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AUTHOR Romero, Carol J.; And Others
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ABSTRACT

Re-employment experiences were analyzed for dislocated workers who used the services of the Employment Service (ES) during the 1980s under the Economic Dislocation and Worker Adjustment Assistance Act (EDWAA). Data came from administrative records in three states--Pennsylvania, California, and Missouri--noteworthy for differences in their administration of the work tests. Workers eligible for Unemployment Insurance (UI) were subject to taking the "work test," a job search requirement for individuals receiving UI or other benefits from government programs. As part of the work test, individuals were typically required to register with the ES. Pennsylvania did not apply the work test stringently during the period under study. In essence, dislocated workers who used the ES did so of their own volition at any time during their period of unemployment. In contrast, Missouri applied the work test strictly during the period under study. Dislocated workers who received UI were required to register with the agency at the start of a UI claim period. California's application of the work test fell somewhere between the other two states'. Results from the three states suggested that the ES was most effective when use of its services was at the discretion of the dislocated workers, that is, when the work test was not strictly enforced. A literature review of other empirical research on ES suggested that voluntary use of ES was associated with quicker reemployment among dislocated workers. (In addition to a 22-item bibliography, appendixes at the end of each chapter provide data tables and additional information from the states.) (YLB)

THE POTENTIAL EFFECTIVENESS OF THE EMPLOYMENT SERVICE IN SERVING DISLOCATED WORKERS UNDER EDWAA:

Evidence from the 1980s

Research Report

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Research Report 91-02

Carol J. Romero
National Commission for Employment Policy

Donald Cox
Fu Associates, Ltd.

Arnold Katz
University of Pittsburgh

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National Commission for Employment Policy

PREFACE

In response to a congressional mandate regarding the role of the Employment Service in assisting dislocated workers under the Economic Dislocation and Worker Adjustment Assistance Act (EDWAA), the National Commission for Employment Policy undertook several activities. It reviewed past empirical and institutional research on the Employment Service, held hearings on issues of importance to improving the effectiveness of the Agency, reviewed fifty state plans for implementing EDWAA, held discussions with numerous state officials responsible for administering the Employment Service and EDWAA, and undertook new empirical research on the Employment Service.

Findings from all these endeavors are contained in the Commission's report, Assisting Dislocated Workers: Alternatives to Layoffs, and the Role of the Employment Service under the Economic Dislocation and Worker Adjustment Assistance Act. Detailed findings from the review of the institutional literature on the Employment Service and from the Commission's hearings are contained in a Research Report, Improving the Effectiveness of the Employment Service: Defining the Issues.

This Research Report presents the detailed findings on the new empirical work on the effectiveness of the Employment Service in assisting dislocated workers and a related review of other empirical work on the effectiveness of the Agency. The questions the report addresses are -- Under what conditions was the Employment Service effective in assisting dislocated workers to become re-employed prior to EDWAA? To what extent do these conditions prevail under EDWAA? How effective, then, is the Employment Service expected to be under EDWAA? The "pre-EDWAA focus" was necessary because the most recent available data on the Employment Service are from the mid-1980s, that is, prior to the implementation of EDWAA.

Because the Employment Service is a state-administered program, the empirical analysis relies on state-level data. The states examined are Pennsylvania, California, and Missouri.

The analysis of Pennsylvania was undertaken by Dr. Arnold Katz, Department of Economics, University of Pittsburgh; the analysis of California and Missouri was undertaken by Dr. Donald Cox, Fu Associates Ltd. and Dr. Carol Romero, a member of the Commission's staff. Dr. Cox and Dr. Romero are also the authors of the review of the literature in this report and the introductory and concluding sections. A draft version was reviewed by members of the Commission staff, Dr. Vincent Geraci, Mr. Robert Ainsworth, and Ms. Barbara Oakley.

Empirical examinations of the Employment Service are difficult undertakings. Assembling the required data is a massive endeavor; interpreting the findings is equally complicated. By accomplishing both tasks, the authors have helped to clarify the conditions under which the Employment Service has helped dislocated workers in the past, and therefore, can assist them under EDWAA. On behalf of the Commission, I would like to thank the authors for this fresh analysis of the role of the Employment Service in assisting dislocated workers. I would also like to thank the state officials who made the data available for this research.

JOHN C. GARTLAND
Chairman

Table of Contents

I. Introduction

EDWAA, WARN, and Dislocated Workers

In 1988 two laws were enacted that significantly altered the way employment and training services are provided to workers who have become unemployed due to mass layoffs or plant closures, that is, have become "dislocated workers." These laws are the Worker Adjustment and Retraining Notification Act (WARN) and the Economic Dislocation and Worker Adjustment Assistance Act (EDWAA), which amended Title III of the Job Training Partnership Act (JTPA). [1]

The major feature of WARN is:

- a requirement that employers of 100 or more workers give advance notification (60 days) of mass layoffs and plant closures to the affected workers, to the State's Dislocated Worker Unit (established under EDWAA) and to the appropriate local government.

The purpose of WARN is to provide advance notification to workers, their families and communities of an unexpected loss of employment. By requiring employers to notify the State Dislocated Worker Unit, WARN begins the process of assistance to the about-to-be dislocated workers under EDWAA.

Highlights of EDWAA are:

- a requirement that states establish a Dislocated Worker Unit which, in turn, is responsible for establishing a Rapid Response Team to provide adjustment services to workers notified of a layoff under WARN;
- the encouragement of greater coordination among the Unemployment Insurance System, the Employment Service, and Trade Adjustment Assistance in providing services to dislocated workers; and
- an emphasis on using EDWAA funds for retraining.

Ultimate goals of these two laws are to reduce the financial and psychological hardship associated with dislocation and to hasten the dislocated workers' re-employment. These goals are to be accomplished by (a) providing employment and training services to workers before they are dislocated; (b) assuring that the services are comprehensive, for example, that workers receive information on their eligibility for Unemployment Insurance (UI) as well as re-employment assistance; and (c) encouraging agencies to provide the

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1 JTPA funds employment and training programs; Title II funds programs for economically disadvantaged youth and adults. Title III funds programs for dislocated workers. For detail on changes in JTPA due to EDWAA, see National Association of Counties, JTPA Issues: Economic Dislocation and Worker Adjustment Assistance Act Implementation, Vol. 22-88 (September 1988), Washington, D.C. For detail on WARN, see "Worker Adjustment and Retraining Notification: Final Rule," Federal Register, Vol. 54, No. 74, April 20, 1989, pp. 16042-16070.

services in which they have a comparative advantage -- EDWAA programs are to emphasize training and the Employment Service (ES) is to provide re-employment assistance, such as job search assistance and referrals to jobs.

This report presents the results of new empirical research on the role of the Employment Service in enhancing services to dislocated workers under the Economic Dislocation and Adjustment Assistance (EDWAA) Act of 1988. It was undertaken as part of a congressional mandate to the National Commission for Employment Policy.

Because EDWAA and WARN had been in effect for a short period of time when this reseach began, it was too early to assess empirically the extent to which dislocated workers' use of the ES under EDWAA is effective. However, it was possible to examine data on dislocated workers' experiences prior to the laws' implementation to ask -- Under what conditions was the Employment Service effective in hastening the re-employment of dislocated workers prior to EDWAA? To what extent do these conditions prevail under EDWAA? How effective, then, is the Employment Service expected to be under EDWAA?

In addressing these questions, it is important to bear in mind that during the 1980s dislocated workers were one of many applicant groups served by the ES.[2] They were given no special preference for service; however, they were required to meet the "work test" requirement if they were UI or Food Stamp recipients.

Because states' application of the work test is a critical aspect of this report's analysis and findings, a brief descriptionn of the work test and how it can affect empiririca examinations of the ES is given next. The Introduction concludes with an outline of the full report, highlighting how states' enforcement of the work test influenced the report's design and structure.

EDWAA, WARN, the UI/ES System, and the Work Test

EDWAA and WARN were introduced into a well-established system for assisting workers who had become unemployed due to a plant closure, mass layoff, or other reasons. Regardless of the reason for their unemployment, workers went through a process of verifying their eligibility for UI (and Trade Adjustment Assistance where

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2 Any individual, whether unemployed or employed, may use the ES for employment assistance; all employers may list their job vacancies with the agency.

The Employment Service has several functions in addition to matching workers and jobs. First, as part of its labor exchange functions, the ES provides counselling, testing, referral, and job search assistance to job seekers. Second, it provides special assistance to target populations, such as veterans, migrant and seasonal farmworkers, and low-income individuals. (Since EDWAA was enacted, dislocated workers have become a targeted group for ES services.) Third, it provides labor market information to governments, industry, and individuals for purposes of planning for economic development and investments in training. Finally, as discussed in the text, the ES is responsible for administering the "work test" -- or work search requirement -- for recipients of Unemployment Insurance (UI), Food Stamps, and Aid to Families with Dependent Children (AFDC). For more information on the Employment Service, see Robert Ainsworth, Improving the Effectiveness of the Employment Service: Defining the Issues, Research Report Number 91-01, National Commission for Employment Policy, Washington, D.C., October 1991.

applicable). Once their eligibility had been determined, the workers were subject to the "work test" – the job search requirement for individuals receiving UI or other benefits from government programs. As part of the work test, individuals were (and currently are) typically required to register with the ES and the ES monitors their search for work.

In conducting the work test, the ES certifies that people continue to be eligible for the assistance programs. To continue to be eligible, recipients must be able to work and available for jobs; they must also be free of disqualification for cause, such as having refused suitable employment. Although the UI system has the major responsibility for administering the work test, the ES refers claimants to jobs and monitors their search for work.

States have varied among themselves and over time in the strictness with which they enforce the work test.[3] In some areas, UI recipients' use of the ES is mandatory early in their UI benefit period. In other areas, their use of the ES is, in essence, voluntary, and so, may occur at any time. Thus EDWAA and WARN -- which seek to encourage dislocated workers to use the ES early -- were superimposed upon a system which in some places already mandated early use of the Agency.

This linkage between the timing of, and motivation for, dislocated workers' use of the ES poses problems for empirical examinations of the potential effectiveness of the ES under EDWAA, because it can confound statistical results. For two reasons strict enforcement of the work test could lead to use of ES services appearing empirically to be ineffective when, in fact, they may be effective.

First, the more strictly the work test is enforced, the greater the number of dislocated workers who use the Agency only to meet the work-test requirements. If these workers would prefer not to use the ES, they may resist the Agency's efforts to assist them (for example, because they are at the start of their UI benefit period and are not psychologically ready to accept the jobs available in the ES job listings). This resistance would tend to dilute the measured effectiveness of the ES.

Second, the more strictly the work test is administered, the greater the likelihood that readily employable individuals will find new jobs quickly on their own. Individuals who do not find jobs on their own and apply at the ES may be "the more difficult to place," which also would tend to dilute the measured effectiveness of the ES.

On the other hand, strict enforcement of the work test could in reality be associated with relatively ineffective ES services if the Agency has resource constraints. Agencies make trade-offs in the way they allocate staff's time; to the extent that time is devoted to administering the work test, less time is available for the provision of other services.

The above statements regarding the work test are not intended to diminish its importance in reducing the amount of time UI claimants receive UI payments.[4] Instead,

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3 For a detailed description of variations among states in their enforcement of the work test, see U.S. Department of Labor, Employment and Training Administration, Work Search Among Unemployment Insurance Claimants: An Investigation of Some Effects of State Rules and Enforcement, Unemployment Insurance Service Occasional Paper 88-1, Washington, D.C., 1988.

4 See the results in U.S. Department of Labor, Employment and Training Administration, Evaluation of the Charlestown Claimant Placement and Work Test Demonstration, Unemployment Insurance Occasional Paper 85-2, Washington, D.C., 1985.

they are intended to illustrate that variations in administrating the work test confounds empirical examinations of the effectiveness of the ES.

Research Approach and Outline of Report

Even though the Employment Service has been in existence for nearly 60 years (established in 1933), there has been relatively little empirical research assessing its effectiveness.[5] One likely reason for the paucity of recent empirical research is that although the ES is a national program, it is administered at the state level.[6] There are variations across states in ES policies and procedures, including the collection and maintenance of the data on its activities needed for broad research to take place.

Two approaches to examining the ES empirically may be undertaken. One is to develop data based on a nationally representative survey of workers who used the ES and those who did not. A second approach is to rely on administrative records from individual states. Due to the expense involved in undertaking the first approach, the new empirical research reported here used administrative records.

The research examines the re-employment experiences of dislocated workers who used the services of the ES during the 1980s. The data come from three states -- Pennsylvania, California and Missouri -- noteworthy for differences in their administration of the work test, as described below.

In the analysis, dislocated workers are defined as individuals with relatively long employment experience who received UI benefits. It is recognized that dislocated workers are defined more broadly under EDWAA.[7] However, the main thrust of EDWAA, in combination with WARN, is likely to be the provision of assistance to dislocated workers who are eligible to receive UI benefits.

Section II presents empirical results on the effectiveness of the Pennsylvania ES in serving dislocated workers. Pennsylvania did not apply the work test stringently during the period under study; in essence, dislocated workers who used the ES did so of their own volition at any time during their period of unemployment. Thus Section II examines the effectiveness of ES services to dislocated workers when their use of the ES was voluntary and may have occurred toward the end of their full UI claim spell.

Section III analyzes the Missouri and California Employment Services. In contrast to Pennsylvania, Missouri applied

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5 Section IV reviews much of this literature. See also U.S. General Accounting Office, Employment Service: Variations in Local Office Performance, GAO/HRD-89-116BR, Washington, D.C., August 1989.

6 In 1982 the Job Training Partnership Act amended the Wagner-Peyser Act, giving increased responsibility for the Employment Service to the states.

7 Workers eligible for services under EDWAA are persons who: have been terminated or laid off, or have received notification of job-termination or layoff, and are unlikely to return to their previous occupation or industry; have been terminated due to a plant closure; are long-term unemployed and have limited opportunities for (re)employment in the same or similar occupation in their locality; were self-employed (including farmers and ranchers) and are unemployed due to either general economic conditions in their locality or natural disasters; or are displaced homemakers.

the work test strictly during the period under study; dislocated workers who received UI were required to register with the Agency at the start of a UI claim spell. California's application of the work test was between the other two states.[8] Thus Section III examines the effectiveness of ES services to dislocated workers when registration with the Agency was mandatory at the beginning of their spell of unemployment.

Results from the three states suggest that the ES was most effective when use of its services was at the discretion of the dislocated workers, that is, when the work test was not strictly enforced. To determine whether this result is consistent with other empirical research on the ES, a review of the literature on the ES was undertaken.

The results of this literature review are given in Section IV. Studies of the ES have differed in the purpose for which they were undertaken and in the data bases they used. Partly as a result, the studies have obtained conflicting findings on the effectiveness of the ES. An examination of these differences among studies, along with the new findings in this report, reveal the conditions under which the Employment Service was effective prior to EDWAA and so can be effective under EDWAA.

Section IV presents the conclusions.

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8 See U.S. Department of Labor, Work Search Among Unemployment Insurance Claimants, Table D.1.

II. Length Of Joblessness And The Employment Service With Special Reference To Philadelphia And Pittsburgh, Pennsylvania 1979 - 1987

Introduction

This section examines the role of the Employment Service (ES) in assisting dislocated workers in Pennsylvania who remained jobless for extended periods.[1] In principle, the ES would appear to be uniquely situated to facilitate the employment transition of dislocated workers. It is the nation's most centralized labor exchange with up-to-date computerized listings of regional and national job vacancies. It has long experience in the counseling, aptitude testing, and job search assistance services, which the dislocated sorely need to cope with the disruptions of their work careers.

Unfortunately, little is known of the ES's capabilities to assist these individuals. Previous research has found that users of the ES are generally out of work for longer periods, on average, than persons who find jobs on their own, without ES assistance.[2] However, such findings are comparatively meaningless in the context of services to dislocated workers since many of the ES's traditional registrants are less skilled, often disadvantaged -- workers with limited job opportunities. They have distinctly different needs than dislocated workers, who often have specialized training and high wage expectations.

This section of the report sheds considerable light on the distinctive role of the ES in assisting dislocated workers who have been jobless for an extended period. Accordingly, it serves as a guide to knowing how effectively the ES may respond -- based on past performance -- under the provisions of the Economic Dislocation and Worker Adjustment Assistance (EDWAA) and Worker Adjustment and Retraining Notification (WARN) Acts. The results of this study concentrate on the Agency's contributions to the speed of dislocated workers' re-employment; other measures of ES performance are outside this study's scope.

The experiences of workers in Philadelphia and Pittsburgh, examined here, are typical of many other individuals who were dislocated throughout the "rustbelt" in recent years.[3] During the period under investigation -- 1979 to 1987 -- large numbers

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1 The author of this section is Dr. Arnold Katz. He is grateful to Dr. Carol Romero and Dr. Louis Jacobson for helpful criticisms. He is also indebted to the Allegheny County Planning Department, the Pennsylvania Department of Labor and Industry, and the W.E. Upjohn Institute of Employment Research for support in assembling the data analyzed in the report.

2 For example, see Terry Johnson, et al, "A Pilot Evaluation of the Impact of the U.S. Employment Service," Stanford Research Institute, Menlo Park, California, January 1979. See Section IV of this report for a review of the empirical literature on the ES.

of workers in both areas experienced permanent job loss due to extensive contractions of traditional industries.

This study defines dislocated workers as persons who received Unemployment Insurance (UI) benefits, had strong job attachments (more than three years of work experience prior to becoming unemployed), and were not at work in the quarter immediately prior to applying for UI benefits. Thus the individuals examined were either dislocated workers or had characteristics very similar to those of dislocated workers, in terms of their previous work experience and loss of well-paying jobs in distressed areas. That is, very high proportions of those who received UI were either directly or indirectly -- via multiplier effects -- workers dislocated because of structural change. The sample consists of 16,470 persons.

It is important to note that in Pennsylvania, the "work test" was not stringently applied during the period under study, which means UI recipients were not systematically required to register with the ES. The lag in making contact with the Agency was shorter in states where registration was mandatory for UI recipients, as shown in Section III of this report.

An important finding from this study of the Pennsylvania ES is that the long-term jobless who received UI benefits first applied to the ES long after they became unemployed. Individuals in this study who used the ES waited, on average, close to six months before going there for help.

Clearly, the ES cannot contribute to people's attempts to find work until they are ready to accept its assistance. The influence of the Agency is completely obscured if this common-sense observation is not taken into account. The measures in this study evaluate the contribution of the ES beginning with the point at which jobless applicants first received referral, counseling, and placement services. Adjusting for the timing of UI recipients' use of the ES reveals that those who used the ES in Pennsylvania returned to work significantly sooner than others with similar characteristics and similar amounts of previous time without work who did not use the ES. A major result is that ES interventions increased employment when their effects are appropriately measured.

