samples drawn on the basis of the occurrence of an "outcome variable," such as exhaustion, produce biased analyses unless complex, compensating analytic techniques are used. A preferable approach is to include nonexhaustees in the analysis sample.

A supplemental sample of 1,000 nonexhaustees, in conjunction with the larger exhaustee sample, was judged adequate for meeting these comparative objectives of the study. This sample was to be drawn from the same 20 states used for the exhaustee sample, from individuals who received first payments during the same 12-month interval but who did not subsequently exhaust their benefits.

To draw a nationally representative sample of nonexhaustees, special procedures were needed to account for the fact that the selection probabilities of states were relative to the exhaustee population, rather than to nonexhaustees or to claimants in general. Nonexhaustees were sampled with equal probabilities of selection by allocating larger numbers of nonexhaustees to states with lower exhaustion rates according to the following formula:

$$(1) \quad Q_j = X_j \left[(1 - E_j) / E_j \right] R,$$

where, for state j, Q_j is the nonexhaustee sample, X_j was the exhaustee sample, Ej was the exhaustion rate, and R was the uniform sub-sampling rate required to reduce the supplementary nonexhaustee sample to a total of 1,000. The uniform subsampling rate R was calculated as:

$$(2) \quad R = 1{,}000 / \{ \sum_j X_j \left[(1 - E_j) / E_j \right] \}$$

The above procedure produced equal probabilities of selection for all nonexhaustees (though at a lower rate than for exhaustees). Thus, the nonexhaustee sample was self-weighting. However, for some analytic methods in which exhaustees were compared with nonexhaustees, sample weights were used to compensate for the differential sampling rates of the two groups (see Chapter I).

D. STATE SELECTION AND SAMPLE ALLOCATION

To complete the process of selecting states for the 20-state sample, states were allocated to strata and a sample of states drawn within each stratum. With the six largest states plus Louisiana and New Jersey sampled with certainty, and New Hampshire excluded, 12 sample states were drawn from the remaining 42 states.

The following stratification procedure was employed for drawing these 12 states. First, the 42 remaining states were ranked by their exhaustion rates. The ranked states were then divided into three balanced strata, with the sum of the state weights in each stratum being roughly four. Four states were then selected within each stratum with probability proportional to the number of final payments.

In Table A.2 we display the randomly selected sample of 20 states. Though only 20 of 51 states were in the sample, the sampled states contained almost 73 percent of total 1987 exhaustees. The top six states in terms of final payments and two outlier states (Louisiana and New Jersey) were chosen with certainty, and the exhaustee sample size allocated to each was proportional to the state's share of the national population of exhaustees. For example, California, with 15.54 percent of the nation's exhaustees in 1987, was allocated 15.54 percent of the sample of 2,000 exhaustees, or 310.9 exhaustees.[9]

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[9]The fractional allocation was eliminated by selecting a random number between 0 and 1, and adding one sample member to the state's allocation if the random number was less than the fractional allocation.

TABLE A.2

STATE SAMPLES FOR UNEMPLOYMENT INSURANCE EXHAUSTEES STUDY

State	Implied 1987 Final Payments	Exhaustion Rate (Percent)	Probability of Selection	Exhaustees Sample Size	Nonexhaustees Sample Size	Total Sample Size
California	334,563	34.0	1	311	131	442
Texas	183,462	43.0	1	171	49	220
New York	159,369	33.0	1	148	64	212
Illinois	118,957	37.0	1	110	40	150
Michigan	102,008	28.0	1	95	53	148
Pennsylvania	96,439	23.0	1	89	64	153
Louisiana	80,308	53.0	1	75	14	89
New Jersey	79,549	34.0	1	74	31	105
Subtotal	1,154,655	36.0 **		1,073	446	1,519
Alaska	23,443	52.0	28.2%	76	15	91
Montana	10,478	40.0	12.6%	77	24	101
Minnesota	41,461	34.0	49.9%	76	32	108
Oklahoma	23,432	34.0	28.2%	76	31	107
Ohio	77,440	26.0	93.1%	81	51	132
Missouri	41,583	27.0	50.1%	81	47	128
Georgia	51,517	26.0	61.9%	80	50	130
Mississippi	21,306	28.0	25.6%	81	45	126
Wisconsin	45,234	25.0	54.4%	75	48	123
Oregon	27,193	24.0	32.7%	75	51	126
North Carolina	33,986	18.0	40.9%	75	72	147
Connecticut	14,373	15.0	17.3%	75	89	164
Subtotal	411,447	28.0 **		928	555	1,483
Total	1,566,103	34.0 **		2,000	1,001	3,002