This finding is very similar to those of an earlier study of the ES which focused on lower-paid applicants with weaker work attachments. In the previous work, the ES contribution was termed a "backstop" effect; implying that the ES significantly aids those whose more preferred means of finding work have been unsuccessful and who lack alternative sources of job information.[4] Viewing the ES as a "backstop" helps to explain why ES applicants delay applying there for help and tend, on average, to be jobless for longer periods than other workers. A key finding of the present research is that the ES also provides a "backstop" for the more highly skilled in

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3 Philadelphia is the Census Standard Metropolitan Statistical Area comprising Bucks, Chester, Delaware, Montgomery, and Philadelphia counties. Pittsburgh includes Allegheny, Beaver, Fayette, Washington, and Westmoreland counties. Since Fayette replaced Beaver in the Census definition of the Pittsburgh SMSA after 1984, the counties here are covered under the old and new definitions.

4 Arnold Katz, "Nonexperimental Evaluations of the Employment Service's Influences on Search Times and Earnings" in Tim L. Wentling ed., Annual Review of Research in Vocational Education, Volume 1, 1980, University of Illinois.

much the same way as it does workers with more limited qualifications.

After describing the Pennsylvania data used for this study, this section compares the UI recipients in Philadelphia and Pittsburgh. It then identifies the characteristics which distinguish the persons most likely to have made use of the ES. The main body of the section analyzes the consequences of ES interventions on the length of the individuals' periods of joblessness. It analyzes how the probability of remaining jobless changes with the passage of time and the role of the ES in this relationship. The discussion includes estimates of the effectiveness of different types of ES services in shortening the amount of time UI recipients were joblessness after they have applied to the ES. The section concludes with brief comments on the significance of the findings.

The Pennsylvania Data

Although data for the study were collected from a 5 percent sampling of UI recipients, for many purposes the data are better viewed as a sample of periods of joblessness.[5] The basic unit of observation is the period of continuous joblessness for each UI recipient sampled beginning with the first payment of unemployment benefits from 1979 on. Thus the study excludes periods for which benefits were received prior to 1979 as well as periods following the basic sampling unit. Length of joblessness is measured in quarters and terminates in the quarter of the year in which an individual returned to work in covered employment. The sample of 16,470 periods of such joblessness is almost evenly divided between Philadelphia and Pittsburgh (8,198 versus 8,272).

Philadelphia and Pittsburgh Compared

Table 1 gives basic information on the characteristics of UI recipients in Philadelphia and Pittsburgh during the 1980s. The data indicate that the two groups were more alike than dissimilar, reflecting their exposure to common economic trends. Observed differences are small: for example, more of the Philadelphia workers were women; somewhat fewer of the Philadelphia unemployed had been working in manufacturing; their previous earnings were correspondingly lower; and they tended to be less experienced than the Pittsburgh workers at the time they became unemployed. These differences mostly reflect the somewhat heavier concentration of hard-hit heavy industries in Pittsburgh than in Philadelphia and Pittsburgh's consequently higher rates of local unemployment (averaging 9.0 percent in Pittsburgh compared to 7.2 percent in Philadelphia at the start of each sample spell of unemployment).

Notwithstanding the differences in rates of unemployment, UI recipients' periods of joblessness averaged 3.6 quarters in each city. Pittsburgh workers collected UI benefits for a longer average time (1.9 quarters versus 1.5 quarters), but the proportion exhausting benefits was almost identical in each area.

Also shown in Table 1, about one in ten of the UI recipients in both Pittsburgh and Philadelphia had been served by the ES before becoming unemployed. About one in five of these prior users sought ES help again after becoming unemployed. For purposes of this study, ES assistance is defined to include receipt of a job referral, placement, or other job search assistance

[5] See Appendix II.A for details on the data that were used.

TABLE 1

Characteristics of UI Recipients Under Age 62 and with 3 or More Years of Work Experience Before Becoming Unemployed,

Philadelphia and Pittsburgh SMSAs, 1979-87 (a)

Characteristic	Philadelphia	Pittsburgh
Average Age (years)	39.8	40.2
Percent Female	35.2	28.7
Average Number of Quarters of Prior Work Experience	29.8	31.2
Average Highest Quarterly Earnings	$5,770	$6,359
Average Quarters Jobless Before Unemployment	19.8	17.9
Percent Employed in Manufacturing Before Unemployment	40.6	42.5
Average Unemployment Rate in SMSA	7.2	9.0
Average Weekly Amount of Unemployment Benefit in 1982 Dollars	$143	$149
Percent Who Exhausted Benefits	40.1	40.7
Average Number of Quarters in First Completed Period of Joblessness:		
Total	3.6	3.6
While Drawing Unemployment Benefits	1.5	1.9
While Not Drawing Benefits	2.1	1.7
Percent Using Employment Service While Jobless	20.3	22.0
Percent Using Employment Service Before Unemployment	11.9	12.8
Total Number of Persons	8,198	8,272

(a) For persons whose first completed period of joblessness began in 1979 or later.

while jobless. By this definition, the proportions of UI recipients in the two cities who used the ES while jobless was very similar: the ES assisted 20 percent of the Philadelphia workers and 22 percent of the Pittsburgh workers.

Characteristics of ES-Users

Table 2 compares the characteristics of those who used the ES with those who did not. The major differences are that ES-users tended to be less well-paid (their

TABLE 2

Characteristics of UI Recipients Under Age 62 and With 3 or More Years of Work Experience Before Becoming Unemployed By Their Use (and Non-use) of the Employment Service While Jobless

Philadelphia and Pittsburgh SMSAs, 1979-87 (a)

Characteristic	Did Not Use ES	Used ES
Average Age (years)	40.1	39.6
Percent Female	31.2	34.8
Average Number of Quarters of Prior Work Experience	30.5	30.4
Average Highest Quarterly Earnings	$6,223	$5,477
Average Quarters Jobless Before Unemployment	18.9	18.6
Percent Employed in Manufacturing Before Unemployment	42.5	37.9
Average Unemployment Rate in SMSA	8.1	8.3
Average Weekly Amount of Unemployment Benefits in 1982 Dollars	$148	$141
Percent Who Exhausted Benefits	32.8	68.0
Average Number of Quarters in Completed Period of Joblessness:		
Total	3.1	5.5
While Drawing Unemployment Benefits	1.4	2.8
While Not Drawing Benefits	1.7	2.7
Total Number	12,988	3,482

(a) For persons whose first completed period of joblessness began in 1979 or later.

peak-quarter earnings was $5,477 before becoming unemployed compared to $6,223 for UI recipients who did not use the ES) and a far higher proportion exhausted their unemployment benefits (68 versus 33 percent). Consistent with the findings of other studies, ES-users were also jobless for longer periods, on average. They not only received benefits for a longer average time (2.8 quarters compared to 1.4 quarters), but also were out of work longer, on average, after their benefits were exhausted (2.7 versus 1.7 quarters).

Such differences as those shown in Table 2 demonstrate that ES-users are not a random

sub-sample of UI recipients. As a result, it is necessary to make appropriate allowances for these differences in comparisons of ES-users' experiences with those of non-users. The study makes use of a statistical technique, regression analysis, to adjust for these differences.

Table 3 illustrates the technique by showing how variations in individuals' characteristics affect their use of the ES. Each "regression coefficient" is an estimate of what a unit change in the matching characteristic contributes to the probability of a person's receiving ES services, after controlling for the other variables listed.

For example, the regression analysis reveals that women were 1.5 percentage points significantly less likely to be ES-users than men, contradicting the finding in Table 2 that more of ES-users are women. The explanation behind this apparent contradiction is that (a) women earned less, received lower benefits, and were less likely than men to have worked in manufacturing and (b) individuals with these characteristics had a higher probability of using the ES, as indicated by the regression. When these factors are taken into account (through regression analysis), the net result is that women are less likely than men to use the ES.

The regression analysis also deepens an understanding of how receipt of UI influenced individuals' use of the ES. Other characteristics being the same, persons who exhausted their benefits were 7 percentage points likelier to be ES-users, compared to a seemingly 35 percentage point difference shown in Table 2. The regression analysis reveals that much of the gap between the two comparisons is due to the fact that use of the ES did not begin abruptly at the point that benefits run out. Rather, the likelihood of UI recipients using the ES increased gradually as benefits were used up. This can be seen in the regression coefficient for "weeks of unemployment benefits": the likelihood of becoming an ES-user increased by .7 percentage points week by week with the receipt of each benefit check.

Timing of Use of the Employment Service in Philadelphia and Pittsburgh

The results in Table 3 implied that receipt of UI benefits tended to delay the point at which jobless workers turned to the ES for assistance after they became unemployed. Further analysis shows there was a significant delay in many UI recipients' use of ES services -- which must be accounted for in any measure of the performance of the ES.

Table 4 displays the actual quarters that elapsed between the onset of unemployment and applicants' first contact with the ES. The average delay preceding ES help was considerable: close to 2 quarters. Overall, almost half (45 percent) of ES-users were jobless for more than two months before receiving assistance. At first glance, waiting to seek ES assistance until after benefits were exhausted appears to account for the bulk of the delay: exhaustees waited 2.5 times longer than persons not exhausting benefits (2.5 quarters versus 1.0 quarters). Yet earlier results showed that UI benefits influenced use of the ES gradually over time. The differences between Philadelphia and Pittsburgh suggest that other factors bear on the length of the delay. In Pittsburgh, workers delayed an average of .7 quarters (about 9 weeks) longer in coming to the ES than workers in Philadelphia, although the proportion of exhaustees in both cities was virtually the same.

Table 5 presents the findings from a regression analyzing individual variations

TABLE 3

Probability of Using the Employment Service While Jobless Among UI Recipients Under Age 62 and With 3 or More Years of Work Experience Before Becoming Unemployed, By Their Personal Characteristics

Philadelphia and Pittsburgh SMSAs, 1979-87 (a)

Characteristic	Regression Coefficient
Constant	0.1230259** (6.115)
Age (years)	-0.0004979 (1.454)
Sex (Female=1; Male=0)	-0.0148604* (2.148)
Number of Quarters of Prior Work Experience	0.0019205** (6.254)
Highest Quarterly Earnings	-0.0000055** (6.594)
Number Quarters Jobless Before Unemployment	0.0003282 (1.087)
Employed in Mfg. Before Unemployment (Yes=1;No=0)	-0.0152241* (2.466)
SMSA Unemployment Rate When Unemployed	-0.0040236** (2.607)
Weekly Unemployment Benefits (1982 Dollars)	-0.0004444** (8.656)
Exhausted Benefits (Yes=1;No=0)	0.070190** (8.489)
Number Weeks Drawing Unemployment Benefits	0.0066614** (36.766)
Number Jobless Weeks without Drawing Benefits	0.0000588 (1.3)
Used ES Before Being Jobless (Yes=1;No=0)	0.0321882** (3.456)
In Pittsburgh SMSA When Unemployed (Yes=1;No=0)	0.0104922 (1.614)
R-SQUARED	0.1533

T-statistic given in parenthesis.
* = significant at 5% level.
** = significant at 1% level.
(a) For persons whose first completed period of joblessness began in 1979 or later.

TABLE 4

Percent Distribution of Delays (in Quarters) in Using the Employment Service Among UI Recipients Under 62, and With 3 or More Years of Work Experience Before Becoming Unemployed, By Selected Personal Characteristics

Philadelphia and Pittsburgh SMSAs, 1979-87 (a)

	Quarters Delay (Percent Distribution)				
	Number	Less Than Or = 1	2-4	4+	Average
Used Employment Service While Jobless:					
Total	2,863	55.4	35.4	9.3	1.9
in Philadelphia	1,390	61.2	32.2	6.6	1.5
in Pittsburgh	1,473	50.0	38.3	11.7	2.2
Selected Characteristics:					
Male	1,839	54.6	34.0	11.4	2.0
Female	1,024	56.8	37.7	5.5	1.7
Under 45 years	2,056	56.6	34.5	8.9	1.9
45 or older	807	52.4	37.5	10.2	1.9
Exhausted Benefits	1,869	41.0	45.5	13.6	2.5
Did not exhaust	994	78.2	19.3	2.5	1.0

(a) For persons whose first completed period of joblessness began in 1979 or later.

in the delay. Each regression coefficient estimates how much a unit increase in the indicated characteristic increases the quarters elapsing between the onset of unemployment and the point at which a UI recipient applied to the ES. The estimates show that the most significant factor associated with the delay was the number of weekly benefit checks received, each week of UI benefits adding about .05 quarters (or .7 weeks) to the delay.[6] Once again, the results indicate that the influences of UI

6 This is a statistical association and not a causal relationship. If it were causal, the probability of using the ES would diminish with each week of benefits, which is inconsistent with the observed pattern of use of the ES.

TABLE 5

Delay (in Quarters) in Using the Employment Service While Jobless Among UI Recipients Under Age 62 and With 3 or More Years of Work Experience Before Becoming Unemployed, By Their Personal Characteristics

Philadelphia and Pittsburgh SMSAs, 1979-87 (a)

Characteristic	Regression Coefficient
Constant	-0.9042028 (3.76)**
Age (years)	0.0004009 (0.092)
Sex (Female=1; Male=0)	-0.1688603* (2.037)
Number of Quarters of Prior Work Experience	-0.0007197 (0.191)
Highest Quarterly Earnings	-0.0000222 (1.588)
Number Quarters Jobless Before Unemployment	0.0034931 (1.02)
Employed in Mfg. Before Unemployment (Yes=1;No=0)	0.2337684** (3.013)
SMSA Unemployment Rate When Unemployed	0.0514967** (2.702)
Weekly Unemployment Benefits (1982 Dollars)	0.0008591 (1.121)
Exhausted Benefits (Yes=1;No=0)	-0.080388 (0.921)
Number Weeks Drawing Unemployment Benefits	0.0486701** (25.648)
Number Jobless Weeks without Drawing Benefits	0.015037** (19.748)
Used ES Before Being Jobless (Yes=1;No=0)	-0.214245* (2.197)
In Pittsburgh SMSA When Unemployed (Yes=1;No=0)	0.144898 (1.771)
R-SQUARED	0.3795

T-statistic given in parenthesis.
* = significant at 5% level.
** = significant at 1% level.
(a) For persons whose first completed period of joblessness began in 1979 or later.

benefits build up gradually over time. Here, it turns out that exhausting benefits had no statistically significant bearing per se on the length of the delay.

Other characteristics the same, high unemployment in an area added to UI recipients' delay in using the ES. Evidently, the bleaker the local labor market prospects for finding work, the more pessimistic jobless persons seemingly become of the ES capabilities to assist them. The regression further shows that men delayed longer than women, and manufacturing workers delayed longer than non-manufacturing workers. The combination of factors -- more widespread unemployment and more manufacturing in Pittsburgh -- contribute to explaining why workers in Philadelphia contacted the ES sooner. Once these factors are taken into account, the difference in the average delay of workers in the two cities falls appreciably (from .7 to .14 quarters) and is not statistically significant.

The regression analysis also indicates that reluctance to use the ES gradually broke down in an ongoing process as total joblessness -- before and after benefits were exhausted -- was prolonged. Thus, the findings are consistent with the ES serving as a "backstop" source of information, increasingly relied upon by workers with diminishing financial resources and unsuccessful in other ways of finding jobs.

Quarterly Profiles of Changes in the Probability of Remaining Jobless

UI recipients' delay in using the ES in Pennsylvania obscures the Agency's contribution to the speed with which they returned to work. This section prefaces the discussion of a more accurate measure of the influence of the ES, a discussion which takes this delay into account. This section uses graphs to illustrate how the influence of the ES becomes more apparent when evaluated from the point at which a jobless person first receives ES assistance. The illustration is based on the experiences of males who were employed in manufacturing before becoming unemployed, the bulk of whom were likely -- in this sample -- to have been dislocated workers. In this discussion, no distinction is made between the jobless in Philadelphia and Pittsburgh. A look at the influences of area of residence and other potentially important factors is postponed until the more detailed analysis in the following section.

In Figure 1, the horizontal axis shows the passage of time (in quarters) since first becoming unemployed. The vertical axis shows the proportion of men formerly in manufacturing who still had not found work and remained jobless for each quarter indicated on the horizontal axis.[7] Points

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[7] The proportions are equivalent to the probability of remaining jobless. The measure of the probabilities used is the well-known Kaplan-Meier or product-limit estimator. To see how this is calculated, let n_j represent the number of individuals in a given group who are jobless in quarter j. Let h_j represent the number who are re-employed in the same quarter. Then the Kaplan-Meier estimator of the probability of a member of the group remaining jobless for as long as t quarters is calculated as the chain product of $(n_j - h_j)/n_j$ as j is indexed from 1 to t. (J.D. Kalbfleisch and R.L. Prentice, The Statistical Analysis of Failure Time Data, John Wiley and Sons, New York, New York, 1980, is a standard reference on this procedure.)

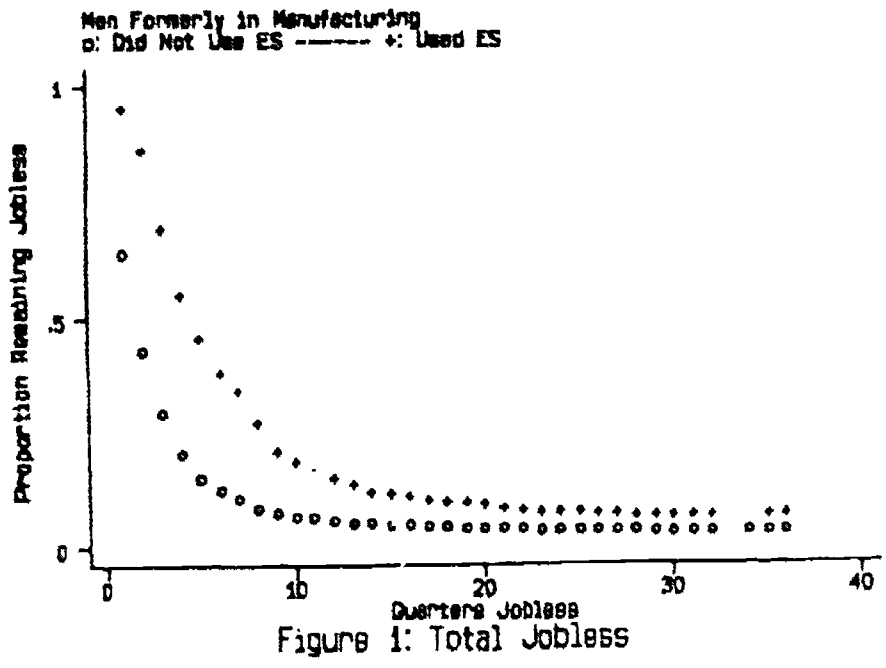
For meaningful probabilities, the estimates in the Figures include both periods of joblessness which terminated before the end of the study period (4th quarter 1987) and those which were still ongoing at that point. Unless otherwise indicated, other measures of joblessness in the report are

marked with a "+" refer to men who used the ES. Points marked with an "o" refer to those who did not.

As Figure 1 shows, the proportion of unemployed men who continued to be jobless drops abruptly at first for those who did not use the ES, while it decreases only slightly for ES-users. One-third of those who did not use the ES returned to work in the first quarter of unemployment compared to only about 5 percent of the men who were ES-users -- either in the first quarter or later on. By the second quarter, less than half (43 percent) of the non-users remained jobless, compared to 86 percent of those who were -- or became – ES-users. The decline in the proportion of ES-users remaining jobless quickened in the third quarter. Eventually the proportions for both groups flatten out at close to the same level, but ES-users had a consistently higher probability of remaining unemployed.[8] Thus, the dislocated who applied to the ES had a more difficult time finding work and remained jobless longer overall.

Figure 1

Proportions of Jobless Men By the Number of Quarters They Remained Jobless According to their Use (Non-Use) of the Pennsylvania ES (a)



(a) Men formerly in manufacturing.

based on spells completed before the close of the study period.

[8] The maximum number of quarters for which the estimates are available is 36, determined by the length of the sample period (first quarter 1979 through fourth quarter 1987). The porportion remaining jobless never reaches zero because 6 percent of non-ES users and 9 percent of ES users were still out of work at the end of the ample period or could not be tracked because they had died or moved out of state.

Figure 2 is constructed in a manner similar to Figure 1, except that it refers to men who exhausted UI benefits and were jobless for more than one quarter. Restricting the comparisons to exhaustees focuses on long-term jobless workers. The "o" points refer once again to men who did not use the ES. Now however, the timing of use of the ES is taken into account: the "+" points refer to men who used the ES during the first quarter of their joblessness. All of those men who first used the ES later on are excluded to be certain that the ES intervened in the quarter just before the starting point of the Figure 2 comparisons. For comparability, both ES-users' and non-users' joblessness is measured from the same point (second quarter on).

The results in Figure 2 are strikingly different from Figure 1. A high proportion of both groups (about 96 percent) remained jobless in the second quarter, with no significant difference between ES-users and non-users. As joblessness continued, it is now ES-users who returned more quickly to work. By the fourth quarter, 51 percent of ES-users were re-employed, compared to 61 percent of non-users. The differential persists and does not begin to narrow until around the eighth quarter. These findings imply that contact with the ES helped people find work sooner, although it may be some time before the effect is fully evident.

Figure 2

Proportions of Men Who were Jobless More than One Quarter and Had Exhausted their UI Benefits, By the Number of Quarters They Remained Jobless and According to their Use (Non-use) of their Pennsylvania ES During the First Quarter of their Joblessness (a)

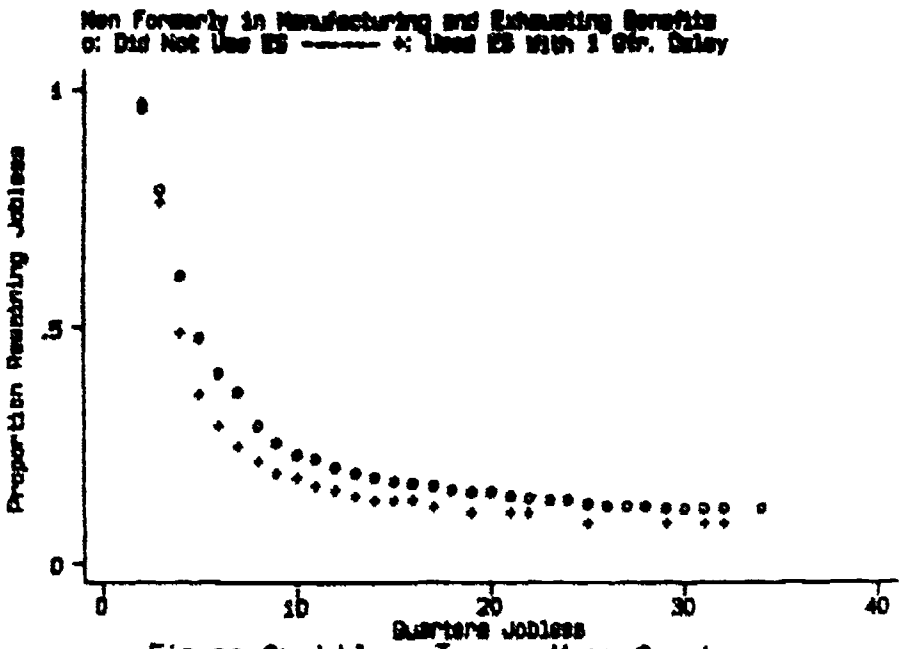


Figure 2: Jobless Two or More Quarters

(a) Men formerly in manufacturing.

Figure 3 shows the experiences of those who used (and did not use) the ES during their second quarter of joblessness. Again both ES-users and non-users are men formerly in manufacturing who exhausted unemployment benefits. To assure comparing experiences after the first ES contact, the joblessness of both groups is examined from the third quarter on.

Outcomes in Figure 3 resemble Figure 2. While there was more re-employment in the fourth quarter, immediately following the ES reference point, only moderately more ES-users were re-employed than non-users (21 percent versus 18 percent). Thereafter, the gap widens: ES-users were consistently more likely to have been re-employed (for example, 44 percent compared to 37 percent in the fourth quarter). The differential grows wider than in Figure 2 and persists longer as well.

The similarities of Figures 2 and 3 strengthen findings regarding the importance of timing an individual's use of the ES. In both illustrations, ES interventions significantly assisted the long-term jobless to become re-employed, although the effects are not immediately apparent. This could be because of the time required to weigh offers received through the ES. Information obtained through the ES may open up new avenues of search and so lead only indirectly, and with a time lag, to becoming re-employed. In other cases, the ES may refer the applicant to counseling or training which increases employability eventually, not right away.

Figure 3

Proportions of Men Who were Jobless More than Two Quarters and Had Exhausted their UI Benefits, By the Number of Quarters They Remained Jobless and According to their Use (Non-Use) of the Pennsylvania ES During the Second Quarter of their Joblessness (a)

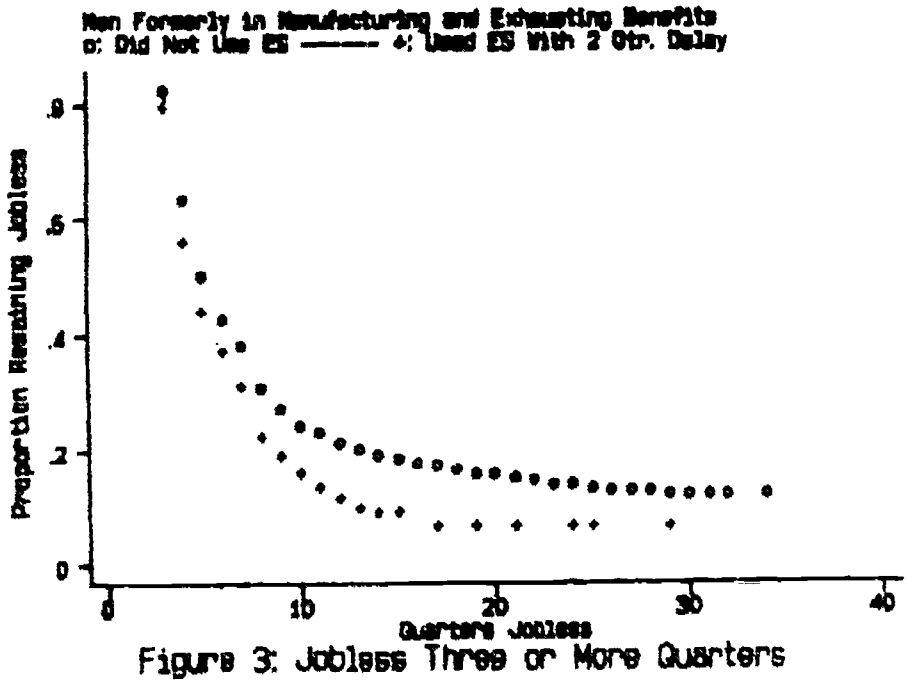


Figure 3: Jobless Three or More Quarters

(a) Men formerly in manufacturing.

In any case, Figures 1-3 are only meant to be suggestive. They fail to control for many of the differences in the characteristics of ES-users and non-users, noted before. They also do not consider the experiences of long-term jobless workers who were dislocated from industries other than manufacturing. The next section presents a more comprehensive analysis of the contribution of the Pennsylvania ES.

Contribution of the Pennsylvania Employment Service

Table 6 summarizes regression estimates showing that the previous results can be generalized. Each entry is an estimate of the difference between the average weeks of joblessness of ES-users and non-users. Negative values denote a shorter period out of work for ES-users.[9] Each column refers to the period chosen to correct for the timing of ES services. For example, the first column covers a period analogous to that of Figure 2. That is, it refers to persons who used the ES in the first quarter of unemployment and compares their subsequent joblessness (from the second quarter on) to that of non-users who were jobless for at least as long (i.e., two or more quarters).

The second and third columns are similarly derived for longer delays in ES interventions. Column 2 compares the experiences of persons who first received ES help in the second quarter; column 3 compares experiences for third quarter ES applicants. In each case, the table indicates the net difference in the remaining joblessness of ES-users versus non-users beginning with the quarter immediately following the receipt of ES assistance. Since all of the table entries are negative, ES-users were re-employed sooner than non-users, allowing for the delay with which the ES intervened.

Rows 1 and 2 compare the full sample of ES-users and non-users for Philadelphia and Pittsburgh, respectively. These estimates show that ES helped reduce the joblessness of those who applied in the first quarter by 1.5 weeks in Pittsburgh and by 2.6 weeks in Philadelphia. The ES contribution increased from 7.1 weeks to as much as 12.1 weeks for those whom the ES helped two to three quarters after they had become unemployed.[10]

These estimates are the net effects associated with ES interventions after controlling for variables such as those included in the previous regressions.[11]

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9 The estimates in Table 6 are the regression coefficients of a dummy variable equal to 1 if the UI recipient used the ES as redefined and equal to zero if he/she made no use of the ES in the sample period of joblessness. The coefficients appear in the rows labelled "ES User: While Jobless" in Appendix II.B, Tables B.1-B.9. The original coefficients are scaled, like the dependent variable, in quarters and have been converted to weeks, treating each quarter as 13, for purposes of Table 6.

Since weeks when benefits are received are included in the dependent variable measuring duration of joblessness, the regression coefficents measure influences on duration of joblessness after benefits are no longer received. This introduces technical complexities in the interpretation of the coefficients of some of the variables which do not affect our interpretations of the ES influence.

10 It might be noted that compared to Pittsburgh, the contribution of the Philadephia ES is greater when workers' delay in contacting the ES is shorter. Conversely, the effect of using the Pittsburgh ES is greater among workers whose delay is longer. However, since these differences between cities are not statistically significant, they should probably be ignored.

The last row of Table 6 shows similar estimates for the group looked at graphically before -- men formerly employed in manufacturing industries who exhausted unemployment benefits.[12] The differences between these men's experiences and those of the full sample findings are minor; they fall well within the range of sampling variability.

The similarities between the cities and between manufacturing and non-manufacturing workers are noteworthy. Pittsburgh's industrial base was less diversified and greater numbers of plants, in steel and steel-related industries, were permanently closed during the period under study. Thus, more of the Pittsburgh workers were likely to have been dislocated in the narrower sense entailing plant shutdowns. Philadelphia workers, on the other hand, were likelier dislocated in the broader sense, entailing more generalized mass layoffs. The similarities in the city and industry comparisons imply that the findings generalize to broad categories of dislocated workers. The effectiveness of the ES appeared to be much less a function of the characteristics of individual workers than the overall length of their joblessness.

TABLE 6

Number Of Weeks Remaining Jobless Among UI Recipients Under Age 62 With 3 Or More Years Work Experience Before Becoming Unemployed, According To Their Use Of The Employment Service While Jobless

Philadelphia and Pittsburgh SMSAs, 1979-87 (a)

	Difference in weeks remaining jobless if used Employment Service after:		
	1 Quarter	2 Quarters	3 Quarters
In Philadelphia	- 2.6	- 10.7**	- 10.9*
	(1.2)	(3.5)	(2.1)
In Pittsburgh	- 1.5	- 7.1**	- 12.2**
	(0.7)	(2.6)	(3.1)
Men formerly in Manufacturing and Exhausting Benefits	- 4.8	- 9.0*	- 7.6
	(0.9)	(2.1)	(1.8)

T-statistic in parentheses.
* = significant at the 5% level.
** = significant at the 1% level.
(a) For persons whose first completed period of joblessness began in 1979 or later. See the text for the definition of "use of the Employment Service."

11 The full regression results are listed in Appendix II.B, Tables B.1-B.6.

12 See Appendix II.B, Tables B.7-B.9 for the full regression results.

It is important also to mention that these estimates are likely to understate the benefits associated with the ES, given its "backstop" role. This is the case, for example, if people's lack of basic labor market information, which leads them to use the ES as a "backstop," is also indicative of their more limited job opportunities. This is a situation which is not fully reflected in the data. In this event, the estimates have an unquantifiable bias. Measures of the contribution of the ES are likely to have been greater if the ES-users examined here could have been compared to a more randomly selected group of non-users, i.e., one including a more balanced representation of the more difficult cases served by the ES.

The Effects of the Pennsylvania Employment Service by Type of Service

As a check on the findings, the foregoing analyses were replicated by breaking ES influences down by the major categories of services received by ES applicants. Knowing more about the effectiveness of different types of services is worthwhile, especially for ES placements, because placements represent the most direct ES intervention. If they are not effective, the findings given previously are open to question.

For example, it might be that UI recipients who used the ES in later stages of joblessness were mainly individuals who had stepped up the intensity of their search for work while those who avoided using the ES did so mainly because they were searching less intensively. Under such conditions, ES applicants would have returned to work sooner than non-applicants, even without ES services. If ES assistance truly made a difference, its placements could not be less effective than its other services.

It is important to note that an ES placement does not automatically imply an end to joblessness as defined for this study. If an applicant was placed in any given quarter, he/she would need to remain employed in the subsequent quarter to be re-employed.

Table 7 summarizes the relevant findings on this issue.[13] Each column breaks down the comparisons in a manner similar to Table 6. Column 1 relates to persons who used the ES in the first quarter of unemployment and compares the remaining joblessness of ES-users and non-users from the subsequent quarter forward. Columns 2 and 3 contain similar comparisons for persons using the ES in the second and third quarters of joblessness.

Each pair of rows indicates the net difference in joblessness of ES-users versus non-users by the type of services they received.[14] The first row of each pair refers to Philadelphia; the second for Pittsburgh. Negative values indicate ES-users spent less time out of work, as in Table 6.

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13 See Appendix II.B, Tables B.10-B.15 for the full regression results.

14 The values in Table 7 are equivalent to those appearing in Appendix Tables B.10-B.15 under the heading "ES Services, if ES User". The regression includes a dummy variable for each category of service, equal to one if services in the category were rendered at any point in the period of sample joblessness and equal to zero otherwise. That is, the categorizations measure the incidence of service types and not the numbers of each kind received. The coefficients have the same interpretation as described for Table 6 and have been rescaled, as described above, to reflect weekly rather than quarterly (as in the Appendix B Tables) differences.

TABLE 7

Remaining Joblessness Among UI Recipients Under Age 62 With 3 Or More Years Work Experience Before Becoming Unemployed, By ES Service Received While Jobless

Philadelphia and Pittsburgh SMSAs, 1979-87 (a)

	Difference in weeks remaining joblessness if used Employment Service after:		
Type of Aid	**1 quarter**	**2 quarters**	**3 quarters**
Placements:			
In Philadelphia	- 1.4 weeks	- 20.7** weeks	4.1 weeks
	(0.3)	(3.2)	(0.3)
In Pittsburgh	- 3.0	- 14.8*	- 23.7**
	(0.6)	(2.3)	(2.6)
Referrals Only:			
In Philadelphia	- 4.6	- 13.2*	- 20.5*
	(1.3)	(2.4)	(2.3)
In Pittsburgh	- 0.1	- 10.5**	- 14.8*
	(0.1)	(2.6)	(2.5)
Job Search Assistance:			
In Philadelphia	- 4.8	- 8.3	- 4.0
	(1.3)	(1.7)	(0.5)
In Pittsburgh	- 8.4*	- 6.9	- 14.4
	(2.0)	(1.3)	(1.8)
Plus Placement:			
In Philadelphia	7.9	- 1.8	
	(0.8)	(0.1)	(1.1)
In Pittsburgh	2.2	- 10.6	- 22.5
	(0.3)	(0.9)	(1.3)
Plus Referral:			
In Philadelphia	5.5	5.4	- 13.7
	(0.8)	(0.5)	(0.8)
In Pittsburgh	5.2	12.3	12.9
	(1.0)	(1.8)	(1.4)

T-statistic in parentheses.
* = significant at the 5% level.
** = significant at the 1% level.
(a) For persons whose first completed period of joblessness began in 1979 or later. See the text for the definition of "use of the Employment Service" and the type of service received.

The table shows that virtually all categories of ES services were associated with significant reductions in joblessness. The major exceptions occurred when referrals or placements were combined with other job search assistance. One possible explanation for this result is that such combinations include referrals to training programs, which would increase the amount of joblessness by the amount of time spent in training.

Overall, ES placements were at least as effective, and probably more so, than the other categories of services. A placement, or the combination of a placement with other services, reduced the joblessness of ES-users in 10 of the 12 instances in which placements were evaluated. The probability of discovering this degree of consistency purely by chance is less than one in ten thousand.[15] On the other hand, "referrals only" or the combination of a referral and assistance without a placement reduced the joblessness of ES-users in 7 of the 12 instances in which services of this kind were evaluated. This is a weaker result since its pure chance probability is close to two in five, or markedly higher.

The effectiveness of placement services appeared to increase with the time that ES-users delayed in applying for help. When the time lag is a single quarter, miscellaneous job search assistance, rather than placements, show the largest estimated reductions in joblessness (8 weeks). When the time lag in receipt of ES services increases to two and three quarters, placements show the largest reductions in joblessness (21 weeks in Philadelphia and 15 weeks in Pittsburgh). As in Table 6, there are no evidences of systematic differences between Philadelphia and Pittsburgh. Overall, therefore, the estimates point to the same result: ES services made a significant contribution to the re-employment probabilities of long-term jobless UI recipients. Moreover, the more interventionist the ES service, the greater the improvement associated with the ES contact.

Conclusions

The findings given here for the Pennsylvania ES during the 1980s provide significant insights into the processes through which the Agency's exercise of its labor exchange functions affected UI recipients' welfare and their job search process. The evidence of long delays before UI recipients in Pennsylvania received ES services implies that many viewed the ES as a "safety net" or "backstop" source of job information. They turned only to the ES after exhausting other avenues of job search and as their financial resources for continuing to search for work were increasingly depleted. The importance of financial resources is indicated by the increasing probability that workers used the ES as their UI benefits were drawn down.