**The average exhaustion rate is weighted by implied final payment.

The remaining 12 states were chosen with a probability equal to the figure shown in the fourth column, and allocated an equal sample within the stratum. Overall stratum sizes were determined by subtracting the sample allocated to the certainty states from the total sample, and allocating to each stratum the share of the 12 states accounted for by states in that stratum. The sample weights for the first stratum, for example, sum to 3.95; hence, the first stratum was allocated a sample of 305.1 = (3.95/12)(2000-1073).[10] The second stratum has a total sample weight of 4.18; and each state in the stratum was allocated a sample of 322.9 = (4.18/12)(2000-1073).[11] Each state in the stratum was then allocated an equal share of the total stratum sample size.

To determine the size of the nonexhaustee sample allocated to the selected states, equations (1) and (2) above were applied to the exhaustee sample sizes. The result was a nonexhaustee sample size that is nationally representative but only half as large as the exhaustee sample size.

[10]The true stratum sample size calculation was more exact than the approximation shown in the text; hence, sample sizes shown in Table A.2 do not equal sample sizes calculated in the text.

[11]Fractional allocations were accounted for in the same manner as for states sampled with certainty.

APPENDIX B

SURVEY RESULTS AND NONRESPONSE BIAS ANALYSIS

The exhaustee study design called for the selection of nationally representative samples of exhaustees and nonexhaustees, and the collection of UI program data and telephone interview data for these samples. Sample selection was a two-step process involving the random selection of 20 states and the random selection of samples of exhaustees and nonexhaustees within these states. Sample members were individuals who established a UI benefit year during the one-year period, October 1987 to September 1988. The interviews were conducted over a period of five months, from September 1989 through early February 1990, providing, on average, 20 months of data on each individual's labor-force activity beginning with the UI claim date.

Since the primary data for the study were collected through a survey, and since it was not possible to interview all potential respondents, study findings could be affected by nonresponse bias.[1] This appendix examines this issue. It begins with a summary of the results of the survey and then examines potential nonresponse bias that could arise from using these data.

A. SURVEY RESULTS

The results of the survey are presented in Table B.1. Of the 4,810 sample members for whom interviews were attempted, 2,929 completed the interview, yielding an overall response rate of 61 percent. Of the 3,222 exhaustee sample members for whom interviews were attempted, 1,920 responded to an interview, yielding a response rate of 60 percent. Among the 1,588 nonexhaustee sample members for whom interviews were attempted, 1,009 completed the interview, for a response rate of 64 percent. Thus, nonexhaustees were more likely than exhaustees to respond to an interview, although the difference in response rates was small.

[1]The study findings could also be affected by the quality of the data. For this reason each interview was reviewed manually for missing or inconsistent data and call-backs were attempted when major problems were detected. Further computerized checks for outliers and incorrectly applied skips were done at the time of data entry. Overall we believe that the data are of high quality. Key data items are generally missing for less than one-half a percent of the cases.

TABLE B.1

RESULTS OF SURVEY BY EXHAUSTEE STATUS

	Exhaustees		Nonexhaustees		Total	
Interview Outcome	Number	Percent	Number	Percent	Number	Percent
Interview Completed	1,920	39.9	1,009	21.0	2,929	60.9
Partial Interview	1	0.0	0	0.0	1	0.0
Respondent Refused Interview	182	3.8	73	1.5	255	5.3
Sample Member not Located:						
Address verified, no phone/phone number unlisted	217	4.5	97	2.0	314	6.5
Address confirmed as incorrect/respondent's whereabouts unknown	361	7.5	131	2.7	492	10.2
No contacts made/ no further information	460	9.6	249	5.2	709	14.8
Total, Inability to Locate Respondent	1,038	21.6	477	9.9	1,515	31.5
Sample Member Screened Out of Sample	1	0.0	3	0.2	4	0.1
Language Barrier/Physical Impairment	3	0.1	2	0.1	5	0.1
Sample Member Deceased	20	0.4	4	0.1	24	0.5
Case Retired after Multiple Unsuccessful Attempts	57	1.2	20	0.4	77	1.6
Total Nonrespondents	1302	27.1	579	12.0	1,881	39.1
Total Sample Release	3,222	67.0	1,588	33.0	4,810	100.0