The fact that UI recipients delayed in using the ES is important: it means that comparisons between ES-users and non-users in terms of the overall duration of joblessness are meaningless indicators of the contribution the ES makes to the speed of people's re-employment. Data of the kind available for this study are needed to adjust for the delays and put comparisons of the amount of time out of work on a more comparable basis. Once this is done, there are clear indications that in Pennsylvania, ES interventions were associated with hastened re-employment of long-term jobless UI recipients.

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15 "Pure chance" means a .5 probability of finding either a positive or negative value of the coefficient.

Limitations of the study, associated with its analysis of two Pennsylvania cities and the study's indirect measures of worker dislocation, must be borne in mind. Still, many other industrial centers have experienced similar trends. Similarities of the findings for Philadelphia and Pittsburgh, in spite of significant differences in the character of their worker dislocations, increases confidence in the results. The effectiveness of ES services in Pennsylvania for the state's long-term jobless is important, since the characteristically long times for which dislocated workers remain out of work are at the heart of social concerns about this group.

APPENDIX II. A

Description of the Pennsylvania Data

Description of the Pennsylvania Data

Data for the study were compiled from a 5 percent sampling of the records of individual earnings and unemployment benefits maintained by Pennsylvania's unemployment insurance system. Consolidating these for successive years yields detailed longitudinal work histories covering the period 1969-87. Supplemental information on uses of the Employment Service, were extracted from the Employment Service Automated Recording System (ESARS) for a shorter interval, from 1979-87. Combining these sources provides work histories representative of the 95 percent of the Pennsylvania labor force who are covered by unemployment insurance.[16]

The primary sample period relates to those years (1979-87) for which data on contacts with the Employment Service are available. The work described is based on a 5 percent selection of workers receiving unemployment benefits in the five County Standard Metropolitan Area of Pittsburgh during the primary sample period.

UI recipients are considered jobless in any quarter in which they were without earnings from covered employers or in which they received unemployment benefits. By definition of the sample unit, the analysis is restricted to the first period of continuous joblessness in the primary sample period. Information on work experience in periods prior to becoming unemployed is included, for some of the analyses, going back to 1969.

Length of joblessness continuing through the final quarter of 1987 is indeterminate. Since the sample is based on first periods of joblessness, the bulk of such incomplete spells are due to retirements from the labor force. To abstract from these, we drop persons 62 years or older in the final study year from the sample.

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16 The database was constructed with the support of the Upjohn Institute of Employment Research, the Economic Policy Institute of the University of Pittsburgh, the Planning Department of Allegheny County, and the Pennsylvania Department of Labor and Industry. See Allegheny County Planning Department, "Proposal for a Pennsylvania Regional Economic and Social Information Program", October 1988 for a more detailed description of the database.

APPENDIX II. B

Full Regression Results for the Use of the Employment Service by UI Recipients in Pennsylvania

TABLE II.B.1

Duration Of Joblessness Remaining After One Quarter Among UI Recipients Under Age 62, Regressed Against Their Characteristics

Philadelphia SMSA, 1979-87 (a)

Characteristic	Regression Coefficient
Constant	5.010193** (9.92)
Age (years)	0.00662 (1.128)
Sex (Female=1; Male=0)	-0.1114391 (.982)
Number of Quarters of Prior Work Experience	-0.0577065** (10.391)
Highest Quarterly Earnings	0.0000263 (1.728)
Number of Quarters Jobless Before Unemployment	-0.0594991** (11.995)
Employed in Mfg. Before Unemployment (Yes=1;No=0)	-0.0311403 (.296)
SMSA Unemployment Rate When Unemployed	0.007974 (.153)
Weekly Unemployment Benefits (1982 dollars)	-0.003534** (3.476)
Exhausted Benefits (Yes=1;No=0)	2.20417** (18.165)
Number of Weeks Drawing Unemployment Benefits	0.0589197** (16.296)
Used ES after One Quarter of Joblessness (Yes=1;No=0)	-0.202604 (1.19)
Used ES Before Being Jobless (Yes=1;No=0)	0.1040908 (.678)
R-squared	0.2817
Number of Observations	3,979

T-statistic in parenthesis.
*= significant at the 5% level.
**= significant at the 1% level.
(a) First completed period of joblessness beginning in 1979 or later.

TABLE II.B.2

Duration Of Joblessness Remaining After Two Quarters Among UI Recipients Under Age 62, Regressed Against Their Characteristics

Philadelphia SMSA, 1979-87 (a)

Characteristic	Regression Coefficient
Constant	6.800686** (9.141)
Age (years)	0.0137276 (1.606)
Sex (Female=1; Male=0)	-0.1451765 (.881)
Number of Quarters of Prior Work Experience	-0.0776699** (9.621)
Highest Quarterly Earnings	0.000065** (9.621)
Number of Quarters Jobless Before Unemployment	-0.0771264** (10.784)
Employed in Mfg. Before Unemployment (Yes=1;No=0)	-0.1997724 (1.315)
SMSA Unemployment Rate When Unemployed	0.0552387 (.714)
Weekly Unemployment Benefits (1982 dollars)	-0.0063778** (4.163)
Exhausted Benefits (Yes=1;No=0)	1.947136** (11.959)
Number of Weeks Drawing Unemployment Benefits	0.0363654** (7.506)
Used ES after Two Quarters of Joblessness(Yes=1;No=0)	-0.8268912** (3.482)
Used ES Before Being Jobless (Yes=1;No=0)	0.1531936 (.71)
R-squared	0.1624
Number of Observations	2,565

T-statistic given in parenthesis.
* = significant at the 5% level.
** = significant at the 1% level.
(a) First completed period of joblessness beginning 1979 or later.

TABLE II.B.3

Duration Of Joblessness Remaining After Three Quarters Among UI Recipients Under Age 62, Regressed Against Their Characteristics

Philadelphia SMSA, 1979-87 (a)

Characteristic	Regression Coefficient
Constant	11.70773** (10.05)
Age (years)	0.0149803 (1.164)
Sex(Female=1;Male=0)	-0.075785 (.308)
Number of Quarters of Prior Work Experience	-0.0796844** (6.394)
Highest Quarterly Earnings	0.0001234** (3.293)
Number of Quarters Jobless Before Unemployment	-0.0904603** (8.485)
Employed in Mfg. Before Unemployment (Yes=1;No=0)	-0.1191061 (.524)
SMSA Unemployment Rate When Unemployed	-0.2900975* (2.271)
Weekly Unemployment Benefits (1982 dollars)	-0.0106196** (4.384)
Exhausted Benefits (Yes=1;No=0)	1.734571** (6.745)
Number of Weeks Drawing Unemployment Benefits	0.0151248* (2.434)
Used ES after Three Quarters of Joblessness (Yes=1;No=0)	-0.8415461* (2.075)
Used ES Before Being Jobless (Yes=1;No=0)	0.4950127 (1.512)
R-squared	0.0961
Number of Observations	1,549

T-statistic given in parenthesis.
* = significant at the 5% level.
** = significant at the 1% level.
(a) First completed period of joblessness beginning 1979 or later.

TABLE II.B.4

Duration Of Joblessness Remaining After One Quarter Among UI Recipients Under Age 62, Regressed Against Their Characteristics

Pittsburgh SMSA, 1979-87 (a)

Characteristic	Regression Coefficient
Constant	4.064183** (13.22)
Age (years)	0.0164036** (2.906)
Sex (Female=1;Male=0)	-0.0452955 (.401)
Number of Quarters of Prior WorkExperience	-0.0441858** (8.42)
Highest Quarterly Earnings	0.0000244* (2.092)
Number of Quarters Jobless Before Unemployment	-0.0396009** (7.949)
Employed in Mfg. Before Unemployment (Yes=1;No=0)	-0.146178 (1.454)
SMSA Unemployment Rate When Unemployed	-0.0385007 (1.929)
Weekly Unemployment Benefits (1982 dollars)	-0.0037128** (4.071)
Exhausted Benefits (Yes=1;No=0)	1.526142** (13.071)
Number of Weeks Drawing Unemployment Benefits	0.0737667** (25.429)
Used ES after One Quarter of Joblessness (Yes=1;No=0)	-0.1142636 (.696)
Used ES Before Being Jobless (Yes=1;No=0)	-0.1175729 (.85)
R-squared	0.3407
Number of Observations	3,710

T-statistic given in parenthesis.
* = significant at the 5% level.
** = significant at the 1% level.
(a) First completed period of joblessness beginning 1979 or later.

TABLE II.B.5

Duration Of Joblessness Remaining After Two Quarters Among UI Recipients Under Age 62, Regressed Against Their Characteristics

Pittsburgh SMSA, 1979-87 (a)

Characteristic	Regression Coefficient
Constant	6.002705** (13.436)
Age(years)	0.0201265* (2.485)
Sex (Female=1; Male=0)	-0.051573 (.316)
Number of Quarters of Prior WorkExperience	-0.0597004** (7.94)
Highest Quarterly Earnings	0.0000444** (2.663)
Number of Quarters Jobless Before Unemployment	-0.0556306** (7.717)
Employed in Mfg. Before Unemployment (Yes=1;No=0)	-0.2148936 (1.455)
SMSA Unemployment Rate When Unemployed	-0.0417864 (1.459)
Weekly Unemployment Benefits (1982 dollars)	-0.0059021** (4.301)
Exhausted Benefits (Yes=1;No=0)	1.149217** (7.369)
Number of Weeks Drawing Unemployment Benefits	0.0599949** (15.756)
Used ES after Two Quarters of Joblessness (Yes=1;No=0)	0.5440226* (2.582)
Used ES Before Being Jobless (Yes=1;No=0)	-0.1889334 (.96)
R-squared	0.2071
Number of Observations	2,431

T-statistic given in parenthesis.
* = significant at the 5% level.
** = significant at the 1% level.
(a) First completed period of joblessness beginning 1979 or later.

TABLE II.B.6

Duration Of Joblessness Remaining After Three Quarters Among UI Recipients Under Age 62, Regressed Against Their Characteristics

Pittsburgh SMSA, 1979-87 (a)

Characteristic	Regression Coefficient
Constant	9.360794** (14.269)
Age (years)	0.028264* (2.385)
Sex (Female=1; Male=0)	-0.0366607 (.157)
Number of Quarters of Prior Work Experience	-0.0678392** (5.722)
Highest Quarterly Earnings	0.0000294 (1.454)
Number of Quarters Jobless Before Unemployment	-0.0678287** (6.269)
Employed in Mfg. Before Unemployment (Yes=1;No=0)	-0.3026745 (1.436)
SMSA Unemployment Rate When Unemployed	-0.1245527** (2.97)
Weekly Unemployment Benefits (1982 dollars)	-0.0100375** (4.871)
Exhausted Benefits (Yes=1;No=0)	1.066518 (4.55)
Number of Weeks Drawing Unemployment Benefits	0.0396838** (8.213)
Used ES after Three Quarters of Joblessness (Yes=1;No=0)	-0.9362225** (3.096)
Used ES Before Being Jobless (Yes=1;No=0)	-0.2566247 (.892)
R-squared	0.1333
Number of Observations	1,550

T-statistic given in parenthesis.
* = significant at the 5% level.
** = significant at the 1% level.
(a) First completed period of joblessness beginning 1979 or later

TABLE II.B.7

Duration Of Joblessness Remaining After One Quarter Regressed Against Characteristics Of Men Under Age 62 Exhausting Unemployment Benefits In Manufacturing,

Pittsburgh And Philadelphia SMSAs, 1979-87 (a)

Characteristic	Regression Coefficient
Constant	5.697867** (5.518)
Age (years)	0.0411372* (2.457)
Number of Quarters of PriorWork Experience	-0.0798005** (6.034)
Highest Quarterly Earnings	-0.0000068 (.273)
Number of Quarters JoblessBefore Unemployment	-0.0674529** (4.587)
SMSA Unemployment Rate When Unemployed	-0.0469815 (.708)
Weekly Unemployment Benefits (1982 dollars)	0.0014913 (.38)
Number of Weeks Drawing Unemployment Benefits	0.0704311** (10.088)
Used ES after One Quarter of Joblessness (Yes=1;No=0)	-0.3323919 (.825)
Used ES Before Being Jobless (Yes=1;No=0)	1.318698** (3.099)
In Pittsburgh (Yes=1;No=0)	-0.505955 (1.596)
R-squared	0.177
Number of Observations	850

T-statistic given in parenthesis.
* = significant at the 5% level.
** = significant at the 1% level.
(a) First completed period of joblessness beginning 1979 or later.

TABLE II.B.8

Duration Of Joblessness Remaining After Two Quarters Regressed Against Characteristics Of Men Under Age 62 Exhausting Unemployment Benefits In Manufacturing,

Pittsburgh And Philadelphia SMSAs, 1979-87 (a)

Characteristic	Regression Coefficient
Constant	5.858648** (5.543)
Age (years)	0.0329462 (1.946)
Number of Quarters of Prior Work Experience	-0.0785242** (5.704)
Highest Quarterly Earnings	0.00000179 (.067)
Number of Quarters Jobless Before Unemployment	-0.062391** (4.264)
SMSA Unemployment Rate WhenUnemployed	-0.028066 (.42)
Weekly Unemployment Benefits (1982dollars)	0.0017266 (.416)
Number of Weeks Drawing Unemployment Benefits	0.0684081** (9.678)
Used ES after One Quarter of Joblessness(Yes=1;No=0)	-0.69258 (1.879)
Used ES Before Being Jobless (Yes=1;No=0)	1.23158** (2.891)
In Pittsburgh (Yes=1;No=0)	-0.5511534 (1.735)
R-squared	0.1672
Number of Observations	831

T-statistic given in parenthesis.
* = significant at the 5% level.
** = significant at the 1% level.
(a) First completed period of joblessness beginning 1979 or later.

TABLE II.B.9

Duration Of Joblessness Remaining After Three Quarters Regressed Against Characteristics Of Men Under Age 62 Exhausting Unemployment Benefits In Manufacturing,

Pittsburgh And Philadelphia SMSAs, 1979-87 (a)

Characteristic	Regression Coefficient
Constant	6.895885** (5.353)
Age (years)	0.0509229* (2.324)
Number of Quarters of PriorWork Experience	-0.05544** (2.747)
Highest Quarterly Earnings	-0.0000059 (.198)
Number of Quarters Jobless Before Unemployment	-0.0469081* (2.532)
SMSA Unemployment Rate When Unemployed	-0.237843** (2.679)
Weekly Unemployment Benefits (1982 dollars)	0.003667 (.749)
Number of Weeks DrawingUnemployment Benefits	0.0517801** (6.25)
Used ES after One Quarter of Joblessness (Yes=1;No=0)	-0.5839356 (1.267)
Used ES Before Being Jobless (Yes=1;No=0)	1.789274** (3.427)
In Pittsburgh (Yes=1;No=0)	-0.2986966 (.746)
R-squared	0.0973
Number of Observations	654

T-statistic given in parenthesis.
* = significant at the 5% level.
** = significant at the 1% level.
(a) First completed period of joblessness beginning 1979 or later.

TABLE II.B.10

Duration Of Joblessness Remaining After One Quarter Regressed Against Characteristics Of UI Recipients Under Age 62,

Philadelphia SMSA, 1979-87 (a)

Characteristic	Regression Coefficient
Constant	5.00127** (9.898)
Age (years)	0.0066147 (1.125)
Sex (Female=1; Male=0)	-0.1106242 (.972)
Number of Quarters of Prior Work Experience	-0.0575917** (10.366)
Highest Quarterly Earnings	0.0000263 (1.723)
Number of Quarters Jobless Before Unemployment	-0.0594704** (11.985)
Employed in Mfg. Before Unemployment (Yes=1; No=0)	-0.0285839 (.271)
SMSA Unemployment Rate When Unemployed	0.0084135 (.162)
Weekly Unemployment Benefits (1982 dollars)	-0.003524** (3.464)
Exhausted Benefits (Yes=1;No=0)	2.208206** (18.161)
Number of Weeks Drawing Unemployment Benefits	0.0588966** (16.282)
Type Aid if Used ES after One Quarter of Joblessness:	
Placement	-0.1054523 (.259)
Referral Only	-0.3539538 (1.325)
Job Search Assistance	-0.3723559 (1.287)
Plus Placement	0.6094427 (.818)
Plus Referral	0.4245097 (.804)
Used ES Before Being Jobless (Yes=1;No=0)	0.0938112 (.611)
R-squared	0.2815
Number of Observations	3,979

T-statistic given in parenthesis.
* = significant at the 5% level.
** = significant at the 1% level.
(a) First completed period of joblessness beginning 1979 or later.

TABLE II.B.11

Duration Of Joblessness Remaining After Two Quarters Regressed Against Characteristics Of UI Recipients Under Age 62,

Philadelphia SMSA, 1979-87 (a)

Characteristic	Regression Coefficient
Constant	6.8519** (9.18)
Age(years)	0.0136094 (1.592)
Sex(Female=1; Male=0)	-0.123621 (.749)
Number of Quarters of Prior Work Experience	-0.078349** (9.694)
Highest Quarterly Earnings	0.0000667** (2.729)
Number of Quarters Jobless Before Unemployment	-0.077179** (10.779)
Employed in Mfg. Before Unemployment (Yes=1; No=0)	-0.196149 (1.29)
SMSA Unemployment Rate When Unemployed	0.0510178 (.659)
Weekly Unemployment Benefits (1982 dollars)	-0.006339** (4.137)
Exhausted Benefits (Yes=1;No=0)	1.937913** (11.884)
Number of Weeks Drawing Unemployment Benefits	0.0359435** (7.416)
Type Aid if Used ES after Two Quarters of Joblessness:	
Placement	-1.593912** (3.152)
Referral Only	-1.013572* (2.425)
Job Search Assistance	-0.639557 (1.689)
Plus Placement	-0.136778 (.144)
Plus Referral	0.4176254 (.543)
Used ES Before Being Jobless (Yes=1;No=0)	0.1496572 (.693)
R-squared	0.163
Number of Observations	2,565

T-statistic given in parenthesis.
* = significant at the 5% level.
** = significant at the 1% level.
(a) First completed period of joblessness beginning 1979 or later.

TABLE II.B.12

Duration Of Joblessness Remaining After Three Quarters Regressed Against Characteristics Of UI Recipients Under Age 62,

Philadelphia SMSA, 1979-87 (a)

Characteristic	Regression Coefficient
Constant	11.78298** (10.098)
Age (years)	0.0145235 (1.128)
Sex (Female=1; Male=0)	-0.082936 (.336)
Number of Quarters of Prior WorkExperience	-0.080222** (6.409)
Highest Quarterly Earnings	0.0001219** (3.248)
Number of Quarters Jobless Before Unemployment	-0.091495** (8.529)
Employed in Mfg. Before Unemployment (Yes=1; No=0)	-0.096680 (.424)
SMSA Unemployment Rate When Unemployed	-0.292148* (2.28)
Weekly Unemployment Benefits (1982 dollars)	-0.010632** (4.385)
Exhausted Benefits (Yes=1;No=0)	1.737833** (6.749)
Number of Weeks Drawing Unemployment Benefits	0.0149427* (2.403)
Type Aid if Used ES after Three Quarters of Joblessness:	
Placement	-0.317477 (.337)
Referral Only	-1.576601* (2.277)
Job Search Assistance	-0.308885 (.496)
Plus Placement	-2.3758 (1.107)
Plus Referral	-1.056153 (.778)
Used ES Before Being Jobless (Yes=1;No=0)	0.5039777 (1.537)
R-squared	0.0954
Number of Observations	1,549

T-statistic given in parenthesis.
* = significant at the 5% level.
** = significant at the 1% level
(a) First completed period of joblessness beginning 1979 or later.

TABLE II.B.13

Duration Of Joblessness Remaining After One Quarter Regressed Against Characteristics Of UI Recipients Under Age 62,

Pittsburgh SMSA, 1979-87 (a)

Characteristic	Regression Coefficient
Constant	4.051431** (13.177)
Age(years)	0.016575** (2.934)
Sex (Female=1; Male=0)	-0.0468772 (.414)
Number of Quarters of Prior Work Experience	-0.0439469** (8.361)
Highest Quarterly Earnings	0.0000248* (2.129)
Number of Quarters Jobless Before Unemployment	-0.0391838** (7.856)
Employed in Mfg. Before Unemployment (Yes=1; No=0)	-0.1389004 (1.381)
SMSA Unemployment Rate When Unemployed	-0.0393909* (1.973)
Weekly Unemployment Benefits (1982 dollars)	-0.0037304** (4.09)
Exhausted Benefits (Yes=1;No=0)	1.536458** (13.131)
Number of Weeks Drawing Unemployment Benefits	0.0734988** (25.308)
Type Aid if Used ES after One Quarter of Joblessness:	
Placement	-0.2335997 (.593)
Referral Only	-0.0073705 (.029)
Job Search Assistance	-0.6440615* (1.978)
Plus Placement	0.1712922 (.297)
Plus Referral	0.3978117 (1.011)
Used ES Before Being Jobless (Yes=1;No=0)	-0.1239762 (.896)
R-squared	0.3388
Number of Observations	3,710

T-statistic given in parenthesis.
* = significant at the 5% level.
** = significant at the 1% level.
(a) First completed period of joblessness beginning 1979 or later.

TABLE II.B.14

Duration Of Joblessness Remaining After Two Quarters Regressed Against Characteristics Of UI Recipients Under Age 62,

Pittsburgh SMSA, 1979-87 (a)

Characteristic	Regression Coefficient
Constant	6.025193** (13.499)
Age (years)	0.0195371* (2.414)
Sex (Female=1; Male=0)	-0.027702 (.17)
Number of Quarters of Prior Work Experience	-0.059957** (7.974)
Highest Quarterly Earnings	0.0000445** (2.668)
Number of Quarters Jobless Before Unemployment	-0.055470** (7.7)
Employed in Mfg. Before Unemployment (Yes=1;No=0)	-0.210819 (1.427)
SMSA Unemployment Rate When Unemployed	-0.040382 (1.41)
Weekly Unemployment Benefits (1982 dollars)	-0.005823** (4.248)
Exhausted Benefits (Yes=1;No=0)	1.138992** (7.31)
Number of Weeks Drawing Unemployment Benefits	0.0593687** (15.592)
Type Aid if Used ES after Two Quarters of Joblessness:	
Placement	-1.141138* (2.272)
Referral Only	-0.810960* (2.557)
Job Search Assistance	-0.527786 (1.316)
Plus Placement	-0.811809 (.92)
Plus Referral	0.9445626 (1.811)
Used ES Before Being Jobless (Yes=1;No=0)	-0.197530 (1.003)
R-squared	0.2093
Number of Observations	2,431

T-statistic given in parenthesis.
* = significant at the 5% level.
** = significant at the 1% level.
(a) First completed period of joblessness beginning 1979 or later.

TABLE II.B.15

Duration Of Joblessness Remaining After Three Quarters Regressed Against Characteristics Of UI Recipients Under Age 62,

Pittsburgh SMSA, 1979-87 (a)

Characteristic	Regression Coefficient
Constant	9.346505** (14.266)
Age (years)	0.027539* (2.326)
Sex (Female=1; Male=0)	-0.019675 (.084)
Number of Quarters of Prior Work Experience	-0.066529** (5.615)
Highest Quarterly Earnings	0.0000445** (2.668)
Number of Quarters Jobless Before Unemployment	-0.066557** (6.157)
Employed in Mfg. Before Unemployment (Yes=1;No=0)	-0.323199 (1.534)
SMSA Unemployment Rate When Unemployed	-0.123691** (2.952)
Weekly Unemployment Benefits (1982 dollars)	-0.010051** (4.877)
Exhausted Benefits (Yes=1;No=0)	.055461** (4.508)
Number of Weeks Drawing Unemployment Benefits	0.0393323** (8.143)
Type Aid if Used ES after Three Quarters of Joblessness:	
Placement	-1.824633** (2.634)
Referral Only	-1.135602* (2.526)
Job Search Assistance	-1.106659 (1.762)
Plus Placement	-1.727027 (1.302)
Plus Referral	0.9931085 (1.387)
Used ES Before Being Jobless (Yes=1;No=0)	-0.270858 (.943)
R-squared	0.1365
Number of Observations	1,550

T-statistics given in parenthesis.
* = significant at the 5% level.
** = significant at the 1% level.
(a) First completed period of joblessness beginning 1979 or later.

III. Dislocated Workers And The Employment Service In California And Missouri During The Mid-1980s

Introduction

The previous section examined the effectiveness of the Employment Service (ES) in assisting dislocated workers in a state which did not enforce the "work test" strictly during the 1980s. A major finding was that when the work test is not strictly enforced -- and use of the Agency is therefore largely voluntary -- dislocated workers tended to use the Agency when their Unemployment Insurance (UI) benefit period was coming to an end and other sources of job leads were exhausted. When the workers did apply at the ES, the Agency's services were found to be effective in hastening their re-employment.

This section examines the effectiveness of the ES in assisting dislocated workers under a contrasting set of circumstances: when their use of the Agency occurred early in their period of dislocation and was mandatory. (As noted in the Introduction, EDWAA – in combination with WARN -- encourages early use of the ES. Whether or not ES registration is mandatory for dislocated workers depends upon the state in which they live and whether or not they are recipients of UI or Food Stamps.)

The states being examined are Missouri and California. Both enforced the work test more strictly than Pennsylvania, with Missouri's enforcement having been more stringent than that of California.[1]

The data used for this investigation consist of 5-percent samples of individuals between 21 and 60 years of age who registered with the California or the Missouri ES between the first quarter of 1984 and the second quarter of 1985.[2] Approximately 28,500 people are in the California sample and 13,500 are in the Missouri sample.

Dislocated workers are a subset of all ES registrants. In this study, they are defined as those UI claimants with 12 or more

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1 For example, in contrast to Pennsylvania, in Missouri a UI claimant is typically required to register with the ES at the beginning of a UI claim spell and must report to the UI office every four weeks. In California a UI claimant may wait two weeks before registering. Local offices call in randomly selected samples of claimants in their fourth to sixth weeks of their benefit period. The proportion of UI claimants included in the sample varies among local offices. According to Table D.1 in U.S. Department of Labor, Employment and Training Administration, Work Search Among Unemployment Insurance Claimants: An Investigation of Some Effects of State Roles and Enforcement, Unemployment Insurance Service Occasional Paper 88-1, Washington, D.C., 1988, a UI claimant in California need not register with the ES at the start of a UI claims spell. The authors' contact with the state indicated that UI claimants had to register with the ES prior to receipt of their first UI payment. This amounts to registration within approximately two weeks.

2 A more detailed description of the data base is presented in Appendix III.A.

quarters of work experience prior to their most recent period of joblessness, who were employed during the quarter prior to ES registration.[3]

This section of the report has four additional parts. The next part provides some background information on ES in both states. It compares selected characteristics of all the states' ES registrants with those of ES registrants who were dislocated workers. It also briefly compares selected aspects of the services the dislocated worker ES registrants received with those of ES registrants generally. It should be recalled that the ES was not required to provide specialized services to dislocated workers during the 1980s.

The third part describes the framework for the multivariate analysis of the ES in California and Missouri. The same statistical technique, regression analysis, used to study the Pennsylvania ES was used here. The technique serves to sort out the independent effects of various factors on the outcome of interest. In the present case, one goal was to determine the effect of use of the ES on dislocated workers' subsequent re-employment, after taking into account other factors that might affect the amount of time before their re-employment, such as their education and work experience.

The empirical results are given in the fourth part of this section. How these results compare with those of other empirical analyses are highlighted in the concluding part as a "prelude" to the survey of the literature given in Section IV of the report.

Workers Who Used the Employment Service in California and Missouri and the Services They Received

Characteristics of ES Registrants, Including Dislocated Workers

Table 1 shows the characteristics of all ES registrants (including dislocated workers) in California and Missouri during the mid-1980s. Table 2 presents similar information for the dislocated workers only who registered with the ES in the two states during the same time period.

Along several dimensions ES registrants were very similar across states. The typical registrants during the 1980s had little formal education beyond high school, were in their early 30's, and were somewhat more likely to be male than female.

One characteristic of particular interest to this study is the proportion of ES registrants who were UI recipients: 24 percent in California and 44 percent in Missouri.[4]

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3 An individual was considered to be jointly in the UI and the ES if he/she was registered in the ES and was reported to be a UI Claimant by the ES [according to the data from the ES Automated Record System (ESARS)] or had a UI benefit year "begin date" within 30 days of the ES registration date. It should be noted that in Section II of this report, Katz used a slightly longer period of prior employment (13 or more quarters). The length of the time series data did not permit the same experience restriction for California and Missouri.

4 Slightly over 30 percent of Pennsylvania ES registrants were collecting UI according to Louis Jacobson, "The Effectiveness of the Employment Service in Aiding Dislocated and Other Workers: Evidence from Pennsylvania," Research sponsored by the National Commission for Employment Policy, Washington, D.C., and The W.E. Upjohn Institute, Kalamazoo, Michigan, 1990.

TABLE 1

Characteristics Of All ES Registrants

	California(a)	Missouri(a)	National(b)
Average Age	33.0	32.3	29.2
Average Number of Years of Schooling	12.0	12.1	12.1
Percent Female	41.2	46.8	43.7
Percent Veteran	17.8	14.7	17.7
Percent Black	13.8	18.1	16.0
Percent Hispanic	23.5	0.7	6.3
Average Number of Quarters of Previous Work Experience	13.3	13.1	38.8(c)
Percent of ES Registrants Receiving UI	23.8	44.1	(d)
Average Amount Of Weekly UI Benefits(e)	$111.97	$107.13	N/A

(a)Data cover the period 1984(I) through 1985(II).
(b)Based on a national sample of 6,679 ES registrants during Program Year 1981. See Terry Johnson, et al, A National Evaluation of the Impact of the United States Employment Service, Report prepared for the U.S. Department of Labor, Employment and Training Administration, SRI International, Menlo Park, California, June 1983, Tables V-1 to V-8.
(c)The wide difference between this figure and the number of quarters based on state data is due to differences in the way the information was obtained. The number of quarters of prior work experience in the national survey was obtained through questions regarding the individuals' total work experience. The number of quarters shown for the states comes from administrative data beginning in the first quarter of 1978.
(d)39 percent of the national sample were required to register in order to qualify for UI or Food Stamps (Johnson et al, A National Evaluation, Table V-5, p. 54).
(e)Based on those individuals receiving UI at time of ES registration.
N/ANot available.

These proportions in both states illustrate that in addition to serving active UI claimants, the ES served many other job seekers -- including individuals who had either exhausted their UI benefits, did not qualify for benefits, or had registered for ES in anticipation of a job separation.

The wide difference between the two states in the proportion of ES registrants who are UI recipients may reflect variations in the "health" of the states' economies. It may also reflect a difference in their application of the work test.

In terms of characteristics that could affect the types of services received, dislocated workers who used the ES were similar to all ES registrants in two ways: they had the same average age (in their early 30's) and the same average number of years of schooling (12 years). The two groups differed in that

51

TABLE 2

Characteristics Of Dislocated Workers Who Used The ES(a)

	California	Missouri
Average Age	34.0	32.8
Average Number of Years of Schooling	12.0	12.3
Percent Female	42.0	48.2
Percent Veteran	14.8	11.8
Percent Black	10.6	15.0
Percent Hispanic	26.7	0.6
Average Number of Quarters of Previous Work Experience	20.8	21.1
Average Amount of Weekly UI Benefits(b)	$124.32	$112.68

(a)Data cover the period 1984(I) through 1985 (II).
(b)Based on those individuals receiving UI at time of ES registration.

dislocated workers had a higher proportion of veterans. In addition, they had longer stories of employment (averaging over 20 quarters compared to an average of 13 quarters for ES registrants generally).

Use of ES Services

For both ES registrants generally (which includes dislocated workers) and dislocated workers specifically, the following experiences with the ES are discussed here: (a) the amount of time between registration and receipt of their first service; (b) the proportions of ES registrants who received varying numbers of post-registration services; and (c) the first type of service they received after registering.[5]

For the most part it is difficult to generalize about these dimensions of ES use either across states or groups of workers: there were differences between the two states in terms of services each offered the two groups of workers and there were differences between the two groups within the states.

Along one dimension of ES use -- the timing of receipt of an ES service after registration -- the two states treated ES registrants generally and dislocated

[5] Appendix III.B contains the data on which this discussion is based.

workers in virtually identical fashions. In both states the greatest proportions of both groups of workers received a subsequent service the same week as registration (about 30 percent in California and 40 percent in Missouri). With every week that elapsed after registration, smaller and smaller proportions of both all ES registrants and dislocated workers received an ES service. The states differed in that Missouri served a higher proportion of both groups during the same week as registration than California, as noted above.

Along the second dimension of ES use discussed here -- the number of services received -- the two states differed in their treatment of the two groups of workers. In California the proportions of the two groups who received different numbers of services were virtually identical; for example, about 25 percent of both groups received one post-registration service; and about 30 percent received two or more post-registration services. In contrast, in Missouri while about 25 percent of both groups received one post-registration service, 30 percent of ES registrants -- but 25 percent of dislocated workers -- received two or more post-registration services.

Along the third dimension of ES use considered here -- the types of services received -- the states differed somewhat once again. Although a job referral was the first post-registration service most likely to be received by both groups of workers in both states, there were differences in the extent to which the two groups received this service. For example, in California, over 70 percent of the two groups received a job referral after registration. In contrast, in Missouri a little over 45 percent of both groups received this service after registration.

Differences between the states, such as those indicated here, are not surprising since the ES is administered by states and states are likely to differ in their administrative policies and procedures. In addition, there may well be differences between the states in terms of job-relevant characteristics (such as their educational backgrounds) of their ES registrants (dislocated workers or otherwise) and the characteristics of the jobs listed in the ES job banks.

Framework for Analyzing Dislocated Workers and the ES in California and Missouri

An initial goal of the multivariate analysis was to ascertain the factors associated with workers' delay in receiving a service from the ES. However, relationships between individual factors and the outcome under investigation were not stable; they were highly sensitive to the way the regressions were specified. A major reason for the poor results of the preliminary regressions appeared to be the fact that a large proportion of ES registrants who receive a subsequent service do so within two to three weeks of registration. Delays of the type found in Pennsylvania did not seem to occur to the same extent in California or Missouri for the time period under study.

The focus of the empirical work then shifted to a more direct examination of the effects of ES services on dislocated workers' subsequent re-employment.[6] The regressions shown here are for three outcomes of interest (dependent variables). The major dependent variable is "the number of quarters a dislocated worker

[6] See Appendix III.C for the formal specification that was used.

remained unemployed after the date of registration with the ES."[7] The purpose of the regression was to test for the effects of receipt of an ES service on the length of dislocated workers' subsequent unemployment.

The two other dependent variables represent receipt of an ES service: job referral and job search assistance. The purpose of these regressions was to test whether individuals with particular sets of characteristics were more, or less, likely to receive an ES service. At issue was the possibility that a service could appear to be effective in reducing the duration of unemployment, when in fact the service was only effective because of the characteristics of the individuals receiving it, including the level of wages they expected to earn at their new job.

For example, a job referral could appear to be an effective service in a regression estimating the factors associated with the amount of time to dislocated workers' re-employment. However, a separate regression estimating the factors associated with receipt of a job referral could indicate that only the highly educated were receiving this service. In this case, it would likely be the characteristics of the people receiving the job referral, rather than the service itself, that was leading to hastened re-employment.

In order to capture possible effects of timing in the use of ES services, receipt of an ES service was dated: it had to occur in the same week as registration or in the following week. This particular time period was selected for two reasons. First, in order to approximate possible effects of EDWAA's emphasis on early intervention, estimating the effects of early use of the ES appeared to be appropriate. Second, as discussed earlier, the data indicated that if a registrant was going to use any of the services provided by the ES, it would likely occur shortly after registration.[8]

Variable Specification

The variables used in the regressions are listed in Table 3. The first is the dependent variable, number of quarters from ES registration to re-employment (TIME TO RE-EMPLOYMENT).

The next three represent a worker's receipt of various ES services: job referral (REFERRAL); job search assistance (JSA); and other (OTHER). It should be noted that these categories are not mutually exclusive; an individual could have received multiple services.

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7 Other regressions not shown here were for (a) the probability of re-employment within 6, 12, and 18 months after ES registration and (b) the probability that a dislocated worker received any subsequent service after registration. Although such linear probability models possess several undesirable characteristics relative to other estimation approaches, their use, rather than probit or logit models, was driven primarily by cost considerations. (See T.A. Domenich and D. McFadden, Urban Travel Demand: A Behavioral Analysis, North-Holland Publishing Company, Amsterdam, Holland, 1975.)

8 Regressions were also estimated for use of an ES service in the first week only and for use of an ES service 3 to 4 weeks after registration, given the worker had not used the ES within the first two weeks after registration. Results for "first week only" paralleled those shown here. Regressions for use of the ES in the third or fourth week did not yield consistent results due to insufficient variation in the variables representing the types of ES services received.