More variation in response rates was observed among states, as can be seen in Table B.2. The highest response rate was 88 percent for nonexhaustees in Montana and the lowest was 38 percent for nonexhaustees in Mississippi. This variation among states arose, in part, because the population of some states is more mobile than it is in others. However, the primary reason for the variation is that some states were able to provide us with telephone numbers and others were not. In general, the states with low response rates were not able to provide telephone numbers.

B. REASONS FOR NONRESPONSE

The most common reason for nonresponse to the interview (Table B.1) was an inability to locate the respondent during the data collection period. A total of 1,515 sample points, or 31 percent of the total sample release, fell into this category. The location of 314 sample members was known with some certainty, but no contacts with the respondents were made, primarily because they had no telephone or had an unpublished telephone number. Of the remaining 1,201 sample members in the unlocatable category, no contacts were successfully made and no further information was available for 709, while it was confirmed that 492 had moved after filing their UI claim and could not be located. Altogether, 81 percent of the sample for whom an interview was not completed could not be located by searching staff. This figure did not differ significantly by exhaustee status; 80 percent of the exhaustee nonrespondents could not be located, compared with 82 percent of the nonexhaustee nonrespondents.

The second most prevalent reason for interview nonresponse was refusals; 255 sample points, or 5 percent of the total sample release, fell into this category. Refusals could occur at three points in the interview process: (1) the interviewer was denied access to the sample member by a member of his or her household or other proxy; (2) the sample member refused to begin the interview; or (3) the sample member terminated the interview prior to completion and refused to continue when recontacted. The refusal rates of exhaustees and nonexhaustees were similar;

TABLE B.2

SURVEY NONRESPONSE, BY STATE AND EXHAUSTEE STATUS
(Percent)

State	Exhaustees	Nonexhaustees
Alaska	57.9	72.0
California	56.6	59.2
Connecticut	47.8	57.4
Georgia	44.4	59.0
Illinois	59.6	77.2
Louisiana	67.3	56.0
Michigan	69.1	74.6
Minnesota	67.0	81.0
Mississippi	47.7	38.4
Missouri	60.9	65.7
Montana	72.6	87.5
New Jersey	55.3	70.5
New York	43.7	
North Carolina	69.2	56.3
Ohio	69.0	72.5
Oklahoma	68.8	76.7
Oregon	65.2	65.8
Pennsylvania	78.3	77.6
Texas	60.3	67.6
Wisconsin	78.0	79.7
Total	59.6	63.5

refusals accounted for 14 percent of the nonresponse among exhaustees and approximately 13 percent among nonexhaustees.

The interview status of the remaining 111 sample points, or slightly more than 2 percent of the total sample release, was resolved in a variety of ways. Seventy-seven cases were retired after multiple, unsuccessful attempts were made to conduct the interview; 24 sample members were deceased; 5 could not complete the interview due to physical or mental incapacitation or language barriers; 4 persons were screened out of the interview sample; and one respondent completed only a partial interview.

C. POTENTIAL NONRESPONSE BIAS

Potential nonresponse bias could arise from using these survey data, because 39 percent of the sample members with whom an interview was attempted did not complete the interview. If these nonrespondents differed from their respondent counterparts in a systematic way, inferences drawn from the interview data on the characteristics and labor-market experiences of respondents would be misleading if applied to the universe of unemployment insurance recipients.

In order to analyze the implications of survey nonresponse for the analysis, we examined UI administrative data that were available for both respondents and nonrespondents. These data include demographic, baseline earnings, and UI entitlement data that are used in the analysis as control variables, as well as outcome data on UI benefit receipt.

One methodological issue must be addressed before proceeding with the analysis. This issue arises because the target number of interview respondents was fixed by exhaustee status for each state. Since the number of nonrespondents, and thus the response rate, fluctuated by state and exhaustee status, a comparison of unweighted means of respondent and nonrespondent characteristics would be misleading. Differences in the average characteristics of respondents and nonrespondents would arise from differential cross-state and cross-status response rates, even if population means did not differ for the two groups. In order to compare survey respondents and

nonrespondents, weights were assigned to nonrespondents by state and exhaustee status. Weights were constructed such that, for exhaustees and nonexhaustees, the weighted distribution of nonrespondents by state matched that of survey respondents.