TABLE 3
VARIABLE DEFINITIONS

TIME TO RE-EMPLOYMENT:	Number of quarters from ES registration to re-employment.
REFERRAL:	Indicator of referral within 2 weeks of ES registration: referral=1, no referral=0.
JSA:	Indicator of job search assistance provided within 2 weeks of ES registration: assistance=1, no assistance=0.
OTHER:	Indicator of other service within 2 weeks of registration: other assistance=1, no assistance=0.
AGE:	Age at time of ES registration
EDUCATION:	Highest grade of formal education completed.
BLACK:	Indicator if respondent is black: Black=1, non-Black=0.
HISPANIC:	Indicator if respondent is Hispanic: Hispanic=1, non-Hispanic=0.
VETERAN:	Indicator of respondent's veteran status; veteran=1, non-veteran=0.
VETREFERAL:	Interactive variable [(VETERAN) X (REFERRAL)].
EXPERIENCE:	Number of quarters of employment prior to most recent unemployment spell.
BENEFITS:	Unemployment Insurance weekly benefit amount for respondents collecting benefits; reported in actual dollars.
UNEMPLOYMENT:	Local area unemployment rate during the quarter of ES registration.

These three independent variables are included in the regression estimating length of time to re-employment. Job referral and job search assistance are also dependent variables in separate equations. Referrals and job search assistance were the two ES programs selected because they were the most frequently used. If a program was used, there was between a 61 and 83 percent probability that it was either a job referral or job search assistance for Missouri and California, respectively.[9]

The next five variables represent the personal characteristics and work experience of the dislocated workers. Personal characteristics include: their age at the time of registration (AGE) and the number of years of schooling they have completed (EDUCATION). The workers' race (BLACK), ethnicity (HISPANIC), and veteran's status (VETERAN) are represented by a series of binary (0/1) variables.

[9] See Appendix III.B, Table B.6.

Due to the emphasis the ES is required to place on assisting veterans, a term capturing the interactive effects of being a veteran and receipt of a job referral was included (VETREFERAL).

Work experience is represented by the number of quarters of employment prior to ES registration (EXPERIENCE) and the dollar amount of UI benefits received weekly for those who received benefits (BENEFITS).

For Missouri there was a final variable measuring the unemployment rate of the local area where the dislocated worker lived at the time of ES registration (UNEMPLOYMENT). Because it was not possible to link county level unemployment rates to the ES office location in California, local unemployment rates were not included for this state.[10]

Results of the regressions for "Time to Re-Employment" are shown separately for each state and for men and women. Tables 4 and 5 show the Missouri results for men and women, respectively; Tables 6 and 7 show the California results for men and women, respectively. Appendix III.D contains the results for the probabilities of men and women receiving a referral and job search assistance in the two states. Results combining men and women in the three equations are presented in Appendix III.E.

Empirical Results

Veterans' Preference

Results indicate that along one dimension -- veterans' preference -- the operations of the two states were very similar. As the results for men indicate, the ES in both Missouri and California was responsive to the requirement that veterans receive special preference.[11] In Missouri veterans were more likely than nonveterans to receive either or both a job referral or job search assistance. In California, veterans were more likely than nonveterans to receive a job referral.

These results are consistent with other research on ES services to veterans. According to a national survey of ES registrants, the probability of a male veteran receiving a referral was 35.1 percent, whereas the probability for a nonveteran was 26.7 percent.[12] This difference (8 percent) is similar to the estimates reported in this study (approximately 4 to 7.2 percent increased probability of referral for veterans).

Along other dimensions, however, California and Missouri were quite different in how they interacted with both their male and female clientele.

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10 The California ES data file did not contain the geographic codes necessary for matching county level unemployment rates to ES local offices.

11 A variable representing veterans' status was not included in the equations for women due to the small number of female veterans in the samples.

12 See Johnson, et al, A National Evaluation, Table VIII-4, p. 118. The regressions for Pennsylvania reported in Section II did not include a variable representing veterans' status.

TABLE 4

Time To Re-employment Among Male Dislocated Workers In Missouri

INDEPENDENT VARIABLES	DEPENDENT VARIABLE TIME TO RE-EMPLOYMENT
CONSTANT	0.9353* (2.337)
AGE	0.0096* (2.286)
EXPERIENCE	-0.0232** (2.912)
EDUCATION	0.0129 (0.670)
VETERAN	-0.0642 (0.614)
BLACK	0.2610* (2.402)
HISPANIC	0.1778 (0.334)
REFERRAL	0.1440 (1.001)
JSA	-0.1053 (0.884)
OTHER	0.1481 (1.331)
VETREFERAL	-0.2699 (1.061)
BENEFITS	.0073** (3.158)
UNEMPLOYMENT	0.0193 (1.411)
R-SQUARED:	0.0450
F-STATISTIC	3.175

T-statistic in parentheses.
* = significant at the 5% level.
** = significant at the 1% level.

TABLE 5

Time To Re-employment Among Female Dislocated Workers In Missouri

INDEPENDENTVARIABLES	DEPENDENT VARIABLE TIME TO RE-EMPLOYMENT
CONSTANT	-0.7937 (1.495)
AGE	0.0012 (0.241)
EXPERIENCE	0.0183 (1.811)
EDUCATION	0.0501 (1.569)
BLACK	-0.1837 (1.406)
HISPANIC	0.9117 (1.260)
REFERRAL	-0.0948 (0.661)
JSA	0.1081 (0.589)
OTHER	-0.2763 (1.432)
BENEFITS	0.0003 (0.122)
UNEMPLOYMENT	0.0008 (0.045)
R-SQUARED:	0.0188
F-STATISTIC:	1.229

T-statistic in parentheses.
* = significant at the 5% level.
**= significant at the 1% level.

TABLE 6

Time To Re-employment Among Male Dislocated Workers In California

DEPENDENT VARIABLE	TIME TO RE-EMPLOYMENT INDEPENDENT VARIABLES
CONSTANT	0.4042 (0.863)
AGE	0.0175* (2.416)
EXPERIENCE	-0.0325* (2.378)
EDUCATION	0.0213 (0.795)
VETERAN	-0.0478 (0.318)
BLACK	0.5344** (2.966)
HISPANIC	0.2200 (1.057)
REFERRAL	-0.6128* (2.126)
JSA	1.3788** (3.985)
OTHER	0.0557 (0.235)
VETREFERAL	0.3947 (0.938)
BENEFITS	-0.0008 (0.405)
R-SQUARED:	0.0514
F-STATISTIC:	3.722

T-statistic in parentheses.
*= significant at the 5% level.
**= significant at the 1% level.

TABLE 7

Time To Re-employment Among Female Dislocated Workers In California

INDEPENDENT VARIABLES	DEPENDENT VARIABLE TIME TO RE-EMPLOYMENT
CONSTANT	1.4007 (1.902)
AGE	0.0016 (0.170)
EXPERIENCE	-0.0109 (0.591)
EDUCATION	-0.0066 (0.157)
BLACK	0.5670* (2.151)
HISPANIC	0.0969 (0.296)
REFERRAL	-0.2994 (0.838)
JSA	0.8166 (1.932)
OTHER	0.4163 (1.067)
BENEFITS	-0.0019 (0.710)
R-SQUARED:	0.0207
F-STATISTIC:	1.367

T-statistic given in parenthesis.
*= significant at the 5% level.

Missouri: Probability of Receiving Services and Becoming Re-Employed

In addition to veterans, men in Missouri had a higher probability of receiving a job referral if they lived in a locality with a relatively low unemployment rate. They were also more likely to receive a referral if they received relatively low weekly UI benefits. This may reflect Missouri's way of enforcing the work test: the ES appears to have been targeting its referrals on those men expected to experience a relatively lengthy time to re-employment.

This interpretation is suggested by the regression results for time to re-employment: they indicate that men with relatively low UI benefits took longer to become re-employed than their

counterparts with relatively high benefits. The reasons for this particular finding are likely to be related to the characteristics of workers who receive relatively low benefit levels rather than to the benefit levels themselves. UI benefit levels are determined by a combination of factors, including workers' experience, their level of earnings (which is related to their experience), and financial needs associated with their family status. Individuals with relatively low benefit levels are likely to be without strong attachments to the work force and/or either without heavy financial family obligations or in families with more than one income-earner.

Among women, referrals were more likely to be received by those with relatively little work experience. Also, Hispanics were more likely to receive a referral than non-Hispanics (white or black).

Job search assistance was more likely to be received by black men and women than their white or Hispanic counterparts.

Regressions estimating the effects of receipt of these services on workers' time to re-employment indicate that receipt of an ES service within two weeks of registration was not associated with hastened re-employment.[13]

California: Probability of Receiving Services and Becoming Re-Employed

In California in addition to veterans, younger men were more likely to receive a job referral than older men and those who did receive a referral were re-employed more quickly than those who did not receive this service. In contrast to Missouri, men's level of UI benefits was not associated with either the likelihood of receiving a referral or the amount of time before they became re-employed.

Among women, job referrals were more likely to be received by those with more, rather than less, experience. However, receipt of a referral was not related to the speed of their re-employment.

No factor in the job search assistance regressions for men or women was associated with receipt of this ES service. However, there is a strong possibility that the California ES targets job search assistance on individuals who are most likely to experience difficulties finding jobs on their own. This is suggested by the empirical relationship for men between receipt of job search assistance and time to re-employment.

Specifically, men who received job search assistance were found to take longer to become re-employed than those who did not receive it. Since it is difficult to believe that receipt of this service led to longer periods of joblessness, a more plausible interpretation is that the ES targeted job search assistance on those with the greatest difficulties finding jobs. The variable "job search assistance" in the regressions was a proxy for characteristics of workers that a) would lead ES employees to believe the individuals would have problems finding jobs on their own and b) were not included in the regression. An example would be an ES employee observing that an individual was having difficulties filling out a form,

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[13] Men whose re-employment was hastened tended to have one or more of the following personal characteristics: they were white, relatively young, had a relatively lengthy employment history, and/or received relatively high weekly UI benefits (as noted in the text). None of the variables included in the equation influenced the amount of time before women became re-employed.

regardless of that individual's years of schooling (a variable which was included in the regression).[14]

Highlighting Key Findings on the Effectiveness of the ES

These results on Missouri and California, indicating that the ES was not systematically effective in hastening the re-employment of dislocated workers who are at the start of their UI benefit period, are consistent with those for Pennsylvania, given in Section II. In Pennsylvania, the ES was shown to be effective as a "backstop," when workers' UI benefit period was coming to an end. As in California and Missouri, the Pennsylvania ES was not found to be effective when the workers' UI benefit period was just beginning.

The results suggest that the ES may be between "a rock and a hard place" under EDWAA. EDWAA stresses early intervention for dislocated workers; yet it is during the early stages of workers' unemployment that the ES appears empirically to be least effective.

Whether the ES is ineffective in the early stage of workers' unemployment because it is an early stage or because the workers are not interested in receiving the Agency's services regardless of timing, cannot be determined from this three-state analysis. Due to differences in the way the states enforced the work test, early use of the ES was intertwined with mandatory use of the Agency (Missouri and California) and late use of the ES was intertwined with voluntary use (Pennsylvania).

In order to disentangle the effects of timing from motivation for using the ES, a review of other empirical studies on the effectiveness of the ES was undertaken. The results of this review, given in the next section, indicate that the effectiveness of the ES under EDWAA may hinge as much on the dislocated workers' interest in using ES services (and finding new jobs) as on the early timing of their receipt of those services.

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14 Men whose re-employment was hastened tended to have one or more of three characteristics: they were white, relatively young, and/or had a relatively lengthy employment history. Among women, blacks took longer to become re-employed than their white counterparts.

APPENDIX III. A

Description of the California and Missouri Data Files

63

Description Of The California And Missouri Data Files

The data used in Section III to analyze the Employment Service (ES) in California and Missouri were based on a 5 percent sample of 21 to 60 year old individuals who registered with the ES between first quarter 1984 and second quarter 1985 for each of the respective states. Information on these individuals was obtained from the California and Missouri Employment Service Automated System (ESARS) Master Applicant Record and ESARS Applicant Transaction Record Data Files.

Several additional steps were required to obtain the final analysis data bases. First, the samples were merged with Unemployment Insurance (UI) Claims Records. This permitted cataloging ES registrants who were collecting UI benefits and the amount of the benefit payments they received. For purposes of the analysis, individuals were considered to be active UI recipients if they were either shown in the ESARS as a UI claimants or had a UI "benefit year begin date" within 30 days of their ES registration date.

A second merge was then performed with employer base quarterly wage records. These records contain quarterly wages paid to workers in firms covered by UI. The information contained in these records was used to obtain the workers' covered-sector work experience. The final merged analysis data files contained approximately 28,500 and 13,500 individuals for California and Missouri, respectively. This is the sample of ES registrants for which data are shown in Section III.

The empirical estimates for dislocated workers shown in Section III were based on a subset of the ES registrants. Specifically, only those workers who had 12 or more quarters of employment prior to registering with the ES, were employed in the quarter immediately prior to ES registration, and satisfied the active UI claimant criteria were considered dislocated workers. These additional restrictions were imposed to obtain a sample similar to the one used to study the ES in Pennsylvania (Section II of this report).

APPENDIX III. B

Descriptive Data on Use of the Employment Service in California and Missouri during the 1980s

TABLE III.B.1

Percent Distribution Of All ES Registrants By Number Of Post-Registration ES Services Received(a)

Services	California	Missouri
Total Percent	100.0%	100.0%
1 Service	25.5	24.4
2 Services	16.3	14.2
3 Services	6.3	6.8
4 Services	3.5	3.9
5 or More Services	4.0	5.8
None	44.4	44.3

(a)Data cover the period 1984(I) through 1985(II). Data from a third state, Indiana, suggest that the proportions of ES registrants who receive differing numbers of services was fairly similar across states. In Indiana, one-third of ES registrants received one service after registration; 18 percent received 2 services; and 8 percent received three or more services. Forty percent received no additional service after registering. This information is based on a survey of 719 Indiana ES registrants during Program Years 1986-1988. Indiana Department of Employment and Training Services, Keeping Customers Satisfied: What Our Customers Say, Indianapolis, Indiana, 1990.

TABLE III.B.2

Percent Distribution Of Dislocated Workers Who Are ES Registrants By Number Of Post-Registration ES Services Received(a)

Services	California	Missouri
Total Percent	100.0%	100.0%
1 Service	25.7	24.1
2 Services	15.1	12.7
3 Services	6.2	5.2
4 Services	3.2	2.9
5 or More Services	5.4	5.1
None	44.4	50.1

(a)Data cover the period 1984(I) through 1985 (II).

TABLE III.B.3

Percent Distribution Of All ES Registrants By The Number Of Weeks Between Registration And First Subsequent Service(a)

Time from ES Registration to First Subsequent Service	California	Missouri
Total Percent of Registrants with Subsequent Service	100.0%	100.%
Same Week	31.7	41.1
2nd Week	9.6	5.6
3rd Week	5.8	3.7
4th Week	3.9	2.8
5th Week or Later	49.1	46.8

(a)Data cover the period 1984(I) through 1985(II).

TABLE III.B.4

Percent Distribution Of Dislocated Workers Who Are ES Registrants By The Number Of Weeks Between Registration And First Subsequent Service(a)

Time from ES Registration to First Subsequent Service	California	Missouri
Total Percent of Registrants with Subsequent Service	100.0%	100.0%
Same Week	31.1	42.8
2nd Week	9.4	5.0
3rd Week	5.6	4.2
4th Week	3.8	2.7
5th Week or Later	50.	45.3

(a)Data cover the period 1984(I) through 1985 (II)

TABLE III.B.5

Percent Distribution Of All ES Registrants Who Received A Subsequent Service By Type Of First Post-registration Service Received

Services	California(a)	Missouri(a)	National(b)
Total Percent	100.0%	100.0%	100.0%
Referral (c)	74.5	46.3	55.7
Job Search Assistance	9.0	14.7	N/A
Testing	0.4	12.4	8.3
Counselling	2.6	2.9	7.6
Support	12.6	21.2	8.0
Training Referral	0.9	2.5	0.4
Development	N/A	N/A	20.0

(a)Data cover the period 1984(I) through 1985(II).
(b)Based on a survey of 4,564 ES registrants interviewed at 30 state ES offices during PY 1981. See Johnson, et al, A National Evaluation of the Impact of the United States Employment Service, Report prepared for the U.S. Department of Labor, Employment and Training Administration, SRI International, Menlo Park, California, June 1983, Table VII-1, p. 80. (The data were adjusted to eliminate registrants who received no subsequent service.)
(c)Includes "Placements," which are 0.2% of the state totals.
N/ANot Available

TABLE III.B.6

Percent Distribution Of Dislocated Workers Who Are ES Registrants By Type Of First Post-Registration Service Received(a)

Services	California	Missouri
Total Percent	100.0	100.0
Referral (b)	72.2	46.1
Job Search Assistance	11.3	14.9
Testing	0.2	17.1
Counselling	2.8	2.7
Support	12.3	18.2
Training	1.1	1.0
Referral	1.1	1.0

(a)Data cover the period 1984(I) through 1985 (II).
(b)Includes "Placements," which were less than 0.5% of the state totals.

APPENDIX III. C

Model Specification for Dislocated Workers' Use of the California and Missouri Employment Services

Model Specification For Dislocated Workers' Use Of The California And Missouri Employment Services

The goal of the analysis was to identify the factors affecting the probability of dislocated workers' becoming re-employed. The focus was on the effect that the workers' use of the Employment Service (ES) may have on their re-employment, after taking into account other factors likely to influence the probability of their re-employment. The basic model was

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(1) $Pr(Emp_{i,t+n}) = f_1(X_{it}, Z_{jt}, ES_{it,t+n}, UI_{it,t+n})$,

where:

$Emp_{i,t+n}$ = Employment for person i in period t+n, t= quarter of ES registration, and n = number of quarters after registration that the dislocated workers' employment status was being tested;

X_{it} = Personal and work experience characteristics of individual i at time t;

Z_{jt} = Local labor market measures for ES field office j at time t;

$UI_{it,t+n}$ = Unemployment Insurance control variables over the period t to t+n for person i; and

$ES_{it,t+n}$ = Continuous and discrete measures of time to 1st post-registration ES activity by person i and type of post-registration ES activity during the period of t to t+n.

The variables contained in the vectors X_{it} and Z_{jt} were used to control for the effects of the workers' personal characteristics (such as their education) and the economic conditions of the local area where they lived on the workers' probability of reemployment. The UI control variables were included to account for possible effects the workers' receipt of Unemployment Insurance would have on the probability of their re-employment.

There were two measures of dislocated workers' use of the ES: one was the type of post-registration service received (such as a job referral or job search assistance). The second measure was the amount of time between registration and receipt of a subsequent service. Due to the construction of the dependent variable, most of the observations were either in the early weeks of unemployment or in the category "cumulative weeks of unemployment." In view of the weak fits of exploratory regression models, it did not seem to be worthwhile to pursue more sophisticated and complex econometric methods.[15]

Separate equations were estimated for dependent variables representing the probability of employment at 6, 12, and 18 months after registration. The final results, shown in the text, are for a continuous variable, the number of quarters a dislocated worker remained unemployed after registration with the ES.

Models were also developed to estimate (a) the probability of dislocated workers'

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15 These methods are discussed in G.S. Maddala, Limited-Dependent and Qualitative Variables in Econometrics, Cambridge University Press, New York, 1983.

receipt of various ES services (Equation 2 below) and (b) the amount of time between registration and receipt of a service (Equation 3 below).

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(2) $Pr(ESA_{i,t+s}) = f_2(X_{it}, Z_{jt,t+s}, UI_{it,t+s})$,

where:

$ESA_{i,t+s}$ = First ES service received after registration by person i in period t+s, with t+s t+n;

X_{it} = Personal and work experience characteristics of individual i at time t;

$Z_{jt,t+s}$ = Local labor market measures for ES field office j in period t to t+s; and

$UI_{it,t+s}$ = Unemployment Insurance control variables covering the period t to t+s for person i.

This model was estimated separately for two categories of the first ES service received after registration: referrals and job search assistance. For each category, several time intervals between registration and receipt of the service were also estimated: for example, receipt of a service within two weeks; and receipt of a service three to four weeks after registration, given no service in the first two weeks. The results in the text are for receipt of a service within two weeks of registration.

The final equation estimated the time between dislocated workers' registration with the ES and receipt of a service.

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(3) $TESA_i = f_3(X_{it}, UI_{i,t+n})$,

where:

$TESA_i$ = The number of weeks between date of ES registration and first subsequent service received by person i;

X_{it} = Personal and work experience characteristics of individual i at time t; and

$UI_{it,t+n}$ = Unemployment Insurance control variables covering the period t to t+n for person i.

The issue under examination in Equation (3) was identification of factors affecting the speed with which dislocated workers used ES services. Because these equations did not produce consistent results, they are not included in Section III.

APPENDIX III. D

Results of Separate Regressions for Men and Women on the Probabilities of Receiving a Job Referral or Job Search Assistance in Missouri and California

TABLE III.D.1

Probability Of Male Dislocated Workers In Missouri Receiving A Referral Or Job Search Assistance (JSA) Within Two Weeks Of ES Registration

INDEPENDENT VARIABLES	DEPENDENT VARIABLES	
	REFERRAL	JSA
CONSTANT	0.3393** (2.881)	0.1707 (1.443)
AGE	-0.0015 (1.184)	-0.0011 (0.907)
EXPERIENCE	-0.0009 (0.388)	0.0006 (0.240)
EDUCATION	0.0015 (0.258)	-0.0017 (0.299)
VETERAN	0.0613* (2.291)	0.0725** (2.694)
BLACK	0.0175 (0.555)	0.1858** (5.871)
HISPANIC	-0.1001 (0.635)	-0.0869 (0.549)
BENEFITS	-0.0014* (2.067)	-0.0002 (0.326)
UNEMPLOYMENT	-0.0098* (2.430)	-0.0040 (0.988)
R-SQUARED	0.0220	0.0516
F-STATISTIC	2.281	5.520

T-statistic in parentheses.
* = significant at the 5% level.
**= significant at the 1% level.

TABLE III.D.2

Probability Of Female Dislocated Workers In Missouri Receiving A Referral Or Job Search Assistance (JSA) Within Two Weeks Of ES Registration

INDEPENDENT VARIABLES	DEPENDENT VARIABLES	
	REFERRAL	JSA
CONSTANT	0.3556*	0.1652
	(2.412)	(1.445)
AGE	-0.0013	-0.0008
	(0.892)	(0.755)
EXPERIENCE	-0.0060*	-0.0017
	(2.128)	(0.786)
EDUCATION	0.0070	0.0025
	(0.787)	(0.361)
BLACK	-0.0270	0.1754**
	(0.764)	(6.396)
HISPANIC	0.4909*	-0.0670
	(2.439)	(0.430)
BENEFITS	-0.0008	-0.0004
	(1.194)	(0.733)
UNEMPLOYMENT	-0.0050	-0.0052
	(0.960)	(1.285)
R-SQUARED:	0.0281	0.0681
F-STATISTIC:	2.652	6.714

T-statistic in parentheses.
* = significant at the 5% level.
**= significant at the 1% level.

TABLE III.D.3

Probability Of Male Dislocated Workers In California Receiving A Referral Or Job Search Assistance (JSA) Within Two Weeks Of ES Registration

INDEPENDENT VARIABLES	DEPENDENT VARIABLES	
	REFERRAL	JSA
CONSTANT	0.1821*	-0.0528
	(2.266)	(1.080)
AGE	-0.0034**	0.0007
	(2.744)	(0.883)
EXPERIENCE	0.0030	0.0014
	(1.296)	(0.957)
EDUCATION	0.0013	0.0047
	(0.277)	(1.665)
VETERAN	0.0473*	-0.0222
	(1.965)	(1.517)
BLACK	-0.0170	-0.0048
	(3.546)	(0.253)
HISPANIC	-0.0196	-0.0157
	(0.545)	(0.718)
BENEFITS	-0.0003	-0.0001
	(0.807)	(0.384)
R-SQUARED:	0.0149	0.0114
F-STATISTIC:	1.637	1.253

T-statistic given in parenthesis.
*= significant at the 5% level
**= significant at the 10% level.

TABLE III.D.4

Probability Of Female Dislocated Workers In California Receiving Areferral Or Job Search Assistance (JSA) Within Two Weeks Of ES Registration

INDEPENDENT VARIABLES	DEPENDENT VARIABLES	
	REFERRAL	JSA
CONSTANT	-0.0186 (0.218)	0.0049 (0.067)
AGE	-0.0012 (1.116)	-0.0001 (0.069)
EXPERIENCE	0.0049* (2.309)	0.0018 (0.999)
EDUCATION	0.0078 (1.603)	-0.0000 (0.004)
BLACK	-0.0072 (0.235)	0.0359 (1.391)
HISPANIC	-0.0345 (0.912)	-0.0118 (0.367)
BENEFITS	-0.0006 (1.804)	0.0000 (0.056)
R-SQUARED:	0.0218	0.0060
F-STATISTIC:	2.180	0.588

T-statistic given in parenthesis.
*= significant at the 5% level.

APPENDIX III. E

Results on Regressions for Men and Women Combined on Time to Re-employment and the Probabilities of Receiving a Job Referral or Job Search Assistance in Missouri and California

TABLE III.E.1

**Time To Re-Employment,
The Probability Of Receiving A Referral And The Probability Of Receiving Job Search Assistance Among Male And Female Dislocated Workers In Missouri**

INDEPENDENT VARIABLES	DEPENDENT VARIABLES		
	TIME TO RE-EMPLOYMENT	REFERRAL	JSA
CONSTANT	0.0542 (0.169)	0.3190** (3.503)	0.1836* (2.256)
AGE	0.0043 (1.341)	-0.0014 (1.479)	-0.0009 (1.135)
EXPERIENCE	-0.0035 (0.558)	-0.0020 (1.123)	-0.0004 (0.227)
EDUCATION	0.0288 (1.690)	0.0041 (0.842)	0.0004 (0.092)
FEMALE	-0.0240 (0.362)	0.0426 (2.254)	-0.0218 (1.290)
VETERAN	-0.0202 (0.189)	0.0722** (2.698)	0.0722** (3.018)
BLACK	0.0684 (0.810)	-0.0047 (0.200)	0.1807** (3.609)
HISPANIC	0.4488 (1.025)	0.1615 (1.295)	-0.0750 (0.673)
REFERRAL	-0.0192 (0.190)		
JSA	-0.0404 (0.391)		
OTHER	0.0197 (0.194)		
BENEFITS	-0.0027 (1.715)	-0.0012* (2.523)	-0.0003 (0.779)
UNEMPLOYMENT	0.0108 (0.956)	-0.0073** (3.277)	-0.0044 (1.535)
VETREFERAL	-0.0999 (0.413)		
R-SQUARED	0.0067	0.0217	0.0598
F-STATISTIC	0.754	3.607	10.327

T-statistic in parentheses.
*= significant at the 5% level.
**= significant at the 1% level.

TABLE III.E.2

Time To Re-employment, The Probability Of Receiving A Referral And The Probability Of Receiving Job Search Assistance Among Male And Female Dislocated Workers In California

INDEPENDENT VARIABLES	DEPENDENT VARIABLES		
	TIME TO RE-EMPLOYMENT	REFERRAL	JSA
CONSTANT	0.6913 (1.698)	0.1245* (2.102)	-0.0369 (0.895)
AGE	0.0107 (1.876)	-0.0025** (2.970)	0.0004 (0.625)
EXPERIENCE	-0.0226* (2.041)	0.0037* (2.327)	0.0017 (1.476)
EDUCATION	0.0138 (0.595)	0.0035 (1.053)	0.0030 (1.293)
FEMALE	0.1635 (1.324)	-0.0308 (1.714)	-0.0009 (0.074)
VETERAN	-0.0369 (0.240)	0.0398 (1.895)	-0.0218 (1.489)
BLACK	0.5482** (3.620)	-0.0127 (0.575)	0.0116 (0.757)
HISPANIC	0.1642 (0.916)	-0.0278 (1.064)	-0.0125 (0.685)
REFERRAL	-0.4918* (2.172)		
JSA	1.1308 (4.216)		
OTHER	0.1650 (0.799)		
BENEFITS	-0.0003 (0.195)	-0.0004 (1.781)	-0.0000 (0.180)
VETREFERAL	0.2960 (0.742)		
R-SQUARED	0.0338	0.0194	0.0074
F-STATISTIC	3.927	3.346	1.234

T-statistics in parentheses.
*= significant at the 5% level.
**= significant at the 1% level.

IV. Review Of The Evidence On The Effectiveness Of The Employment Service

This section presents results of a review of the empirical research on the Employment Service (ES), including that given in Sections II and III of this report.[1] It was undertaken to shed light on the conditions under which the ES was effective in carrying out its labor exchange function prior to enactment of the Economic Dislocation and Worker Adjustment Assistance Act (EDWAA), especially the roles played by dislocated workers' timing and motivation in using the Agency. These particular factors are important to the ES under EDWAA because EDWAA establishes a mechanism that stresses early program intervention and encourages dislocated workers to use the ES early in their dislocation period. In states that strictly enforce the "work test," the system designed to encourage early use was superimposed upon a system which mandated early use.

As shall be seen, the general purpose of empirical research on the ES has been to determine whether or not receipt of a service from the ES helps workers find jobs and earn more than they otherwise would have. However, individual studies differed considerably in the particular purposes for which they were undertaken, the outcome measures, and the data bases used.

Under What Conditions is the ES Most Effective?

The review of the literature revealed that several conditions influence the ability of the ES to assist people in finding jobs. These conditions include: the application of the work test; individuals' attitudes toward using the Agency and/or obtaining new jobs; and the resources available to the Agency for meeting its labor exchange and other functions.

These factors are inter-related and operate in combination to influence empirical estimates of the effectiveness of the ES in assisting people to find work.[2] For example, enforcement of the work test influences the likelihood that individuals will use the ES and the timing of that use. In turn, the outcomes associated with use of the ES depend upon individuals' interest in receiving job referrals and the types of jobs which the Agency has listed.

A basic conclusion that emerged from this review is that the ES appears to be most effective in situations where individuals have the greatest amount of control over whether, and when, they use the Agency's services.[3] It is least likely to be effective

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1 Brief descriptions of the studies that were reviewed are given in Appendix IV.A.

2 Unless otherwise noted, effectiveness means time to reemployment and changes in pre/post program earnings.

3 This point was also made in a case study of an early intervention assistance program offered to dislocated miners: "... early intervention assistance can only work if it is chosen by those affected."

when use of ES services is mandatory, that is, when the work test is strictly enforced.[4]

Effects of Work Test Enforcement

By federal statute, all states are required to have a "work test" (or job search requirement) for recipients of government programs (such as UI claimants). Its purpose is to encourage claimants to seek work and thereby eliminate their need to use the program. As noted earlier, although the UI system is responsible for enforcing the work test, one component of the job search requirement is registration with the ES.

Enforcement of the work test can influence estimates of ES effectiveness in several ways, as discussed in the Introductory Section of this report. First, strict enforcement means that individuals who may not want to use the ES as a labor exchange (or may not be ready to find new jobs) are included among ES registrants who choose to use the Agency's services and/or want to find new jobs. Analyses of the ES that include individuals who have little or no desire to use the Agency can make the Agency's services appear empirically to be ineffective even though the services may be effective for those persons who choose to use them.

Second, when the work test is strictly enforced, it may be a sufficiently powerful incentive for "job-ready" individuals to find work on their own. Those who cannot find work on their own may be among the "more difficult to place"; training programs, rather than referrals or job search assistance, may be necessary to hasten their re-employment. In this case, empirical estimates of the use of the ES would indicate that the services are not effective, when in fact the problem is a mismatch between the services offered by the ES and the needs of the individuals.

Finally, strict enforcement of the work test may in reality be associated with ineffective ES services. This could occur if its enforcement meant that a smaller level of ES resources were devoted to meeting its labor exchange function.

Precisely how the work test influences estimates of ES effectiveness has not been resolved in the literature. However, as indicated below, attempts have been made to address this issue.[5]

Annapolis Economic Research, "Finishing Up With Pride": A Case Study in Early Intervention Assistance for Tennessee Copper Miners, Report prepared for U.S. Department of Labor, Employment and Training Administration, Annapolis, Maryland, March 1989, p. 55.

4 A study by the U.S. General Accounting Office (GAO) found wide variations in the effectiveness of the ES among local offices. Because the GAO study did not address the issues discussed here, it is not included in the literature review. U.S. Government Accounting Office, Employment Service: Variations in Local Office Performance, HRD-89-116BR, U.S. Government Printing Office, Washington, D.C., August 1989.

5 One study which explicitly examined the effects of the work test on individuals' job search behavior and likelihood of re-employment had inconclusive results. Their general finding was "... claimants from the states whose work-search rules are the strictest are less successful at leaving the UI rolls and becoming reemployed." The authors attributed this result to their inability to adjust fully for economic conditions in the various states. The states with the stricter work tests were also experiencing greater labor market problems during the time period under study. U.S. Department of Labor, Employment and Training Administration, Work Search Among Unemployment Insurance Claimants: An Investigation of Some Effects of State Rules and Enforcement, Unemployment Insurance Service Occasional Paper 88-1, Washington, D.C., 1988,

One author was sufficiently concerned about the possibility that enforcement of the work test would influence his analysis of people's motivation to use the ES, that he excluded from his analysis individuals who had registered with the ES due to work test requirements.[6]

In a national survey of ES registrants, the probability of receiving a job referral was lower among mandatory ES registrants than among those who had voluntarily registered with the Agency. Specifically, the probability of a referral ranged from 21 to 25 percent among mandatory ES registrants; among voluntary ES registrants these probabilities were 34 percent and 39 percent for men and women, respectively.[7]

The findings in this report regarding the effectiveness of the ES in Pennsylvania, Missouri, and California are consistent with the view that enforcement of the work test affects estimates of ES effectiveness. The ES was found to be most effective in the state with the least stringent application of the work test (Pennsylvania). It was found to be least effective in the state with the strictest application (Missouri); and one ES service -- job referral -- was found to be effective in California, a state which is between the other two in terms of the strictness of its enforcement of the work test.

Findings from the Charleston demonstration project show how the effects of the work test, in combination with use of the ES, vary depending upon the outcome under study. A key component of the demonstration was an examination of the effects of a strengthened work test on the number of weeks individuals were unemployed and on the number of weeks they collected UI benefits. Even though the work test was being enforced locally, there was sufficient information to indicate that enforcement was not very rigorous. Three "treatment groups" were subject to the strengthened work test.[8] Two of the treatment groups were also given "enhanced ES services."[9]

This demonstration project found that compared to UI recipients who were not subject to this strict enforcement (the control group), the three treatment groups had similar outcomes along two dimensions: they claimed UI benefits for fewer weeks

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p. xv.

6 Approximately 12 percent of the sample from the Job Finders Survey was excluded. Arnold Katz, "Exploratory Measures of the Labor Market Influences of the Employment Service," Report prepared for the U.S. Department of Labor, Employment and Training Administration, University of Pittsburgh, Pittsburgh, Pennsylvania, September 1978, p. 10.

7 See Terry Johnson, et al, A National Evaluation of the Impact of the United States Employment Service, Report prepared for the U.S. Department of Labor, Employment and Training Administration, SRI International, Menlo Park, California, June 1983, Table VIII-3, p. 116.

8 The specifics involved in strengthening the work test are discussed in U.S. Department of Labor, Employment and Training Administration, Evaluation of the Charleston Claimant Placement and Work Test Demonstration, Unemployment Insurance Occasional Paper 85-2, Washington, D.C., pp. 16-17.

9 The three "treatment" groups and a control group consisted of approximately the same number of people. UI claimants in treatment group 1 received Strengthened Work Tests (SWT), Enhanced Placement Services (EP), and Job Search Workshops (JSW). Those in treatment group 2 received SWT and EP. Claimants in treatment group 3 received SWT alone; those in the control group received the usual levels of work test monitoring and services.

and they had higher probabilities of receiving job referrals from the ES.[10]

However, there were no differences among the four groups in the duration of unemployment: none of the three treatment groups was re-employed sooner than the control group.

There were differences among the treatment groups along one dimension: compared to the control group, the two treatment groups who received enhanced ES services had substantially higher probabilities of receiving long-term placements. In contrast, there was only somewhat of a difference in the probability of receiving a long-term placement between the control group and the treatment group that did not receive enhanced services.

These results on the relationships among enforcement of the work test, use of the ES, and workers' time to re-employment suggest that the work test will complicate the role of the ES under EDWAA. In those states that enforce the work test strictly, the ES will be asked to provide early-intervention services to dislocated workers who are required to use the Agency to remain eligible for UI or Food Stamps along with those who desire to use the Agency's services.

The Effect of Individuals' Attitudes Toward Using the ES

When people who do not want to receive ES services are included among ES registrants, the measured effectiveness of the Agency is affected, as noted earlier. The fact that people's attitudes (or motivation) influence estimates of a program's effectiveness is a well known problem in statistical research. (The technical term for the problem is "selectivity bias.")[11] It is relatively common in empirical analyses of programs where individuals have a choice regarding program participation. The issue is whether people who choose to use the program differ in some fashion, not captured by the data, such as their motivation, from those who do not use the program -- or are forced to register for the service in the case of the ES and the work test.

Research on the ES has shown the effects of "selectivity bias" on estimates of the Agency's effectiveness. First, as mentioned earlier, the national survey of ES registrants found a sizable difference in the probability of receiving a job referral between individuals who were required to register with the ES in order to receive UI benefits or Food Stamps and those for whom registration was not mandatory.