In our analysis of nonresponse, we first consider differences in means between respondents and nonrespondents for demographic characteristics. These differences, depicted in Table B.3, show that respondents, both exhaustees and nonexhaustees, were older and more likely to be female and white than nonrespondents. Respondents also had higher average earnings in the UI base period and hence slightly higher average UI weekly benefit amounts and potential durations than did nonrespondents. Many of the racial, age, and UI entitlement differences were statistically significant for both exhaustees and nonexhaustees. The pattern of differences suggests that the respondent sample represented an older, more stable population than the nonrespondent sample. Given that the main reason for nonresponse was an inability to locate the sample member, this result is not surprising.

Some of the respondent-nonrespondent differences in demographic characteristics are large, but only the difference in gender could affect conclusions drawn about exhaustee-nonexhaustee differences. On the basis of respondents alone, we would conclude that exhaustees were more likely than nonexhaustees to be female. However, if we adjust for nonresponse, the exhaustee-nonexhaustee difference in gender narrows to 3 percentage points,[2] a difference which is not statistically significant. However, this difference is unlikely to affect many of our conclusions, since baseline characteristics are controlled for in most of our analyses. In addition, the main gender difference between exhaustees and nonexhaustees that is highlighted in the report concerns married women. This difference is quite large, and it is unlikely that an adjustment for nonresponse would affect its statistical significance.

[2]Forty percent of the total exhaustee population were women, versus 37 percent of the nonexhaustee population.

TABLE B.3

CHARACTERISTICS OF THE INTERVIEW SAMPLE BY EXHAUSTEE AND SURVEY RESPONSE STATUS

	Exhaustees		Nonexhaustees	
	Respondents	Nonrespondents	Respondents	Nonrespondents
Demographic Variables				
Gender				
Percent female	44.5	32.6	39.8	32.8
Race/Ethnicity				
Percent white	71.9	60.7	79.4	69.8
Percent black	14.4	22.2	9.8	16.7
Percent Hispanic	9.7	12.5	7.1	8.5
Percent other race	4.1	4.7	3.7	5.0
Age				
Percent younger than 25	10.8	15.2	14.9	20.0 *
Percent 25 to 34	31.5	38.7	34.2	36.8
Percent 35 to 44	25.0	25.6	24.5	22.9
Percent 45 to 54	18.9	13.9	16.3	14.6
Percent 55 to 64	12.5	5.6	8.8	5.4
Percent 65 and older	1.3	1.0	1.3	0.4
Mean Base Period Earnings (Dollars)	14,112	11,967	15,367	13,276
UI Entitlement				
Mean weekly benefit amount (dollars)	146	139	152	141
Mean maximum benefit amount (dollars)	3,358	3,143	3,693	3,389
Mean potential duration (weeks)	23.0	22.6	24.5	24.4
Sample Size[a]	1,920	1,302	1,009	579

[a]Louisiana and Michigan were not able to provide data on base period earnings. Michigan was also unable to provide data on the maximum benefit, and Georgia was unable to provide data on date of birth.

Data on UI benefit receipt, depicted in Table B.4, indicate that respondents and nonrespondents also exhibited differences in UI outcomes. Mean weeks of UI collected were slightly higher for respondents than for nonrespondents, as was the average amount of UI benefits collected. These differences in outcome variables were statistically significant only for the exhaustees, and the differences themselves were small.

TABLE B.4

UNEMPLOYMENT INSURANCE OUTCOMES BY EXHAUSTEE AND SURVEY RESPONSE STATUS

	Exhaustees		Nonexhaustees	
	Respondents	Nonrespondents	Respondents	Nonrespondents
Unemployment Compensation Receipt				
Mean full-benefit weeks of UI collected	23.0	22.5	9.0	8.8
Mean dollars of UI collected	3,358	3,143	1,331	1,270
Sample Size[a]	1,824	1,260	956	561

SOURCE: State UI program data.

[a]Sample excludes Michigan, since no data were available on UI receipt.

☆ U.S. GOVERNMENT PRINTING OFFICE: 1990 — 282-146/28284