In a direct examination of the selectivity bias issue, the authors of the report on the national survey had findings suggesting "The true impacts of a referral [in terms of earnings at placement] may be underestimated by about $30 for men and $130 for women."[12]

Another study found that if statistical adjustments were made for the probability

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10 This result regarding shorter duration on UI is consistent with findings in Steven M. Director and Frederick J. Englander, "Requiring Unemployment Insurance Recipients to Register with the Public Employment Service," The Journal of Risk and Insurance, Volume LV, Number 2, June 1980, pp. 245-258.

11 For a thorough discussion of selectivity bias and various methods of correction, see G.S. Maddala, Limited-Dependent and Qualitative Variables in Econometrics, Cambridge University Press, New York, 1983.

of individuals choosing to use the ES, the outcomes associated with ES use were very different from those obtained without the adjustment.[13] Specifically, ES registrants were classified according to whether or not they had received a service: one group had received a placement or referral; the second group had not received one of these services.

A straightforward analysis of the experiences of these two groups indicated that individuals who received a service from the ES had a sizeable gain in annual earnings (27 percent) and those who did not receive a service were found to experience a small loss (-4.7 percent). Adjusting for the possibility that people choose to be in one group or the other produced the following results: if people who typically use the ES were to find a job through other means, they would experience only a slight increase in annual earnings (1 percent). By comparison, if people who typically would not use the ES were to rely on the Agency for a referral, they would experience a small decline in their annual earnings (-3.2 percent).[14]

This difference in outcomes suggests that those who expect to benefit the most by using the ES do in fact use the Agency. A similar interpretation was offered regarding use of the ES by members of the "control group" in the Charleston demonstration project. While members of the control group were not required to use the ES, about one-third did so.[15] Of these individuals, 60 percent received a job referral, compared to 40 to 50 percent of the members of the treatment groups. The authors interpreted this high rate of job referrals to mean that "control group claimants who reported to the [Employment Service] were presumably those who expected to benefit from the visit."[16]

A further study focused on people's choice regarding the point in their job search when they switch from not using the ES to using the ES.[17] Its results indicated that failure to

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12 See Johnson, et al, A National Evaluation, p. 173.

13 Katz, "Evaluating Contributions of the Employment Service to Applicant Earnings," Paper presented at the Annual Spring Meetings of the Industrial Relations Research Association, Tucson, Arizona, March 1977. In this study, effectiveness of placements/referrals was measured by a comparison of annual earnings and "high quarter" earnings before and after use of the ES.

14 The technique involved imputing earnings for (a) those registrants who did not receive a placement or referral as if they had received one, and (b) those registrants who had received a placement or referral as if they had not received one. Katz, "Evaluating Contributions of the Employment Service," Tables 1 and 3.
The results may be due to the types of jobs the ES lists and the characteristics of individuals likely to use the ES. A discussion of these issues is given later in this section.

15 Even though the intent of the demonstration project may not have been to compel UI claimants to use ES services in the early stages of their unemployment, the study design (e.g., the strengthened work test) more or less did so for those claimants in the "treatment" groups. This was particularly the situation for claimants receiving the enhanced placement services and job search workshops (treatment group 1).

16 U.S. Department of Labor, Evaluation of the Charleston Claimant Placement and Work Test Demonstration, p. 41.

17 The research tested the view that individuals go through different stages when they look for work. The empirical work involved first estimating when the individual changes search strategies (that is, from non-ES use to ES use). The second part of the research consisted of comparing the

date individuals' use of the ES within their period of unemployment leads to a misleading result that ES users took, on average, 49-51 percent longer to find employment than persons who did not use the ES.[18] By contrast, taking into account the timing of individuals' use of the ES indicates that ES users took approximately 50 percent less time to find jobs than if they had not had access to ES.[19] Use of the ES reduced the amount of time people spent looking for work by about 10-20 percent over what could be expected if they had not had access to the Agency.[20]

These results, indicating the importance of workers' motivation for using the ES to the Agency's measured effectiveness, suggest that to be effective under EDWAA, the ES would need to enhance the attractiveness of its services. The services would need to be sufficiently attractive that dislocated workers are motivated to use them early in the dislocation period, overcoming any initial negative feelings associated with being required to do so.

The Influence of Resource Constraints on the Effectiveness of the ES

Even though resource constraints of the ES play a substantial role in determining its effectiveness, they have yet to be addressed

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observed amount of time spent looking for work by individuals with the hypothetical amount of time spent had they not used the ES. Katz, "Exploratory Measures."

18 See Katz, "Exploratory Measures," Table 4, p. 28.

19 Katz, "Exploratory Measures," Table 5, p. 28.

20 Katz, "Exploratory Measures," p. 5. These two findings -- that it is important to adjust for people's choices about using the ES and that timing their use affects outcomes associated with receipt of a service -- help resolve contradictory findings from the national survey of ES registrants. On the one hand, the survey found that men who received a referral within one month of registration experienced a shorter delay to re-employment than men who did not receive a referral in that period. On the other hand, men who received a referral at some point within six months of registration were re-employed no sooner than those who did not receive a referral.

The authors interpreted the first finding to mean that the "more employable" men received a referral in the first month. Although the complete regression on which this result was based was not shown in the report, it is assumed that the analysis took into account standard measures of "employability," such as the registrants' education and work experience.(Johnson, et al, A National Evaluation, p. 153.) This assumption seems reasonable since these meaures, as well as indicators of the registrants' attitudes, were in the data base. This would mean that the men are "more employable" along measures not included in the analysis, one of which may be their attitude toward using the ES. That is, individuals who wanted to use ES services may have been among the first to receive a service. This would be consistent with the finding that individuals who expect to benefit the most from using the ES will do so.The second finding (for men for the six month period) appears to be related to the fact that use of the ES was not appropriately dated.

Women who used the ES experienced higher probabilities of re-employment and greater gains in earnings that those who did not use the ES, regardless of the time period (one or six months). (Johnson, et al, A National Evaluation, pp. 153-156.) The authors attribute these findings as largely due to reductions in the percentage of women leaving the labor force. This would suggest that the women who used the ES tended to have few alternative methods of finding jobs on their own. They benefitted from the ES in that they did not leave the labor force.

fully in the literature.[21] The ES has several functions in addition to labor exchange activities, as discussed earlier. The number of functions, and the emphasis accorded each, affects the extent to which the Agency is effective on any one function.[22] With the exception of the Charleston demonstration project, the analyses reviewed in this section did not address these constraints.[23] For the most part, they assumed that decisions to use an ES service were made by individual registrants and that their decisions were not related to the availability of (say) slots available in a workshop on how to write a resume.

A related issue concerns the number and types of vacancies listed in ES job banks. Although the Charleston project recognized the importance of the number of job listings to the success of their efforts to re-employ UI recipients, a full test of this aspect of the project was not undertaken.[24] Anecdotal evidence suggests that the typical ES job is lower paying than the jobs typically held by registrants prior to unemployment.[25] In spite of the importance of the number and types of jobs listed by the ES to studies of the Agency's effectiveness, there is little information on the number of job openings, the characteristics of the jobs listed, or on how the types of jobs listed affect individuals' interest in using the ES.

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21 For a discussion of resource constraints on the ES as described by witnesses at hearings on "Improving the Effectiveness of the Employment Service" held by the National Commission for Employment Policy in 1989, see Robert Ainsworth, Improving the Effectiveness of the Employment Service: Defining the Issues, Research Report 91-01, National Commission for Employment Policy, Washington, D.C., October 1991.

22 See U.S. Department of Labor, Employment and Training Administration, Referral of Long-Term Unemployment Insurance Claimants to Reemployment Services, Unemployment Insurance Occasional Paper 88-4, Washington, D.C., 1988. This study indicates that the long term unemployed (who need more intensive service than the average registrant), are particularly affected by resource constraints (p. A-8).

23 The Charleston project suggested that services to other ES registrants were not adversely affected by the efforts staff devoted to the project. (U.S. Department of Labor, Evaluation of the Charleston Claimant Placement and Work Test Demonstration, pp 85-97. Johnson, et al, A National Evaluation alluded to possible resource constraints in the discussion of their results (For example, see p. 149.) The GAO study referenced earlier (Employment Service: Variations in Local Office Performance) discussed costs in the context of the labor exchange functions of the ES; the report did not discuss the costs associated with other functions of the agency.

24 U.S. Department of Labor, Evaluation of the Charleston Claimant Placement and Work Test Demonstration, Appendix A.

25 "On a typical day last month, the Job Service office [in Ocala, Florida] posted 35 offers for 101 workers. The best offer, for a librarian, paid $9.59 an hour or $20,000 a year, but it required a master's degree and went unfilled for weeks.

... great majority of the jobs paid much less. Among them were 26 jobs that paid the minimum wage of $3.80, and 1 of those was part-time. The average for all the jobs was $5.04." "Youths Lacking Special Skills Find Jobs Leading Nowhere," The New York Times; Vol CXL, No. 48,432; Tuesday, November 27, 1990, p. B10.

Do Dislocated Workers Have the Characteristics of Users of the ES?

The review of the literature has suggested that voluntary use of the ES is associated with hastened re-employment among dislocated workers and others. A follow-up question is -- do dislocated workers in general have characteristics similar to those of individuals who voluntarily use the ES? Dislocated workers tend to be men with lengthy work experience, high school educations, relatively high wages; and they tend to be recipients of UI benefits.[26]

While the studies reviewed here do not contain data that permit direct comparisons between the characteristics of dislocated workers and individuals who use the ES, they do provide some information. It is possible to describe some of the characteristics of individuals who are likely to use the ES early in their search for work and of the ES applicants who are likely to receive a job referral.[27]

Using receipt of a referral as an indicator of ES use suggests that individuals with two particular characteristics are most likely to use the ES. Among men, these characteristics are the expectation of jobs with relatively low wages and an intensive search for work. Among women, the two characteristics are: fewer than 12 years of education and lengthy work experience.[28]

The indicator, "early ES use," suggests that men with certain characteristics are likely to use the Agency. The men have few years of job tenure; they earn relatively low wages, and are not in occupations that normally fill vacancies via personal contacts. Among men 35 years of age or younger, those who have relatively high levels of education also tend to be early users of the ES.[29]

Among UI recipients in areas where the work test is weakly enforced, men are more likely to be early users of the ES than women, and both men and women who are approaching the end of their UI benefit period are more likely to use the ES than those who have recently started receiving their UI benefits.[30] Among long-term UI recipients, lack of use of the ES (or of training programs for dislocated workers under the Job Training Partnership Act) was attributed to respondents having: unrealistic expectations of being recalled, unrealistic wage expectations, educational deficits, a lack of familiarity with the ES, and reluctance to accept re-employment assistance until after UI benefits are exhausted.[31]

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26 See the descriptions in Sections II and III of this report and Paul O. Flaim and Ellen Sehgal, "Displaced Workers of 1979-83: How Well Have They Fared?" Monthly Labor Review, Volume 108, Number 6, June 1985, pp. 3-16.

27 It should be noted that receipt of a job referral reflects the interaction of both the characteristics of the individual and the selection process of ES officials. Therefore, the characteristics described here may be more associated with individuals most likely to benefit from the ES rather than to use the Agency.

28 See Johnson, et al, A National Evaluation, Table VIII, pp. 109-116.

29 See Katz, "Exploratory Measures," Table 3, p. 26.

30 Section II of this report, Table 5.

Thus available information suggests that the characteristics of individuals who use the ES early in their search for jobs, and have the most to gain from its use, differ from those of typical dislocated workers. In this context, one important finding is that the two groups differ in terms of the wages they expect to earn in the future compared to those they earned in the past, with ES users having lower wage expectations than dislocated workers. This is consistent with the view that under EDWAA, dislocated workers are unlikely to use the ES voluntarily at the start of their dislocation unless they perceive that they will benefit from the Agency's services.

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31 See U.S. Department of Labor, Referral of Long Term Unemployment Insurance Claimants, p. A-44.

APPENDIX IV. A

Descriptions of Empirical Studies of the Employment Service: Their Purpose and Data Bases

Descriptions Of Empirical Studies Of The Employment Service:

Their Purpose And Data Bases

Section IV of this report contains results of a review of five empirical studies on the Employment Service, selected due to their relevance to the topics discussed in the section. The titles of each study, and a brief description of each, are given below.

- Evaluating Contributions of the Employment Service to Applicant Earnings. The purpose of the study was to address methods of evaluating the effectiveness of the ES. Effectiveness was measured in terms of changes in earnings before and after use of the ES. A merged data base from the 1972 Employment Service Automated Record System (ESARS) and the Continuous Wage Benefit History (CWBH) data base for 25 to 64 year old white males in Pennsylvania between 1967 to 1974 was used.[32]

- Exploratory Measures of Labor Market Influences of the Employment Service. This study, a follow-up to the previous one, tested whether people switch from not using the ES to using it and how the timing of the switch affects estimates of the effectiveness of the Agency. Effectiveness was measured in terms of the amount of time before individuals became re-employed after they had registered with the ES and the earnings they received at their new jobs. It used data on unemployed white males drawn from the 1972 Bureau of Labor Statistics Job Finders Survey, and a merged ESARS/CWBH data base for the state of Pennsylvania.[33]

- A National Evaluation of the Impact of the United States Employment Service. This is the most recent evaluation of the Employment Service nationally. ES effectiveness was measured in several ways, including changes in the employment status and earnings of ES applicants 6 months after registration, and the duration of their unemployment. It was based on a sample of approximately 8,000 ES registrants interviewed at 30

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32 Arnold Katz, Paper presented at the Annual Spring Meetings of the Industrial Relations Research Association, Tucson, Arizona, March 1977.

33 Arnold Katz, Report prepared for the U.S. Department of Labor, Employment and Training Administration, University of Pittsburgh, Pittsburgh, Pennsylvania, September 1978. The Job Finders Survey is a household survey containing information on the job search experiences and strategies of workers that became reemployed in 1972.The merged ESARS/CWBH data base is the same file as used in Katz, "Evaluating Contributions of the Employment Service."

randomly selected ES offices in 27 states for Program Year 1981. (Only individuals unemployed at the time of registration were included in the analysis.)[34]

- Evaluation of the Charleston Claimant Placement and Work Test Demonstration. This project examined how increased enforcement of the work test, coupled with enhanced ES services, affected the re-employment of UI recipients. Four outcome measures were examined: long-term placements,[35] the length of time people claimed Unemployment Insurance (UI) benefits, individuals' employment status 3 to 6 months after registering with the ES, and their earnings at their new jobs. The analysis was based on data collected during a random assignment demonstration experiment in Charleston, South Carolina conducted between February and December, 1983.[36]

- Referral of Long-Term Unemployment Insurance Claimants to Reemployment Services. This study was concerned with the feasibility of identifying and targeting services on long-term UI claimants. The outcome measures were re-employment prior to UI benefit exhaustion and employment status after UI benefits were exhausted. The study involved collecting information from 1,090 long-term UI claimants in 10 states. In addition, state ES, UI and JTPA program officials were interviewed.[37]

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34 Terry Johnson et al, Report prepared for the U.S. Department of Labor, Employment and Training Administration, SRI International, Menlo Park, California, 1982.

35 A long term placement is a position offering 150 or more days of employment.

36 U.S. Department of Labor, the Employment and Training Administration, Unemployment Insurance Occasional Paper 85-2, Washington, D.C., 1985.

37 U.S. Department of Labor, Employment and Training Administration, Unemployment Insurance Occasional Paper 88-4, Washington, D.C., 1988. Long-term claimants were defined as those collecting UI benefits for 22 or more weeks.

V. Conclusions

This report addressed the questions -- under what conditions was the Employment Service (ES) effective in assisting dislocated workers prior to the Economic Dislocation and Worker Adjustment Assistance Act (EDWAA)? To what extent do these conditions prevail under EDWAA? How effective, then, is the ES expected to be under EDWAA? Findings are based on new empirical research on the Employment Service in three states, California, Missouri, and Pennsylvania and on a review of other empirical studies on the ES undertaken during the past decade.

Prior to EDWAA, the ES had no special policy or program for serving dislocated workers. Individual dislocated workers received services similar to those received by other job seekers. If they were receiving Unemployment Insurance (UI) or Food Stamps, the dislocated workers were subject to their state's work test requirement.

With the enactment of EDWAA -- especially the provision of a Rapid Response Team -- services to dislocated workers have become more targeted. Research results on ES services to another targeted group -- veterans -- indicate that veterans are more likely than nonveterans to receive job referrals and job search assistance. To the extent that parallels can be drawn between these two targeted groups, ES services to dislocated workers are likely to be improved due to EDWAA.

The extent to which the provision of ES services will result in dislocated workers' hastened re-employment cannot be known with certainty based on empirical research from the 1980s. However, two often neglected points, which are both critical and elementary, do emerge. The first is that the effectiveness of the ES depends in part upon the resources it has available and the way it allocates those resources among its several functions. For example, although there is scant evidence on this point, common sense indicates that the greater the number of job openings listed -- and the greater the variation in the types of jobs listed (including wage rates) -- the greater the likelihood that the ES will be effective.

The second point that emerges is that use of the Employment Service hastens the re-employment of workers who have voluntarily chosen to use its services. Under EDWAA, dislocated workers' voluntary use of the ES will depend in part on their interest in finding a new job in general, and specifically their attitudes about their ability to find new jobs on their own. For example, evidence from the 1980s indicates that some workers who used the Employment Service viewed it as a "backstop," that is, as a source of jobs when other methods of finding work had failed and their UI benefit period was drawing to a close. Other workers, whose earnings at their previous jobs were low, were willing to use the Agency more quickly.

On the other hand, if dislocated workers' use of the ES is mandatory -- for example, if the work test is strictly enforced for dislocated workers who are UI claimants or Food Stamp recipients -- the workers may well view the ES an enforcement Agency and consider its use punitive. In this case, one of the goals of EDWAA -- a positive early intervention experience for dislocated workers -- could unintentionally become a negative experience for them. In turn, a negative experience with the ES when it is

an early stop could further delay workers use of the ES, when it would otherwise become an effective backstop for them. To the extent that the workers use the ES in a pro forma manner in order to remain eligible for UI (or the ES treats the workers in a similarly pro forma manner), the ES is unlikely to be effective, regardless of the speed with which the Agency offers its services after a plant layoff or closure has been announced.

For the ES to be effective under EDWAA, it must take care with regard to how it enforces the work test and also have the resources necessary to interest dislocated workers in using its services. In this context resources includes the number and quality of the Agency's job openings.

As important, the success of the ES will depend upon the efforts of all employment and training institutions involved in assisting dislocated workers, especially those institutions represented on EDWAA's Rapid Response Teams. The ES is one part of a team effort. For the Agency to have a reasonable chance of assisting the dislocated workers, all members of the team must play their part in giving the workers full and accurate information about the likelihood of a recall, about other jobs that are available, and about the workers' possible need for retraining.

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